IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

WANDA NALLS, ***Plaintiff,*** ***vs.*** **REGENERON PHARMACEUTICALS, INC., SANOFI-AVENTIS U.S. LLC, GENZYME CORPORATION** ***Defendants.***	**CASE NO.:** **COMPLAINT FOR DAMAGES** **DEMAND FOR JURY TRIAL**

COMPLAINT

COMES NOW Plaintiff, Wanda Nalls by and through undersigned counsel, and hereby brings this action for damages against Defendants, Regeneron Pharmaceuticals, Inc.; Sanofi-Aventis U.S. LLC; and Genzyme Corporation, and alleges as follows:

INTRODUCTION

1. This is an action for damages due to Plaintiff relating to Defendants' development, testing, manufacture, packaging, preparation, labeling, marketing, supply and/or sale of the dangerous and defective pharmaceutical product Dupixent®.

2. Defendants misrepresented that Dupixent was a safe and effective treatment for atopic dermatitis and other inflammatory health conditions when in fact the drug causes cutaneous t-cell lymphoma (CTCL), a form of non-Hodgkin's lymphoma, and/or triggers a reaction leading to severe and rapid clinical progression of otherwise subclinical and undiagnosed CTCL.

3. Defendants failed to warn physicians and the public about Dupixent's propensity to cause CTCL or rapidly exacerbate subclinical CTCL.

4. Consumers and physicians alike have been misled about the safety and efficacy of Dupixent, and as a result consumers, including Plaintiff, have developed CTCL.

PARTIES

5. Plaintiff, Wanda Nalls is and was at all times relevant hereto, a resident of Cobb County, Georgia.

6. Defendant, Regeneron Pharmaceuticals, Inc. is and was at all times relevant hereto a corporation organized under the laws of the state of New York with its principal place of business at 777 Old Saw Mill River Road, Tarrytown, New York 10591. Regeneron Pharmaceuticals, Inc. lists nine locations in North America, including Cambridge, Massachusetts. Defendant, Regeneron Pharmaceuticals, Inc. is the current official sponsor of the Biologics License Application for Dupixent in the United States, and thus maintains significant responsibility and control over the

drug and all activities and materials relating thereto. Defendant, Regeneron Pharmaceuticals, Inc. has been substantively involved in the development and sale of Dupixent and the design, funding, conduct, authorship, publication and dissemination of scientific research and promotional messaging related to Dupixent and the indications for which Dupixent has received approval to treat.

7. Defendant, Sanofi-Aventis U.S. LLC, a wholly owned subsidiary of Sanofi, is and was at all times relevant hereto a limited liability company organized and existing under the laws of the State of Delaware, having its principal place of business at 55 Corporate Drive, Bridgewater, New Jersey 08807. Upon information and belief, Defendant, Sanofi-Aventis U.S. LLC has been substantively involved in, *inter alia*, the development and sale of Dupixent and the design, funding, conduct, authorship, publication and dissemination of scientific research and promotional messaging related to Dupixent and the indications for which Dupixent has received approval to treat.

8. Defendant, Genzyme Corporation, a wholly-owned subsidiary of Sanofi, is and was at all times relevant hereto a corporation organized and existing under the laws of the State of Massachusetts, having its principal place of business at 450 Water Street, Cambridge, Massachusetts 02142. Upon information and belief, Defendant, Genzyme Corporation has done business under various names and/or aliases, including “Sanofi Genzyme” and “Sanofi-Genzyme”, at certain times

relevant to this action. Defendant, Genzyme Corporation's headquarters is located less than one mile from Defendant, Regeneron Pharmaceuticals, Inc.'s Massachusetts office. Genzyme Corporation "focuses on developing specialty treatments for debilitating diseases that are often difficult to diagnose and treat, providing hope to patients and their families".[1] At the time of launch, Dupixent was considered an "[i]mportant new addition to Sanofi Genzyme [Genzyme Corporation] specialty care business."[2] Defendant, Genzyme Corporation has been substantively involved in, *inter alia*, in the coordination and funding of third parties to design, conduct, author, publish and disseminate scientific research and promotional messaging related to Dupixent and the indications for which Dupixent has received approval to treat. Prior to Dupixent's launch, Defendant Genzyme Corporation worked hand in hand with Defendants Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC in commercializing Dupixent.[3]

---

[1] Regeneron Pharm., Inc. & Sanofi, Regeneron and Sanofi Announce Positive Dupixent® (Dupilumab) Phase III Data, Regeneron (Oct. 27, 2024), https://investor.regeneron.com/news-releases/news-release-details/regeneron-and-sanofi-announce-positive-dupixentr-dupilumab-phase

[2] Sanofi, *Dupixent FDA Approval Investor Call* (Mar. 28, 2017), https://www.sanofi.com/assets/dotcom/content-app/events/investor-presentation/2017/Dupixent_FDA_Approval_Investor_call_FINAL.pdf (last visited Nov. 25, 2025).

[3] Regeneron Pharm., Inc. & Sanofi, Regeneron and Sanofi Announce Marketing Authorization Application for Dupixent® (dupilumab) Accepted for Review by the EMA (Dec. 8, 2016), https://investor.regeneron.com/news-releases/news-release-details/regeneron-and-sanofi-announce-marketing-authorization

9. Defendants, Regeneron Pharmaceuticals, Inc.; Sanofi-Aventis U.S. LLC; and Genzyme Corporation, shall hereinafter be referred to collectively as "Defendants".

10. Defendants, directly and/or through third parties acting upon Defendants' directives, were jointly engaged in the business of designing, developing, manufacturing, testing, packaging, promoting, marketing, distributing, labeling, and/or selling Dupixent and controlling the Biologics License Application for Dupixent and other intellectual property associated with Dupixent.

11. At all times relevant hereto, Defendants include and have included any and all parent companies, subsidiaries, affiliates, divisions, franchises, partners, joint venturers, and organizational units of any kind, their predecessors, successors and assigns and their officers, directors, employees, agents, representatives and any and all other persons acting on their behalf.

12. At all times relevant hereto, Defendants were engaged in the business of developing, designing, licensing, manufacturing, distributing, selling, marketing, and or introducing into interstate commerce throughout the United States, and in the state of Georgia, either directly or indirectly, through third-parties, subsidiaries and/or related entities, the pharmaceutical product Dupixent.

13. Consistent with Plaintiff's allegations herein, in *Immunex Corp. v. Sanofi*, No. 2:17-cv-02613, 2017 (C.D. Cal. Aug. 16, 2017), Defendants expressly

admitted in their amended answer, (Doc. No. 140) the following:

a. Defendants, collectively, manufacture, use, and sell Dupixent. Am. Answer ¶ 1, Doc. 64.

b. Defendants Genzyme Corporation and Regeneron Pharmaceuticals, Inc. have marketed and sold Dupixent. Am. Answer ¶ 46, Doc. 64.

c. Defendant Genzyme Corporation prepared a U.S.-based salesforce to offer for sale and to sell Dupixent in the United States. Am. Answer ¶ 47, Doc. 64.

JURISDICTION & VENUE

14. The jurisdiction of this Court over the subject matter of this action is predicated on 28 U.S.C. § 1332. The amount in controversy exceeds $75,000.00, exclusive of interest and costs and complete diversity of citizenship exists between the parties.

15. Venue in this Court is proper pursuant to 28 U.S.C § 1391 in that a substantial part of the events or omissions giving rise to the claims asserted herein occurred in this District, and Defendants are subject to personal jurisdiction in this District.

GENERAL ALLEGATIONS

16. This action is for damages brought on behalf of Plaintiff, Wanda Nalls, who was prescribed and supplied with and who has taken the prescription drug Dupixent, as tested, studied, researched, evaluated, endorsed, designed, formulated, compounded, manufactured, produced, processed, assembled, inspected, distributed,

marketed, labeled, promoted, packaged, advertised for sale, or otherwise placed in the stream of commerce by Defendants.

17. Plaintiff used Dupixent to treat atopic dermatitis from approximately August 2018 to August 2019. Following Plaintiff's initiation of Dupixent she was diagnosed with CTCL.

18. Plaintiff, Wanda Nalls, brings this action against Defendants to recover damages for the injuries suffered as a result of her use of Dupixent and to recover for her individual economic and non-economic damages which she sustained as a result therefrom.

19. Defendants' wrongful acts, omissions, and fraudulent misrepresentations caused Plaintiff's injuries and damages.

20. At all times relevant, Defendants were engaged in the business of researching, licensing, designing, formulating, compounding, testing, manufacturing, producing, processing, assembling, inspecting, distributing, marketing, labeling, promoting, packaging and/or advertising for sale the prescription drug Dupixent for use by physicians in treating their patients, including Plaintiff.

21. At all times relevant hereto, Defendants were authorized to do business within Plaintiff's state of residence and did conduct such business.

22. At times relevant hereto, the officers and directors of Defendants

participated in, authorized, and directed the production and promotion of Dupixent when they knew, or with the exercise of reasonable care should have known, of the hazards and dangerous propensities of Dupixent and thereby actively participated in the tortious conduct which resulted in the injuries suffered by Plaintiff discussed herein.

FACTS COMMON TO ALL COUNTS

A. Dupixent

23. Dupixent® (dupilumab) is a therapeutic biologic used in the treatment of infants, children and adults with inflammatory health conditions in the United States and worldwide.

24. Dupixent is a human monoclonal immunoglobulin G4 antibody that binds to the interleukin (IL)-4 receptor alpha subunit shared by IL-4 and IL-13 to prevent their signaling. IL-4 and IL-13 signaling produces an inflammatory cascade that has been implicated in a number of immune-mediated inflammatory conditions, including atopic dermatitis, chronic rhinosinusitis with nasal polyposis, eosinophilic esophagitis, prurigo nodularis, chronic obstructive pulmonary disease, chronic spontaneous urticaria and bullous pemphigoid. Despite this, the mechanism of action through which Dupixent exerts a therapeutic effect in patients with these conditions has not been definitively established.

25. Dupixent is supplied by Defendants in 200 mg and 300 mg single-dose

prefilled syringes and single-dose prefilled pens. Dupixent is self-administered by patients or by caregivers through a subcutaneous injection in 1-, 2- or 4-week intervals depending on age, weight and therapeutic indication.

B. Defendants' Collaboration Agreement

26. In September 2003, Defendant Regeneron Pharmaceuticals, Inc. entered into a Collaboration Agreement with Aventis Pharmaceuticals Inc. to co-develop an oncology medication it had invented.

27. In or about December 2004, Aventis Pharmaceuticals Inc. merged with and into Sanofi, at the time operating under the name Sanofi-Aventis, and formerly known as Sanofi-Synthélabo. Upon information and belief, Sanofi, at the time operating under the name Sanofi-Aventis, became the successor in interest to Aventis Pharmaceuticals Inc. in all agreements to which Aventis Pharmaceuticals Inc. was a party and acquired all rights formerly held by Aventis Pharmaceuticals Inc. in its Collaboration Agreement with Defendant, Regeneron Pharmaceuticals, Inc.

28. This Collaboration Agreement was again amended in January 2005, December 2005 and January 2006, at which point Defendant, Sanofi-Aventis U.S., LLC was named the successor in interest to Aventis Pharmaceuticals Inc. in the Collaboration Agreement with Defendant, Regeneron Pharmaceuticals, Inc.

29. In November 2007, Defendant Regeneron Pharmaceuticals, Inc.

entered into a new License and Collaboration Agreement with Sanofi, via its subsidiaries and/or affiliate entities. Under this License and Collaboration Agreement, Sanofi agreed to provide research funding in exchange for exclusive rights to co-develop and co-commercialize any new biopharmaceuticals discovered by Defendant, Regeneron Pharmaceuticals, Inc. In this agreement, Defendant, Sanofi-Aventis U.S. LLC was again identified as the successor in interest to Aventis Pharmaceuticals Inc. in the original September 2003 Collaboration Agreement and all amendments thereto. Defendants contemporaneously entered into a Discovery and Preclinical Development Agreement under which Defendant, Regeneron Pharmaceuticals, Inc. would discover and create products for joint development and commercialization with Sanofi and its subsidiaries and/or affiliates. Such products would be considered a "Licensed Product" under the terms of the License and Collaboration Agreement.

30. In November 2009, Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi, via its subsidiaries and/or affiliate entities, expanded the scope and terms of their collaboration in an Amended and Restated License and Collaboration Agreement and Amended and Restated Discovery and Preclinical Development Agreement. The Amended and Restated License and Collaboration Agreement currently remains in effect, with subsequent amendments in May 2013, July 2015, April 2020 and September 2021, while the Amended Discovery Agreement expired

in 2017.

31. Upon information and belief, as of January 2014, Defendant, Sanofi-Aventis U.S. LLC was again named successor in interest to Aventis Pharmaceuticals Inc. with respect to the original September 2003 Collaboration Agreement and all amendments thereto, as well as the First Amendment to the Amended and Restated License and Collaboration Agreement dated May 2013.

32. One of the drugs Defendants agreed to co-commercialize under the Amended and Restated License and Collaboration Agreement was Dupixent. Sanofi via its subsidiary and/or affiliate entities provided upfront funding to cover 100% of the costs incurred by Defendant, Regeneron Pharmaceuticals, Inc. in the development of Dupixent and other Licensed Products under the Amended and Restated License and Collaboration Agreement, including an initial non-refundable sum of $85 million USD.

33. Sanofi, individually and/or through its subsidiaries, is considered the lead party with respect to the commercialization of Dupixent, and Defendant, Regeneron Pharmaceuticals, Inc. exercised its co-promotion rights under the Restated License and Collaboration Agreement for Dupixent in the United States.

34. Sanofi, individually and/or through its subsidiary, Defendant, Sanofi-Aventis U.S. LLC, continues to supply funding for ongoing Dupixent development research being conducted by Defendant, Regeneron Pharmaceuticals, Inc.

35. Upon information and belief, Defendants, Regeneron Pharmaceuticals, Inc., Sanofi-Aventis U.S. LLC, and Genzyme Corporation, both independently and collaboratively, are substantively involved in performing commercialization activities for Dupixent in the United States, including but not limited to manufacturing, producing, processing, assembling, inspecting, distributing, marketing, labeling, promoting, packaging and/or advertising, along with support activities associated with each of those functions, both directly and through third parties acting on their behalf.

36. Under the terms of the Amended and Restated License and Collaboration Agreement, Defendants have a reciprocal duty to regularly share information relating to the commercialization of Dupixent, to include anticipated launch dates, key market metrics, market research and sales, as well as to promptly notify the other party of any major market developments.

37. Sanofi, the parent company of Defendants, Sanofi-Aventis U.S. LLC and Genzyme Corporation, recognizes all sales of Dupixent. Profits and losses arising from commercial operations in the United States, including those associated with Dupixent, are split equally (50/50) between Sanofi and its subsidiaries and Defendant, Regeneron Pharmaceuticals, Inc. Profit-sharing between Defendants for sales of Dupixent outside of the United States is done based on a sliding scale. Defendant, Regeneron Pharmaceuticals, Inc. also receives or has at times received

milestone payments from Sanofi based on sales of Dupixent and other Licensed Products in markets outside of the United States.

38. Upon information and belief, Sanofi serves as the "Lead Regulatory Party", as defined in the Amended and Restated License and Collaboration Agreement, responsible for managing pharmacovigilance and product complaints and for formulating and implementing any related strategies for Dupixent in the United States. Further upon information and belief, Defendant, Sanofi-Aventis U.S. LLC handles all processing and submissions of adverse event reports and product complaints for Dupixent in the United States on behalf of Sanofi. Despite this, Defendants have joint responsibility under the terms of the Amended and Restated License and Collaboration Agreement to collaborate in fulfilling all regulatory requirements concerning pharmacovigilance and risk management plans and product complaint reporting associated with Dupixent in the United States. Further to this joint responsibility, upon information and belief, Defendants executed a Safety Data Exchange Agreement setting forth the specific procedures to be used to coordinate the investigation and exchange of reports of adverse events and complaints associated with Dupixent to ensure timely communication to regulatory authorities and compliance with applicable laws as prescribed in the Amended and Restated License and Collaboration Agreement.

C. Development of Dupixent

39. Upon information and belief, the human monoclonal antibody and active ingredient in Dupixent, dupilumab, formerly known under the common names REGN668 and SAR231893, was originally discovered by Defendant, Regeneron Pharmaceuticals, Inc. during the mid- to late-2000s. Defendant, Regeneron Pharmaceuticals, Inc. utilized its proprietary VelocImmune® technology, a genetically-engineered mouse platform endowed with a genetically-humanized immune system, in order to invent dupilumab.

40. Defendant, Regeneron Pharmaceuticals, Inc. has been assigned at least 7 United States patents relating to Dupixent, including US 7,608,693 B2 (October 2009), US 8,735,095 B2 (May 2014), US 8,945,559 B2 (February 2015), US 9.238,692 B2 (January 2016), US 10,435,473 B2 (October 2019), US 11,059,896 B2 (July 2021) and US 11,926,670 (March 2024).

41. The first clinical development program for Dupixent in the treatment of patients with atopic dermatitis was regulated under Investigational New Drug ("IND") Application number 107969 in the United States. Defendant, Regeneron Pharmaceuticals, Inc. submitted IND number 107969 to the United States Food and Drug Administration ("FDA") on July 12, 2010 requesting permission to study Dupixent in human subjects. The FDA deemed the first Phase I clinical study to assess the safety and tolerability of Dupixent in adult patients with atopic dermatitis

"Safe to Proceed" on August 21, 2010.

42. During clinical development, the FDA granted Dupixent a Breakthrough designation, Priority Review and Rolling Review, regulatory programs which are each intended to expedite development and approval of new therapeutics. Defendant, Regeneron Pharmaceuticals, Inc., completed its rolling submission of Biologics License Application ("BLA") number 761055 for Dupixent to FDA on July 28, 2016. FDA received the BLA on July 29, 2016.

43. Defendants officially received FDA approval to market Dupixent in the United States on March 28, 2017 for the treatment of adult patients with moderate to severe atopic dermatitis whose disease is not adequately controlled with topical prescription therapies or when those therapies are not advisable.

44. The original approval of Dupixent was based on the results of three Phase III randomized controlled trials, SOLO 1, SOLO 2, and CHRONOS, which used a clinical scale known as the Investigator's Global Assessment (IGA) to measure changes in atopic dermatitis disease severity in response to treatment. Each of these trials demonstrated superiority of Dupixent over placebo or placebo plus topical corticosteroids in the primary endpoint, change from baseline to Week 16 in the proportion of subjects achieving an IGA score of 0 (clear skin) or 1 (almost clear skin), with at least a 2-point improvement in IGA score.

45. Following its approval in March 2017 as a second-line treatment for

adult patients with atopic dermatitis in the United States, Defendants proceeded to submit several supplemental BLAs to the FDA seeking to market Dupixent for the treatment of additional health conditions and expand the indicated patient population to include nearly all age groups.

46. In October 2018, Dupixent was approved as an add-on maintenance treatment for patients aged 12 years and older with moderate-to-severe asthma characterized by an eosinophilic phenotype or with oral corticosteroid dependent asthma.

47. In March 2019, Dupixent's indicated atopic dermatitis population was expanded to include patients aged 12 years and older.

48. In June 2019, Dupixent was approved as an add-on maintenance treatment in adult patients with inadequately controlled chronic rhinosinusitis with nasal polyps.

49. In May 2020, Dupixent's indicated atopic dermatitis population was expanded to include patients aged 6 years and older.

50. In October 2021, Dupixent's indicated asthma population was expanded to include patients aged 6 years and older.

51. In May 2022, Dupixent was approved for the treatment of patients aged 12 years and older with eosinophilic esophagitis.

52. In June 2022, Dupixent's indicated atopic dermatitis population was

expanded to include patients aged 6 months and older.

53. In September 2022, Dupixent was approved for the treatment of adult patients with prurigo nodularis.

54. In January 2024, Dupixent's indicated eosinophilic esophagitis population was expanded to include patients aged 1 year and older.

55. In September 2024, Dupixent's indicated chronic rhinosinusitis with nasal polyps population was expanded to include patients aged 12 years and older. Dupixent was also approved as an add-on maintenance treatment of adult patients with inadequately controlled chronic obstructive pulmonary disease and an eosinophilic phenotype in September 2024.

56. In April 2025, Dupixent was approved for the treatment of patients aged 12 years and older with chronic spontaneous urticaria who remain symptomatic despite H1 antihistamine treatment.

57. Finally, in June 2025, Dupixent was approved for the treatment of adult patients with bullous pemphigoid.

58. Defendants continue to co-develop Dupixent under INDs in the treatment of chronic pruritus of unknown origin, eosinophilic gastritis with or without eosinophilic duodenitis, lichen simplex chronicus and ulcerative colitis.

D. Defendants' Marketing of Dupixent

59. Defendants have utilized multiple mediums and mechanisms to

aggressively promote Dupixent as a necessary, life-changing therapy for patients suffering from atopic dermatitis and other inflammatory health conditions in order to drive prescriptions for Dupixent. Much of Defendants' approach to boosting Dupixent uptake has involved expanding the market for its use by convincing individuals with subtle symptoms, or even no symptoms, that they actually have a serious, undiagnosed inflammatory health condition, and penetrating the existing market by convincing patients that their current treatment regimen is inadequate to control their disease and/or has an unacceptable safety profile.

60. Defendants have infused billions of dollars into persuasive direct-to-consumer advertising depicting Dupixent as being highly safe and effective and capable of greatly improving the quality of patients' lives.

61. In 2024, Defendants spent an estimated $484.1 million on advertising for Dupixent across all media types. This spend included $276 million on 17 different direct-to-consumer television advertisements: 8 for atopic dermatitis, 8 for asthma and 1 for gastrointestinal conditions. Defendants' annual advertising expenditures for Dupixent were the third highest among all marketed drugs in 2024.[4]

[4] Andrea Park, *AbbVie Pulls Off a Hat Trick with 3rd Straight Year as Top TV Drug Ad Spender, Buoyed by Skyrizi and Rinvoq Spots*, Fierce Pharma (Jan. 22, 2025), https://www.fiercepharma.com/marketing/abbvie-pulls-hat-trick-3rd-straight-year-top-tv-drug-ad-spender-buoyed-skyrizi-and-rinvoq (last visited Dec. 9, 2025); Andrea Park, Nick Paul Taylor & Zoey Becker, *The Top 10 Pharma Drug Ad Spenders of 2024*, Fierce Pharma (June 30, 2025),

62. In 2023, Defendants spent an estimated $502 million on advertising for Dupixent across all media types. This spend included $315.3 million on 12 different direct-to-consumer television advertisements: 8 for atopic dermatitis and 4 for asthma. Defendants' annual advertising expenditures for Dupixent were the second highest among all marketed drugs in 2023.[5]

63. In 2022, Defendants spent an estimated $491 million on advertising for Dupixent across all media types. This spend included $305.9 million on direct-to-consumer television advertisements. Defendants' annual advertising expenditures for Dupixent were higher than any other marketed drugs in 2022.[6]

---

https://www.fiercepharma.com/marketing/top-10-pharma-drug-ad-spenders-2024 (last visited Dec. 9, 2025).

[5] Ben Adams, Andrea Park & Nick Paul Taylor, *AbbVie Makes Clean Sweep—Skyrizi and Rinvoq Top TV Drug-Ad Spender for 2023*, Fierce Pharma (Jan. 9, 2024), https://www.fiercepharma.com/marketing/abbvie-makes-clean-sweep-skyrizi-and-rinvoq-top-tv-drug-ad-spender-2023 (last visited Dec. 9, 2025); Ben Adams, Andrea Park & Nick Paul Taylor, *The Top 10 Pharma Drug Ad Spenders for 2023*, Fierce Pharma (June 3, 2024), https://www.fiercepharma.com/marketing/top-10-pharma-drug-ad-spenders-2023 (last visited Dec. 9, 2025); Park, supra note 5, https://www.fiercepharma.com/marketing/abbvie-pulls-hat-trick-3rd-straight-year-top-tv-drug-ad-spender-buoyed-skyrizi-and-rinvoq ; Andrea Park, Nick Paul Taylor & Zoey Becker, *The Top 10 Pharma Drug Ad Spenders of 2024*, Fierce Pharma (June 30, 2025), https://www.fiercepharma.com/marketing/top-10-pharma-drug-ad-spenders-2024 (last visited Dec. 9, 2025).

[6] Ben Adams, *The Top 10 Pharma Drug-Brand Ad Spenders for 2022*, Fierce Pharma (May 1, 2023), https://www.fiercepharma.com/special-reports/top-10-pharma-drug-brand-ad-spenders-2022 (last visited Dec. 9, 2025).

64. In 2021, Defendants spent an estimated $523.9 million on advertising for Dupixent across all media types. This spend included $287.6 million on direct-to-consumer television advertisements. Defendants' annual advertising expenditures for Dupixent were higher than any other marketed drugs in 2021.[7]

65. In 2020, Defendants spent an estimated $409.8 million on advertising for Dupixent across all media types. This spend included millions on 7 different direct-to-consumer television advertisements: 4 for atopic dermatitis and 3 for asthma. Defendants' annual advertising expenditures for Dupixent were the second highest among all marketed drugs in 2020.[8]

66. In 2019, Defendants spent an estimated $199.4 million on their first full year of advertising for Dupixent across all media types. This spend included $76 million on direct-to-consumer television advertisements. Defendants' annual advertising expenditures for Dupixent were the third highest among all marketed drugs in 2019.[9]

---

[7] *Id*.

[8] Beth Snyder Bulik, *The Top 10 Ad Spenders in Big Pharma for 2020*, Fierce Pharma (Apr. 19, 2021), https://www.fiercepharma.com/special-report/top-10-ad-spenders-big-pharma-for-2020 (last visited Dec. 9, 2025).

[9] Beth Snyder Bulik, *Pharma's 2019 TV Spending Ticks Up — Barely — Thanks to Big Humira Growth*, Fierce Pharma (Jan. 14, 2020), https://www.fiercepharma.com/marketing/pharma-tv-ad-spending-for-2019-finishes-flat-compared-to-previous-year (last visited Dec. 9, 2025); Beth Snyder Bulik, *The Top 10 Ad Spenders in Big Pharma for 2019*, Fierce Pharma (Feb. 19, 2020), https://www.fiercepharma.com/special-report/top-10-advertisers-big-pharma-for-2019 (last visited Dec. 9, 2025).

67. In 2018, Defendants spent an estimated $104.2 million on direct-to-consumer advertising.[10]

68. Defendants' provocative messaging typically bombards consumers with glossy imagery and catchy phrases like "Du-More", "Better Days" and "This is Better" that imply patients will lead a happier, more productive and fulfilling life if they use Dupixent. According to a spokesperson for Defendant, Regeneron Pharmaceuticals, Inc., one 60-second Dupixent commercial that aired throughout 2024 made patients "not only want to talk to their doctors but also to rewatch the ad".[11]

69. To ensure ready access to Dupixent and prevent potential sales lapses from treatment interruptions or omissions, Defendants launched Dupixent MyWay, a support program that helps patients "get access to DUPIXENT and stay on track".[12] Defendants paired Dupixent MyWay with the Dupixent MyWay Ambassador program which uses real world patients to endorse and further disseminate their

[10] U.S. Gov't Accountability Off., GAO-21-380, *Prescription Drugs: Medicare Spending on Drugs with Direct-to-Consumer Advertising: Report to the Committee on the Judiciary, U.S. Senate* (May 2021), https://www.gao.gov/assets/gao-21-380.pdf (last visited Dec. 9, 2025).
[11] Andrea Park, Nick Paul Taylor & Zoey Becker, *The Top 10 Pharma Drug Ad Spenders of 2024*, Fierce Pharma (June 30, 2025), https://www.fiercepharma.com/marketing/top-10-pharma-drug-ad-spenders-2024 (last visited Dec. 9, 2025).
[12] DUPIXENT MyWay, *Patient Support Program*, dupixent.com, https://www.dupixent.com/support-savings/dupixent-my-way (last visited Dec. 9, 2025).

messaging. Defendants also created and launched smartphone apps, EZTtrack for Atopic Dermatitis and the Dupixent MyWay Patient App, to help patients access Dupixent "as quickly as possible" and facilitate "more productive conversations" with doctors that are more likely to lead to a prescription for Dupixent.[13,14]

70. In conjunction with branded advertising, Defendants have amplified public awareness of the conditions for which Dupixent is indicated in order to increase rates of their diagnosis and further drive prescriptions of Dupixent. Defendants accomplished this by using unbranded disease state awareness websites and funding and conducting large-scale unbranded disease state awareness campaigns, scientific publications and continuing medical education programs. With these multifaceted unbranded campaigns, which Defendants designed to track branded marketing campaigns, Defendants began seeding the market for Dupixent well before it received FDA approval for marketing in the United States.

71. Defendant, Regeneron Pharmaceuticals, Inc. initially registered the disease state awareness website UnderstandAD.com on March 23, 2016 and continues to own and operate it in conjunction with Defendant, Sanofi-Aventis U.S. LLC and the National Eczema Association. Also on March 23, 2016, Sanofi, under

[13] Apple Inc., *MyWay Patient Support*, Apple App Store, https://apps.apple.com/us/app/myway-patient-support/id6443848439 (last visited Dec. 9, 2025).
[14] Apptopia, About — *MyWay Patient Support (iOS),* Apptopia, https://apptopia.com/ios/app/1501488844/about (last visited Dec. 9, 2025).

its former name Sanofi-Synthelabo, initially registered the disease state awareness website EczemaExposed.com which is currently hosted by Defendant, Sanofi-Aventis U.S. LLC. Defendants use these disease state awareness websites to provide seemingly unbiased educational information geared towards highlighting the potential burdens of atopic dermatitis on patients, helping patients identify signs and symptoms of undiagnosed atopic dermatitis and suggesting to patients that their condition is more uncontrolled than they might believe, while also supplying guidance to steer productive communications with physicians regarding available treatment options. Upon information and belief, Defendants registered these web domains approximately one week before making their first rolling submission of the Dupixent BLA to the FDA.

72. In Defendant, Regeneron Pharmaceuticals, Inc., November 2017 Earnings Call, Defendants acknowledged their goal to increase rates of diagnosis and further drive prescriptions of Dupixent. Robert J. Terifay, Regeneron's Executive Vice President, Commercial, stated "we anticipate is that we will see other prescribers as patients become aware through our direct-to-consumer campaign on the severity of the condition and the need to seek out a dermatologist, and that there could be an increased urgency to treat over time".[15]

[15] Regeneron Pharm., Inc., Q3 2017 Earnings Call Transcript, ROIC.AI (Nov. 8, 2017), https://www.roic.ai/quote/REGN/transcripts/2017/3

73. During this call, Defendants also represented prescriptions are not driven from physicians but rather ". . .expansion into moderate AD. . . helped by our direct-to-consumer campaign".[16]

74. Defendants' vast unbranded marketing campaigns for other indicated conditions have followed suit. Another disease state awareness website targeting asthma and chronic rhinosinusitis with nasal polyps, TheNextBreath.com, was originally registered by Sanofi, under its former name Sanofi-Synthelabo, and is currently maintained by Defendant, Regeneron Pharmaceuticals, Inc. and Sanofi, individually and/or through its subsidiaries. Through this website Defendants aim to "bring more awareness to severe asthma" and "empower people to take action to strive for better asthma control", while claiming asthma "often goes unrecognized". Additionally, Defendants cite statistics such as "[o]ver 80% of people overestimate how well controlled their asthma is" and nearly half of asthma patients "have symptoms that are not well controlled", as a means to convince patients that believe they have "good" or "very good" control over their asthma symptoms that they are actually wrong.

75. Another disease state awareness website, Type2Inflammation.com, was originally registered by Sanofi, under its former name Sanofi-Synthelabo, in February 2019 and is currently maintained by Defendant, Sanofi-Aventis U.S. LLC

[16] *Id.*

on behalf of Defendants. Defendants utilize this unbranded website to drive awareness and treatment of several conditions for which Dupixent has been approved, including eosinophilic esophagitis, chronic spontaneous urticaria, prurigo nodularis, atopic dermatitis, asthma, chronic rhinosinusitis with nasal polyposis and chronic obstructive pulmonary disease.

76. Finally, Defendants own and maintain two disease state awareness websites dedicated to driving awareness and treatment of chronic obstructive pulmonary disease: ThinkCOPDInflammation.com, initially registered in March 2023 by Sanofi, under its former name Sanofi-Synthelabo, and currently maintained by Defendant, Regeneron Pharmaceuticals, Inc. and Sanofi, individually and/or through its subsidiaries; and LiveWithCOPD.com, initially registered in December 2023 by Sanofi, under its former name Sanofi-Synthelabo, and currently maintained by Defendant, Sanofi-Aventis U.S. LLC on behalf of Defendants. Upon information and belief, Defendants registered the web domain ThinkCOPDInflammation.com approximately 9 months before submitting the supplemental BLA for Dupixent in the treatment of COPD to the FDA, and Defendants registered the web domain LiveWithCOPD.com approximately 2 weeks before submitting the supplemental BLA for Dupixent in the treatment of COPD to the FDA.

77. On July 12, 2016, Defendants, Regeneron Pharmaceuticals, Inc., Sanofi-Aventis U.S. LLC, and Genzyme Corporation launched the “Understand

AD" awareness campaign which was "focused on educating people about moderate-to-severe atopic dermatitis".[17] Defendants highlighted extreme examples of symptoms to depict how uncontrolled atopic dermatitis can impact patients' lives and utilized celebrity chef Elizabeth Falkner as a spokesperson to expand the reach and influence of this initiative. In a press release about the Understand AD campaign, Defendants specifically signaled "there is still a need for additional treatment options for atopic dermatitis", while featuring quotes from leaders at the National Eczema Association and Dermatology Nurses Association regarding "raising the level of awareness" of atopic dermatitis, "advocating for better care and treatments" and "driv[ing] the dialogue that atopic dermatitis is more than skin deep". Upon information and belief, Defendants launched this disease state awareness campaign approximately 2 weeks before making their final rolling submission of the Dupixent BLA to the FDA.

78. On October 11, 2017, Defendants, Regeneron Pharmaceuticals, Inc., Sanofi-Aventis U.S. LLC, and Genzyme Corporation launched the campaign "Understand AD: A Day in the Life" using Peter Moffat, writer and executive

[17] Regeneron Pharmaceuticals, Inc., *Award-Winning Chef Elizabeth Falkner Reveals Her Struggle with Atopic Dermatitis to Highlight the Physical and Psychological Impact of the Disease* (news release), Regeneron Investor Relations (July 12, 2016), https://investor.regeneron.com/news-releases/news-release-details/award-winning-chef-elizabeth-falkner-reveals-her-struggle-atopic (last visited Dec. 9, 2025).

producer of the HBO show "The Night Of" to help push their unbranded disease awareness messaging for the stated purpose of "Driving Empathy and Understanding" of atopic dermatitis.[18] In the spirit of disease mongering, Defendants represented that this program would serve to "transport[] people into what a typical, often unremitting and painful day is really like for people living with uncontrolled moderate-to-severe atopic dermatitis". Taking care not to explicitly reference Dupixent, Defendants also casually highlighted that atopic dermatitis patients often "continue to experience debilitating symptoms despite available topical and systemic steroid treatment options, causing their disease to remain uncontrolled" in the press release announcing this campaign.

79. Then in September 2019 Defendants expanded the Understand AD program into its next phase, The Understand AD Squad video series, which was "targeted to adolescents with AD and their caregivers".[19] In the press release announcing the Understand AD Squad video series, Defendants exaggerated the

[18] Regeneron Pharmaceuticals, Inc., *Internationally Acclaimed Writer and Executive Producer of HBO's "The Night Of" Partners With Regeneron to Release "Understand AD: A Day in the Life"* (news release), Regeneron Investor Relations (Oct. 11, 2017), https://investor.regeneron.com/static-files/4e57c3b2-9384-451d-b508-5e41052cb738 (last visited Dec. 9, 2025).

[19] Regeneron Pharmaceuticals, Inc., *Internationally Acclaimed Writer and Executive Producer of HBO's "The Night Of" Partners With Regeneron to Release "Understand AD: A Day in the Life"* (news release), Regeneron Investor Relations (Oct. 11, 2017), https://investor.regeneron.com/static-files/4e57c3b2-9384-451d-b508-5e41052cb738 (last visited Dec. 9, 2025).

rates and typical burdens of uncontrolled atopic dermatitis, suggesting "400,000 adolescents in the U.S. with uncontrolled moderate-to-severe atopic dermatitis" experience "debilitating, burdensome disease symptoms including intense, persistent itching, skin lesions and skin dryness, cracking, redness, crusting and oozing".

80. The next step of Defendants' calculated marketing efforts involved using published scientific literature to promote perceptions that patients suffering from atopic dermatitis are not being diagnosed or, if they have already received a diagnosis of atopic dermatitis, they are not being sufficiently treated.

81. Defendants wasted no time in strategizing Dupixent sales. Regeneron's Executive Vice President, Commercial, Robert J. Terifay, stated the month before FDA approval: "Sanofi Genzyme [Genzyme Corporation] and Regeneron have fully hired and trained our field teams".[20]

82. In April 2017, the month following FDA approval of Dupixent for marketing in the United States, Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC funded and published a cross-sectional survey study via several of their employees to prompt increases in atopic dermatitis diagnoses and

[20] Regeneron Pharm., Inc., Q4 2016 Earnings Call Transcript, ROIC.AI (Feb. 23, 2017), https://www.roic.ai/quote/REGN/transcripts/2016-year/4-quarter (last visited Nov. 25, 2025).

prescriptions of atopic dermatitis therapies.[21] Published in American Journal of Clinical Dermatology, Defendants' study reported that awareness and use of clinical scales to measure atopic dermatitis severity was low, "suggesting a need for greater education of physicians regarding the availability and use of such measures for the assessment of AD". Despite nearly 70% concordance between patients and physicians on symptom severity, Defendants' employees concluded their results "show[ed] a discordance between patient- and physician-reported AD severity" and suggested "physicians may have a similar misunderstanding of the patient's perspective regardless of specialty". It was also the opinion of the authors that "clinical assessment may be less than optimal" and that "physicians may not be having meaningful conversations with patients about [quality of life] or the impact of AD on the daily life of the patient. The patient impact likely represents an important indicator of a need for treatment". Finally, the authors advised that it is important to include the patient perspective when making management decisions.

83. Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC then funded and published a pair of studies in November 2017 and July 2018 in order to create and push a narrative that a majority of patients with atopic

[21] Wei W, Anderson P, Gadkari A, et al. Discordance Between Physician- and Patient-Reported Disease Severity in Adults with Atopic Dermatitis: A US Cross-Sectional Survey. Am J Clin Dermatol. 2017;18(6):825-835. doi:10.1007/s40257-017-0284-y

dermatitis continue to experience inadequate control of their symptoms despite treatment with therapies other than Dupixent, in addition to suffering from impaired quality of life and higher rates of anxiety, depression, work impairment, sleep impairment and itching symptoms.[22,23]

84. Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC further endeavored to invent their own diagnostic tool for self-administration by patients. Defendants designed their 6-item patient symptom questionnaire, the Atopic Dermatitis Control Tool (ADCT), to have much greater sensitivity than existing tools, and as a result, its use by patients would serve to artificially increase rates of atopic dermatitis diagnoses. Defendants funded and published a pair of studies in November 2019 and December 2019 in order to introduce the ADCT.[24,25] The ADCT tool has a dedicated website (adcontroltool.com) owned by Sanofi and

[22] Wei W, Anderson P, Gadkari A, et al. Extent and consequences of inadequate disease control among adults with a history of moderate to severe atopic dermatitis. J Dermatol. 2018;45(2):150-157. doi:10.1111/1346-8138.14116

[23] Simpson EL, Guttman-Yassky E, Margolis DJ, et al. Association of Inadequately Controlled Disease and Disease Severity With Patient-Reported Disease Burden in Adults With Atopic Dermatitis. JAMA Dermatol. 2018;154(8):903-912. doi:10.1001/jamadermatol.2018.1572

[24] Simpson E, Eckert L, Gadkari A, et al. Validation of the Atopic Dermatitis Control Tool (ADCT©) using a longitudinal survey of biologic-treated patients with atopic dermatitis. BMC Dermatol. 2019;19(1):15. Published 2019 Nov 6. doi:10.1186/s12895-019-0095-3

[25] Pariser DM, Simpson EL, Gadkari A, et al. Evaluating patient-perceived control of atopic dermatitis: design, validation, and scoring of the Atopic Dermatitis Control Tool (ADCT). Curr Med Res Opin. 2020;36(3):367-376. doi:10.1080/03007995.2019.1699516

maintained by Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC, and is currently available for patients to use on Defendants' unbranded website EczemaExposed.com. Defendants created similar questionnaires to use with and increase diagnoses of atopic dermatitis in children aged 6 to 11 years, the Worst Itch Scale, and children and infants aged 6 months to less than 6 years, the Worst Scratch Itch Numeric Rating Scale (WSI-NRS).[26,27]

85. Finally, Defendants have funded and promoted hundreds of continuing medical education programs as a means to disseminate seemingly unbiased unbranded disease state awareness marketing materials directly to healthcare providers to increase screening and diagnoses of atopic dermatitis, asthma and other indicated health conditions and corresponding prescriptions of Dupixent. Defendants further established ADVENT, a dedicated global medical education platform disseminating "non-promotional" information to healthcare providers worldwide regarding Type 2 inflammatory diseases that Dupixent has been approved

[26] Paller AS, Yosipovitch G, Weidinger S, et al. Development, Psychometric Validation and Responder Definition of Worst Itch Scale in Children with Severe Atopic Dermatitis. Dermatol Ther (Heidelb). 2022;12(12):2839-2850. doi:10.1007/s13555-022-00804-z

[27] Paller AS, Siegfried E, Marron SE, et al. Development and validation of a caregiver-reported Numeric Rating Scale for measuring worst scratch/itch in patients aged 6 months to younger than 6 years with atopic dermatitis. J Am Acad Dermatol. 2024;90(2):382-385. doi:10.1016/j.jaad.2023.08.104

to treat or in which Dupixent is currently being investigated.[28]

86. In addition to extensive branded and unbranded disease awareness marketing, Defendants have also leveraged influential third parties to inappropriately characterize the safety and effectiveness of Dupixent and promote its use in an unrestricted manner inconsistent with its FDA-approved indications. In this arm of the marketing scheme, Defendants partnered with patient advocacy organizations to further drive awareness of inflammatory health conditions and engaged and funded major academic societies, trade groups and leading subject matter experts who are charged with shaping clinical treatment guidelines.

87. Eight months before securing FDA approval to market Dupixent in the United States, Defendants, Regeneron Pharmaceuticals, Inc., Sanofi-Aventis U.S. LLC and Genzyme Corporation, via the "Sanofi-Genzyme and Regeneron Alliance", funded and coordinated the convening of a "steering committee" to discuss and provide recommendations for the management of atopic dermatitis, later formalizing their opinions in a September 2017 publication termed a "Multidisciplinary Consensus" in The Journal of Allergy and Clinical Immunology: In Practice.[29] Oddly, the stated rationale for convening this "steering committee"

[28] ADVENT, *Welcome to ADVENT!*, https://www.adventprogram.com/us/ (last visited Dec. 9, 2025).

[29] Boguniewicz M, Alexis AF, Beck LA, et al. Expert Perspectives on Management of Moderate-to-Severe Atopic Dermatitis: A Multidisciplinary Consensus

was to "develop consensus recommendations relating to the diagnosis and treatment of patients with moderate-to-severe AD in the era of biologic therapies", even though at the time this "steering committee" met between July 2016 and January 2017, neither Dupixent nor any other biologic therapy had been approved for the treatment of atopic dermatitis. Although Dupixent was not an approved drug for any purpose at the time of the meeting, the "steering committee" nonetheless broadly advocated for its use in patients with atopic dermatitis, even beyond the indication that would eventually be approved by the FDA. Defendants used this publication as a vessel to position their experimental drug as the premier first-line therapy for patients with atopic dermatitis and to characterize its safety profile as being superior to existing therapies, including in terms of lymphoma risk, notwithstanding that it had not yet been used by any patients under real-world conditions. Indeed, in the discussion section of Defendants' treatment guidelines publication, the authors state "for patients with moderate-to-severe AD, the [steering committee] recommends dupilumab as a first-line systemic treatment option in adults". Of course, however, Dupixent has never been approved by the FDA as a first-line systemic treatment for atopic dermatitis, and instead is only indicated when patients first use and fail to respond to first-line topical treatments, rendering Dupixent a second-line, third-line

---

Addressing Current and Emerging Therapies. J Allergy Clin Immunol Pract. 2017;5(6):1519-1531. doi:10.1016/j.jaip.2017.08.005

or even fourth-line therapy. Nonetheless, making sure to drive the message home, the authors explicitly reiterate their recommendation for use of Dupixent as a "first-line systemic treatment" four (4) separate times in the publication. Additionally, the authors provide their opinion that all systemic immunosuppressive treatments commonly used for atopic dermatitis (cyclosporine, methotrexate, azathioprine and mycophenolate mofetil) are associated with an "increased risk" of lymphoma, while highlighting no such risk for Dupixent. The authors also stress the importance of ensuring patients have access to materials to educate themselves regarding atopic dermatitis therapies and that patient preference should play a major role in treatment selection.

88. Furthermore, a consultant for Defendants published an editorial in The Journal of Allergy and Clinical Immunology: In Practice to accompany and echo the recommendations of the "Multidisciplinary Consensus" article in which he characterized the use of Dupixent as "an example of precision medicine with minimal side effects and an avoidance of risks with antibiotics, systemic corticosteroids, and cytotoxic agents".[30] Defendants' consultant also noted Dupixent "is approved for use in adult patients with atopic dermatitis", while failing to specify its designation as a second-line therapy by the FDA upon approval.

[30] Busse WW. Are Biotherapeutics Revolutionizing Treatment of "Allergic" Diseases?. J Allergy Clin Immunol Pract. 2017;5(6):1517-1518. doi:10.1016/j.jaip.2017.08.017

89. Sanofi is a corporate sponsor of the International Eczema Council and currently participates at the Director's Council level through providing $50,000 to $99,999 annually in unrestricted funding to the organization. Through its funding of the International Eczema Council, Sanofi and its subsidiaries receive certain important benefits, including yearly meetings with International Eczema Council leadership comprised of "the researchers and clinicians who are global influencers on atopic dermatitis research and treatment", active engagement in surveys and outreach from International Eczema Council leaders when considering policy decisions, participation in the International Eczema Council Industry Liaison Committee and the exclusive right of first refusal to participate in funding and shaping the International Eczema Council's special projects and fellowship opportunities. Despite its explicit designation as a second-line therapy in the FDA-approved prescribing information, the International Eczema Council conspicuously recommends Defendants' drug Dupixent as first-line therapy for patients with atopic dermatitis.[31,32,33]

---

[31] Simpson EL, Bruin-Weller M, Flohr C, et al. When does atopic dermatitis warrant systemic therapy? Recommendations from an expert panel of the International Eczema Council. J Am Acad Dermatol. 2017;77(4):623-633. doi:10.1016/j.jaad.2017.06.042

[32] Drucker AM, Eyerich K, de Bruin-Weller MS, et al. Use of systemic corticosteroids for atopic dermatitis: International Eczema Council consensus statement. Br J Dermatol. 2018;178(3):768-775. doi:10.1111/bjd.15928

[33] Drucker AM, Lam M, Flohr C, et al. Systemic Therapy for Atopic Dermatitis in Older Adults and Adults With Comorbidities: A Scoping Review and International

90. Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC are corporate sponsors of the American Academy of Dermatology Association and currently participate at the Diamond level through providing $500,000 or more annually in funding. In exchange for funding and participating in this organization, Defendants receive access to exclusive meetings and the ability to maintain direct contact with researchers and clinicians who are global influencers on the treatment of atopic dermatitis. Despite its explicit designation as a second-line therapy in the FDA-approved prescribing information, the current American Academy of Dermatology guidelines for the management of atopic dermatitis strongly recommend Defendants' drug Dupixent as first-line therapy for atopic dermatitis.[34]

91. Defendants similarly sponsor, fund and/or partner with multiple influential organizations that shape guidelines for the prescription of medications in the treatment of other health conditions for which Dupixent has received FDA approval, including the American College of Allergy, Asthma and Immunology, the American Academy of Allergy, Asthma and Immunology, the Allergy & Asthma Network, the American Lung Association, and the American College of

---

Eczema Council Survey. Dermatitis. 2022;33(3):200-206. doi:10.1097/DER.0000000000000845

[34] Davis DMR, Drucker AM, Alikhan A, et al. Guidelines of care for the management of atopic dermatitis in adults with phototherapy and systemic therapies. J Am Acad Dermatol. 2024;90(2):e43-e56. doi:10.1016/j.jaad.2023.08.102

Gastroenterology, among many others.

92. Defendants have also gratuitously paid Key Opinion Leaders (KOLs), distinguished researchers and clinicians with strong regional, national and international influence on treatment and prescription practices among their professional communities, to engage in marketing activities, publish research that is favorable to Dupixent and persuade fellow clinicians to prescribe Dupixent to patients with atopic dermatitis, asthma and other inflammatory health conditions.

93. According to United States Centers for Medicare & Medicaid Services (CMS) OpenPayments data, between 2019 and 2024 Defendant, Regeneron Pharmaceuticals, Inc. made 3,643 individual payments to physicians in the United States totaling $3,041,084 for consulting fees, food and beverage costs, education costs and travel and lodging expenses associated with Dupixent. Between 2019 and 2024, Defendant's subsidiary, Regeneron Healthcare Solutions, Inc. made 420,649 individual payments to physicians in the United States totaling $45,377,957 for consulting fees, food and beverage costs, education costs and travel and lodging expenses associated with Dupixent. Between 2019 and 2024, Defendant, Sanofi-Aventis U.S. LLC made 14,384 individual payments to physicians in the United States totaling $3,900,992 for consulting fees, food and beverage costs, education costs and travel and lodging expenses associated with Dupixent. Between 2019 and 2024, Sanofi's subsidiary Sanofi US Services Inc. made 249 individual payments to

physicians in the United States totaling $325,906 for consulting fees, food and beverage costs, education costs and travel and lodging expenses associated with Dupixent. Finally, between 2019 and 2024, Defendant, Genzyme Corporation made 236,981 individual payments to physicians in the United States totaling $53,277,547 for consulting fees, food and beverage costs, education costs and travel and lodging expenses associated with Dupixent.

94. Collectively, Defendants and their affiliates made 675,906 individual payments to physicians in the United States totaling $105,923,486 for consulting fees, food and beverage costs, education costs and travel and lodging expenses associated with Dupixent between 2019 and 2024.

95. The 2017 "Multidisciplinary Consensus" publication described *supra*[35] provides an excellent example of how Defendants have used direct payments to KOLs to contaminate the practice of medicine for their financial gain. Ten of the 11 authors of this treatment guidelines article were retained by Defendants as physician KOLs, with the final author being a patient advocate from the National Eczema Association. In the competing interests section, Defendants disclaim any influence on the development of the treatment recommendations or the manuscript itself, and

[35] Boguniewicz M, Alexis AF, Beck LA, et al. Expert Perspectives on Management of Moderate-to-Severe Atopic Dermatitis: A Multidisciplinary Consensus Addressing Current and Emerging Therapies. J Allergy Clin Immunol Pract. 2017;5(6):1519-1531. doi:10.1016/j.jaip.2017.08.005

further aver "No payments were made to the authors for the writing of this manuscript". Despite attempting to manufacture a perception that the recommendations and manuscript were free from bias, Defendants indeed financially enriched each of the authors for their work directly or indirectly associated with this manuscript. According to data from CMS OpenPayments, in 2017 Defendants paid the physician KOL authors of this manuscript a total of $919,595 for consulting fees, food and beverage costs, education costs and travel and lodging expenses. A breakdown of these payments by author is as follows: Mark Boguniewicz, MD: $240,959; Andrew F. Alexis, MD, MPH: $2,102; Lisa A. Beck, MD: $25,876; Lawrence F. Eichenfield, MD: $100,950; Luz Fonacier, MD: $77,589; Emma Guttman-Yassky, MD, PhD: $91,538; Amy S. Paller, MD: $26,556; David Pariser, MD: $34,375; Jonathan I. Silverberg, MD, PhD, MPH: $316,962; and Mark Lebwohl, MD: $2,688. Furthermore, Defendants' KOL William W. Busse, MD, author of the editorial[36] accompanying the "Multidisciplinary Consensus" article, was paid $57,906 by Defendants in 2017.

96. Defendants also used KOLs to disseminate recommendations to help facilitate the transition of patients from prior effective treatments onto Dupixent, to include patient groups in which Defendants had not studied the safety and efficacy

[36] Busse WW. Are Biotherapeutics Revolutionizing Treatment of "Allergic" Diseases?. J Allergy Clin Immunol Pract. 2017;5(6):1517-1518. doi:10.1016/j.jaip.2017.08.017

of Dupixent.[37]

97. Further, KOLs played a pivotal role in helping Defendants push for widespread off-label use of Dupixent in the treatment of numerous unapproved inflammatory conditions including, but not limited to chronic pruritus, eczematous eruption of aging, allergic contact dermatitis, chronic hand eczema, alopecia areata, eosinophilic annular erythema and papuloerythroderma of Ofuji.[38]

98. In addition to paying KOLs to promote and increase prescribing of Dupixent, Defendants have also disingenuously leveraged the power of their retained KOLs to sow doubt into any research shedding light on adverse effects that might lead to a reduction in prescriptions of Dupixent as further described *infra*.

99. Defendants' aggressive tactics have paid off. In its first partial year on the market, Dupixent generated $253.8 million in sales in the United States. In 2018, Dupixent sales in the United States climbed to $776.3 million. Dupixent officially became a domestic blockbuster drug in 2019 based on annual sales of $1.87 billion. United States sales of Dupixent continued to increase year over year thereafter, reaching $3.23 billion in 2020, $4.71 billion in 2021, $6.67 billion in 2022, $8.86

[37] Papp KA, Hong CH, Lansang MP, et al. Practical Management of Patients with Atopic Dermatitis on Dupilumab. Dermatol Ther (Heidelb). 2021;11(5):1805-1828. doi:10.1007/s13555-021-00586-w

[38] Hendricks AJ, Yosipovitch G, Shi VY. Dupilumab use in dermatologic conditions beyond atopic dermatitis - a systematic review. J Dermatolog Treat. 2021;32(1):19-28. doi:10.1080/09546634.2019.1689227

billion in 2023 and $10.40 billion in 2024. To date, United States Dupixent sales have exceeded $30 billion.

100. Based on publicly available figures supplied by Defendants, more than an estimated 1 million patients worldwide have been treated with Dupixent across all approved indications.[39]

101. Defendants' surreptitious marketing practices also caught the attention of the United States Department of Justice.[40] In September 2019, Defendants, Regeneron Pharmaceuticals, Inc. and Regeneron Healthcare Services, Inc. each received a civil investigative demand from the United States Department of Justice pursuant to the federal False Claims Act relating to remuneration paid to physicians in the form of consulting fees, advisory boards, speaker fees and payment or reimbursement for travel and entertainment alleged to be in violation of the federal Anti-Kickback Statute in association with several drugs including Dupixent.

E. Cutaneous T-Cell Lymphoma

102. The instant matter involves injuries of cutaneous t-cell lymphoma (CTCL) associated with the administration of Dupixent.

103. CTCL is a form of non-Hodgkin lymphoma that is initiated by the

[39] *Atopic Dermatitis*, DUPIXENT, https://www.dupixenthcp.com/atopicdermatitis/ (last visited Dec. 9, 2025).
[40] Annual Report 2024. Regeneron Pharmaceuticals, Inc. https://investor.regeneron.com/pdf/2024AR

malignant proliferation of T-cell lymphocytes contained in the skin. CTCL is an extremely rare condition estimated to affect fewer than 10 out of every 1 million people in the United States annually. The disease typically presents with patches, plaques or rashes on the skin and may evolve over years.

104. CTCL is a chronic condition that is generally considered incurable, and accordingly, treatment generally aims to put the disease into remission, leaving the patient with fewer signs and symptoms. Many patients will require several different types of treatments throughout their lifetime. As lesions become more resistant to treatment, or in patients initially presenting with more severe forms of CTCL, more aggressive treatment approaches are usually necessary.

105. CTCL can cause severe itching, pain and physical disfigurement which can significantly impair health-related quality of life, especially in later stages of the disease. CTCL can also metastasize to affect tissues and organs other than the skin. Survival rates vary depending on stage at the time of diagnosis, and patients with moderate to advanced CTCL experience markedly reduced survival.

106. Diagnosis of CTCL is typically made through repeated skin biopsies and blood tests. Imaging and biopsies of lymph nodes and bone marrow may also be performed in certain circumstances. CTCL is graded or staged according to the TNMB (Tumor, Node, Metastasis, Blood) criteria developed by the International Society for Cutaneous Lymphomas and the European Organization for Research and

Treatment of Cancer based the proportion of skin affected by lesions, the type and size of lesions, metastasis to lymph nodes or other organs and the number of Sézary cells in the blood. CTCL stages range from I to IV, and include substages indicated by letters A or B, with higher numbers and letters indicating greater severity.

107. The most common subtypes of CTCL are Mycosis fungoides and Sézary syndrome. Other forms of CTCL include peripheral T-cell lymphoma, subcutaneous panniculitis-like T-cell lymphoma, primary cutaneous anaplastic large cell lymphoma and extranodal natural killer/T-cell lymphoma. CTCL and its subtypes fall within a broader category of malignant disease processes referred to as mature T-cell and NK-cell lymphomas.

108. CTCL is typically a non-aggressive and slowly progressing disease, taking an average of 3 to 5 years, and up to 70 years, from initial presentation of symptoms until becoming diagnosable through clinical and histopathological evaluation. Accordingly, patients who have unidentified, subclinical CTCL that goes undiagnosed or is potentially diagnosed as some other dermatosis in the interim are likely to remain asymptomatic and live without clinical or pathological signs of

CTCL for long periods of time, or even indefinitely.[41,42,43]

109. CTCL is usually stable, and capable of remaining stable for years. However, certain environmental triggers can prompt rapid disease progression. Indeed, when undiagnosed or misdiagnosed as another dermatosis, treatment-emergent "unmasking" of CTCL has long been a known risk with the use of certain medications.[44]

[41] Kim YH, Liu HL, Mraz-Gernhard S, Varghese A, Hoppe RT. Long-term outcome of 525 patients with mycosis fungoides and Sezary syndrome: clinical prognostic factors and risk for disease progression. Arch Dermatol. 2003;139(7):857-866. doi:10.1001/archderm.139.7.857

[42] Lavin L, Geller S. Cutaneous T Cell Lymphoma Following Dupilumab Therapy in Patients with Atopic Dermatitis: Clinical Review and Recommendations. Am J Clin Dermatol. 2025;26(5):723-731. doi:10.1007/s40257-025-00955-7

[43] Hristov AC, Tejasvi T, Wilcox RA. Cutaneous T-cell lymphomas: 2023 update on diagnosis, risk-stratification, and management. Am J Hematol. 2023;98(1):193-209. doi:10.1002/ajh.26760

[44] Foo SH, Shah F, Chaganti S, Stevens A, Scarisbrick JJ. Unmasking mycosis fungoides/Sézary syndrome from preceding or co-existing benign inflammatory dermatoses requiring systemic therapies: patients frequently present with advanced disease and have an aggressive clinical course. Br J Dermatol. 2016;174(4):901-904. doi:10.1111/bjd.14238

110. Atopic dermatitis has been a well-known and widely documented health condition, often classified under the name eczema, among the medical community since at least the 1800s.[45,46] Although, historical accounts suggest atopic dermatitis may have been first described as early as 69-140 CE, with the first known use of the term eczema in 543 CE.[47] Early studies observed no association between atopic dermatitis and CTCL, alternatively finding that rates of atopic dermatitis were very low in CTCL patients and not significantly different from the general population.[48,49] The sequential observation of atopic dermatitis followed by Mycosis fungoides or Sézary syndrome was also extremely rare.[50,51] However, as the use of powerful immunomodulating therapies in the treatment of dermatological conditions became commonplace, reports of CTCL in patients with atopic dermatitis – including both new-onset cases and unmasking or progression of pre-malignant cases – began to appear more frequently in the literature. Unsurprisingly, the ensuing expanded utilization of biological therapeutics in the management of dermatologic conditions was accorded by a parallel rise in CTCL diagnoses in treated patients.[52,53,54,55] At the same time, studies reporting an increased risk of CTCL attributable to atopic dermatitis – as opposed to atopic dermatitis medications – have almost exclusively been funded and conducted by manufacturers of atopic dermatitis medications and their associates.[56,57,58,59,60]

[45] Crawford A. Case of Eczema Rubrum, with Remarks. Edinb Med Surg J. 1820;16(62):37-41.
[46] Green J. Dr. Green's Observations on the Treatment of Eczema. Med Exam (Phila). 1842;5(40):637-640.
[47] Kramer ON, Strom MA, Ladizinski B, Lio PA. The history of atopic dermatitis. Clin Dermatol. 2017;35(4):344-348. doi:10.1016/j.clindermatol.2017.03.005
[48] Tuyp E, Burgoyne A, Aitchison T, MacKie R. A case-control study of possible causative factors in mycosis fungoides. Arch Dermatol. 1987;123(2):196-200.
[49] Mehrany K, El-Azhary RA, Bouwhuis SA, Pittelkow MR. Cutaneous T-cell lymphoma and atopy: is there an association?. Br J Dermatol. 2003;149(5):1013-1017. doi:10.1111/j.1365-2133.2003.05551.x
[50] Rajka G, Winkelmann RK. Atopic dermatitis and Sézary syndrome. Arch Dermatol. 1984;120(1):83-84.
[51] Lange-Vejlsgaard G, Ralfkiaer E, Larsen JK, O'Connor N, Thomsen K. Fatal cutaneous T cell lymphoma in a child with atopic dermatitis. J Am Acad Dermatol. 1989;20(5 Pt 2):954-958. doi:10.1016/s0190-9622(89)70118-3
[52] Sokołowska-Wojdyło M, Barańska-Rybak W, Cegielska A, Trzeciak M, Lugowska-Umer H, Gniadecki R. Atopic dermatitis-like pre-Sézary syndrome: role of immunosuppression. Acta Derm Venereol. 2011;91(5):574-577. doi:10.2340/00015555-1149
[53] Dequidt L, Franck N, Sanchez-Pena P, et al. Cutaneous lymphomas appearing during treatment with biologics: 44 cases from the French Study Group on Cutaneous Lymphomas and French Pharmacovigilance Database. Br J Dermatol. 2019;181(3):616-618. doi:10.1111/bjd.17834
[54] Amitay-Laish I, Guenova E, Ortiz-Romero PL, et al. The Course of Mycosis Fungoides under Cytokine Pathway Blockers: A Multicentre Analysis of Real-life Clinical Data. Acta Derm Venereol. 2020;100(16):adv00277. Published 2020 Sep 30. doi:10.2340/00015555-3642
[55] Davis MS, Spencer RK, Johnson CE, et al. Risk of Cutaneous T Cell Lymphoma with Psoriasis Biologic Therapies. Dermatol Ther (Heidelb). 2024;14(1):15-30. doi:10.1007/s13555-023-01074-z
[56] Arellano FM, Wentworth CE, Arana A, Fernández C, Paul CF. Risk of lymphoma following exposure to calcineurin inhibitors and topical steroids in patients with atopic dermatitis. J Invest Dermatol. 2007;127(4):808-816. doi:10.1038/sj.jid.5700622
[57] Legendre L, Barnetche T, Mazereeuw-Hautier J, Meyer N, Murrell D, Paul C. Risk of lymphoma in patients with atopic dermatitis and the role of topical treatment: A systematic review and meta-analysis. J Am Acad Dermatol. 2015;72(6):992-1002. doi:10.1016/j.jaad.2015.02.1116

F. Dupixent and CTCL

111. Despite its historical infrequence in the population, CTCL has been widely reported among patients taking Dupixent. These cases have included diagnoses of new, primary CTCL as well as an unexpected "unmasking" or severe and rapid clinical progression of otherwise subclinical and undiagnosed CTCL occurring weeks to years following initiation of Dupixent use. Evidence supporting a causal relationship between use of Dupixent and incident CTCL is derived from both experimental and observational studies in humans.

a. Clinical Trials

112. Years before its approval for marketing by FDA, CTCL was first reported in a patient treated with Dupixent in a Phase II clinical trial in adults with atopic dermatitis (Study R668-AD-1314). In this study, Mycosis fungoides stage IV was reported in 1 of 97 (1.03%) subjects treated with dupilumab and 0 of 97 subjects

[58] Wan J, Shin DB, Syed MN, et al. Malignancy risk in patients with atopic dermatitis: a population-based cohort study. Br J Dermatol. 2023;189(1):53-61. doi:10.1093/bjd/ljad072

[59] Powers CM, Piontkowski AJ, Orloff J, et al. Risk of lymphoma in patients with atopic dermatitis: A case-control study in the All of Us database. J Am Acad Dermatol. 2024;91(2):344-346. doi:10.1016/j.jaad.2024.03.038

[60] Ma Y, Chachin M, Hirose T, et al. Prevalence and incidence of comorbidities in patients with atopic dermatitis, psoriasis, alopecia areata, and vitiligo using a Japanese claims database. J Dermatol. 2025;52(5):841-854. doi:10.1111/1346-8138.17643

assigned to placebo.[61] According to the FDA Medical Review for Dupixent, this subject presented on day 35 of treatment with apparent worsening of his atopic dermatitis after receiving 7 doses of Dupixent 300 mg. After receiving another dose on day 43, his atopic dermatitis was considered "completely refractory to treatment", and skin biopsies were obtained. On day 48 this subject was formally diagnosed with Mycosis fungoides stage IV and Dupixent was discontinued. Mycosis fungoides stage IV was noted to be ongoing at the end of the study.[62]

113. Following this and another CTCL clinical trial case, Defendants amended the study protocol for the ongoing Phase III open-label trial (R668-AD-1225) on January 12, 2015 to designate "mycosis fungoides and cutaneous T-cell dyscrasias" as adverse events of special interest (AESIs). Based on information and belief, Defendants did not likewise amend protocols for all ongoing or subsequent clinical trials in Dupixent development programs.

114. The results of the Phase III open-label extension trial were eventually posted to ClinicalTrials.gov in October 2023 and published in JAMA Dermatology in July 2024, and indicated CTCL was reported in a total of 3 patients who continued

[61] Center for Drug Evaluation and Research. Medical Review: Dupixent (dupilumab). Application Number 761055. U.S. Food and Drug Administration. March 2017.

[62] Blauvelt A, Simpson EL, Tyring SK, et al. Dupilumab does not affect correlates of vaccine-induced immunity: A randomized, placebo-controlled trial in adults with moderate-to-severe atopic dermatitis. J Am Acad Dermatol. 2019;80(1):158-167.e1. doi:10.1016/j.jaad.2018.07.048

their Dupixent treatment from prior clinical trials. One additional subject treated with Dupixent developed t-cell lymphoma.[63] In addition to a tripling in the number of CTCL cases reported in Dupixent-treated patients in this trial since November 2014, Mycosis fungoides was also noted to be one of the 5 most common treatment-emergent adverse events leading to discontinuation in this study.[64]

115. Importantly, randomized controlled trials suffer from several important limitations that restrict the generalizability of their results to real-world populations, and many patients exposed to a drug after its approval have disease features and comorbidities or use concomitant medications which would have rendered them ineligible to participate in premarket clinical trials. This limitation is particularly true for safety endpoints, as premarket clinical trials are typically too small in size and too short in duration to detect rare, serious adverse events that may be associated with the treatment. This is because premarket clinical trials are primarily designed to detect differences between groups in efficacy endpoints, with safety being a secondary consideration. The Dupixent pivotal trials were no exception.

116. Across the 3 Dupixent pivotal trials in the treatment of atopic

[63] U.S. National Library of Medicine. NCT01949311. Open-label Study of Dupilumab in Patients With Atopic Dermatitis. https://clinicaltrials.gov/study/NCT01949311

[64] Beck LA, Bissonnette R, Deleuran M, et al. Dupilumab in Adults With Moderate to Severe Atopic Dermatitis: A 5-Year Open-Label Extension Study. JAMA Dermatol. 2024;160(8):805-812. doi:10.1001/jamadermatol.2024.1536

dermatitis, 1,344 patients were randomized to Dupixent, with just 563 following the dosing schedule that was ultimately approved by the FDA. Subjects in 2 of the pivotal trials were only treated with Dupixent for up to 16 weeks, and in the third pivotal trial subjects were treated with Dupixent for up to 52 weeks. Defendants' clinical development safety database for atopic dermatitis included a total of 2,526 subjects who received at least 1 dose of Dupixent. Notably, however, while Dupixent is intended to be a chronic therapy for indefinite use, the Defendants' clinical development safety database included just 160 subjects with at least 2 years of exposure to any dose of Dupixent at the time they submitted their BLA seeking an indication in atopic dermatitis.[65]

117. The safety populations in Defendants' subsequent clinical development programs for Dupixent in the treatment of other conditions were even smaller or exposed to Dupixent for shorter durations than the atopic dermatitis development program. Defendants' clinical development safety database for asthma in patients 12 years of age and older included 1,670 subjects who received at least one dose of Dupixent at the time of BLA submission. Among these, only 350 were treated with

[65] Center for Drug Evaluation and Research. Medical Reviews: Dupixent (dupilumab). Application Number 761055. U.S. Food and Drug Administration. March 2017.

Dupixent for at least 1 year, and no subjects were treated for 2 or more years.[66] The safety database for atopic dermatitis in 12 to 17-year-olds included just 322 subjects treated with at least 1 dose of Dupixent, of which only 35 received at least 1 year of treatment and 27 received 2 years of treatment at the time of BLA submission.[67] The chronic rhinosinusitis with nasal polyps clinical development safety database included only 440 subjects treated with at least 1 dose of Dupixent at the time of BLA submission, with 83 being treated for at least 1 year and none being treated for 2 or more years.[68] Finally, Defendants' eosinophilic esophagitis safety database included only 367 subjects who received at least 1 dose of Dupixent at the time of BLA submission. Of 182 patients who received the recommended Dupixent dosage regimen, 40 were treated for at least 1 year and none were treated for 2 or more years.[69]

118. Given the small number of exposed patients and very short periods of

[66] Center for Drug Evaluation and Research. Approval Package: Dupixent (dupilumab). Application Number 761055Orig1s007. U.S. Food and Drug Administration. October 2018.
[67] Center for Drug Evaluation and Research. Approval Package: Dupixent (dupilumab). Application Number 761055Orig1s012. U.S. Food and Drug Administration. March 2019.
[68] Center for Drug Evaluation and Research. Approval Package: Dupixent (dupilumab). Application Number 761055Orig1s014. U.S. Food and Drug Administration. June 2019.
[69] Center for Drug Evaluation and Research. Approval Package: Dupixent (dupilumab). Application Number 761055Orig1s040. U.S. Food and Drug Administration. May 2022.

treatment and observation in the Dupixent clinical development programs, it is not surprising that rare and serious treatment-emergent safety concerns would begin to emerge with long-term use among hundreds of thousands of patients during the postmarketing period. This phenomenon was all the more likely given that, thanks to Defendants' successful marketing scheme, the patients being treated with Dupixent in the real world were far more diverse than the populations that were enrolled in premarket clinical trials.[70]

119. Indeed, following its approval for marketing in the United States in March 2017, several independent clinicians and researchers began investigating and reporting a concerning association between Dupixent use and the development of CTCL. This large and growing body of research has been published in the form of cohort studies, cross-sectional studies, analyses of postmarketing adverse events, case series and individual case reports.

b. Case Reports, Case Series and Descriptive Observational Studies

120. On November 30, 2018 a report was published in French in Annales de Dermatologie et de Vénéréologie.[71] Published as an abstract, this report described a

[70] Papp KA, Hong CH, Lansang MP, et al. Practical Management of Patients with Atopic Dermatitis on Dupilumab. Dermatol Ther (Heidelb). 2021;11(5):1805-1828. doi:10.1007/s13555-021-00586-w

[71] Bozon A, Dereure O, Szablewski V, Vincent T, Du Thanh A, Gustave V. P268: Lymphome à grandes cellules ALK1 négatif CD 30+ avec atteintes ganglionnaire et cutanée sous dupilumab. Annales de Dermatologie et de Vénéréologie. 2018;145(12):S272-S273. doi:10.1016/j.annder.2018.09.430

49-year-old female with a history of atopic dermatitis since adolescence who experienced worsening of her disease over the preceding 6 years. Following an inadequate response to 7 months of treatment with cyclosporine and 2 months of treatment with methotrexate, the patient was started on Dupixent. After 3 months of Dupixent treatment, she developed right inguinal lymph node enlargement, plaques on her neck, elbow and lower back, and a rapidly ulcerated lesion under her right nipple. Biopsy revealed CD30+ ALK1-negative cutaneous anaplastic large cell lymphoma and positron emission tomography confirmed right inguinal, cervical and right external iliac lymph node involvement. Chemotherapy was initiated to treat the patient's CTCL. In their discussion the authors noted that anaplastic large cell lymphoma was not known to be associated with atopic dermatitis, and that prior research had shown Th2 pathway involvement in oncogenesis via IL-4 and IL-13.

121. An additional case report was published on May 2, 2019, documenting CTCL in a patient treated with Dupixent in the journal Acta Dermato-Venereologica.[72] The patient in this case had atopic dermatitis since early childhood, with remission in adolescence and reemergence at age 47. Due to an inadequate response to other treatments and persistent itching, Dupixent was prescribed to treat his atopic dermatitis at age 58. One month of Dupixent treatment failed to alleviate

[72] Chiba T, Nagai T, Osada SI, Manabe M. Diagnosis of Mycosis Fungoides Following Administration of Dupilumab for Misdiagnosed Atopic Dermatitis. Acta Derm Venereol. 2019;99(9):818-819. doi:10.2340/00015555-3208

atopic dermatitis symptoms, and instead induced a flare-up of cutaneous lesions. This exacerbation of erythematous lesions prompted physicians to order a skin biopsy. Based on the results of histopathology and computed tomography scans, the patient was diagnosed with Mycosis fungoides and Dupixent was discontinued. Despite a long history of atopic dermatitis, these authors proposed that this patient may have had Mycosis fungoides that was misdiagnosed as atopic dermatitis.

122. On September 24, 2019, a case of Mycosis fungoides in a patient treated with Dupixent for atopic eczema was presented at the 2019 Cutaneous Lymphoma Task Force Meeting of the European Organisation for Research and Treatment of Cancer.[73] This subject developed widespread rash and lymphadenopathy 9 weeks after initiating Dupixent. Dupixent was discontinued, and after initial improvement, the subject experienced rapid disease progression. The subject was ultimately diagnosed with Mycosis fungoides and started on chemotherapy. Based on their assessment, the authors believed this patient may have had preexisting Mycosis fungoides which rapidly progressed upon starting treatment with Dupixent.

123. Also at the September 2019 Cutaneous Lymphoma Task Force Meeting of the European Organisation for Research and Treatment of Cancer, researchers from several universities around the world presented the results of a descriptive

[73] Poyner E, Bacon C, Meggitt S, Weatherhead S. A case of mycosis fungoides with large cell transformation following dupilumab treatment. Eur J Cancer. 2019;119:S42–S43

study investigating CTCL among patients treated with biologics; this study was formally published in the journal Acta Dermato-Venereologica in September 2020.[74] These researchers included all patients diagnosed with Mycosis fungoides while being treated with tumor necrosis factor-alpha inhibitors, IL-17 inhibitors, IL-12/23 inhibitors or IL-23 inhibitors and managed at Cutaneous Lymphoma Clinics, Rabin Medical Center, Israel, University of Pittsburgh, USA, University Hospital Zürich, Switzerland, Hospital Universitario 12 de Octubre, Spain, Johns Hopkins Medicine, USA and Andreas Sygros or Attikon General Hospital, Greece through June 2019. Among 19 included patients, the authors incidentally identified 2 patients who had been treated with Dupixent – in addition to other biologics meeting study inclusion criteria – for a presumed atopic dermatitis or psoriasis. These patients were retrospectively diagnosed as having preexisting Mycosis fungoides, and both experienced disease progression during treatment with Dupixent and other biologics. In one patient patches progressed to plaques and in the other stage III Mycosis fungoides progressed to stage IV Mycosis fungoides with blood involvement. These authors cautioned "before considering biologics for benign cutaneous inflammatory disorders, clinicians should re-think the indication, take a second look for clinical

[74] Amitay-Laish I, Guenova E, Ortiz-Romero PL, et al. The Course of Mycosis Fungoides under Cytokine Pathway Blockers: A Multicentre Analysis of Real-life Clinical Data. Acta Derm Venereol. 2020;100(16):adv00277. Published 2020 Sep 30. doi:10.2340/00015555-3642

clues of MF, revise the histology or take another biopsy, and consider blood assessment, including flow cytometry".

124. A third abstract from the September 2019 Cutaneous Lymphoma Task Force Meeting of the European Organisation for Research and Treatment of Cancer described a series of patients with newly diagnosed Mycosis fungoides after initiating biologic medications for atopic dermatitis or psoriasis.[75] One patient, a 44-year-old female who had a life-long history of atopic dermatitis, started using Dupixent in April 2018 an initially responded to the therapy. However, after 10 months of Dupixent treatment, her condition worsened, at which point a biopsy revealed Stage II mycosis fungoides. These authors advised that patients should undergo screening with biopsies before starting treatment with biologics.

125. On March 27, 2020, clinicians published a case series of 4 patients with atopic dermatitis and 3 patients with preexisting CTCL treated with Dupixent in the Journal of the American Academy of Dermatology.[76] An abstract of this study was also published in the British Journal of Dermatology in April 2020.[77] After a brief

[75] Yoo J, Shah F, Velangi S, Stewart G, Hague J, Scarisbrick J. Three cases of new diagnosis of mycosis fungoides following commencement on biologic therapies for presumed psoriasis/eczema. Eur J Cancer. 2019;119:S41

[76] Espinosa ML, Nguyen MT, Aguirre AS, et al. Progression of cutaneous T-cell lymphoma after dupilumab: Case review of 7 patients. J Am Acad Dermatol. 2020;83(1):197-199. doi:10.1016/j.jaad.2020.03.050

[77] Espinosa ML, Nguyen MT, Aguirre AS, et al. P44: Dupilumab is associated with disease worsening or unmasking of cutaneous T-cell lymphoma. Br J Dermatol. 2020;183(4):25. doi:10.1111/bjd.19043

initial improvement on Dupixent, both groups of patients experienced worsening of their symptoms. The 4 atopic dermatitis patients began to develop palmoplantar desquamation, severe skin burning and pruritus, erythroderma, and enlargement and thickening of plaques, and were eventually diagnosed with mycosis fungoides or CTCL (not otherwise specified) after 4 to 27 months of Dupixent treatment. Additionally, 2 of the 3 patients with preexisting CTCL being treated with Dupixent progressed from mycosis fungoides to Sézary syndrome stage IV and ultimately died due to CTCL progression. After presenting the details of these cases, these authors noted "our observations highlight the need for caution when using dupilumab in patients with atypical dermatitis presentations without previous exclusion of Cutaneous T-cell lymphoma via skin biopsy, testing for T-cell receptor gene rearrangement, and flow cytometry of the blood", and further advised "[a]s dupilumab becomes more commonplace in the treatment of atopic dermatitis and atopic disease, we anticipate seeing a greater number of cases of unmasked Cutaneous T-cell lymphoma in patients who initially received a diagnosis of atypical atopic dermatitis".

126. The following month in April 2020, physicians published another case report of an atopic dermatitis patient who developed CTCL while being treated with

Dupixent in the Dermatology Online Journal.[78] Just 2 weeks after receiving his first 600 mg loading dose of Dupixent, this patient presented with an erythrodermic rash covering 95% of his body surface. Additional treatments were initiated to control the erythroderma and newly diagnosed psoriasis, but erythroderma and lymphadenopathy persisted and prompted further testing. After 3 months of Dupixent treatment, this patient was diagnosed with Sézary syndrome. The authors concluded "The temporal relationship between the initiation of dupilumab and the onset of erythroderma suggests that dupilumab was a trigger for [Sézary syndrome] in this patient" and advised "clinicians should be aware of this association for prompt diagnosis and treatment". These authors further cautioned "Although dupilumab provides promise in the treatment of atopic and allergic conditions, clinicians should take into account its novelty and the potential for unexpected adverse events".

127. On June 18, 2020, another case series involving Dupixent and CTCL was published in the journal Acta Dermato-Venereologica.[79] This report profiled the clinical courses of 1 patient with atopic dermatitis and another patient with mycosis fungoides and a history of atopic dermatitis who were both treated with Dupixent.

[78] Tran J, Morris L, Vu A, Duvic M. Development of Sézary syndrome following the administration of dupilumab. Dermatol Online J. 2020;26(4):13030/qt1m67z8sb. Published 2020 Apr 15.
[79] Lazaridou I, Ram-Wolff C, Bouaziz JD, et al. Dupilumab Treatment in Two Patients with Cutaneous T-cell Lymphomas. Acta Derm Venereol. 2020;100(16):adv00271. Published 2020 Sep 30. doi:10.2340/00015555-3576

While the patient with mycosis fungoides and atopic dermatitis experienced improvement in his symptoms after starting Dupixent, the atopic dermatitis-only patient failed to respond to Dupixent treatment over a 2-month period. This patient instead developed intense pruritus, skin plaques and palmoplantar keratosis and was ultimately diagnosed with Sézary syndrome.

128. In another case report published June 19, 2020 in Dermatologic Therapy, Dupixent was initiated in a patient with a 1-year history of atopic dermatitis.[80] Following 8 doses of Dupixent, the patient experienced worsening lesions, spreading plaques and the appearance of new ulcerated tumors, and was ultimately diagnosed with tumoral-stage mycosis fungoides.

129. On July 16, 2020, another case report involving CTCL in the setting of Dupixent use was published in The Journal of Dermatology.[81] This patient had a history of atopic dermatitis since infancy which had worsened over the previous 2 years. After administering 3 doses of Dupixent, the patient presented with severe exfoliative erythroderma with superficial lymph node swelling. Following a battery of tests, the patient was diagnosed with Sézary syndrome.

[80] Miyashiro D, Vivarelli AG, Gonçalves F, Cury-Martins J, Sanches JA. Progression of mycosis fungoides after treatment with dupilumab: A case report. Dermatol Ther. 2020;33(6):e13880. doi:10.1111/dth.13880

[81] Umemoto N, Demitsu T, Otaki K, et al. Dupilumab therapy in Sézary syndrome misdiagnosed as atopic dermatitis: A case report. J Dermatol. 2020;47(10):e356-e357. doi:10.1111/1346-8138.15501

130. The Journal Cutis published a case series on August 27, 2020 describing CTCL in 3 Dupixent-treated patients with long-standing histories of adult-onset dermatitis.[82] After receiving 6 or fewer injections of Dupixent, each of these patients experienced an acute exacerbation of their dermatitis. Upon discontinuation of Dupixent, each patient was diagnosed with Mycosis fungoides.

131. On December 16, 2020, another case report of CTCL developing in a patient with atopic dermatitis treated with Dupixent was published in JAAD Case Reports.[83] Despite initial limited improvement of his symptoms, two months after initiating Dupixent the patient presented with significant worsening of his dermatitis, weight loss and marked lymphadenopathy, and was diagnosed with Mycosis fungoides stage IV. In their discussion, the authors advocated for diligent monitoring of disease course after Dupixent initiation and prompt evaluations for CTCL in patients that exhibit an inadequate response to treatment.

132. In December 2020, a case report describing a case of CTCL involving Dupixent in a 40-year-old female with a history of atopic dermatitis since childhood

[82] Hollins LC, Wirth P, Fulchiero GJ Jr, Foulke GT. Long-standing dermatitis treated with dupilumab with subsequent progression to cutaneous T-cell lymphoma. Cutis. 2020;106(2):E8-E11. doi:10.12788/cutis.0074

[83] Russomanno K, Carver DeKlotz CM. Acceleration of cutaneous T-cell lymphoma following dupilumab administration. JAAD Case Rep. 2020;8:83-85. Published 2020 Dec 17. doi:10.1016/j.jdcr.2020.12.010

was published in Dermatitis.[84] Following initial improvement, this patient exhibited a flare of her atopic dermatitis symptoms after 5 months of taking Dupixent. She continued Dupixent treatment for another 8 months, during which she experienced widespread progression of lesions to 80% of her body surface area. This patient discontinued Dupixent and was ultimately diagnosed with Mycosis fungoides stage II.

133. In January 2021, a case series of 2 patients developing CTCL shortly after starting treatment with Dupixent was published in Dermatology Online Journal.[85] Both patients were treated with Dupixent for atopic dermatitis for approximately 5 months. After failing to respond to treatment, biopsies were ordered revealing Mycosis fungoides. In discussing the cases, these authors found their report to "highlight[ed] the importance of considering cutaneous lymphoma when treating inflammatory dermatoses that are recalcitrant to targeted immunotherapies".

134. On April 22, 2021, a German clinician published a case report involving a patient who developed Mycosis fungoides large-cell anaplastic T-cell lymphoma with involvement of the supraclavicular lymph node after initiating treatment with

[84] Ayasse M, Nelson K, Glass F, Silverberg JI. Mycosis Fungoides Unmasked by Dupilumab Treatment in a Patient With a History of Atopic Dermatitis. Dermatitis. 2021;32(1S):e88-e89. doi:10.1097/DER.0000000000000679

[85] Newsom M, Hrin ML, Hamid RN, et al. Two cases of mycosis fungoides diagnosed after treatment non-response to dupilumab. Dermatol Online J. 2021;27(1):13030/qt1133121d. Published 2021 Jan 15.

Dupixent.[86]

135. On October 11, 2021, a case report of CTCL with a fatal outcome following initiation of Dupixent was published in JAAD Case Reports.[87] The patient experienced an improvement in skin inflammatory lesions after 5 months of Dupixent treatment, but again presented to her physician 3 weeks after developing new painful, erythematous and ulcerated plaques on her breast. Testing revealed features suggestive of an anaplastic large-cell lymphoma with cutaneous and systemic involvement and Dupixent was immediately discontinued. During the following month, the patient rapidly developed a similar skin tumor on her left forearm and rapidly progressive inguinal lymph nodes. Despite achieving a partial response after 2 lines of systemic chemotherapies, the patient ultimately died of pulmonary cytomegalovirus infection associated with severe hypoxemic infiltrative fibrosis just 12 months following the onset of the first lesion on her breast. The authors considered this unfortunate case as "add[ing] to the literature of new-onset cutaneous lymphomas associated with dupilumab therapy".

136. In October 2021, researchers from Mayo Clinic published a study of

[86] Troyanova-Slavkova S. Großzellig-anaplastisches T-Zell-Lymphom und Mycosis fungoides unter der Therapie mit Dupilumab [Anaplastic Large-Cell T-Cell Lymphoma and Mycosis fungoides under Therapy with Dupilumab]. Aktuelle Dermatologie 2021;47(07):331-334. doi:10.1055/a-1402-9645

[87] Du-Thanh A, Gustave V, Dereure O. Lethal anaplastic large-cell lymphoma occurring in a patient treated with dupilumab. JAAD Case Rep. 2021;18:4-7. Published 2021 Oct 12. doi:10.1016/j.jdcr.2021.09.020

histopathologic features in 7 atopic dermatitis patients who developed atypical lymphoid infiltrate or Mycosis fungoides while taking Dupixent in The American Journal of Dermatopathology.[88] All 7 patients had biopsy-proven atopic dermatitis (average of 3.4 pre-treatment biopsies), reconfirmed through secondary histopathologic review at the time of the study, and none had CTCL before starting Dupixent. These patients were between 27 and 74 years of age with an average length of Dupixent treatment of 9.8 months before developing CTCL. After starting Dupixent, all 7 patients demonstrated progressive increases in the densities of atypical lymphoid infiltrates while 6 had new atypical epidermotropic lymphocytes and papillary dermal fibrosis. One patient experienced progressive worsening of symptoms 12 months post-Dupixent initiation and received a diagnosis of Mycosis fungoides stage IV. Despite chemotherapy, this patient developed systemic symptoms and lymphadenopathy, and ultimately died of complications of CTCL 6 months after her diagnosis. Based on their findings, these authors recommended serial biopsies of patients before and during treatment with Dupixent.

137. On December 27, 2021, a case report of CTCL in a 38-year-old patient with atopic dermatitis after starting Dupixent was published in Dermatologic

[88] Sokumbi O, Shamim H, Davis MDP, Wetter DA, Newman CC, Comfere N. Evolution of Dupilumab-Associated Cutaneous Atypical Lymphoid Infiltrates. Am J Dermatopathol. 2021;43(10):714-720. doi:10.1097/DAD.0000000000001875

Therapy.[89] This patient had been treated with topical steroids for 3 years and Dupixent for 1 year when he began developing steroid-resistant disseminated papules. Upon presentation, this patient showed no physical or histopathologic signs CTCL. Seven months later the patient experienced rapid enlargement of a nodule in his inguinal region that demonstrated lymph node involvement on positron emission tomography and dense infiltration of CD30+ and ALK-lymphocytes on biopsy. He was ultimately diagnosed with CD30 + ALK-nodal anaplastic large cell lymphoma and treated with chemotherapy. The authors concluded that their case indicated Dupixent could accelerate CD30+ lymphoproliferative disorders.

138. The rash of cases did not stop there, with additional case reports of new CTCL development, CTCL "unmasking" and CTCL progression in patients after starting Dupixent continuing to be published in the succeeding months. Such publications included a case report of Hodgkin's lymphoma and peripheral T-cell lymphoma in March 2022,[90] a case report of rapidly progressing and ultimately fatal

[89] Amagai M, Ozawa M, Amagai R, et al. Nodal anaplastic large cell lymphoma with lymphomatoid papulosis following treatment of initially presumed atopic dermatitis with dupilumab: A case report. Dermatol Ther. 2022;35(3):e15290. doi:10.1111/dth.15290

[90] Nakazaki K, Yoshida M, Masamoto Y, et al. Discordant lymphomas of classic Hodgkin lymphoma and peripheral T-cell lymphoma following dupilumab treatment for atopic dermatitis. Int J Hematol. 2022;116(3):446-452. doi:10.1007/s12185-022-03330-y

CTCL in May 2022,[91] an aggressive and fatal case of primary cutaneous gamma-delta T-cell lymphoma in May 2022,[92] a case of erythrodermic Mycosis fungoides with suspected blood involvement in August 2022[93] and a case of "dupilumab-associated CD8+ [Mycosis fungoides]" stage II in November 2022.[94]

139. In August 2022, researchers from the Mayo Clinic published a descriptive analysis of CTCL among patients treated with biological therapies at their facility in the International Journal of Dermatology.[95] Over the preceding 10-year period, 17 patients treated with biologics for rheumatologic, dermatologic or gastrointestinal conditions had subsequently been diagnosed with CTCL. Among these 17 patients, most (n=9; 53%) had been treated with Dupixent for atopic dermatitis for between 1.2 and 24 months before their CTCL diagnosis. Specific

---

[91] Poyner EFM, Bacon CM, Osborne W, Frew JA, Weatherhead SC. Dupilumab unmasking cutaneous T-cell lymphoma: report of a fatal case. Clin Exp Dermatol. 2022;47(5):974-976. doi:10.1111/ced.15079

[92] Ahatov R, Good AJ, Joo M, Tipton S, Goodwin B, Kelly B. A rare case of aggressive cytotoxic T-cell lymphoma in a patient on dupilumab. JAAD Case Rep. 2022;24:112-114. Published 2022 May 10. doi:10.1016/j.jdcr.2022.04.023

[93] Hashimoto M, Miyagaki T, Komaki R, Takeuchi S, Kadono T. Development of Nodular Lesions after Dupilumab Therapy in Erythrodermic Mycosis Fungoides with Interleukin-13 Receptor alpha2 Expression. Acta Derm Venereol. 2022;102:adv00766. Published 2022 Aug 24. doi:10.2340/actadv.v102.2234

[94] Park A, Wong L, Lang A, Kraus C, Anderson N, Elsensohn A. Dupilumab-Associated Mycosis Fungoides with a CD8+ Immunophenotype. Dermatopathology (Basel). 2022;9(4):385-391. Published 2022 Nov 30. doi:10.3390/dermatopathology9040045

[95] Schaefer L, Comfere NI, Sokumbi O. Development of cutaneous T-cell lymphoma following exposure to biologic therapy: a Mayo Clinic retrospective analysis. Int J Dermatol. 2023;62(7):e371-e374. doi:10.1111/ijd.16386

diagnoses included Mycosis fungoides, Sézary syndrome and peripheral T-cell lymphoma, and these patients were variously treated with chemotherapy, topical steroids, extracorporeal photopheresis, ultraviolet therapy, monoclonal antibodies and interferons. One of these subjects had effectively managed her long-standing atopic dermatitis with methotrexate for over 10 years and only switched to Dupixent when she no longer responded to her maintenance treatment. Within 7 months of starting Dupixent she developed peripheral T-cell lymphoma stage IV and ultimately died 8 months later. These authors advised "further prospective investigations are warranted to elucidate dupilumab's role in the development of CTCL. This is especially relevant, given its common use in the management of AD and growing clinical indications for use including chronic urticaria, bullous pemphigoid, and alopecia areata."

140. Still more case reports of CTCL development in patients after starting Dupixent treatment continued to be published in 2023 and 2024, including a case of angioimmunoblastic T-cell lymphoma in January 2023,[96] a case of Mycosis fungoides in March 2023,[97] a case of peripheral T-cell lymphoma "presumably

[96] Choo ZY, Akinyemi AA, Cibull T, Mehlis S, Waldinger JB. Angioimmunoblastic T-cell lymphoma unmasked by treatment with dupilumab. JAAD Case Rep. 2023;33:87-90. Published 2023 Jan 26. doi:10.1016/j.jdcr.2023.01.008

[97] Yan D, Ramachandran V, Weston G, Kim RH, Latkowski JA. Diagnosing mycosis fungoides after initiation of therapy with dupilumab: a case report and literature review. Int J Dermatol. 2023;62(9):e500-e503. doi:10.1111/ijd.16641

associated with dupilumab" in April 2023,[98] a case of Mycosis fungoides stage III in May 2023,[99] a case of rapidly progressive CD30+ Mycosis fungoides in May 2023,[100] a case of Sézary syndrome in July 2023,[101] a case of CTCL in August 2023[102] and a case of folliculocentric Mycosis fungoides in May 2024.[103]

141. Researchers from Mayo Clinic published a systematic review of cases of CTCL reported in patients treated with biological therapies in the American Journal of Clinical Dermatology in January 2023.[104] The authors ultimately identified 28 studies describing 62 patients who had developed CTCL following exposure to a biologic agent. Among these CTCL cases, Dupixent was the most

---

[98] Shimada M, Inano S, Kitano T. T-cell lymphoma associated with dupilumab. Ann Hematol. 2023;102(6):1601-1602. doi:10.1007/s00277-023-05237-y

[99] Hsieh CY, Tsai TF. Rapid progression of cutaneous T-cell lymphoma in a patient with erythroderma during dupilumab treatment, following prior sequential azathioprine, baricitinib and cyclosporine treatments. Indian J Dermatol Venereol Leprol. Published online May 1, 2023. doi:10.25259/IJDVL_1090_2022

[100] Toker M, Srivastava P, Amin B, Wu B. Did dupilumab unmask smoldering mycosis fungoides?. JAAD Case Rep. 2023;38:11-13. Published 2023 May 30. doi:10.1016/j.jdcr.2023.05.025

[101] Hamp A, Hanson J, Alhatem A, Schwartz RA. Dupilumab-Associated Sezary Syndrome. Indian J Dermatol. 2023;68(4):459-462. doi:10.4103/ijd.ijd_580_22

[102] Malick H, Wilson A, Hall M, Meier M. Cutaneous T-cell Lymphoma Progression: A Potential Dupilumab Pitfall. Cureus. 2023;15(8):e42959. Published 2023 Aug 4. doi:10.7759/cureus.42959

[103] Jiang SY, Yeh J, Novoa R, Wang E, Chen M. Folliculocentric Mycosis Fungoides Masquerading as Angioedema and Allergic Contact Dermatitis. J Allergy Clin Immunol Pract. 2024;12(7):1905-1906. doi:10.1016/j.jaip.2024.04.017

[104] Schaefer L, Comfere N, Sokumbi O. Development of Cutaneous T-Cell Lymphoma Following Biologic Treatment: A Systematic Review. Am J Clin Dermatol. 2023;24(2):153-164. doi:10.1007/s40257-022-00749-1

commonly used biologic agent (42%), despite several others being on the market for longer and with much greater overall patient exposure.

142. In March 2023, researchers from Johns Hopkins University School of Medicine presented the results of a single center retrospective study of patients with CTCL at the Annual Meeting of the American Academy of Dermatology.[105] Researchers identified 411 patients with CTCL, of which 6 were found to have received Dupixent for biopsy-proven atopic dermatitis prior to being diagnosed with Mycosis fungoides or Sézary syndrome. Initial diagnosis of atopic dermatitis had been made in adulthood for 5 and in childhood in 1, and 2 patients experienced worsening of their disease after starting Dupixent. The authors concluded "[d]upilumab can be associated with worsening skin disease".

143. In June 2023, researchers from Saint Louis University School of Medicine, Rutgers New Jersey Medical School and Arizona College of Osteopathic Medicine published a cross-sectional study in the Archives of Dermatological Research based on 25 patients – 20 cases published in the literature and 5 from their institutions – who had developed Mycosis fungoides after starting Dupixent

[105] Pierog O, Talluru SM, Munjal A, Weiner D, Fazal M, Ly A, Rozati S. 44588: Clinical outcomes and characteristics in CTCL patients with a diagnosis of eczema: retrospective review at a single tertiary referral center. J Am Acad Dermatol. 2023;89(3):AB136.

treatment for atopic dermatitis.[106] The 5 institutional patients were treated with Dupixent for an average of 8.4 months prior to developing Mycosis fungoides. Mycosis fungoides was diagnosed at stage I in 2 patients and stage II in 1 patient, while 2 patients progressed to Sézary syndrome. The average length of Dupixent treatment prior to Mycosis fungoides diagnosis among the 20 literature cases was 11.2 months. The authors advocated for "[c]lose monitoring of these patients and further investigation of the relationship between dupilumab and [Mycosis fungoides]".

144. In August 2023, clinicians from Italy published a retrospective analysis of atopic dermatitis patients treated at two Italian tertiary care centers in The Educational Journal of the British Association of Dermatologists.[107] Between June 2018 and June 2023, 995 patients with atopic dermatitis had been administered Dupixent, 91.8% with a classic atopic dermatitis phenotype and 8.1% with a prurigo nodularis-like phenotype. Seven patients who were unresponsive to Dupixent or exhibited atypical clinical features discontinued treatment and were further studied through skin biopsy and T-cell receptor gamma gene rearrangement analysis. Two

[106] Hamp A, Hanson J, Schwartz RA, Lambert WC, Alhatem A. Dupilumab-associated mycosis fungoides: a cross-sectional study. Arch Dermatol Res. 2023;315(9):2561-2569. doi:10.1007/s00403-023-02652-z

[107] Buffon S, Alberti Violetti S, Avallone G, et al. Mycosis fungoides and Sézary syndrome following dupilumab treatment: experience of two Italian tertiary care centres. Clin Exp Dermatol. 2023;48(12):1376-1378. doi:10.1093/ced/llad277

of these patients, males aged 55 and 85 years, developed histologically confirmed CTCL after 11 and 19 months of Dupixent treatment. One was diagnosed with Mycosis fungoides stage I and treated with ultraviolet therapy with partial response, while the other was diagnosed with progressive Sézary syndrome stage IV and ultimately died before initiating treatment.

145. Researchers from Memorial Sloan Kettering Cancer Center published a descriptive cohort study of CTCL in Dupixent-treated patients as an abstract in the journal Blood in November 2023.[108] An updated, final version of the study was later published in May 2024 in the Journal of the European Academy of Dermatology and Venerology.[109] In this study, researchers identified 27 patients presenting to their center with new Mycosis fungoides after being treated with Dupixent for atopic dermatitis. In 16 patients, atopic dermatitis was confirmed through skin biopsy, while the remaining subjects were diagnosed based on clinical features. All patients had worsening symptoms following Dupixent use, and the median duration of Dupixent use prior to CTCL diagnosis was 10.2 months. Mycosis fungoides was

[108] Stuver R, Dusza S, Epstein-Peterson ZD, Ghione P, Johnson W, Moskowitz A, Myskowski P, Pulitzer M, Horwitz SM, Geller S. Cutaneous T-Cell Lymphoma and Dupilumab Use: A Retrospective Matched Cohort Study of Clinical Characteristics and Treatment Outcomes. Blood. 2023;142:6184.

[109] Stuver R, Dusza S, Epstein-Peterson ZD, et al. Cutaneous T-cell lymphoma and dupilumab use: A retrospective matched cohort study of clinical characteristics and treatment outcomes. J Eur Acad Dermatol Venereol. 2025;39(2):e114-e117. doi:10.1111/jdv.20141

diagnosed as stage I (n=16), stage II (n=4), stage III (n=2) or stage IV (n=5) after Dupixent treatment. Authors remarked that the relationship between Dupixent and CTCL deserves a dedicated biological study.

146. In November 2023, researchers from The Netherlands published a case series describing lymphoid reactions mimicking CTCL in 14 patients treated with Dupixent in JAMA Dermatology.[110] Three of these patients were retrospectively diagnosed as having preexisting CTCL, each of which experienced clinical worsening of CTCL in response to Dupixent treatment. Despite serving as KOLs for Defendants, Sanofi, Genzyme Corporation and Regeneron Pharmaceuticals, Inc., these authors found their study highlighted a "need for caution in continuing dupilumab treatment in patients with AD with clinical worsening and newly reported symptoms (eg, burning sensation) after initial adequate response because these patients might develop an LR", while further warning that "these benign LRs may evolve into CTCL if dupilumab treatment is not permanently stopped". Finally, these authors recommended histopathologic evaluation including immunohistochemical staining in specific patients prior to prescribing Dupixent.

147. In an editorial commenting on the study by Boesjes and colleagues, a dermatologist from Northwestern University Feinberg Medical School noted that the

[110] Boesjes CM, van der Gang LF, Bakker DS, et al. Dupilumab-Associated Lymphoid Reactions in Patients With Atopic Dermatitis. JAMA Dermatol. 2023;159(11):1240-1247. doi:10.1001/jamadermatol.2023.3849

observation of a patient with both CTCL and lymphoid reaction "rais[ed] concerns that [lymphoid reaction] may not be reversible in all cases, but rather an initial step toward lymphoma".[111] The author further advised "dermatologists should remain vigilant in ruling out [Mycosis fungoides], particularly in atypical presentations", and that "[i]n such cases, skin biopsy should be the first step prior to dupilumab prescription".

148. At the March 2024 Annual Meeting of the American Academy of Dermatology, researchers from Johns Hopkins University School of Medicine conducted and presented the results of a single center retrospective study investigating clinical presentation and outcomes of patients with CTCL following the use of biologics.[112] These clinicians reviewed 148 patients with Mycosis fungoides or Sézary syndrome and a documented history of atopic dermatitis at least 2 years prior to CTCL diagnosis, identifying 19 who had undergone treatment with biologics, including adalimumab, apremilast, dupilumab (Dupixent), risankizumab, upadacitinib or ustekinumab, for an average of 2.03 years prior to their CTCL diagnosis. CTCL patients treated with biologics including Dupixent demonstrated

[111] Guitart J. Dupilumab, Atopic Dermatitis, and Mycosis Fungoides-New Insights on an Evolving Story. JAMA Dermatol. 2023;159(11):1177-1178. doi:10.1001/jamadermatol.2023.3846

[112] Fleischli A, Pierog O, Rozati S. 54697: Clinical presentation and outcomes of Cutaneous T-cell Lymphoma patients following the use of biologic therapies: retrospective review at a single tertiary referral center. J Am Acad Dermatol. 2024;91(3):AB26.

more frequent advanced-stage CTCL (III to IV) at diagnosis (52.9% vs 15.1%; p=0.001) and large cell transformation (26.3% vs. 9.3%; p=0.033) compared to CTCL patients who had not been treated with biologics. These researchers concluded their results suggested atopic dermatitis patients treated with biologics like Dupixent could increase the risk of advanced-stage and aggressive CTCL, and that "[t]here may be patients on biologics at risk for developing or unmasking CTCL".

149. Johns Hopkins University School of Medicine researchers presented a similar study at the 5th World Congress of Cutaneous Lymphomas in April 2024, this time comparing the presentation and outcomes of CTCL between patients treated with Dupixent and other biologic therapies.[113] Of 148 patients diagnosed with Mycosis fungoides or Sézary syndrome between Jamuary 2011 and July 2023 and having a documented history of atopic dermatitis at least 2 years prior to CTCL diagnosis, 19 patients were identified as having been previously treated with biologics, including 9 with Dupixent only, 4 with a combination of Dupixent and other biologics and 6 with biologics other than Dupixent only. These researchers found that patients treated with Dupixent were at a significantly higher risk of

[113] Fleischli A, Pierog O, Yenokyan G, Bao A, Rozati S. Abstract #183: Presentation and outcomes of cutaneous T-cell lymphoma following the use of dupilumab compared to other biologic therapies. 5th World Congress of Cutaneous Lymphomas, April 11 to 13, 2024. Pasadena, California.

advanced-stage CTCL at the time of diagnosis ($p<0.001$) and patients treated with a combination of Dupixent and other biologics were at a significantly higher risk of CTCL progression following initial diagnosis ($p=0.04$). The authors advised "[a] thorough clinical work up should be considered prior to initiating treatment with biologic agents for chronic benign inflammatory disease to establish a clear diagnosis and patients should be monitored throughout their treatment course for signs of disease transformation".

150. Researchers from Korea and Germany investigated clinical and pathological features in atopic dermatitis patients who exhibited an inadequate response to Dupixent treatment and published their findings in the Journal of the European Academy of Dermatology and Venerology in April 2024.[114] Of 371 patients treated with Dupixent for severe atopic dermatitis, 46 (12.3%) were classified as inadequate responders. Thirty-five of these patients underwent additional evaluation, and of those, 19 (54.2%) were found to have developed Mycosis fungoides following treatment with Dupixent. These authors concluded that an inadequate response to Dupixent treatment may be an indicator of early Mycosis fungoides development in patients with atopic dermatitis.

151. Another case report involving Mycosis fungoides developing in a 76-

[114] Kook H, Gwag HE, Park SY, et al. Detecting T-cell receptor clonality in patients with severe atopic dermatitis refractory to dupilumab. J Eur Acad Dermatol Venereol. 2024;38(10):1939-1946. doi:10.1111/jdv.20053

year-old male patient following initiation of Dupixent was published in September 2024 in Advances in Dermatology and Allergology.[115] This patient had a 7-year history of atopic dermatitis confirmed through biopsy and characterized by pruritus, chronic and relapsing course of the disease, family history of atopy, xerosis, nonspecific hand eczema and pruritus after sweating. During the 10th week of Dupixent treatment the patient developed erythroderma and significant facial and lower limb edema, and was admitted for management of exacerbated skin symptoms "likely attributed to an outbreak during dupilumab treatment". Based on the results of several tests, the patient was ultimately diagnosed with Mycosis fungoides.

152. In December 2024, researchers from Tulane University School of Medicine published a descriptive analysis of patients diagnosed with CTCL at their facility between 2021 and 2023 in the Journal of the American Academy of Dermatology.[116] Of 136 new CTCL cases during the study period, 18 had been treated with Dupixent prior to their CTCL diagnosis. Most patients had adult-onset atopic dermatitis (89%) for a mean duration of 7.17 years and no prior history of

[115] Cisoń H, Cisoń W, Białynicka-Birula B, Suseł M, Białynicki-Birula R, Szepietowski JC. Mycosis fungoides unveiled following dupilumab treatment in a patient with a history of atopic dermatitis. Usefulness of HFUS in monitoring skin features. A review with a case report. Postepy Dermatol Alergol. 2025;42(1):5-12. doi:10.5114/ada.2024.143463

[116] Accetta J, Gioe R, Falgout L, Chastain W, Bitar C, Boh E. Cutaneous T cell lymphoma arising in patients treated with dupilumab: A case series of 18 patients. J Am Acad Dermatol. 2025;92(4):924-926. doi:10.1016/j.jaad.2024.10.119

treatment with immunosuppressive therapies (72%). Pre-treatment atopic dermatitis diagnoses were confirmed through biopsy in half of the patients, and the mean length of Dupixent treatment before diagnosis of CTCL was 8.1 months. Following treatment with Dupixent, 33% of patients developed erythroderma and 22% developed tumors, and CTCL was classified as stage II or higher in 61%. Researchers concluded by commenting that their "study adds 18 patients to the body of evidence linking dupilumab with CTCL".

153. Researchers from Memorial Sloan Kettering Cancer Center published a descriptive cohort study investigating associations between biologic therapies, atopic dermatitis and CTCL in the Journal of the American Academy of Dermatology in February 2025.[117] Researchers identified all cases presenting to their cutaneous lymphoma clinical with new confirmed diagnosis of CTCL following use of Dupixent, a Janus Kinase inhibitor (JAKi) or the IL-13 inhibitor tralokinumab since 2011 Among 32 total CTCL cases, all 32 (100%) had been treated with Dupixent before being diagnosed with CTCL, 2 (6.25%) of whom had been first treated with the JAKi upadacitinib and then Dupixent before being diagnosed with CTCL. All cases had been diagnosed with atopic dermatitis (n=30) or eczematous

[117] Liao V, Lavin L, Pulitzer MP, Stuver R, Geller S. Diagnosis of cutaneous T-cell lymphoma following exposure to biologic agents for atopic dermatitis: A retrospective cohort study from a single tertiary cancer center. J Am Acad Dermatol. 2025;92(6):1394-1395. doi:10.1016/j.jaad.2025.01.088

rash (n=2), with 22 of the atopic dermatitis/eczema diagnoses being confirmed by an outside dermatologist via skin biopsy. Researchers reevaluated 5 of the 22 skin biopsies and re-confirmed 4 (80%) as pathologic atopic dermatitis, while only in 1 case they changed the pre-treatment diagnosis to Mycosis fungoides. The authors concluded that the lack of any cases of CTCL following JAKi alone or tralokinumab in their institution "challenge[s] the hypothesis that severe chronic AD is the cause of CTCL in patients exposed to dupilumab".

154. Owing to accumulating reports describing the development and progression of CTCL in patients treated with Dupixent, independent researchers began conducting systematic reviews of published case reports and case series and publishing their findings as early as 2021. These included a systematic review of 19 cases from 10 studies published in March 2021,[118] a systematic review of 23 cases from 13 studies published in December 2021,[119] a systematic review of 27 cases from 12 studies published in September 2022,[120] a systematic review of 23 cases

[118] Sugaya M. Is blocking IL-4 receptor alpha beneficial for patients with mycosis fungoides or Sézary syndrome?. J Dermatol. 2021;48(5):e225-e226. doi:10.1111/1346-8138.15834

[119] Kołkowski K, Trzeciak M, Sokołowska-Wojdyło M. Safety and Danger Considerations of Novel Treatments for Atopic Dermatitis in Context of Primary Cutaneous Lymphomas. Int J Mol Sci. 2021;22(24):13388. Published 2021 Dec 13. doi:10.3390/ijms222413388

[120] Park A, Wong L, Lang A, Kraus C, Anderson N, Elsensohn A. Cutaneous T-cell lymphoma following dupilumab use: a systematic review. Int J Dermatol. 2023;62(7):862-876. doi:10.1111/ijd.16388

from 11 studies published in December 2022[121] and a systematic review of 30 cases from 18 studies published in December 2024.[122] In one of these systematic reviews of Dupixent CTCL case reports the authors remarked, "Interestingly, progression of [Sézary syndrome] has been frequent, considering the rarity of the disease".[123]

155. Researchers from China presented a case series of 3 patients who developed CTCL after starting Dupixent in Frontiers in Medicine in April 2025.[124] These patients were between 39 and 60 years of age, and each was prescribed Dupixent to treat adult-onset atopic dermatitis. All 3 patients experienced new and worsening symptoms after receiving 2 to 12 doses Dupixent and were eventually diagnosed with Mycosis fungoides (2 patients) or Sézary syndrome (1 patient). In reviewing the available scientific literature, these authors found 19 published reports involving 31 patients with atopic dermatitis who had been treated with biologics and subsequently developed CTCL, including 27 (87.10%) that were treated with

[121] Jfri A, Smith JS, Larocca C. Diagnosis of mycosis fungoides or Sézary syndrome after dupilumab use: A systematic review. J Am Acad Dermatol. 2023;88(5):1164-1166. doi:10.1016/j.jaad.2022.12.001

[122] Guo S, Wang L, Bu D, Liu F. Tumors in the setting of dupilumab use: A review of the literature. World Allergy Organ J. 2024;18(1):101006. Published 2024 Dec 11. doi:10.1016/j.waojou.2024.101006

[123] Sugaya M. Is blocking IL-4 receptor alpha beneficial for patients with mycosis fungoides or Sézary syndrome?. J Dermatol. 2021;48(5):e225-e226. doi:10.1111/1346-8138.15834

[124] Li T, Wang G, Zhang C, Wang W, Li C, Wang Y. Case Report: Cutaneous T-cell lymphoma associated with biologic therapy: three cases and a literature review. Front Med (Lausanne). 2025;12:1544912. Published 2025 Apr 28. doi:10.3389/fmed.2025.1544912

Dupixent. Ultimately, these researchers concluded that their "observations suggest that dupilumab may play a role in the onset and progression of CTCL".

156. In a May 2025 systematic review of CTCL cases reported in Dupixent users, researchers aggregated and described the characteristics of 124 subjects profiled across 29 different case reports, case series and cross-sectional studies.[125] Subjects had a median age of 57.3 years (SD ± 15.7) at the time of lymphoproliferative disorder diagnosis, and more cases were reported in males (n=69; 55.65%) than females (n=55; 44.35%). Most subjects were diagnosed with early-stage Mycosis fungoides (n=57; 45.97%), while a considerable proportion were diagnosed with advanced-stage Mycosis fungoides or Sézary syndrome (n=41; 33.06%). Remaining diagnoses included Mycosis fungoides or Sézary syndrome of unclear stage (n=7; 5.65%), lymphoproliferative reaction (n=13; 10.48%) and other lymphoma (n=6; 4.84%). Median time from Dupixent initiation to biopsy-confirmed lymphoproliferative disorder was 5 months. Of 121 patients initially diagnosed with atopic dermatitis, only 6 were retrospectively diagnosed as having CTCL instead of atopic dermatitis. Three additional patients were initially diagnosed with Mycosis fungoides and treated with Dupixent off-label. All 9 patients initially or

[125] Li M, Zhao W, Lai P, Xiao Y, Wang Y. Dupilumab-associated lymphoproliferative disorders: a comprehensive review on clinicohistopathologic features and underlying mechanisms. Curr Opin Immunol. 2025;94:102563. doi:10.1016/j.coi.2025.102563

retrospectively diagnosed with CTCL demonstrated clinical or histopathological progression, with 6 in the advanced stage.

157. As postmarketing case reports, case series and descriptive observational studies evidencing a strong risk of CTCL with Dupixent use amassed, researchers expressed concern, advised caution and strongly recommended that atopic dermatitis patients undergo multiple skin biopsies to rule out underlying cutaneous malignancy prior to prescribing Dupixent. Furthermore, these clinicians recommended ongoing monitoring and repeat screening though serial biopsies and other means to detect changes in pathology during the course of Dupixent treatment that may be indicative of disease transformation. Additionally, researchers advised healthcare providers to maintain a high degree of clinical suspicion for CTCL when a patient shows signs of non-responsiveness or brief, initial responsiveness to Dupixent treatment followed by exacerbation of symptoms. Despite these calls from researchers year after year, Defendants provided no such recommendations to aid in the appropriate screening and monitoring of patients to reduce or eliminate their risk of Dupixent-induced CTCL.

158. On the contrary, Defendants, via their retained KOLs, actually advocated for *increased* usage of Dupixent when the FDA-approved dosing regimen proved inadequate to relieve symptoms of atopic dermatitis. Peter A. Lio, MD, an investigator, speaker, advisory board member and consultant for Defendants, Sanofi-

Aventis U.S. LLC, Regeneron Pharmaceuticals, Inc. and Genzyme Corporation, and Vivian Y. Shi, MD, an investigator and advisor for Defendants, Sanofi-Aventis U.S. LLC, Regeneron Pharmaceuticals, Inc. and Genzyme Corporation, along with their colleague Aleski Hendricks, published an article in 2019 in the American Journal of Clinical Dermatology recommending more aggressive prescribing of Dupixent, including increased dosages, increased dosing frequency and the addition of immunosuppressive agents to existing Dupixent regimens, in circumstances when patients exhibit an inadequate or incomplete response to Dupixent treatment.[126] Notably, despite claiming "[t]here were no incentives or transactions financial or otherwise relevant to this manuscript", in just 2018 and 2019, Defendants, Regeneron Pharmaceuticals, Inc., Genzyme Corporation and Sanofi-Aventis U.S. LLC paid Peter A. Lio, MD $306,404 in general payments and Regeneron Healthcare Solutions, Inc., Genzyme Corporation and Sanofi-Aventis U.S. LLC paid Vivian Y. Shi, MD $69,300 in general payments. The above recommendations for more aggressive prescribing of Dupixent in patients exhibiting an inadequate or incomplete response to treatment were echoed in another "expert panel" report funded by Defendants and authored by KOLs retained by Defendants which was

[126] Hendricks AJ, Lio PA, Shi VY. Management Recommendations for Dupilumab Partial and Non-durable Responders in Atopic Dermatitis. Am J Clin Dermatol. 2019;20(4):565-569. doi:10.1007/s40257-019-00436-8

published in 2021.[127]

159. Furthermore, all times relevant hereto, Defendants' branded marketing materials and branded websites for Dupixent have expressly advertised "NO INITIAL LAB TESTING OR ONGOING LAB MONITORING" is required for prescription and treatment with Dupixent.[128,129,130,131] Atopic dermatitis clinical treatment guidelines funded by Defendants have similarly touted "[n]o laboratory monitoring is required before initiation or during treatment" with Dupixent.[132,133]

---

[127] Papp KA, Hong CH, Lansang MP, et al. Practical Management of Patients with Atopic Dermatitis on Dupilumab. Dermatol Ther (Heidelb). 2021;11(5):1805-1828. doi:10.1007/s13555-021-00586-w

[128] DUPIXENT Specialist Referral, *Dupixent Partnering With a Specialist Brochure* (PDF), https://www.dupixentspecialistreferral.com/assets/pdfs/US.DUP.24.09.0134_DUPIXENT_AD-PCP-PED_FAQ_Brochure.pdf (last visited Dec. 10, 2025).

[129] DUPIXENT, *DUP AD Patient Profile* (Aug. 2022), https://www.dupixent.com/dam/jcr:777e1c3f-5c75-4ec4-a2d4-d6eb546f7a52/DUP.22.08.0105%20DUP%20AD%20Patient%20Profile_Ore_Aug%202022%20Update.pdf (last visited Dec. 10, 2025).

[130] DUPIXENT, *Atopic Dermatitis*, https://www.dupixenthcp.com/atopicdermatitis/ (last visited Dec. 10, 2025).

[131] DUPIXENT, Safety/Clinical Trial, Demonstrated Long-Term Safety Profile https://www.dupixenthcp.com/atopicdermatitis/efficacy-safety/safety-clinical-trial (last visited Dec. 10, 2025).

[132] Simpson EL, Bruin-Weller M, Flohr C, et al. When does atopic dermatitis warrant systemic therapy? Recommendations from an expert panel of the International Eczema Council. J Am Acad Dermatol. 2017;77(4):623-633. doi:10.1016/j.jaad.2017.06.042

[133] Davis DMR, Drucker AM, Alikhan A, et al. Guidelines of care for the management of atopic dermatitis in adults with phototherapy and systemic therapies. J Am Acad Dermatol. 2024;90(2):e43-e56. doi:10.1016/j.jaad.2023.08.102

c. Analytic Cohort Studies

160. In addition to the extensive body of published case reports, case series and descriptive observational studies, a strong causal relationship between Dupixent and CTCL is supported by several large, high-quality analytical cohort studies of patients with atopic dermatitis and asthma. A total of six analytical cohort studies investigating CTCL risk in the setting of Dupixent use have been published to date.

161. The first analytical cohort study (the "Owji 2023 study") was published December 26, 2022 in The Journal of Allergy and Clinical Immunology: In Practice by several independent researchers from Icahn School of Medicine at Mount Sinai and Still University and a KOL retained by Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi.[134] This was a retrospective study of 9,707 subjects with atopic dermatitis treated at a single academic institution over a 5-year period. Researchers fit Cox proportional hazards models to compare the risk of several different cancers between atopic dermatitis patients treated with Dupixent and atopic dermatitis patients not treated with Dupixent. Researchers observed a 267% elevated risk of CTCL among Dupixent-treated subjects (HR 3.67; 95% CI 0.89-15.21) after adjustment for age and sex. A similar result was observed when further controlling for age, sex and prior immunosuppressant use, with Dupixent being associated with

[134] Owji S, Ungar B, Dubin DP, et al. No association between dupilumab use and short-term cancer development in atopic dermatitis patients. J Allergy Clin Immunol Pract. 2023;11(5):1548-1551. doi:10.1016/j.jaip.2022.12.018

a 260% increased risk of CTCL (HR 3.60; 95% CI 0.88-14.82). Despite finding no statistically significant association between Dupixent use and any of the many cancers studied, these researchers concluded that "Cutaneous T-cell lymphoma (CTCL) may, however, prove to be the exception, given the higher incidence of CTCL in exposed versus unexposed patients, with a P value approaching significance (IR, 0.92 and 0.20, respectively; adjusted HR, 3.67; P = .073). These findings are echoed by recent reports that postulate that dupilumab increases the risk for progression of new and established CTCL. Given the possible link between CTCL and dupilumab, additional studies evaluating this association are warranted."

162. The second analytical cohort study (the "Hasan 2024 study") was published April 6, 2024 in the Journal of the American Academy of Dermatology. In this study, researchers from the West Virginia University School of Medicine leveraged data from TriNetX, a large deidentified electronic health record (EHR) database containing clinical observations and other information on over 275 million patients, to compare the risk of CTCL and other malignancies among atopic dermatitis patients treated or not treated with Dupixent.[135] Researchers developed two separate models using propensity score matching to control for potential

[135] Hasan I, Parsons L, Duran S, Zinn Z. Dupilumab therapy for atopic dermatitis is associated with increased risk of cutaneous T cell lymphoma: A retrospective cohort study. J Am Acad Dermatol. 2024;91(2):255-258. doi:10.1016/j.jaad.2024.03.039

confounders. In the first model adjusting for age only, Dupixent-treated subjects exhibited over a 300% increased risk of developing CTCL (OR 4.10; 95% CI 2.06-8.19) compared to untreated subjects. The observed statistically significant association persisted after excluding subjects with prior disease-modifying antirheumatic drug use and controlling for age, sex, ethnicity and race, with Dupixent use increasing the risk of CTCL among atopic dermatitis patients by 220% (OR 3.20; 95% CI 1.57-6.51).

163. Also utilizing data from TriNetX, the third analytical cohort study investigating CTCL risk with use of Dupixent was published August 14, 2024 in the journal Dermatologic Therapy by researchers from Thomas Jefferson University.[136] In this study (the "Mandel 2024 study"), authors first excluded all subjects with a history of inflammatory conditions and use of biologics with evidence of a possible association with lymphoma. After controlling for age at the time of atopic dermatitis diagnosis, race and sex through propensity score matching, Dupixent-treated atopic dermatitis patients were found to be at a 359% increased risk of CTCL (RR 4.59; 95% CI 2.46-8.57) compared to atopic dermatitis patients not treated with Dupixent.

164. The fourth analytical cohort study (the "Tsai 2024 study") was published in The Journal of Allergy and Clinical Immunology August 1, 2024 by

[136] Mandel J, Mehta J, Hafer R, et al. Increased Risk of Cutaneous T-Cell Lymphoma Development after Dupilumab Use for Atopic Dermatitis. Dermatol Ther. 2024;2024:9924306. doi:10.1155/2024/9924306

researchers from Harvard Medical School, Massachusetts General Hospital, Boston Children's Hospital and Perelman School of Medicine at the University of Pennsylvania.[137] Also using data from the TriNetX database, this study followed atopic dermatitis patients over a 2-year period to compare multiple safety endpoints between those treated with Dupixent or Janus kinase inhibitors (JAKi). These researchers excluded patients with a prior diagnosis of certain rheumatic conditions other than atopic dermatitis (alopecia areata, rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, nonradiographic axial spondyloarthritis, ulcerative colitis, Crohn's disease, asthma, prurigo nodularis, chronic sinusitis with nasal polyposis and eosinophilic esophagitis) from their cohort, and used propensity score matching to adjust for age, sex, race, history of hypertension, type 2 diabetes, hyperlipidemia, ischemic heart disease, stroke or chronic kidney disease, comorbid atopic disease (food allergy, allergic rhinitis and asthma) and use of other immunomodulating medications (azathioprine, cyclosporine, methotrexate, and mycophenolate mofetil). Before propensity matching, Dupixent-treated patients exhibited a reduced risk of CTCL (HR 0.81; 95% CI 0.11-6.25) relative to JAKi patients. However, after propensity matching, Dupixent was associated with a 59% increased risk of CTCL

[137] Tsai SY, Phipatanakul W, Hawryluk EB, Oyoshi MK, Schneider LC, Ma KS. Comparative safety of oral Janus kinase inhibitors versus dupilumab in patients with atopic dermatitis: A population-based cohort study. J Allergy Clin Immunol. 2024;154(5):1195-1203.e3. doi:10.1016/j.jaci.2024.07.019

(HR 1.59; 95% CI 0.15-16.67)[138] compared to JAKi, despite lacking statistical significance. A notable strength of this study was the use of JAKi-treated subjects as an active comparator population, which reduced the potential for indication bias, channeling bias and confounding from disease severity.

165. The fifth analytical cohort study (the "Neubauer 2024 research letter") was also conducted using TriNext and published as a short research letter in Journal of the American Academy of Dermatology in September 2024 by independent researchers from Thomas Jefferson University, Columbia University and Weill Cornell Medicine, and two KOLs retained by Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi.[139] As made apparent by the authors, this research letter was submitted in response to the Hasan 2024 study which reported a statistically significant increased risk of CTCL among atopic dermatitis patients treated with Dupixent. This study used a 5-year follow-up period to compare risk of CTCL among atopic dermatitis patients initially treated with Dupixent or 3 alternative therapies. This study reported a non-significantly elevated risk of CTCL with Dupixent when compared to initial treatment with oral prednisone (OR 1.834;

[138] This study compared JAKi patients *to* Dupixent patients. These HRs and 95% CIs are the inverse of those presented in the publication, reflecting the risk of CTCL when comparing Dupixent patients *to* JAKi patients.

[139] Neubauer ZJK, Brunner PM, Geskin LJ, Guttman E, Lipner SR. Decoupling the association of dupilumab with cutaneous T-cell lymphoma. J Am Acad Dermatol. 2024;91(6):1296-1298. doi:10.1016/j.jaad.2024.08.057

95% CI 0.908-3.708), a non-significantly reduced risk compared to initial treatment with cyclosporine (OR 0.833; 95% CI 0.419-1.654) and a significantly reduced risk of CTCL compared to initial treatment with methotrexate (OR 0.512; 95% CI 0.295-0.892), adjusting for age, sex and race though propensity score matching. Of note, the Dupixent group in this study was comprised exclusively of patients using Dupixent off-label as a first-line, initial therapy. Relatedly, as the exposure assignment reflected only the first therapy prescribed after atopic dermatitis diagnosis without considering or adjusting for subsequent use of different medications, it is likely many subjects in the alternative therapy groups, especially in more severe cases, actually used multiple therapies including Dupixent at some point during the study period, biasing point estimates towards the null or reversing their direction entirely.

166. The sixth analytical cohort study (the "Sheng-Kai Ma 2025 study") was published in June 2025 in the European Respiratory Journal by researchers from Harvard Medical School, Massachusetts General Hospital, Boston Children's Hospital and Harvard T.H. Chan School of Public Health.[140] These researchers used data from TriNetX to compare hematological malignancy risk among asthma patients initiating treatment with Dupixent or combination inhaled corticosteroids

[140] Sheng-Kai Ma K, Brumbaugh B, Saff RR, et al. Dupilumab and lymphoma risk among patients with asthma: a population-based cohort study. Eur Respir J. 2025 (Ahead-of-Print). doi:10.1183/13993003.00139-2025

and long-acting beta agonists (ICS/LABA) while excluding patients with a history of atopic dermatitis. Before adjustment, Dupixent-treated asthma patients had a significantly increased risk of CTCL (HR 5.97; 95% CI 2.75-12.97), Mycosis fungoides and Sézary syndrome (HR 5.62; 95% CI 2.72-11.59) and peripheral T-cell lymphoma (HR 5.61; 95% CI 2.71-11.59) compared to ICS/LABA asthma patients. A greedy nearest-neighbor propensity score matching algorithm was used to control for age, sex, socioeconomic status, comorbidities, concomitant medications, substance use and healthcare utilization prior to treatment initiation. Results were nearly identical after propensity score matching, with a significant increased risk of CTCL (HR 5.63; 95% CI 1.16-27.37), Mycosis fungoides and Sézary syndrome (HR 5.79; 95% CI 1.22-27.42) and peripheral T-cell lymphoma (HR 6.14; 95% CI 1.29-29.17) among Dupixent patients. Dupixent was also associated with a higher risk of any lymphoma (HR 1.79; 95% CI 1.19-2.71) and combined mature T and NK cell lymphomas (HR 4.58; 95% CI 1.82-11.53). In a sensitivity analysis among subjects with at least 16 weeks of exposure to their respective drug, crude risk estimates comparing asthma patients treated with Dupixent to asthma patients treated with ICS/LABA increased for CTCL (HR 6.79; 95% CI 2.73-16.85) and peripheral T-cell lymphoma (HR 10.55; 95% CI 4.51-24.70) and remained similar for Mycosis fungoides and Sézary syndrome (HR 5.36; 95% CI 2.17-13.24). After propensity score matching there was an insufficient number of cases in the ICS/LABA group to

calculate HRs, but log-rank tests demonstrated significantly different survival curves between dupilumab and ICS/LABA groups. The risk estimate for combined mature T and NK cell lymphomas increased considerably (HR 15.63; 95% CI 1.99-122.76) after propensity score matching in this subgroup, indicating Dupixent-treated asthma patients were at a 1,463% increased risk of these cancers compared to ICS/LABA-treated asthma patients.

167. With the exception of the single paper published by Defendants' retained KOLs, each of the forgoing analytic cohort studies reported a strong and consistent increased risk of CTCL with the use of Dupixent in patients with atopic dermatitis and asthma, with several also evidencing a positive dose-response relationship between Dupixent and CTCL.

d. Disproportionality Analyses

168. The FDA and all major foreign health authorities collect spontaneous reports involving adverse drug events, medication errors and product quality issues submitted by patients, healthcare providers and sponsors of pharmaceutical products. In the United States, the FDA collects and stores these reports in the FDA Adverse Event Reporting System (FAERS). It is mandatory for pharmaceutical sponsors to timely submit any adverse events it receives to the FDA. Patients and healthcare providers submit reports on a voluntary basis, either directly to the FDA or to pharmaceutical companies who are then required to forward them to the FDA.

These reports are coded using the Medical Dictionary for Regulatory Activities (MedDRA), a formal, hierarchical language which assigns specific reaction preferred terms to reported adverse events.

169. Spontaneous adverse events serve as a foundation for the detection of emerging safety signals for pharmaceutical products. Pharmaceutical sponsors and independent researchers commonly analyze adverse events using statistical measures that quantify the degree of disproportionality between observed and expected reporting frequencies of drug-event combinations. Two common disproportionality statistics include the reporting odds ratio (ROR) and proportional reporting ratio (PRR), which are interpreted in a similar manner to that of the odds ratio and risk ratio, respectively. The higher the ROR or PRR, the greater the extent to which the reporting of a given adverse event is observed to be disproportionately reported with a given drug. Like odds ratios and risk ratios, RORs and PRRs are typically accompanied by 95% confidence intervals to indicate precision and statistical significance of the disproportionality estimate. A report of an adverse event necessarily comes with it suspicion that there is an association between the drug used and event experienced. Reporters indicate the suspected role of a drug in an observed adverse event using one of the following designations: primary suspect, secondary suspect, concomitant or interacting product. A primary suspect product is one which the reporter believes is most likely responsible for the observed adverse

event. A secondary suspect product is one which the reporter believes may have contributed to the observed adverse event, but which is less likely to be responsible than the drug designated the primary suspect. Concomitant products are generally not suspected to have contributed to the observed adverse event, while interacting products may have contributed to the observed adverse event by interacting with a primary or secondary suspect product.

170. To date, five published disproportionality analyses have reported a positive safety signal for CTCL in association with Dupixent based on postmarketing adverse event reports.

171. The first disproportionality analysis (the "Mota 2023 study") was initially published as a preprint on the online preprint server Authorea on August 1, 2022 and subsequently in Allergy: European Journal of Allergy and Clinical Immunology on December 26, 2022 after undergoing peer review.[141] In this study, researchers from Portugal analyzed data from VigiBase, the pharmacovigilance database maintained by the World Health Organization, to investigate potential safety signals for various cancers with therapeutic biologics targeting IL-5 and IL-4 receptor alpha based on postmarketing adverse event reporting. Based on reports submitted to VigiBase between 2008 and 2020, this study identified a positive

[141] Mota D, Rama TA, Moreira A. Real-world evidence on the risk of cancer with anti-IL-5 and anti-IL-4Ra biologicals. Allergy. 2023;78(5):1375-1377. doi:10.1111/all.15628

disproportionality signal for CTCL with Dupixent as reflected by a statistically significant ROR of 11.11 (95% CI 6.77-18.23). This finding indicates patients were over 10 times more likely to report CTCL as an adverse event with Dupixent than other medications between 2008 and 2020.

172. The second disproportionality analysis (the "Lavin 2025 study") was published by researchers from Memorial Sloan Kettering Cancer Center in the Journal of Investigative Dermatology on June 28, 2024.[142] This study utilized data from FAERS to evaluate CTCL reporting with Dupixent and other biologics used in the treatment of dermatological conditions, and performed separate analyses of reports submitted involving a single medication (monotherapy analysis) and reports involving multiple suspect medications (polytherapy analysis). Ultimately, in analyzing adverse event reports submitted to the FDA between the first quarter of 2017 and fourth quarter of 2024, these researchers observed significant signals of disproportionate CTCL reporting with Dupixent in both monotherapy (ROR 8.81; 95% CI 7.10-10.90) and polytherapy (ROR 10.35; 95% CI 8.50-12.60) analyses. These results demonstrate Dupixent was approximately 8 to 10 times as likely to be identified as a primary suspect product in CTCL adverse event reports submitted

[142] Lavin L, Dusza S, Geller S. Cutaneous T-Cell Lymphoma after Dupilumab Use: A Real-World Pharmacovigilance Study of the FDA Adverse Event Reporting System. J Invest Dermatol. 2025;145(1):211-214.e1. doi:10.1016/j.jid.2024.06.1272

between 2017 and 2024 as compared to other medications.

173. The third disproportionality analysis (the "Cabrera-Perez 2025 study") also used data from FAERS and was published in The Journal of Allergy and Clinical Immunology by researchers from Brigham & Women's Hospital, Harvard Medical School, Dana-Farber Cancer Institute, UMass Chan Medical School, Massachusetts General Hospital and Massachusetts Institute of Technology on November 7, 2024.[143] In evaluating MedDRA preferred terms for individual stages of CTCL, these researchers observed extremely strong disproportionality signals with Dupixent for CTCL (PRR 29.96; 95% CI 25.02-35.87), CTCL stage I (PRR 277.00; 95% CI 118.41-648.03), CTCL stage II (PRR 103.26; 95% CI 41.20-258.82), CTCL stage III (PRR 383.54; 95% CI 115.49-1,273.73) and CTCL stage IV (PRR 1,246.52; 95% CI 281.29-5,523.87) based on reporting to FAERS between the first quarter of 2017 and fourth quarter of 2024. The findings of this disproportionality analysis indicate that various stages of CTCL were anywhere from 29 to over 1,200 times more likely to be reported to FAERS in association with Dupixent than other medications between 2017 and 2024.

174. The fourth disproportionality analysis (the "Gao 2025 study") was

[143] Cabrera-Perez JS, Carey VJ, Odejide OO, et al. Integrative epidemiology and immunotranscriptomics uncover a risk and potential mechanism for cutaneous lymphoma unmasking or progression with dupilumab therapy. J Allergy Clin Immunol. 2025;155(5):1584-1594. doi:10.1016/j.jaci.2024.10.028

published in Scientific Reports in March 2025 by researchers from Jiangyin People's Hospital in China.[144] Utilizing FAERS data covering the second quarter of 2017 through the fourth quarter of 2023, this study identified significant safety signals for CTCL stage III (ROR 35.83; 95% CI 13.89-92.43) and CTCL stage IV (ROR 33.78; 95% CI 16.52-69.11) among reports in which Dupixent was identified as a primary suspect product. These results indicate Dupixent was over 30 times more likely than other medications to be identified as a primary suspect product in cases of CTCL stage III and IV reported to FAERS between 2017 and 2023.

175. In August 2025, the fifth analysis highlighting a disproportionality signal for CTCL with Dupixent (the "Zhou 2025 study") was published in the European Journal of Pharmacology.[145] Researchers analyzed adverse event reporting to FAERS between the second quarter of 2017 and fourth quarter of 2024, and stratified reporting by age group (children < 18 years old and adults ≥ 18 years old). Among adults, a strong signal for CTCL stage III and CTCL stage IV reporting was observed with Dupixent, as indicated by RORs of 28.10 (95% CI 13.38-59.02) and 31.11 (95% CI 14.68-65.93), respectively. Consistent with prior disproportionality

[144] Gao H, Cao L, Liu C. Analysis and mining of Dupilumab adverse events based on FAERS database. Sci Rep. 2025;15(1):8597. doi:10.1038/s41598-025-92330-z

[145] Zhou J, Xie Y, Du P, Chen M, Liu X. Analysis of differences in dupilumab-associated adverse drug event signals between children and adults based on the FAERS database. Eur J Pharmacol. 2025;1005:178103. doi:10.1016/j.ejphar.2025.178103

analyses, the findings of this study show CTCL stage III and IV were approximately 30 times more likely to be reported to FAERS with Dupixent among adults between 2017 and 2024.

e. Spontaneous Postmarketing Adverse Events

176. The foregoing published case reports, case series, cohort studies and disproportionality analyses were not the first sources of notice to Defendants that CTCL was a serious problem with Dupixent following its approval for marketing in the United States by the FDA. Indeed, a review of the FAERS database reveals Defendants received numerous spontaneous postmarketing adverse events of CTCL developing in patients after starting treatment with Dupixent.

177. On March 6, 2018, Defendants received the first postmarketing adverse event involving CTCL associated with Dupixent use. In this case, CTCL developed in a 42-year-old female after starting Dupixent for atopic dermatitis, with CTCL coded under the MedDRA preferred terms Cutaneous T-cell lymphoma and Mycosis fungoides (Manufacturer Control # US-SA-2018SA070308; FDA Case ID 14631226). This case was submitted to Defendants by a physician in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the Mycosis fungoides reaction and the secondary suspect product in the Cutaneous T-cell lymphoma reaction.

178. On May 31, 2018, Defendants received another postmarketing adverse

event involving CTCL in a 49-year-old female after starting Dupixent for atopic dermatitis, coded under the MedDRA preferred terms Cutaneous lymphoma and Anaplastic large cell lymphoma T- and null-cell types (Manufacturer Control # FR-SA-2018SA152895; FDA Case ID 14996226). This case was submitted to Defendants by a physician in France, and the outcome was coded as involving hospitalization, life-threatening and other serious outcomes. Dupixent was coded the primary suspect product in each of the CTCL reactions. In assessing causality, the reporting physician considered the patient's CTCL to be related to her use of Dupixent.

179. On June 7, 2018, Defendants received another postmarketing adverse event involving T-cell lymphoma in a 58-year-old male after starting Dupixent for atopic eczema, coded under the MedDRA preferred term T-cell lymphoma (Manufacturer Control # DE-SA-2018SA154104; FDA Case ID 15017896). This case was retrieved by Defendants from the EudraVigilance database after being submitted by a physician in Germany, and the outcome was coded as involving life-threatening outcomes. Dupixent was coded the primary suspect product in the reaction.

180. On June 20, 2018, Defendants received another postmarketing adverse event involving T-cell lymphoma in a female patient of unspecified age after starting Dupixent, coded under the MedDRA preferred term T-cell lymphoma (Manufacturer

Control # US-SA-2018SA168847; FDA Case ID 15657049). This case was submitted to Defendants by a consumer in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the reaction. Defendants determined that the T-cell lymphoma in this case was related to Dupixent.

181. On June 20, 2018, Defendants received another postmarketing adverse event involving CTCL in a female patient of unspecified age after starting Dupixent, coded under the MedDRA preferred term Cutaneous lymphoma (Manufacturer Control # US-SAKK-2018SA168812AA; FDA Case ID 15662436). This case was submitted to Defendants by a healthcare professional in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the CTCL reaction. Defendants determined that the CTCL in this case was related to Dupixent.

182. On June 28, 2018, Defendants received another postmarketing adverse event involving CTCL in a 49-year-old female after starting Dupixent for atopic dermatitis, coded under the MedDRA preferred term Cutaneous lymphoma (Manufacturer Control # FR-SA-2018SA177287; FDA Case ID 15120678). This case was retrieved by Defendants from the EudraVigilance database after being submitted by a physician in France, and the outcome was coded as involving hospitalization and other serious outcomes. Dupixent was coded the primary suspect

product in the CTCL reaction.

183. On July 19, 2018, a pharmacist in the United States submitted a postmarketing adverse event directly to the FDA involving CTCL in a 60-year-old male after starting Dupixent, coded under the MedDRA preferred term Cutaneous lymphoma (FDA Case ID 15261101). An outcome code was not provided. Dupixent was coded the primary suspect product in the CTCL reaction.

184. On August 27, 2018, Defendants received another postmarketing adverse event involving CTCL in a 71-year-old male patient after starting Dupixent for atopic dermatitis, coded under the MedDRA preferred term Cutaneous T-cell lymphoma (Manufacturer Control # US-SAKK-2018SA241856AA; FDA Case ID 15361034). This case was submitted to Defendants by a physician in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the CTCL reaction.

185. On September 21, 2018, Defendants received another postmarketing adverse event involving CTCL in a female patient of unspecified age after starting Dupixent for atopic dermatitis, coded under the MedDRA preferred terms Cutaneous T-cell lymphoma, Mycosis fungoides and T-cell lymphoma (Manufacturer Control # US-SA-2018SA266899; FDA Case ID 15453098). This case was submitted to Defendants by a healthcare professional in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect

product in each of the CTCL reactions.

186. On October 23, 2018, Defendants received another postmarketing adverse event involving CTCL in a 69-year-old male patient after starting Dupixent for atopic dermatitis, coded under the MedDRA preferred term Cutaneous T-cell lymphoma (Manufacturer Control # DE-SA-2018SA294020; FDA Case ID 15659024). This case was submitted to Defendants by a physician in Germany, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the CTCL reaction.

187. On November 16, 2018, Defendants received another postmarketing adverse event involving CTCL in a 60-year-old male patient after starting Dupixent, coded under the MedDRA preferred term Cutaneous lymphoma (Manufacturer Control # US-SA-2018SA320596; FDA Case ID 15657860). This case was submitted to Defendants by a consumer in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the CTCL reaction.

188. Ten of the foregoing 11 spontaneous postmarketing adverse event reports of CTCL developing in patients after starting Dupixent were received by Defendants before the publication of the case report by Bozon and colleagues on November 30, 2018, with 1 additional adverse event report being submitted directly to the FDA. Defendants would have expeditiously received a copy of the single

report submitted directly to the FDA if they were participants in the FDA's MedWatch-to-Manufacturer program, still in effect at the time this adverse event was reported.

189. Four additional spontaneous postmarketing adverse event reports of CTCL in patients treated with Dupixent were received by Defendants between the November 30, 2018 publication of Bozon et al. and the publication of the case report by Chiba and colleagues on May 2, 2019.

190. On January 17, 2019, Defendants sent the FDA another postmarketing adverse event it had received involving CTCL in a 62-year-old male after starting Dupixent, coded under the MedDRA preferred term Mycosis fungoides (Manufacturer Control # US-SAKK-2019SA011181AA; FDA Case ID 15837889). This case was submitted to Defendants by a physician in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the CTCL reaction.

191. On March 7, 2019, Defendants received another postmarketing adverse event involving CTCL in a 60-year-old male after starting Dupixent for atopic eczema, coded under the MedDRA preferred terms Cutaneous T-cell lymphoma stage IV and Mycosis fungoides stage IV (Manufacturer Control # 2019SA065205). According to the narrative, this patient experienced "[r]apid progression of [M]ycosis fungoides to stage 4 disease,exacerbation of T-cell lymphoma,rapid

progression of ctcl with systemic spread(developed greater than 50 cutaneous tumours)", with "[t]umours popping up daily- very aggressive with rapid progression", and the causal relationship between Dupixent and the reported reaction was considered "probable". The outcome in this case was coded as involving hospitalization, disability, life-threatening and other serious outcomes, and Dupixent was coded the primary suspect product in each of the CTCL reactions.

192. On March 12, 2019, Defendants received another postmarketing adverse event involving CTCL in a male patient of unspecified age after starting Dupixent for atopic dermatitis, coded under the MedDRA preferred terms Cutaneous T-cell lymphoma and Mycosis fungoides (Manufacturer Control # CA-SA-2019SA071375; FDA Case ID 16089199). This case was submitted to Defendants by a physician in Canada, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the CTCL reaction.

193. On April 22, 2019, Defendants received another postmarketing adverse event involving CTCL in a male patient of unspecified age after starting Dupixent for asthma and allergic eczema, coded under the MedDRA preferred term Cutaneous T-cell lymphoma (Manufacturer Control # US-SA-2019SA116239; FDA Case ID 16243025). This case was submitted to Defendants by a consumer in the United States, and the outcome was coded as involving other serious outcomes. Dupixent was coded the primary suspect product in the CTCL reaction.

194. After Chiba and colleagues published their case report, spontaneous postmarketing adverse event reports of CTCL developing in patients after starting Dupixent continued to pile up. Ten additional postmarketing adverse event reports of CTCL developing in patients after starting Dupixent were received by Defendants between May 2, 2019 and September 24, 2019, the date Poyner and colleagues presented their case report, Yoo et al. presented their case report and Amitay-Laish and colleagues presented their descriptive study at the 2019 Cutaneous Lymphoma Task Force Meeting of the European Organisation for Research and Treatment of Cancer.

195. At least 17 further postmarketing adverse event reports of CTCL developing in patients after starting Dupixent were received by Defendants and forwarded to FDA between September 24, 2019 and the publication of the case series by Espinosa and colleagues on March 27, 2020.

196. Through the end of 2020, at least 23 more postmarketing adverse event reports of CTCL developing in patients after starting Dupixent were received by Defendants and forwarded to FDA.

197. In the following years, a steady stream of CTCL adverse events in patients taking Dupixent continued to flow in. Upon information and belief, over 200 such cases were reported to the Defendants by the end of 2024.

198. These adverse event numbers have been reported, although based on

well-established principles, these numbers vastly underestimate the true number of CTCL events occurring with Dupixent use. Additionally, as FDAS has made clear in its Guidance to Industry, even a single well-documented post-marketing adverse event report can constitute a safety signal requiring action by the manufacturer, including a potential label change, particularly if the report involves an event that is extremely rare in the absence of drug use.

199. Importantly, the above-referenced figures exclude any CTCL adverse event reports associated with Dupixent that were received by Defendants via solicited reporting and/or that Defendants submitted to the FDA via periodic summary reporting and/or that Defendants failed to submit to the FDA. Thus, the true number of CTCL adverse events that have been reported to Defendants in association with Dupixent, along with the dates on which Defendants first learned of any such reports, remain unknown.

200. Many of the aforementioned adverse event reports contained causal attributions to Dupixent use by the reporting physicians.

f. Mechanistic Research

201. Defendants did not conduct any experimental carcinogenicity studies of Dupixent in any animal species prior to its approval by FDA for marketing in the

United States.[146] Upon information and belief, since receiving approval for marketing in the United States, Defendants still have not conducted any formal testing to evaluate the carcinogenic properties of Dupixent. Similarly, upon information and belief, Defendants have failed to conduct any formal testing to identify potential mechanisms through which Dupixent exposure might cause "unmasking" or severe and rapid progression of subclinical CTCL.

202. Defendants' failure to allocate resources towards studying causal mechanisms of Dupixent-induced CTCL is despite multiple calls to conduct such testing from independent researchers (e.g. "We believe that this relationship deserves a dedicated biological study";[147,148] "current hypotheses still require further validation through in vivo and in vitro experiments, as well as patient sequencing data"[149]) and even Defendants' own paid KOLs ("More studies should be conducted

---

[146] Center for Drug Evaluation and Research. Pharmacology Reviews: Dupixent (dupilumab). Application Number 761055. U.S. Food and Drug Administration. March 2017

[147] Stuver R, Dusza S, Epstein-Peterson ZD, Ghione P, Johnson W, Moskowitz A, Myskowski P, Pulitzer M, Horwitz SM, Geller S. Cutaneous T-Cell Lymphoma and Dupilumab Use: A Retrospective Matched Cohort Study of Clinical Characteristics and Treatment Outcomes. Blood. 2023;142:6184

[148] Stuver R, Dusza S, Epstein-Peterson ZD, et al. Cutaneous T-cell lymphoma and dupilumab use: A retrospective matched cohort study of clinical characteristics and treatment outcomes. J Eur Acad Dermatol Venereol. 2025;39(2):e114-e117. doi:10.1111/jdv.20141

[149] Li M, Zhao W, Lai P, Xiao Y, Wang Y. Dupilumab-associated lymphoproliferative disorders: a comprehensive review on clinicohistopathologic features and underlying mechanisms. Curr Opin Immunol. 2025;94:102563. doi:10.1016/j.coi.2025.102563

to investigate the association of CTCL with dupilumab therapy, as the currently available data is not sufficient to identify the mechanistic relationship clearly"[150]). Defendants' KOLs even suggested establishing a dedicated database to provide "comprehensive data on clinical features histology, and outcomes of dupilumab-associated CTCL… given the widespread use of dupilumab", yet upon information and belief, Defendants have failed to support any such initiative.[151]

203. As a result of Defendants' failures, the exact mechanism through which Dupixent causes or contributes to the development of CTCL has not yet been discovered. Nonetheless, a causal relationship between use of Dupixent and development or "unmasking" of CTCL is biologically plausible, and is supported by various lines of clinical and non-clinical research.

204. In the presence of inaction by Defendants to perform necessary testing and research to better understand pathological processes underlying Dupixent-induced CTCL, independent researchers and clinicians have endeavored to investigate plausible mechanisms through which Dupixent can cause CTCL or lead to "unmasking" or severe and rapid progression of subclinical CTCL.

---

[150] Francuzik W, Alexiou A, Worm M. Safety of dupilumab in patients with atopic dermatitis: expert opinion. Expert Opin Drug Saf. 2021;20(9):997-1004. doi:10.1080/14740338.2021.1939673

[151] Beylot-Barry M, Staumont-Salle D. Cutaneous T-Cell Lymphoma and Dupilumab Use: A Multifactorial and Complex Story. J Invest Dermatol. 2025;145(1):9-11. doi:10.1016/j.jid.2024.08.015

205. IL-4 and IL-13, the two primary targets of Dupixent, have been implicated in the pathogenesis of CTCL, with IL-13 and its receptors being highly expressed in the clinically involved skin of CTCL patients.[152,153] Malignant Sézary cells have also been shown to have a T helper 2 cytokine fingerprint with a predominance of IL-13 in addition to IL-4, IL-5 and IL-10.[154] According to one leading theory that has been proposed by researchers, Dupixent's blocking of IL-4 receptor alpha results in increases in the amount of free IL-13, while keratinocytes which would normally act as a sink to absorb excess IL-13 in atopic conditions are also blocked by Dupixent. Consequently, the unbound IL-13 is available to bind at the upregulated IL-13 receptor alpha 2 site on cells and support proliferation of

[152] Geskin LJ, Viragova S, Stolz DB, Fuschiotti P. Interleukin-13 is overexpressed in cutaneous T-cell lymphoma cells and regulates their proliferation. Blood. 2015;125(18):2798-2805. doi:10.1182/blood-2014-07-590398

[153] Mazzetto R, Miceli P, Tartaglia J, Ciolfi C, Sernicola A, Alaibac M. Role of IL-4 and IL-13 in Cutaneous T Cell Lymphoma. Life (Basel). 2024;14(2):245. Published 2024 Feb 9. doi:10.3390/life14020245

[154] Francuzik W, Alexiou A, Worm M. Safety of dupilumab in patients with atopic dermatitis: expert opinion. Expert Opin Drug Saf. 2021;20(9):997-1004. doi:10.1080/14740338.2021.1939673

neoplastic T cell clones into full-blown lymphoma.[155,156,157,158] This is important because prior research has identified multiple mechanisms through which free IL-13 can promote growth or survival of certain tumors through direct action on the tumor or suppression of immunosurveillance.[159] Of note, a similar mechanism for off-target effects of free IL-15 in the setting of an inadequate IL-15 sink has also been described in the literature.[160,161] Another theory posits that pre-existing chronic skin inflammation, when exposed to a Dupixent-induced immunomodulatory shift,

[155] Cabrera-Perez JS, Carey VJ, Odejide OO, et al. Integrative epidemiology and immunotranscriptomics uncover a risk and potential mechanism for cutaneous lymphoma unmasking or progression with dupilumab therapy. J Allergy Clin Immunol. 2025;155(5):1584-1594. doi:10.1016/j.jaci.2024.10.028

[156] Guglielmo A, Borghi A, Schettini N, et al. Mycosis fungoides and IL-4/13 inhibitors: what is known and unmet needs. Expert Rev Clin Immunol. 2025;21(6):723-729. doi:10.1080/1744666X.2025.2507332

[157] Li M, Zhao W, Lai P, Xiao Y, Wang Y. Dupilumab-associated lymphoproliferative disorders: a comprehensive review on clinicohistopathologic features and underlying mechanisms. Curr Opin Immunol. 2025;94:102563. doi:10.1016/j.coi.2025.102563

[158] Ong PY. Is dupilumab use in atopic dermatitis associated with cutaneous T-cell lymphoma?. J Allergy Clin Immunol. 2025;155(5):1481-1482. doi:10.1016/j.jaci.2025.02.002

[159] Geskin LJ, Viragova S, Stolz DB, Fuschiotti P. Interleukin-13 is overexpressed in cutaneous T-cell lymphoma cells and regulates their proliferation. Blood. 2015;125(18):2798-2805. doi:10.1182/blood-2014-07-590398

[160] Fehniger TA, Caligiuri MA. Interleukin 15: biology and relevance to human disease. Blood. 2001;97(1):14-32. doi:10.1182/blood.v97.1.14

[161] Ma S, Caligiuri MA, Yu J. Harnessing IL-15 signaling to potentiate NK cell-mediated cancer immunotherapy. Trends Immunol. 2022;43(10):833-847. doi:10.1016/j.it.2022.08.004

might promote T-cell clone emergence leading to CTCL development.[162] Researchers have also proposed that Dupixent may act as a trigger for the progression of initially benign lymphoid infiltrates leading to the clonal expansion of T lymphocytes and their subsequent malignant transformation.[163] Several additional hypotheses, including those centering around altered dendritic cell composition and cytokine alteration, among others, have also been proposed. Additionally, in rodent studies, inoculation with IL-4-producing tumor cells demonstrated rejection and long-lasting antitumor immunity, suggesting blocking IL-4 signaling may have a negative impact on tumor immunity.[164]

206. More recently, researchers performed single-cell sequencing on peripheral blood mononuclear cells sampled from an atopic dermatitis patient who developed CTCL with severe blood involvement after 3 months of Dupixent treatment.[165] These researchers subjected the peripheral blood mononuclear cells to

---

[162] Beylot-Barry M, Staumont-Salle D. Cutaneous T-Cell Lymphoma and Dupilumab Use: A Multifactorial and Complex Story. J Invest Dermatol. 2025;145(1):9-11. doi:10.1016/j.jid.2024.08.015

[163] Sokumbi O, Shamim H, Davis MDP, Wetter DA, Newman CC, Comfere N. Evolution of Dupilumab-Associated Cutaneous Atypical Lymphoid Infiltrates. Am J Dermatopathol. 2021;43(10):714-720. doi:10.1097/DAD.0000000000001875

[164] Sugaya M. Is blocking IL-4 receptor alpha beneficial for patients with mycosis fungoides or Sézary syndrome?. J Dermatol. 2021;48(5):e225-e226. doi:10.1111/1346-8138.15834

[165] Li M, Xiao Y, Jiang Y, Wang Y. 0912: Dupilumab unmasking cutaneous γδ T cell lymphoma through promoting tumorous T cell aggressiveness and microenvironment reprogramming. J Invest Dermatol. 2025;145(8):S158. doi:10.1016/j.jid.2025.06.928

treatment with IL-4 and IL-13, with and without Dupixent, to explore underlying mechanisms of Dupixent and its target cytokines in CTCL pathogenesis. Dupixent was observed to reduce IL-4 receptor expression and increase IL-13 receptor alpha 1 expression in corresponding cell types. Notably, researchers found that Dupixent treatment significantly increased the proliferation of tumorous T cells, and that those tumorous T cells exhibited a markedly higher gamma-delta T-cell aggressive score and upregulated exhaustion markers. Similarly, the interferon response pathway in cells, known to be associated with aggressiveness and poor prognosis in gamma-delta T-cell lymphoma, was enriched after Dupixent treatment. Furthermore, Dupixent was observed to upregulate several genes in monocytes that are known to promote tumor progression. Ultimately, these researchers determined their case served to provide "evidence that dupilumab promotes tumor progression in T cell lymphoma".

207. The aforementioned data and information that was received prior to Plaintiff's use of Dupixent as outlined in this Complaint constitutes newly acquired information pursuant to C.F.R. § 601.12 (f)(6), which supported a label change to Dupixent in order to properly warn about CTCL with Dupixent use.

G. Defendants' Reaction to Negative Research

208. In response to research identifying a strong causal connection between Dupixent and CTCL, Defendants did not express concern for patient safety or

commit to taking necessary actions to protect patients and develop a better understanding of this relationship. Instead, Defendants launched an aggressive publishing campaign to assuage fears among patients and healthcare providers that might otherwise lead to a reduction in prescriptions for Dupixent. Defendants' employees, along with KOLs paid by Defendants, published original studies and wrote multiple letters to editors of journals that had published research concerning Dupixent and CTCL in order to sow doubt into the findings of these studies and to shape a narrative that would deflect attention from Dupixent and redirect blame for the observed CTCL risk to an alternative culprit: atopic dermatitis itself. Defendants would also attempt to direct blame for CTCL to physicians despite prescribing Dupixent in accordance with the information and directions supplied by Defendants, and to further suggest that many CTCL diagnoses in Dupixent-treated patients were actually a benign, reversible reaction and not CTCL.

209. Defendants' employees and Defendants' retained KOLs submitted two letters to the editor of the Journal of the American Academy of Dermatology in response to the Hasan 2024 study, the first cohort study reporting a statistically significant increased risk of CTCL with Dupixent use.

210. The first letter was published on August 24, 2024 and co-authored by Yung-Tsu Cho, MD, PhD, who served as a sub-investigator for Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC and received speaker

fees from Defendant, Sanofi-Aventis U.S. LLC, and Chia-Yu Chu, MD, PhD, who served as a sub-investigator for Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC, served as a consultant/advisory board member for Defendant, Sanofi-Aventis U.S. LLC, and received speaker fees from Defendant, Sanofi-Aventis U.S. LLC.[166] In this short letter, these authors argued that the atopic dermatitis population experiences an increased rate of CTCL and other lymphomas irrespective of Dupixent use and suggested it was possible that some proportion of reported CTCL cases in the Hasan study may actually have been lymphoid reactions rather than CTCL. Interestingly, the two publications cited by Cho and Chu in support of their claim that atopic dermatitis patients experience an elevated rate of CTCL were each co-authored by KOLs retained by Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC. They also made certain unfounded assumptions regarding the composition of the study groups without citing any data in support of their position, and ultimately advised fellow dermatologists to observe their patients for the development of certain adverse events rather than to exercise caution in prescribing Dupixent. Although no funding source was claimed, this letter was published Open Access at a price of $4,200.

[166] Cho YT, Chu CY. Response to Hasan et al., "Dupilumab therapy for atopic dermatitis is associated with increased risk of cutaneous T-cell lymphoma: A retrospective cohort study". J Am Acad Dermatol. 2025;92(1):e9-e10. doi:10.1016/j.jaad.2024.06.105

211. The second letter was funded by Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC and published on September 30, 2024.[167] This letter was co-authored by 10 employees of Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC, as follows: Tien V. Nguyen, MD, Andrea Fleisch Marcus, PhD, MPH, Stephane Levy, MD and Marius Ardeleanu, MD of Regeneron Pharmaceuticals Inc., Tarrytown, New York; Sarah-Jo Sinnott, MPharm, PhD, Debra Sierka, PharmD and Ana B. Rossi, MD, CMD of Sanofi, Cambridge, Massachusetts; Anna Coleman, MS of Regeneron Pharmaceuticals Inc., Dublin, Ireland; Carlos Peralta, MD, MBA of Sanofi, Amsterdam, Netherlands; and Prashant Kushwaha, MD of Sanofi, Mumbai, India. After performing what they referred to as a thoughtful evaluation of the study by Hasan and Colleagues, Defendants' employees swiftly proceeded to conclude the study was invalid and reached unsupported conclusions. In support of this position, Defendants' employees claimed that the atopic dermatitis population experiences an increased rate of CTCL, citing the same KOL-authored study relied upon by Cho and Chu and another industry-funded study also co-authored by one of Defendants' KOLs. They also claimed that the comparator group in the Hasan study was

[167] Nguyen TV, Marcus AF, Sinnott SJ, et al. Commentary: Response to "Dupilumab therapy for atopic dermatitis is associated with increased risk of cutaneous T cell lymphoma: A retrospective cohort study". J Am Acad Dermatol. 2025;92(2):e41-e42. doi:10.1016/j.jaad.2024.08.082

inappropriate, based upon their belief that those not treated with Dupixent were more likely to have less severe disease. Relatedly, they further advanced the unfounded assumption that "dupilumab is generally prescribed to patients with chronic, refractory AD", which runs contrary to the clinical treatment guidelines their employers funded that recommend Dupixent as a first-line treatment and advocate for its use in otherwise treatment-naïve patients. Additionally, Defendants' employees expressly claimed that the European Medicines Agency performed a review of CTCL in 2022 and determined "no causal association between dupilumab and CTCL can be established". However, no such conclusion appears in the European Medicines Agency report cited by Defendants' employees. Finally, the authors stated "[a]s of March 28, 2024, ongoing safety surveillance activities for dupilumab have not identified an association with CTCL", and that "the available evidence does not support a causal association between dupilumab and CTCL".

212. Clearly, Defendants' employees took an untenable position as, upon information and belief, Defendants knew, or through the exercise of reasonable diligence should have known at the time this letter was first published that 4 retrospective cohort studies, 2 disproportionality analyses and no fewer than 20 case reports and case series encompassing dozens of patients had been published reporting an association between Dupixent and CTCL. This is, of course, in addition to the cases of CTCL observed during the Dupixent clinical development program,

including the 3 cases reported in the long-term extension trial which published its results on ClinicalTrials.gov in October 2023 and in JAMA Dermatology in July 2024.

213. Defendants doubled down on their misrepresentations in a lengthy review of Dupixent safety data published in the American Journal of Clinical Dermatology in September 2025.[168] This article was co-authored by 1 KOL (Richard G. Langley) and 10 employee-shareholders of Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi, as follows: Guy Gherardi of Sanofi, Reading, UK; Anna Coleman of Regeneron Pharmaceuticals Inc., Dublin, Ireland; Marius Ardeleanu, Stephane Levy, Ashish Bansal, Zhen Chen, Brad Shumel and Faisal A. Khokhar of Regeneron Pharmaceuticals Inc., Tarrytown, New York; Ainara Rodríguez-Marco of Sanofi, Madrid, Spain; and Ana B. Rossi, of Sanofi, Cambridge, Massachusetts. Although Defendants framed this review as being the "most comprehensive dupilumab safety assessment to date for the treatment of moderate-to-severe atopic dermatitis", they instead used it as an opportunity to publicly misrepresent clinical trial data and the safety profile of Dupixent. As an initial matter, Defendants selectively omitted important safety data from the review

[168] Langley RG, Gherardi G, Coleman A, et al. The Safety Data of Dupilumab for the Treatment of Moderate-to-Severe Atopic Dermatitis in Infants, Children, Adolescents, and Adults. Am J Clin Dermatol. 2025;26(6):981-1002. doi:10.1007/s40257-025-00952-w

by focusing only on a subset of the clinical trials that had been completed in the atopic dermatitis development program. Despite substantial evidence of an association between Dupixent and CTCL from 6 retrospective cohort studies, 5 disproportionality analyses and dozens of descriptive cohort studies, case reports, case series and systematic reviews – in addition to being notified by the FDA that the agency had identified a safety signal for CTCL with Dupixent – Defendants boldly, and falsely – and astonishingly, represented " [t]here is currently no evidence associating CTCL and dupilumab treatment". In alignment with their detraction playbook, Defendants then proceeded to blame atopic dermatitis for any reported CTCL risk, downplay the utility of spontaneous adverse event data analysis in postmarketing surveillance and discount any available research concerning Dupixent and CTCL, serially citing their own letter to the editor (Nguyen et al. 2025) and other pieces authored by company KOLs as support for their unsound position. Finally, Defendants utilized a full-page infographic to call attention to the findings of the review, highlighting, among other things, "No increased risk of…cutaneous T-cell lymphoma" with Dupixent.

214. Taking it a step further, two KOLs retained by Defendants, Emma Guttman-Yassky, MD, PhD and Patrick M. Brunner, MD, in conjunction with their colleagues, submitted the Neubauer 2024 research letter discussed *supra* to the Journal of American Dermatology in response to the Hasan 2025 study which was

published on September 7, 2024.[169] Despite expressly claiming no funding sources in the publication, these authors included several statements indicative of strong bias and industry influence. Examples include "[w]e are concerned that this report might negatively influence physicians from prescribing dupilumab, causing more harm than good" and "[a]pproval of dupilumab has been life-changing for AD patients. Concerns over CTCL should not sway dermatologists from utilizing dupilumab for AD, with skin biopsy indicated in equivocal cases." These statements reflect a conspicuous change in tone from the Owji 2023 study, also co-authored by Emma Guttman-Yassky, MD, PhD, which alternatively concluded that CTCL may "prove to be the exception" (to the lack of risk observed for other malignancies) and advised "Given the possible link between CTCL and dupilumab, additional studies evaluating this association are warranted". Of note, during the 24-month period following publication of Owji 2023, Defendants compensated Emma Guttman-Yassky, MD, PhD $130,715 in general payments and $3,572 in research payments along with $1,920,394 in associated research funding according to CMS OpenPayments data. Patrick M. Brunner, MD likewise received $15,359 in general payments from Defendants during this period.

215. Just 12 days prior to the publication of the Neubauer 2024 research

[169] Neubauer ZJK, Brunner PM, Geskin LJ, Guttman E, Lipner SR. Decoupling the association of dupilumab with cutaneous T-cell lymphoma. J Am Acad Dermatol. 2024;91(6):1296-1298. doi:10.1016/j.jaad.2024.08.057

letter, Emma Guttman-Yassky, MD, PhD and her colleagues submitted yet another study investigating malignancies among atopic dermatitis patients treated with Dupixent on August 25, 2024 to The Journal of Allergy and Clinical Immunology: In Practice.[170] Using data from TriNetX, these authors ultimately reported that Dupixent-treated patients had a significantly lower risk of internal malignancy development compared with patients treated with other atopic dermatitis therapies. Oddly, however, these authors claimed there were not enough cases in TriNetX to examine CTCL as a specific endpoint, while nonetheless postulating that patients with severe atopic dermatitis may have a higher baseline lymphoma risk regardless of treatment exposure. Their claim of an inadequate number of CTCL cases is peculiar for several reasons, particularly given that somehow Emma Guttman-Yassky, MD, PhD and colleagues had an adequate number of cases to analyze CTCL as an endpoint when conducting almost the same exact study, at almost the same exact time, in the same database, yet followed patients over a period four times shorter (20 years vs. 5 years) in the Neubauer 2024 research letter. Also curious, senior author Nicholas Gulati, MD, PhD declared no conflicts of interest in the publication despite receiving 31 payments from Defendants, Regeneron Healthcare

[170] Garate D, Thang CJ, Chang CT, et al. Risk of malignancy associated with use of dupilumab versus other treatments in atopic dermatitis patients: A national database analysis. J Allergy Clin Immunol Pract. 2025;13(3):698-701.e1. doi:10.1016/j.jaip.2024.11.015

Solutions, Inc. and Genzyme Corporation in 2023 and 2024 according to CMS OpenPayments data.

216. One month after the publication of the Neubauer 2024 research letter, Patrick M. Brunner, MD, as senior author, submitted a review publication to The Journal of Allergy and Clinical Immunology self-citing his Neubauer research letter to bolster the perceived reliability and reach of the findings.[171] In this review, the authors cite the Hasan 2024 to simply note "[t]here have also been previous studies that associated an increased risk of Cutaneous T-cell lymphoma (CTCL) in patients treated with dupilumab for AD", but without providing any of the results of the study. They also fail to cite the Owji 2023 study, Tsai 2024 study and Mandel 2024 study, all of which similarly identified an increased risk of CTCL in patients treated with Dupixent and had been published by this time. Brunner and his co-authors went on to describe in detail the findings of his research letter that was published the month prior, all while using the term "they" to refer to its authors in attempt to manufacture some perception of independence from the current work. Additionally, the authors made sure to mention that none of the cases of CTCL in the Lavin study reporting a safety signal for CTCL with Dupixent involved patients treated for non-cutaneous indications to suggest atopic dermatitis was driving the apparent CTCL

[171] Meledathu S, Naidu MP, Brunner PM. Update on atopic dermatitis. J Allergy Clin Immunol. 2025;155(4):1124-1132. doi:10.1016/j.jaci.2025.01.013

risk. Notably, although Brunner and his co-authors discussed several classes of available therapies for the treatment of atopic dermatitis throughout their review, CTCL was only referenced in the section describing the only FDA-approved IL-4 receptor alpha inhibitor, Dupixent.

217. Initially submitted on December 31, 2024 and published February 13, 2025 in The Journal of Allergy and Clinical Immunology, an editorial authored by Defendants' KOL Peck Y. Ong, MD sought downplay the safety signal for CTCL with Dupixent reported in the disproportionality analysis by Cabrera-Perez and colleagues.[172] In common refrain with other letters and editorials authored by Defendants' KOLs, Ong carefully noted the Cabrera-Perez et al. "observation that CTCL was reported almost exclusively in patients with AD, but not in those with asthma or other atopic conditions, suggests that dupilumab by itself is not causative of CTCL". Ong also advanced the theory that the CTCL cases in the Cabrera-Perez 2024 study may have actually been benign cutaneous lymphoid reactions that were misdiagnosed as CTCL, relying on another study authored by Defendants' KOLs in support of this proposition. Despite acknowledging the findings of Cabrera-Perez et al. "support a worsening of CTCL with dupilumab use", Ong boldly concluded "[t]here is no evidence that dupilumab causes or leads to the development of CTCL

[172] Ong PY. Is dupilumab use in atopic dermatitis associated with cutaneous T-cell lymphoma?. J Allergy Clin Immunol. 2025;155(5):1481-1482. doi:10.1016/j.jaci.2025.02.002

in AD".

218. Another letter to the editor authored by multiple KOLs retained by Defendants aiming to allay concerns regarding the safety signal for CTCL with Dupixent reported by Lavin and colleagues was published in The Journal of Investigative Dermatology in June 2025.[173] These authors put forward an interesting theory that "[h]eightened vigilance around CTCL shortly after the introduction of dupilumab for AD, may have led to over-reporting by dermatologists", despite the absence of a warning regarding CTCL in the prescribing information for Dupixent or any communications from Defendants regarding a potential relationship between Dupixent and CTCL, in addition to the existence of the well-known phenomenon of significant underreporting of postmarketing adverse events. Although the disproportionality analysis by Lavin et al. covered a period during which Dupixent had been approved for 6 unique indications (5 indications other than atopic dermatitis) in the United States, the authors "suggest[ed] that comparison with drugs not commonly used for AD could be misleading". Again, consistent with previous letters and editorials authored by Defendants' KOLs, these authors commented "[n]one of the CTCL reports in this paper (or other literature) featured dupilumab

[173] James ML, Pink AE, Woolf RT, et al. Response to Lavin et al (2025)'s Paper: Cutaneous T-Cell Lymphoma after Dupilumab Use: A Real-World Pharmacovigilance Study of the FDA Adverse Event Reporting System. J Invest Dermatol. 2025;145(9):2325-2326. doi:10.1016/j.jid.2025.05.022

for asthma", further noting that an "[a]nalysis of associations in such people would be useful, as a lack of signal would further support the association being with AD over drug". These authors additionally pronounced "reports of CTCL in patients with severe AD predate dupilumab and large-scale population-based evidence supports an increased risk of lymphoma in severe AD". However, the only research they could find to support these claims included a 2020 cohort study which specifically excluded patients with CTCL and a small 2004 case series of 4 patients with long-term atopic dermatitis who eventually developed lymphomatoid papulosis or cutaneous anaplastic large cell lymphoma. Ultimately, Defendants' KOLs concluded, "[w]e highlight that no clear causal association has been identified".

219. Next, craftily circumventing the hassles and uncertainties of the peer review process, Defendants leaned on their deep connections with members of scientific journal editorial and advisory boards to dispel CTCL concerns and champion the continued, unfettered use of Dupixent.

220. In September 2025, in response to the methodologically robust study by Sheng-Kai Ma and colleagues identifying a strong, significant association between Dupixent use and CTCL among asthma patients, Defendants' KOL Ian D. Pavord, DM wrote and published an editorial in the European Respiratory Journal.[174]

[174] Davies TJ, Pavord ID. Lymphoma in patients with asthma treated with dupilumab: much ado about nothing?. Eur Respir J. 2025;66(3):2501321. Published 2025 Sep 25. doi:10.1183/13993003.01321-2025

Dr. Pavord, who is also a member of the International Advisory Board for the European Respiratory Journal and a contributor to Defendants' ADVENT platform, acknowledged "dupilumab may be associated with an increased risk of cutaneous lymphoma", while downplaying the magnitude of the observed risk as "very small", asserting that cutaneous lymphomas are "rarely life-threatening" and ultimately characterizing the findings of Sheng-Kai Ma et al (2025) as "much ado about nothing".

221. In October 2025, Tiago Torres, a KOL retained by Defendant, Genzyme Corporation ("Sanofi-Genzyme"), published an editorial in the American Journal of Clinical Dermatology, a journal for which he serves as an Editorial Board member, describing recent research concerning Dupixent and CTCL.[175] As with other pieces authored by Defendants and their KOLs, Dr. Torres casted Dupixent as having "revolutionized" atopic dermatitis treatment while emphasizing that the risk of CTCL should not stop physicians from prescribing Dupixent, in triplicate, as follows: "overstating a malignancy risk could discourage clinicians from prescribing a highly effective and generally well-tolerated therapy, potentially depriving patients of substantial clinical benefit"; "concerns regarding CTCL in the context of dupilumab should not deter the use of a highly effective, safe, and well-tolerated

[175] Torres T. Dupilumab and Cutaneous T-Cell Lymphoma: A Call for Vigilance, Not Alarm. Am J Clin Dermatol. Published online October 22, 2025. doi:10.1007/s40257-025-00991-3

therapy"; and "Does this mean dermatologists should be reluctant to prescribe dupilumab? Certainly not." Nonetheless, Dr. Torres did concede in his editorial that the "CTCL signal" for Dupixent was "potentially real" while also describing various biological mechanisms providing "a plausible link between dupilumab and CTCL risk".

222. Finally, another Defendant-funded KOL and his colleagues argued against a causal link between Dupixent and CTCL in an editorial published in the Journal of Drugs in Dermatology in November 2025.[176] In their editorial, these authors repeatedly mischaracterized evidence concerning CTCL with Dupixent use, referred to findings from high quality epidemiologic studies and well-documented case series as "anecdotal", and concluded that available research did not provide "convincing evidence of causality". Despite acknowledging that causal mechanisms for Dupixent-induced CTCL that have been proposed in the literature "are plausible", the authors suggested atopic dermatitis was more likely responsible for the observed CTCL risk, and ultimately advocated, "we do not believe dupilumab use should be limited due to concern about CTCL risk, particularly given its efficacy in treating chronic inflammatory diseases". Curiously, while expressly declaring he "has no conflicts to disclose" in the disclosures section of this editorial, the senior

[176] Farah M, Zarabian N, Friedman A. Connecting the Plaques: Exploring the Link Between Dupilumab and Cutaneous T-cell Lymphoma. J Drugs Dermatol. 2025;24(11):1148-1149. doi:10.36849/JDD.1125

author Adam Friedman, MD, FAAD has received over $850,000 in general payments from Defendants, including $519,143.97 from Defendant, Genzyme Corporation and $349,501.37 from Regeneron Healthcare Solutions, Inc., the subsidiary of Defendant, Regeneron Pharmaceuticals, Inc.

223. As reflected above, Defendants dedicated considerable time, effort and financial resources to shaping an elaborate narrative that would downplay the risk of CTCL with Dupixent through these publications. At no point did Defendants acknowledge the merits of the findings produced through independent research or take initiative to commit to conducting necessary studies to better understand the pathological mechanisms of Dupixent-induced CTCL or discover why Dupixent triggers rapid and severe progression of subclinical CTCL.

H. Defendants' Labeling and Instructions for Dupixent

224. From its original approval in 2017 to the present, the United States prescribing information for Dupixent has been deficient in that it has failed to provide adequate instructions for its safe prescription and use. At all times relevant hereto, the United States prescribing information for Dupixent has contained **1)** no BOXED WARNING advising patients and their healthcare providers of the risk of CTCL or any other form of cancer with Dupixent treatment; **2)** no warnings in section 5, WARNINGS AND PRECAUTIONS, advising patients and their healthcare providers of the risk of CTCL or any other form of cancer with Dupixent

treatment; **3)** no reference to CTCL in section 6, ADVERSE REACTIONS, advising patients and their healthcare providers that clinically significant CTCL adverse reactions have been reported with the use of Dupixent; **4)** no contraindication for use in patients with a history of CTCL or active CTCL; **5)** no instructions directing healthcare providers to perform adequate testing of patients (through biopsy or other means) to confirm a clinical diagnosis of atopic dermatitis, particularly in equivocal cases, before commencing treatment with Dupixent; **6)** no instructions directing healthcare providers to perform adequate testing of patients (through biopsy, cytometry or other means) to rule out the presence of subclinical or smoldering CTCL before commencing treatment with Dupixent; **7)** no instructions directing healthcare providers to perform regular and continuous monitoring during treatment with Dupixent for the development of signs and symptoms of CTCL and repeat biopsies to detect changes in pathologies during treatment with Dupixent consistent with CTCL development; and **8)** no instructions directing healthcare providers to discontinue use of Dupixent when a patient exhibits signs of non-responsiveness to treatment or worsening of disease, or otherwise develops signs and symptoms consistent with CTCL.

225. Defendants' failure to add the above-referenced information to the United States prescribing information for Dupixent is despite sufficient notice of reasonable evidence of a causal association between Dupixent use and incident

CTCL that would have supported inclusion of this information well before Plaintiff's use of Dupixent.

226. Defendants' failure to appropriately revise the United States prescribing information for Dupixent to reflect the clinically important risk of CTCL with Dupixent treatment continued in the face of mounting evidence from dozens and dozens of postmarketing adverse events, published case reports, published case series, descriptive observational studies, analytic cohort studies and disproportionality analyses.

227. The vast body of scientific evidence discussed *supra* establishes that there exists a strong and consistent causal relationship between the use of Dupixent and incident CTCL, to include both new cases of CTCL and rapid exacerbation of subclinical CTCL, which was known or knowable to Defendants at all times relevant hereto. Further, at all times relevant hereto, numerous practical measures to prevent, mitigate and/or reduce the risk of Dupixent-induced CTCL were known or knowable to Defendants.

228. At all times relevant hereto, Defendants maintained complete responsibility for the content of the United States Prescribing Information for Dupixent.

229. At all times relevant hereto, Defendants were under a duty to advise healthcare providers within Section 5, WARNINGS AND PRECAUTIONS of the

United States Prescribing Information for Dupixent, of clinically significant adverse reactions, including any that are potentially fatal, that are serious even if infrequent or that can be prevented or mitigated through appropriate use of the drug, along with limitations in use imposed by them, associated with the use of Dupixent. (21 CFR 201.57(c)(6)(i)).

230. At all times relevant hereto, Defendants were under a duty to advise healthcare providers within Section 5, WARNINGS AND PRECAUTIONS of the United States Prescribing Information for Dupixent, of laboratory tests that should be performed before, during and after therapy to follow patient responses or identify possible adverse reactions associated with the use of Dupixent. (21 CFR 201.57(c)(6)(iii)).

231. At all times relevant hereto, Defendants were under a duty to advise healthcare providers within a BOXED WARNING in the United States Prescribing Information for Dupixent, of clinically significant adverse reactions, particularly those that may lead to death or serious injury, associated with the use of Dupixent. (21 CFR 201.57(c)(1)).

232. At all times relevant hereto, Defendants were under a duty to promptly revise the United States Prescribing Information for Dupixent to add warnings regarding clinically significant hazards as soon as there is reasonable evidence of a causal association with the drug. (21 CFR 201.57(c)(6)(i)). Importantly, however, a

causal relationship need not have been definitely established in order to add such a warning to the United States Prescribing Information.

233. At all times relevant hereto, through submitting to the FDA a Changes Being Effected (CBE) Supplement, Defendants had available to them the option to unilaterally add new warnings regarding the risk of CTCL to the United States Prescribing Information for Dupixent reflecting newly-acquired information during the postmarketing period evidencing this clinically significant risk. (21 CFR 314.70(c)).

234. Similarly, through submitting a CBE Supplement to the FDA, Defendants had available to them the option to add new contraindications for use of Dupixent in patients without histopathologically confirmed atopic dermatitis or at risk of developing or experiencing exacerbation of subclinical CTCL and/or to add or strengthen instructions concerning dosage and administration of Dupixent that would serve to increase the safety of its use. (21 CFR 314.70(c))

235. Notwithstanding, Defendants chose not to undertake any such actions.

236. Further, at all times relevant hereto, Defendants failed to take other reasonable and prudent steps within their capacity, including, but not limited to sending "Dear Healthcare Provider" (DHCP) letters or issuing and disseminating safety alerts, to advise patients and healthcare providers that Dupixent treatment carries a significant risk of CTCL and to convey appropriate mitigation strategies to

reduce or eliminate the risk of Dupixent-induced CTCL. Similarly, Defendants failed to advise patients and healthcare providers of new research evidencing a significant risk of CTCL with Dupixent use through prudent and reasonable means within their capacity.

I. FDA Identifies Safety Signal for CTCL with Dupixent

237. On January 15, 2025, the FDA notified Defendant, Regeneron Pharmaceuticals, Inc. via email that it identified and began evaluating a newly identified safety signal (NISS) regarding "dupilumab therapy for atopic dermatitis being associated with increased risk of cutaneious T cell lymphoma" on December 26, 2024. The FDA further noted that the agency had classified this NISS as a potential risk and that it was informing Regeneron Pharmaceuticals, Inc. in accordance with the Food and Drug Administration Amendments Act of 2007, the Food Drug & Cosmetic Act and their implementing regulations.[177,178]

238. On March 31, 2025, the FDA published its quarterly report "Potential Signals of Serious Risks/New Safety Information Identified by the FDA Adverse

[177] Center for Drug Evaluation and Research. Manual of Policies and Procedures: MAPP 6700.9: FDA Posting of Potential Signals of Serious Risks Identified by the FDA Adverse Event Reporting System. U.S. Food and Drug Administration. September 9, 2019.
[178] Center for Biologics Evaluation and Research. Standard Operating Procedures and Policies: SOPP 8420: FDAAA Section 921: Posting of Potential Signals of Serious Risk. U.S. Food and Drug Administration. February 27, 2022.

Event Reporting System (FAERS)" for the 4th quarter of 2024.[179] In this report, FDA identified CTCL as a potential signal of a serious risk associated with Dupixent, and noted it was "evaluating the need for regulatory action".

239. As of the filing of this complaint, Defendants have still failed to implement appropriate labeling revisions to add necessary information regarding the risk of CTCL with Dupixent use or appropriate mitigation strategies to reduce or eliminate the risk of Dupixent-induced CTCL.

FACTS SPECIFIC TO PLAINTIFF

240. On or about August 2018, Plaintiff, Wanda Nalls was prescribed Dupixent to treat her atopic dermatitis.

241. Plaintiff, Wanda Nalls used Dupixent in a manner consistent with and as intended by Defendants.

242. In total, Plaintiff, Wanda Nalls used Dupixent from approximately August 2018 to August 2019.

243. In or about December 2018, Plaintiff, Wanda Nalls was diagnosed with CTCL.

[179] October - December 2024 | Potential Signals of Serious Risks/New Safety Information Identified by the FDA Adverse Event Reporting System (FAERS). U.S. Food and Drug Administration. March 31, 2025. https://www.fda.gov/drugs/fdas-adverse-event-reporting-system-faers/october-december-2024-potential-signals-serious-risksnew-safety-information-identified-fda-adverse

244. As a result of Plaintiff's CTCL diagnosis, she has required extensive treatments and the use of medications including electron beam therapy, topical medications, oral medications, and injected/infused medications. Additionally, Plaintiff, Wanda Nalls, has gone through multiple rounds of radiation and chemotherapy.

245. Plaintiff, Wanda Nalls has been advised by her healthcare providers that she will likely require ongoing treatments and healthcare services for CTCL indefinitely. Since her initial diagnosis of CTCL, Plaintiff, Wanda Nalls, has continued to suffer from new tumor growth and symptom progression.

246. Before prescribing and using Dupixent, Plaintiff, Wanda Nalls and Plaintiff's healthcare providers were exposed to Defendants' branded marketing for Dupixent and atopic dermatitis. For example, Plaintiff, Wanda Nalls, was provided with a Dupixent brochure in August 2018 before starting injections.

247. But for Defendants' failure to provide a clear warning regarding the increased risk of CTCL with the use of Dupixent, Plaintiff's physician would not have prescribed her Dupixent and Plaintiff, Wanda Nalls would not have taken Dupixent to treat her atopic dermatitis.

248. Furthermore, Defendants' failure to advise Plaintiff's physician to immediately discontinue Dupixent upon diagnosing CTCL led to Plaintiff's continued treatment with Dupixent and subsequent worsening of CTCL.

249. At the time Plaintiff, Wanda Nalls was first prescribed Dupixent, the available scientific data were adequate to put Defendants on notice that there existed reasonable evidence of causal association between Dupixent and development and progression of CTCL

250. As a direct and proximate result of the dangerous and defective nature of Dupixent as described herein, Plaintiff suffered severe bodily injury, and resulting pain and suffering, disability, disfigurement, mental anguish, loss of capacity for the enjoyment of life, and expense of hospitalization and treatment. The losses are permanent and Plaintiff will continue to suffer the losses in the future.

FIRST CAUSE OF ACTION
STRICT LIABILITY – FAILURE TO WARN

251. Plaintiff incorporates by reference herein each of the allegations heretofore set forth in this Complaint as though fully set forth herein.

252. At all times relevant hereto, Dupixent was defective and unreasonably dangerous when it left the possession of Defendants in that it failed to contain warnings of an adequate or sufficient nature as to alert consumers and physicians, including Plaintiff and Plaintiff's healthcare providers, to the dangerous risks associated therewith, including, but not limited, to its propensity to cause serious and permanent injuries including those which Plaintiff sustained. These risks and dangers were known and/or reasonably knowable by Defendants prior to and during the time which Plaintiff was prescribed and ingested Dupixent.

253. At all times relevant hereto, Defendants failed to provide sufficient warnings and instructions that would have put the general public, including Plaintiff and Plaintiff's physicians, on notice of the dangers and adverse effects caused by administration of Dupixent, including, but not limited to CTCL.

254. Defendants failed to provide warnings of such risks and dangers to Plaintiff and Plaintiff's healthcare providers as described herein, and further, concealed the known risks and dangers and failed to warn of known or scientifically knowable risks and dangers associated with Dupixent from patients, the medical community, and consumers, including Plaintiff, and Plaintiff's healthcare providers.

255. Plaintiff was prescribed and did administer Defendants' Dupixent in a manner consistent with and as intended by Defendants.

256. Ordinary patients and consumers, such as Plaintiff, could not have discovered or recognized any relevant potential risks and dangerous defects in Defendants' Dupixent through the exercise of reasonable care within their capacity.

257. Defendants, as entities materially involved in the development, testing, manufacture, sale and/or distribution of Dupixent, are held to the level of knowledge of an expert in the field.

258. Plaintiff individually, and through her prescribing physician, reasonably relied upon the skill, superior knowledge, and judgment of Defendants.

259. Despite their possession of knowledge regarding this risk and their duty

to adequately warn of severe and dangerous adverse events associated with use of Dupixent, Defendants failed to properly warn the medical community and consumers, including Plaintiff and Plaintiff's healthcare providers, that use of Dupixent was associated with an increased risk of CTCL.

260. Dupixent was designed, manufactured, distributed, sold and/or supplied by Defendants, and was marketed while defective due to inadequate warnings, instructions, labeling and/or inadequate testing in light of Defendants' knowledge of Dupixent's innate risks and dangers and attributable CTCL adverse events.

261. As a direct and proximate result of the dangerous and defective nature of Dupixent, Plaintiff suffered CTCL, and resulting pain and suffering, disability, disfigurement, mental anguish, loss of capacity for the enjoyment of life, expense of hospitalization, and medical treatment. These losses are permanent and the Plaintiff will continue to suffer the losses in the future.

SECOND CAUSE OF ACTION
NEGLIGENCE

262. Plaintiff incorporates by reference herein each of the allegations heretofore set forth in this Complaint as though fully set forth herein.

263. At all times relevant hereto, Defendants were under a duty to exercise reasonable care in advertising, analyzing, assembling, compounding, designing, developing, distributing, formulating, inspecting, labeling, manufacturing, marketing, packing, producing, promoting, processing, researching, selling, and

testing Dupixent to ensure that use of Dupixent did not result in avoidable injuries.

264. At all times relevant hereto, Defendants owed a duty to consumers, physicians, and the general public to assess, manage, and communicate the risks, dangers, and adverse effects of Dupixent, and to warn consumers and the medical community, including Plaintiff and Plaintiff's healthcare providers, of those risks, dangers, and adverse effects.

265. Defendants' duties include, but are not limited to, carefully and properly advertising, analyzing, assembling, compounding, designing, developing, distributing, formulating, inspecting, labeling, manufacturing, marketing, packing, producing, promoting, processing, researching, selling, and testing Dupixent, which was placed in the stream of commerce, and providing adequate information regarding the appropriate use of Dupixent.

266. Defendants negligently breached the above-described duties to Plaintiff by committing negligent acts and/or omissions, including, but not limited to the following:

a. failing in their obligation to provide consumers and the medical community, including Plaintiff and Plaintiff's healthcare providers, with accurate, adequate and clinically relevant information, data and warnings regarding the risk of CTCL associated with use of Dupixent, and/or that there existed safer alternative pharmaceutical drugs to treat atopic dermatitis;

b. failing to continually monitor, test, and analyze data regarding safety, efficacy, and the prescribing practices for Dupixent;

c. failing to review all adverse drug event information and to report any information bearing upon the adequacy and/or accuracy of its warnings, efficacy, or safety, including the risks and/or prevalence of side effects, including CTCL, caused by Dupixent to consumers and the medical community, including Plaintiff and Plaintiff's healthcare providers;

d. failing to provide adequate post-marketing warnings and instructions after Defendants knew or should have known of the significant risks of, among other things, serious adverse events and/or reactions, including, but not limited to an increased risk of CTCL associated with use of Dupixent;

e. failing to review all medical literature regarding Dupixent and failing to report data regarding the adequacy and/or accuracy of its warnings, efficacy, or safety of Dupixent specifically as it relates to CTCL;

f. failing to disclose the results of the testing and other information in their possession regarding the potential for Dupixent to cause serious adverse events including, but not limited to, an increased risk of CTCL;

g. representing that Dupixent was safe for use when, in fact, Defendants knew or should have known that it was unsafe for use and that Dupixent use was associated with serious adverse events and/or reactions, including, but not limited to an increased risk of CTCL;

h. promoting and marketing Dupixent for use despite the fact that Defendants knew or should have known that Dupixent use was associated with serious adverse events and/or reactions, including, but not limited to an increased risk of CTCL;

i. promoting and marketing Dupixent as safe and effective for use when, in fact, it was unsafe, especially as compared to other available therapies to treat atopic dermatitis;

j. failing to act as reasonably prudent drug manufacturers in advertising, analyzing, assembling, compounding, designing, developing, distributing, formulating, inspecting, labeling, manufacturing, marketing, packaging, producing, promoting,

processing, researching, selling, and testing Dupixent;

k. failing to exercise ordinary care in advertising, analyzing, assembling, compounding, designing, developing, distributing, formulating, inspecting, labeling, manufacturing, marketing, packing, producing, promoting, processing, researching, selling, and testing Dupixent so as to reveal and communicate the risk of serious adverse events and/or reactions, including, but not limited to, an increased risk of CTCL to consumers and the medical community, including Plaintiff and Plaintiff's healthcare providers;

l. failing to conduct adequate post-marketing studies, non-clinical and clinical testing, and post-marketing surveillance and analyses to determine and subsequently communicate the safety profile and side effects associated with the use of Dupixent;

m. continuing to promote the safety and effectiveness of Dupixent while downplaying its risks, even after Defendants knew or should have known of the significant risks of Dupixent use;

n. failing to provide consumers and the medical community, including Plaintiff and Plaintiff's healthcare providers, with scientific data which indicated that Dupixent was unreasonably dangerous due to its propensity to cause serious adverse events including, but not limited to, an increased risk of CTCL;

o. negligently and carelessly over-promoting Dupixent in a zealous and unreasonable manner, without regard for the potential dangers which it posed to users; and/or

p. failing to adequately test Dupixent on patients typical of the atopic dermatitis population especially in light of the plan to market precisely to that population of patients.

267. Although Defendants knew or should have known that Dupixent causes unreasonably dangerous side effects, including an increased risk of CTCL, they continue to market Dupixent, despite the fact there are safer and more or equally

effective alternative therapies to treat atopic dermatitis.

268. Defendants knew or should have known that failure to exercise ordinary care, as described herein, would result in serious injury to patients, such as Plaintiff.

269. As a direct and proximate result of the dangerous and defective nature of Dupixent Plaintiff suffered CTCL, and resulting pain and suffering, disability, disfigurement, mental anguish, loss of capacity for the enjoyment of life, expense of hospitalization, and medical care and treatment. These losses are permanent and the Plaintiff will continue to suffer the losses in the future.

THIRD CAUSE OF ACTION
FRAUDULENT MISREPRESENTATION

270. Plaintiff incorporates by reference herein each of the allegations heretofore set forth in this Complaint as though fully set forth herein.

271. Defendants' fraudulent, intentional and material misrepresentations and omissions regarding the safety and efficacy of Dupixent and of Dupixent's side effects, including that concerning an increased risk of CTCL, were communicated to Plaintiff directly through promotional materials, advertising, package inserts, journal publications, and the product monograph with the intent that Plaintiff use Dupixent. The safety and efficacy of Dupixent was also fraudulently and intentionally misrepresented to Plaintiff's healthcare providers with the intent that such misrepresentations would result in Dupixent being prescribed and administered to Plaintiff.

272. Defendants knew that the material representations they were making regarding the safety, efficacy and side effects of Dupixent were false.

273. Defendants fraudulently and intentionally made misrepresentations and/or actively concealed, suppressed, or omitted this material information with the intention and specific desire to induce consumers and the medical community, including Plaintiff and Plaintiff's healthcare providers, to use, prescribe and purchase Dupixent.

274. Defendants fraudulently and intentionally knew that Plaintiff and/or Plaintiff's healthcare providers would rely upon such material misrepresentations and/or omissions in selecting Dupixent for the treatment of Plaintiff.

275. Plaintiff and Plaintiff's healthcare providers detrimentally relied on the fraudulent misrepresentations outlined below.

276. Defendants made these material misrepresentations and/or omissions and actively concealed adverse information at a time when they, their agents and/or their employees knew that Dupixent had certain defects, dangers and characteristics that differed from what had been represented to the medical community and the consuming public, including Plaintiff's healthcare providers and Plaintiff.

277. Defendants misrepresented critical aspects of Dupixent's development and safety evaluation, including its carcinogenic risks and the scope of its clinical testing. As intended, these misrepresentations induced reliance of health care

providers and drove prescriptions of Dupixent including Plaintiff's Dupixent prescription.

a. Defendants publicly portray Dupixent as safe, thereby implying that they have adequately evaluated its carcinogenic potential, despite never conducted formal studies to assess mechanisms by which Dupixent may cause CTCL or accelerate its progression;

b. Defendants misrepresented the results of premarket clinical trials and postmarketing observational studies evidencing a serious risk of CTCL with the use of Dupixent; and

c. Defendants promoted Dupixent as a safe and effective treatment for patients lacking diagnostic confirmation of atopic dermatitis and other inflammatory conditions despite the fact that the Defendants had not properly studied Dupixent in that patient population.

278. Defendants partnered, funded, and leveraged influential "third parties" to misrepresent the safety and effectiveness of Dupixent and promote its use in an unrestricted manner inconsistent with its FDA-approved indications. Defendants' fraudulent conduct, as outlined below, led to the treatment guidelines health care providers rely upon to prescribe Dupixent to patients, including Plaintiff.

a. Through a 2017 "steering committee" funded by Defendants, which later published in The Journal of Allergy and Clinical Immunology: In Practice, Defendants falsely characterized Dupixent's safety profile as being superior to existing therapies, including in terms of lymphoma risk, notwithstanding that it had not yet been used by any patients under real-world conditions;

b. Defendants used this self-funded publication within their treatment guidelines, falsely recommending Dupixent as a first-line systemic treatment option in adults with moderate-to-severe AD despite the fact that: (1) Dupixent was not FDA-approved for any indication at the time the steering committee met or

formulated its recommendations, and (2) Dupixent has never been approved by the FDA as a first-line systemic therapy for atopic dermatitis; and

c. Defendants fraudulently represented this "steering committee" recommendations and manuscript were free from bias, despite the fact that 10 of the 11 authors of the guidelines article being retained by Defendants as physician KOLs who had been paid a total of $919,595 for consulting fees, food and beverage costs, education costs and travel and lodging expenses related to Dupixent.

279. Defendants, their agents and/or their employees, authored and funded misleading publications in the medical literature that contained false material facts and suppressed the truth regarding Dupixent's safety, efficiency, and association with CTCL, to which Defendants knew or should have known.

a. Upon information and belief, and as discovery is expected to reveal, authors Yung-Tsu Cho and Chia-Yu Chu, acting at the direction of and in coordination with Defendants, published an August 2024 letter that sought to minimize the growing evidence linking Dupixent to CTCL, the precise injury suffered by Plaintiff, while failing to disclose Defendants' funding, involvement, and/or influence over the publication. This misleading communication was disseminated despite Defendants' knowledge of CTCL cases observed during the Dupixent clinical development program including at least three CTCL cases reported in the long-term extension trial.

b. Despite there being 4 retrospective cohort studies, 2 disproportionality analyses and no fewer than 20 case reports and case series encompassing dozens of patients that had been published reporting an association between Dupixent and CTCL, on September 30, 2024, 10 employees of Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC published a letter misrepresenting material scientific evidence concerning the rate of CTCL among the atopic dermatitis population and their knowledge of the existence of a safety signal for CTCL with

Dupixent, omitting that their marketing targeted patients with less severe forms of atopic dermatitis – the opposite of the population Defendants asserted was likely to comprise the Dupixent treated group in the Hasan 2024 study, and falsely claiming that the European Medicines Agency had concluded there was no association between Dupixent and CTCL;

c. Defendants further perpetrated fraudulent misrepresentations and omissions by coordinating a series of publications authored by their retained and compensated key opinion leaders, including the Neubauer 2024 research letter, a contemporaneous TriNetX analysis, and a subsequent review article, that falsely minimized the Dupixent–CTCL safety signal, selectively omitted contrary data, misrepresented study findings and comparator groups, and concealed significant financial conflicts while urging clinicians not to allow CTCL evidence to influence their prescribing decisions;

d. In September 2025, Defendants falsely represented that there is no evidence supporting an association between CTCL and Dupixent, while being aware of at least 6 retrospective cohort studies, 5 disproportionality analyses and dozens of descriptive cohort studies, case reports, case series and systematic reviews. In addition, at that time, Defendants had already been notified by the FDA that the agency had identified a safety signal for CTCL with Dupixent;

e. A published letter in June 2025 by Defendants' retained KOLs falsely suggested that heightened clinician "vigilance" led to over-reporting of CTCL with Dupixent, despite the well-known phenomenon of significant underreporting of postmarketing adverse events, and falsely asserting, without support, that no clear causal association had been identified;

f. Defendants further advanced their fraudulent misrepresentations and omissions through a coordinated series of 2025 publications authored by their retained and heavily compensated KOLs, including Ian D. Pavord, Tiago Torres, and Adam Friedman, MD, which collectively downplayed the strength of emerging epidemiologic evidence linking Dupixent to CTCL, mischaracterized high-quality studies as "anecdotal," minimized

the magnitude and seriousness of observed risks, urged clinicians not to let CTCL concerns deter prescribing, selectively emphasized Dupixent's purported benefits while concealing and misrepresenting causal mechanisms, and failed to disclose substantial financial conflicts despite publicly claiming none existed.

280. Despite having a wealth of knowledge, since 2017, Defendants have at all times failed to disclose that the prescribing information for Dupixent is materially deficient. Each of the following failures constitute a fraudulent omission of safety information necessary for patients and prescribers, including Plaintiff, to be informed on the prescription and use of Dupixent:

a. failure to include a BOXED WARNING advising patients and their healthcare providers of the risk of CTCL or any other form of cancer with Dupixent treatment;

b. failure to include warnings in section 5, WARNINGS AND PRECAUTIONS, advising patients and their healthcare providers of the risk of CTCL or any other form of cancer with Dupixent treatment;

c. failure to reference to CTCL in section 6, ADVERSE REACTIONS, advising patients and their healthcare providers that clinically significant CTCL adverse reactions have been reported with the use of Dupixent;

d. failure to include a contraindication for use in patients with a history of CTCL or active CTCL;

e. failure to include instructions directing healthcare providers to perform adequate testing of patients (through biopsy or other means) to confirm a clinical diagnosis of atopic dermatitis, particularly in equivocal cases, before commencing treatment with Dupixent;

f. failure to include instructions directing healthcare providers to

perform adequate testing of patients (through biopsy, cytometry or other means) to rule out the presence of subclinical or smoldering CTCL before commencing treatment with Dupixent;

g. failure to include instructions directing healthcare providers to perform regular and continuous monitoring during treatment with Dupixent for the development of signs and symptoms of CTCL and repeat biopsies to detect changes in pathologies during treatment with Dupixent consistent with CTCL development; and

h. failure to include instructions directing healthcare providers to discontinue use of Dupixent when a patient exhibits signs of non-responsiveness to treatment or worsening of disease, or otherwise develops signs and symptoms consistent with CTCL.

281. Additionally, Defendants affirmatively highlighted the absence of a boxed warning and the lack of any requirement for initial laboratory testing or ongoing laboratory monitoring as favorable safety attributes of Dupixent in their promotional and patient-facing materials. In doing so, Defendants mislead patients and prescribing physicians that Dupixent posed no serious or latent safety risks and had been adequately evaluated for long-term adverse outcomes.

282. To drive profits, Defendants intentionally misrepresented and omitted material information through a multifaceted marketing strategy, spanning direct-to-consumer advertising, disease-awareness initiatives, and other promotional mechanisms. The following marketing strategies, executed by Defendants, their agents and/or their employees, were relied on by Plaintiff and her prescribing physician:

a. Defendants misrepresented Dupixent's safety and effectiveness

through provocative direct-to-consumer advertising that used glossy imagery and slogans such as "Du-More," "Better Days," and "This is Better" to falsely imply that patients would achieve materially happier, healthier, and more fulfilling lives by using Dupixent;

b. Defendants further executed fraudulent misrepresentations and omissions by deploying the Dupixent MyWay and MyWay Ambassador programs, related smartphone applications, and a network of unbranded disease-state awareness campaigns and websites, including UnderstandAD.com, EczemaExposed.com, ThinkCOPDInflammation.com, and LiveWithCOPD.com, to create the false impression of neutral educational resources while in fact steering patients to view their symptoms as serious and uncontrolled, encouraging "productive" doctor conversations designed to yield Dupixent prescriptions, and seeding demand for Dupixent even before FDA approval, all while concealing that these materials were crafted and controlled by Defendants to promote Dupixent's use;

c. Defendants fraudulently misrepresented diagnostic tools, including the Atopic Dermatitis Control Tool (ADCT) and related pediatric itch scales neutral clinical instruments, when in fact their high sensitivity artificially inflated atopic dermatitis diagnoses and artificially steered patients and physicians toward Dupixent treatment; and

d. Through continuing medical education programs and their ADVENT global medical education platform, Defendants misrepresented promotional materials as unbiased scientific education, concealing their true marketing intent to increase Dupixent prescribing.

283. At no point did Defendants acknowledge the merits of the findings produced through independent research or take initiative to commit to conducting necessary studies to better understand the pathological mechanisms of Dupixent-induced CTCL or discover why Dupixent triggers rapid and severe progression of

subclinical CTCL, instead Defendants misrepresented material facts to the public by funding and influence.

284. As further detailed above, Defendants engaged in the following fraudulent practices designed to induce healthcare providers and consumers to prescribe and use Dupixent, which were relied on by Plaintiff's prescribing physician:

a. inducing healthcare providers to switch their patients from other medications to Dupixent despite lacking the necessary evidence to demonstrate that Dupixent is safe and effective in this population and despite affirmative evidence that the drug is not safe in this patient population;

b. inducing healthcare providers, through marketing efforts, to prescribe Dupixent to their patients without first obtaining diagnostic confirmation of an underlying indicated health condition;

c. engaging in marketing efforts, such as disease state awareness campaigns and branded advertising campaigns, seeking to induce patients to obtain a diagnosis for an indicated health condition and then specifically request a prescription of Dupixent from their healthcare provider when its use is not necessary; and

d. intentionally misleading healthcare providers and the general public by making superiority claims for Dupixent as compared to other medications despite possessing the knowledge that these claims are false.

285. Defendants' misrepresentations were widely disseminated to healthcare providers through CME programs, clinical guidelines, KOL publications, and disease awareness campaigns, and to consumers via direct-to-consumer advertising, MyWay materials, and unbranded disease-state websites. These misrepresentations

reached Plaintiff and Plaintiff's treating providers and directly influenced the decision to prescribe and use Dupixent.

286. Defendants' material misrepresentations and/or active concealment, suppression, and omissions were perpetuated directly and/or indirectly by Defendants, their sales representatives, employees, distributors, agents and/or detail persons, through databases, printouts, monographs, product labeling and other information drafted, prepared, marketed, sold, and supplied by Defendants, their sales representatives, employees, distributors, agents and/or detail persons.

287. Defendants' material misrepresentations and/or active concealment, suppression, and omissions constitute a continuing tort.

288. Through its package inserts and other public statements, Defendants continue to misrepresent the serious potential health risks and complications associated with use of Dupixent.

289. Defendants had a post-sale duty to timely warn physicians, including Plaintiff's healthcare providers, and consumers, such as Plaintiffs, about the potential risks and complications associated with use of Dupixent.

290. Defendants fraudulently and intentionally misrepresented the safety and efficacy of Dupixent in their labeling, advertising, package inserts, promotional materials or other marketing resources and materials.

291. If Plaintiff's healthcare providers and Plaintiff had known the true facts

concerning the risks of Dupixent use, in particular, the risk of CTCL, they would not have prescribed or used Dupixent and would have instead prescribed and used a safer alternative pharmaceutical drug or no drug at all.

292. Plaintiff and Plaintiff's healthcare providers' reliance upon Defendants' material misrepresentations were justified, among other reasons, because said misrepresentations and omissions were made by individuals and entities who were in a position of knowledge of the true facts concerning Dupixent, while Plaintiff and Plaintiff's healthcare providers were not in a position to know the true facts concerning Dupixent, and because Defendants overstated the benefits and safety of Dupixent, and concomitantly downplayed the risks of its use, including, but not limited to, an increased risk of CTCL, thereby inducing Plaintiff's healthcare providers to prescribe and Plaintiff to use Dupixent, in lieu of other safer alternatives, or no drug at all.

293. As a direct and proximate result of the dangerous and defective nature of Dupixent, Plaintiff suffered CTCL and resulting pain and suffering, disability, disfigurement, mental anguish, loss of capacity for the enjoyment of life, expense of hospitalization, and medical care and treatment. These losses are permanent and the Plaintiff will continue to suffer the losses in the future.

FOURTH CAUSE OF ACTION
NEGLIGENT MISREPRESENTATION

294. Plaintiff incorporates by reference herein each of the allegations

heretofore set forth in this Complaint as though fully set forth herein.

295. Defendants' negligent material misrepresentations and omissions regarding the safety and efficacy of Dupixent and of Dupixent's side effects, including that concerning an increased risk of CTCL, were communicated to Plaintiffs directly through promotional materials, advertising, package inserts, journal publications, and the product monograph with the intent that Plaintiff use Dupixent. The safety and efficacy of Dupixent was also negligently misrepresented to Plaintiff's healthcare providers with the intent that such misrepresentations would result in Dupixent being prescribed and administered to Plaintiff.

296. Defendants either knew or should have known that the material representations they were making regarding the safety, efficacy and side effects of Dupixent were false.

297. Defendants negligently made misrepresentations and/or actively concealed, suppressed, or omitted this material information with the intention and specific desire to induce consumers and the medical community, including Plaintiff and Plaintiff's healthcare providers, to use, prescribe and purchase Dupixent.

298. Defendants negligently knew or should have known that Plaintiff and/or Plaintiff's healthcare providers would rely upon such material misrepresentations and/or omissions in selecting Dupixent for the treatment of Plaintiff.

299. Plaintiff and Plaintiff's healthcare providers detrimentally relied on the negligent misrepresentations outlined below.

300. Defendants made these material misrepresentations and/or omissions and actively concealed adverse information at a time when they, their agents and/or their employees knew that Dupixent had certain defects, dangers and characteristics that differed from what had been represented to the medical community and the consuming public, including Plaintiff's healthcare providers and Plaintiff.

301. Defendants misrepresented critical aspects of Dupixent's development and safety evaluation, including its carcinogenic risks and the scope of its clinical testing. As intended, these misrepresentations induced reliance of health care providers and drove prescriptions of Dupixent including Plaintiff's Dupixent prescription.

a. Defendants publicly portray Dupixent as safe, thereby implying that they have adequately evaluated its carcinogenic potential, despite never conducted formal studies to assess mechanisms by which Dupixent may cause CTCL or accelerate its progression;

b. Defendants misrepresented the results of premarket clinical trials and postmarketing observational studies evidencing a serious risk of CTCL with the use of Dupixent; and

c. Defendants promoted Dupixent as a safe and effective treatment for patients lacking diagnostic confirmation of atopic dermatitis and other inflammatory conditions despite the fact that the Defendants had not properly studied Dupixent in that patient population.

302. Defendants partnered, funded, and leveraged influential "third parties"

to misrepresent the safety and effectiveness of Dupixent and promote its use in an unrestricted manner inconsistent with its FDA-approved indications. Defendants' negligent conduct, as outlined below, led to the treatment guidelines health care providers rely upon to prescribe Dupixent to patients, including Plaintiff.

a. Through a 2017 "steering committee" funded by Defendants, which later published in The Journal of Allergy and Clinical Immunology: In Practice, Defendants falsely characterized Dupixent's safety profile as being superior to existing therapies, including in terms of lymphoma risk, notwithstanding that it had not yet been used by any patients under real-world conditions;

b. Defendants used this self-funded publication within their treatment guidelines, falsely recommending Dupixent as a first-line systemic treatment option in adults with moderate-to-severe AD despite the fact that: (1) Dupixent was not FDA-approved for any indication at the time the steering committee met or formulated its recommendations, and (2) Dupixent has never been approved by the FDA as a first-line systemic therapy for atopic dermatitis; and

c. Defendants negligently represented this "steering committee" recommendations and manuscript were free from bias, despite the fact that 10 of the 11 authors of the guidelines article being retained by Defendants as physician KOLs who had been paid a total of $919,595 for consulting fees, food and beverage costs, education costs and travel and lodging expenses related to Dupixent.

303. Defendants, their agents and/or their employees, authored and funded misleading publications in the medical literature that contained false material facts and suppressed the truth regarding Dupixent's safety, efficiency, and association with CTCL, to which Defendants knew or should have known.

a. Upon information and belief, and as discovery is expected to

reveal, authors Yung-Tsu Cho and Chia-Yu Chu, acting at the direction of and in coordination with Defendants, published an August 2024 letter that sought to minimize the growing evidence linking Dupixent to CTCL, the precise injury suffered by Plaintiff, while failing to disclose Defendants' funding, involvement, and/or influence over the publication. This misleading communication was disseminated despite Defendants' knowledge of CTCL cases observed during the Dupixent clinical development program including at least three CTCL cases reported in the long-term extension trial.

b. Despite there being 4 retrospective cohort studies, 2 disproportionality analyses and no fewer than 20 case reports and case series encompassing dozens of patients that had been published reporting an association between Dupixent and CTCL, on September 30, 2024, 10 employees of Defendants, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC published a letter misrepresenting material scientific evidence concerning the rate of CTCL among the atopic dermatitis population and their knowledge of the existence of a safety signal for CTCL with Dupixent, omitting that their marketing targeted patients with less severe forms of atopic dermatitis – the opposite of the population Defendants asserted was likely to comprise the Dupixent treated group in the Hasan 2024 study, and falsely claiming that the European Medicines Agency had concluded there was no association between Dupixent and CTCL;

c. Defendants further perpetrated negligently misrepresentations and omissions by coordinating a series of publications authored by their retained and compensated key opinion leaders, including the Neubauer 2024 research letter, a contemporaneous TriNetX analysis, and a subsequent review article, that falsely minimized the Dupixent–CTCL safety signal, selectively omitted contrary data, misrepresented study findings and comparator groups, and concealed significant financial conflicts while urging clinicians not to allow CTCL evidence to influence their prescribing decisions;

d. In September 2025, Defendants falsely represented that there is no evidence supporting an association between CTCL and Dupixent, while being aware of at least 6 retrospective cohort

studies, 5 disproportionality analyses and dozens of descriptive cohort studies, case reports, case series and systematic reviews. In addition, at that time, Defendants had already been notified by the FDA that the agency had identified a safety signal for CTCL with Dupixent;

e. A published letter in June 2025 by Defendants' retained KOLs falsely suggested that heightened clinician "vigilance" led to over-reporting of CTCL with Dupixent, despite the well-known phenomenon of significant underreporting of postmarketing adverse events, and falsely asserting, without support, that no clear causal association had been identified;

f. Defendants further advanced their negligently misrepresentations and omissions through a coordinated series of 2025 publications authored by their retained and heavily compensated KOLs, including Ian D. Pavord, Tiago Torres, and Adam Friedman, MD, which collectively downplayed the strength of emerging epidemiologic evidence linking Dupixent to CTCL, mischaracterized high-quality studies as "anecdotal," minimized the magnitude and seriousness of observed risks, urged clinicians not to let CTCL concerns deter prescribing, selectively emphasized Dupixent's purported benefits while concealing and misrepresenting causal mechanisms, and failed to disclose substantial financial conflicts despite publicly claiming none existed.

304. Despite having a wealth of knowledge, since 2017, Defendants have at all times failed to disclose that the prescribing information for Dupixent is materially deficient. Each of the following failures constitute a negligent omission of safety information necessary for patients and prescribers, including Plaintiff, to be informed on the prescription and use of Dupixent:

a. failure to include a BOXED WARNING advising patients and their healthcare providers of the risk of CTCL or any other form of cancer with Dupixent treatment;

b. failure to include warnings in section 5, WARNINGS AND PRECAUTIONS, advising patients and their healthcare providers of the risk of CTCL or any other form of cancer with Dupixent treatment;

c. failure to reference to CTCL in section 6, ADVERSE REACTIONS, advising patients and their healthcare providers that clinically significant CTCL adverse reactions have been reported with the use of Dupixent;

d. failure to include a contraindication for use in patients with a history of CTCL or active CTCL;

e. failure to include instructions directing healthcare providers to perform adequate testing of patients (through biopsy or other means) to confirm a clinical diagnosis of atopic dermatitis, particularly in equivocal cases, before commencing treatment with Dupixent;

f. failure to include instructions directing healthcare providers to perform adequate testing of patients (through biopsy, cytometry or other means) to rule out the presence of subclinical or smoldering CTCL before commencing treatment with Dupixent;

g. failure to include instructions directing healthcare providers to perform regular and continuous monitoring during treatment with Dupixent for the development of signs and symptoms of CTCL and repeat biopsies to detect changes in pathologies during treatment with Dupixent consistent with CTCL development; and

h. failure to include instructions directing healthcare providers to discontinue use of Dupixent when a patient exhibits signs of non-responsiveness to treatment or worsening of disease, or otherwise develops signs and symptoms consistent with CTCL.

305. Additionally, Defendants affirmatively highlighted the absence of a boxed warning and the lack of any requirement for initial laboratory testing or ongoing laboratory monitoring as favorable safety attributes of Dupixent in their

promotional and patient-facing materials. In doing so, Defendants mislead patients and prescribing physicians that Dupixent posed no serious or latent safety risks and had been adequately evaluated for long-term adverse outcomes.

306. To drive profits, Defendants intentionally misrepresented and omitted material information through a multifaceted marketing strategy, spanning direct-to-consumer advertising, disease-awareness initiatives, and other promotional mechanisms. The following marketing strategies, executed by Defendants, their agents and/or their employees, were relied on by Plaintiff and her prescribing physician:

a. Defendants misrepresented Dupixent's safety and effectiveness through provocative direct-to-consumer advertising that used glossy imagery and slogans such as "Du-More," "Better Days," and "This is Better" to falsely imply that patients would achieve materially happier, healthier, and more fulfilling lives by using Dupixent;

b. Defendants further executed negligently misrepresentations and omissions by deploying the Dupixent MyWay and MyWay Ambassador programs, related smartphone applications, and a network of unbranded disease-state awareness campaigns and websites, including UnderstandAD.com, EczemaExposed.com, ThinkCOPDInflammation.com, and LiveWithCOPD.com, to create the false impression of neutral educational resources while in fact steering patients to view their symptoms as serious and uncontrolled, encouraging "productive" doctor conversations designed to yield Dupixent prescriptions, and seeding demand for Dupixent even before FDA approval, all while concealing that these materials were crafted and controlled by Defendants to promote Dupixent's use;

c. Defendants fraudulently misrepresented diagnostic tools,

including the Atopic Dermatitis Control Tool (ADCT) and related pediatric itch scales neutral clinical instruments, when in fact their high sensitivity artificially inflated atopic dermatitis diagnoses and artificially steered patients and physicians toward Dupixent treatment; and

d. Through continuing medical education programs and their ADVENT global medical education platform, Defendants misrepresented promotional materials as unbiased scientific education, concealing their true marketing intent to increase Dupixent prescribing.

307. At no point did Defendants acknowledge the merits of the findings produced through independent research or take initiative to commit to conducting necessary studies to better understand the pathological mechanisms of Dupixent-induced CTCL or discover why Dupixent triggers rapid and severe progression of subclinical CTCL, instead Defendants misrepresented material facts to the public by funding and influence.

308. As further detailed above, Defendants engaged in the following negligent practices designed to induce healthcare providers and consumers to prescribe and use Dupixent, which were relied on by Plaintiff's prescribing physician:

a. inducing healthcare providers to switch their patients from other medications to Dupixent despite lacking the necessary evidence to demonstrate that Dupixent is safe and effective in this population and despite affirmative evidence that the drug is not safe in this patient population;

b. inducing healthcare providers, through marketing efforts, to prescribe Dupixent to their patients without first obtaining diagnostic confirmation of an underlying indicated health

condition;

c. engaging in marketing efforts, such as disease state awareness campaigns and branded advertising campaigns, seeking to induce patients to obtain a diagnosis for an indicated health condition and then specifically request a prescription of Dupixent from their healthcare provider when its use is not necessary; and

d. intentionally misleading healthcare providers and the general public by making superiority claims for Dupixent as compared to other medications despite possessing the knowledge that these claims are false.

309. Defendants' misrepresentations were widely disseminated to healthcare providers through CME programs, clinical guidelines, KOL publications, and disease awareness campaigns, and to consumers via direct-to-consumer advertising, MyWay materials, and unbranded disease-state websites. These misrepresentations reached Plaintiff and Plaintiff's treating providers and directly influenced the decision to prescribe and use Dupixent.

310. Defendants' material misrepresentations and/or active concealment, suppression, and omissions were perpetuated directly and/or indirectly by Defendants, their sales representatives, employees, distributors, agents and/or detail persons, through databases, printouts, monographs, product labeling and other information drafted, prepared, marketed, sold, and supplied by Defendants, their sales representatives, employees, distributors, agents and/or detail persons.

311. Defendants' material misrepresentations and/or active concealment, suppression, and omissions constitute a continuing tort.

312. Through its package inserts and other public statements, Defendants continue to misrepresent the serious potential health risks and complications associated with use of Dupixent.

313. Defendants had a post-sale duty to timely warn physicians including Plaintiff's healthcare providers, and consumers, such as Plaintiffs, about the potential risks and complications associated with use of Dupixent.

314. Defendants negligently misrepresented the safety and efficacy of Dupixent in their labeling, advertising, package inserts, promotional materials or other marketing resources and materials.

315. If Plaintiff's healthcare providers and Plaintiff had known the true facts concerning the risks of Dupixent use, in particular, the risk of CTCL, they would not have prescribed or used Dupixent and would have instead prescribed and used a safer alternative pharmaceutical drug or no drug at all.

316. Plaintiff and Plaintiff's healthcare providers' reliance upon Defendants' material misrepresentations were justified, among other reasons, because said misrepresentations and omissions were made by individuals and entities who were in a position of knowledge of the true facts concerning Dupixent, while Plaintiff and Plaintiff's healthcare providers were not in a position to know the true facts concerning Dupixent, and because Defendants overstated the benefits and safety of Dupixent, and concomitantly downplayed the risks of its use,

including, but not limited to, an increased risk of CTCL, thereby inducing Plaintiff's healthcare providers to prescribe and Plaintiff to use Dupixent, in lieu of other safer alternatives, or no drug at all.

317. As a direct and proximate result of the dangerous and defective nature of Dupixent, Plaintiff suffered CTCL and resulting pain and suffering, disability, disfigurement, mental anguish, loss of capacity for the enjoyment of life, expense of hospitalization, and medical care and treatment. These losses are permanent and the Plaintiff will continue to suffer the losses in the future.

FIFTH CAUSE OF ACTION
PUNITIVE DAMAGES

318. Plaintiff incorporates by reference herein each of the allegations heretofore set forth in this Complaint as though fully set forth herein.

319. As discussed herein, Defendants have intentionally misrepresented the clinical trial and postmarketing safety data for Dupixent to FDA, healthcare providers, and the general public in order to mask the true risk of CTCL related to Dupixent use. Those misrepresentations continue to the present.

320. Defendants have engaged in marketing efforts seeking to induce healthcare providers to switch their patients from other medications to Dupixent despite lacking the necessary evidence to demonstrate that Dupixent is safe and effective in this population and despite affirmative evidence that the drug is not safe in this patient population.

321. Defendants have engaged in marketing efforts seeking to induce healthcare providers to prescribe Dupixent to their patients without first obtaining diagnostic confirmation of an underlying indicated health condition.

322. Defendants have engaged in marketing efforts seeking to induce patients to specifically request a prescription of Dupixent from their healthcare provider when its use is not necessary.

323. Defendants have intentionally misled healthcare providers and the general public in making superiority claims for Dupixent as compared to other medications despite possessing the knowledge that these claims are false.

324. Defendants have intentionally failed to properly warn healthcare providers about the true risk of CTCL related to Dupixent use despite possessing knowledge that Dupixent causes these serious adverse events.

325. Defendants' actions were willful and malicious in that Defendants' conduct was carried on with a conscious disregard for the safety and rights of Plaintiff. Defendants' unconscionable conduct thereby warrants an assessment of exemplary and punitive damages against Defendants in an amount appropriate to punish Defendants, and deter similar conduct in the future.

326. As a direct and proximate result of the dangerous and defective nature of Dupixent, Plaintiff suffered CTCL, and resulting pain and suffering, disability, disfigurement, mental anguish, loss of capacity for the enjoyment of life, expense of

hospitalization, and medical care and treatment. These losses are permanent and the Plaintiff will continue to suffer the losses in the future.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for judgment against Defendants, as follows:

a. For general damages in an amount to be proven at the time of trial;

b. For special damages in an amount to be proven at the time of trial;

c. For exemplary and punitive damages in an amount to be proven at trial, and sufficient to punish Defendants or to deter Defendants and others from repeating the injurious conduct alleged herein;

d. For pre-judgment and post-judgment interest on the above general and special damages;

e. For costs of this suit and attorneys' fees; and

f. All other relief that this Court deems necessary, proper, and just.

DEMAND FOR JURY TRIAL

Plaintiff demands a trial by jury on all issues.

Respectfully submitted,

Dated: December 22, 2025

/s/ C. Andrew Childers
C. Andrew Childers
GA Bar No. 124398
Childers, Schlueter & Smith, LLC
1932 N. Druid Hills Road
Suite 100
Atlanta, Georgia 30319
achilders@cssfirm.com
Tel: (404) 419-9500
Fax: (404) 419-9501

/s/ Brandon L. Bogle
Brandon L. Bogle, Esq. FL Bar No. 52624
Madison Mougey, Esq. FL Bar No. 1071135
Levin, Papantonio, Proctor, Buchanan, O'Brien, Barr & Mougey, P.A.
316 South Baylen Street, Suite 600
Pensacola, Florida 32502
bbogle@levinlaw.com
(850) 435-7043 (Telephone)
(850) 435-7020 (Facsimile)

Attorneys for Plaintiff