

## **SUPPLEMENTARY MATERIAL**

### **The Association Between Atopic Dermatitis and Select Disease Events in Adults in the United States: a Retrospective Cohort Study in the Optum Electronic Health Records Database**

Adina R. Lemeshow,<sup>1</sup> Alexander Egeberg,<sup>2,3\*</sup> Thomas Edwards,<sup>4</sup> Stephen E. Schachterle,<sup>1</sup> William Romero,<sup>5\*</sup> Daniela E. Myers,<sup>6</sup> Shefali Vyas,<sup>1\*</sup> Jonathan I. Silverberg<sup>7</sup>

<sup>1</sup>Pfizer Inc., New York, NY, USA; <sup>2</sup>Department of Dermatology, Bispebjerg University Hospital, University of Copenhagen, Denmark; <sup>3</sup>Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark; <sup>4</sup>Panalgo, Boston, MA, USA; <sup>5</sup>Pfizer Ltd., Tadworth, Surrey, UK; <sup>6</sup>Pfizer Inc., Collegeville, PA, USA; <sup>7</sup>Department of Dermatology, The George Washington University School of Medicine and Health Sciences, Washington, DC, USA

\*Affiliation at the time of the study

#### **Corresponding Author**

Adina Lemeshow  
Pfizer Inc.  
66 Hudson Yards East, 13/13N-2\*  
New York, NY, 10001  
USA  
adina.lemeshow@pfizer.com

**Supplementary Table S1.** Additional Baseline Demographics and Medical History of Patients With and Without AD in Optum® EHR (2016 to 2021)

|                                           | <b>AD Cohort<br/>N=26,941</b> | <b>Non-AD Cohort<br/>N=134,705</b> |
|-------------------------------------------|-------------------------------|------------------------------------|
| <b>Year of cohort entry, n (%)</b>        |                               |                                    |
| 2016                                      | 7,391 (27.43)                 | 36,955 (27.43)                     |
| 2017                                      | 5,532 (20.53)                 | 27,660 (20.53)                     |
| 2018                                      | 5,112 (18.97)                 | 25,560 (18.97)                     |
| 2019                                      | 4,269 (15.85)                 | 21,345 (15.85)                     |
| 2020                                      | 2,950 (10.95)                 | 14,750 (10.95)                     |
| 2021                                      | 1,687 (6.26)                  | 8,435 (6.26)                       |
| <b>Demographics</b>                       |                               |                                    |
| <b>Age at index date (dichotomous), y</b> |                               |                                    |
| ≤18 to <65                                | 20,476 (76.00)                | 102,404 (76.02)                    |
| ≥65                                       | 6,465 (24.00)                 | 32,301 (23.98)                     |
| <b>Age at index date</b>                  |                               |                                    |
| ≤18 to <35                                | 6,887 (25.56)                 | 34,445 (25.57)                     |
| ≥35 to <45                                | 3,747 (13.91)                 | 18,514 (13.74)                     |
| ≥45 to <65                                | 9,842 (36.53)                 | 49,445 (36.71)                     |
| ≥65                                       | 6,465 (24.00%)                | 32,301 (23.98)                     |
| <b>Region</b>                             |                               |                                    |
| Midwest                                   | 13,777 (51.14)                | 76,515 (56.80)                     |
| Northeast                                 | 5,891 (21.87)                 | 21,860 (16.23)                     |
| South                                     | 3,594 (13.34)                 | 21,412 (15.90)                     |
| West                                      | 2,418 (8.98)                  | 9,140 (6.79)                       |
| Unknown                                   | 1,261 (4.68)                  | 5,778 (4.29)                       |
| <b>Medical history<sup>a</sup></b>        |                               |                                    |
| Chronic kidney disease                    | 1,666 (6.18)                  | 5,730 (4.25)                       |
| COPD                                      | 1,632 (6.06)                  | 4,065 (3.02)                       |
| Dementia                                  | 322 (1.20)                    | 1,321 (0.98)                       |
| Hyperthyroidism                           | 263 (0.98)                    | 747 (0.55)                         |
| Pregnancy                                 | 1,033 (3.83)                  | 4,958 (3.68)                       |
| Respiratory failure                       | 377 (1.40)                    | 858 (0.64)                         |
| Antidepressant use                        | 1,041 (3.86)                  | 4,107 (3.05)                       |
| Antiepileptic use                         | 3,574 (13.27)                 | 12,103 (8.98)                      |

|                                                           |               |                |
|-----------------------------------------------------------|---------------|----------------|
| Inhaled steroids in last 90 days                          | 1,249 (4.64)  | 1,885 (1.40)   |
| OC/Hormone replacement therapy                            | 188 (0.70)    | 566 (0.42)     |
| Proton pump inhibitors                                    | 4,174 (15.49) | 13,868 (10.30) |
| Systemic steroids (oral or intramuscular) in last 90 days | 3,321 (12.33) | 5,326 (3.95)   |

AD, atopic dermatitis; COPD, chronic obstructive pulmonary disease; EHR, electronic health records; OC, oral contraceptive; y, year.

<sup>a</sup>Any evidence of the condition.

**Supplementary Table S2.** Baseline Demographics and Medical History of Patients in Optum® EHR (2016 to 2021) by Treatment Subgroup<sup>a</sup>

|                                           | No AD treatment<br>n=8,384 | TCS/TCI only<br>n=13,459 | Phototherapy with/without<br>TCS/TCI, without systemics<br>n=366 | Systemics with/without<br>TCS/TCI, with/without<br>phototherapy<br>n=3,706 |
|-------------------------------------------|----------------------------|--------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------|
| <b>Year of cohort entry, n (%)</b>        |                            |                          |                                                                  |                                                                            |
| 2016                                      | 2,810 (33.52)              | 3,184 (23.66)            | 162 (44.26)                                                      | 970 (26.17)                                                                |
| 2017                                      | 1,672 (19.94)              | 2,868 (21.31)            | 65 (17.76)                                                       | 740 (19.97)                                                                |
| 2018                                      | 1,477 (17.62)              | 2,712 (20.15)            | 47 (12.84)                                                       | 705 (19.02)                                                                |
| 2019                                      | 1,193 (14.23)              | 2,213 (16.44)            | 43 (11.75)                                                       | 631 (17.03)                                                                |
| 2020                                      | 808 (9.64)                 | 1,586 (11.78)            | 30 (8.20)                                                        | 414 (11.17)                                                                |
| 2021                                      | 424 (5.06)                 | 896 (6.66)               | 19 (5.19)                                                        | 246 (6.64)                                                                 |
| <b>Demographics</b>                       |                            |                          |                                                                  |                                                                            |
| <b>Age at index date, y</b>               |                            |                          |                                                                  |                                                                            |
| Mean (SD)                                 | 50 (18.80)                 | 49 (18.45)               | 53 (18.34)                                                       | 53 (17.86)                                                                 |
| Median (IQR)                              | 51 (34-64)                 | 50 (33-63)               | 56 (37-63)                                                       | 55 (38-66)                                                                 |
| <b>Age at index date (dichotomous), y</b> |                            |                          |                                                                  |                                                                            |
| ≤18 to <65                                | 6,342 (75.64)              | 10,470 (77.79)           | 250 (68.31)                                                      | 2,675 (72.18)                                                              |
| ≥65                                       | 2,042 (24.36)              | 2,989 (22.21)            | 116 (31.69)                                                      | 1,031 (27.82)                                                              |
| <b>Age at index date</b>                  |                            |                          |                                                                  |                                                                            |
| ≤18 to <35                                | 2,204 (26.29)              | 3,625 (26.93)            | 79 (21.58)                                                       | 742 (20.02)                                                                |
| ≥35 to <45                                | 1,137 (13.56)              | 1,959 (14.56)            | 48 (13.11)                                                       | 461 (12.44)                                                                |
| ≥45 to <65                                | 3,001 (35.79)              | 4,886 (36.30)            | 123 (33.61)                                                      | 1,472 (39.72)                                                              |
| ≥65                                       | 2,042 (24.36)              | 2,989 (22.21)            | 116 (31.69)                                                      | 1,031 (27.82)                                                              |
| <b>Sex</b>                                |                            |                          |                                                                  |                                                                            |
| Male                                      | 3,293 (39.28)              | 5,029 (37.37)            | 170 (46.45)                                                      | 1,463 (39.48)                                                              |
| Female                                    | 5,084 (60.64)              | 8,424 (62.59)            | 196 (53.55)                                                      | 2,240 (60.44)                                                              |
| <b>Race</b>                               |                            |                          |                                                                  |                                                                            |
| White                                     | 6,199 (73.94)              | 8,845 (65.72)            | 242 (66.12)                                                      | 2,614 (70.53)                                                              |
| Black or African American                 | 1,162 (13.86)              | 2,697 (20.04)            | 54 (14.75)                                                       | 674 (18.19)                                                                |
| Asian                                     | 402 (4.79)                 | 703 (5.22)               | 32 (8.74)                                                        | 157 (4.24)                                                                 |
| Other/unknown                             | 621 (7.41)                 | 1,214 (9.02)             | 38 (10.38)                                                       | 261 (7.04)                                                                 |
| <b>Ethnicity</b>                          |                            |                          |                                                                  |                                                                            |
| Hispanic                                  | 460 (5.49)                 | 960 (7.13)               | 18 (4.92)                                                        | 204 (5.50)                                                                 |
| Not Hispanic                              | 7,114 (84.85)              | 11,320 (84.11)           | 322 (87.98)                                                      | 3,217 (86.81)                                                              |

|                                          |               |               |             |               |
|------------------------------------------|---------------|---------------|-------------|---------------|
| Non-Hispanic White                       | 5,486 (65.43) | 7,837 (58.23) | 222 (60.66) | 2,346 (63.30) |
| Unknown                                  | 810 (9.66)    | 1,179 (8.76)  | 26 (7.10)   | 285 (7.69)    |
| <b>BMI, kg/m<sup>2</sup></b>             |               |               |             |               |
| <18.5                                    | 94 (1.12)     | 154 (1.14)    | 2 (0.55)    | 43 (1.16)     |
| ≤18.5 to <25.0                           | 1,567 (18.69) | 2,577 (19.15) | 73 (19.95)  | 722 (19.48)   |
| ≤25.0 to <30.0                           | 1,749 (20.86) | 3,193 (23.72) | 91 (24.86)  | 908 (24.50)   |
| ≤30.0 to <35.0                           | 1,293 (15.42) | 2,330 (17.31) | 50 (13.66)  | 655 (17.67)   |
| ≤35.0 to <40.0                           | 660 (7.87)    | 1,249 (9.28)  | 28 (7.65)   | 367 (9.90)    |
| ≤40.0                                    | 531 (6.33)    | 1,201 (8.92)  | 21 (5.74)   | 342 (9.23)    |
| Unknown                                  | 2,490 (29.70) | 2,755 (20.47) | 101 (27.60) | 669 (18.05)   |
| <b>BMI dichotomous, kg/m<sup>2</sup></b> |               |               |             |               |
| ≥30                                      | 2,484 (29.63) | 4,780 (35.52) | 99 (27.05)  | 1,364 (36.81) |
| <30                                      | 3,410 (40.67) | 5,924 (44.02) | 166 (45.36) | 1,673 (45.14) |
| Unknown                                  | 2,490 (29.70) | 2,755 (20.47) | 101 (27.60) | 669 (18.05)   |
| <b>Smoking status</b>                    |               |               |             |               |
| Current                                  | 678 (8.09)    | 1,446 (10.74) | 27 (7.38)   | 465 (12.55)   |
| Former                                   | 1,223 (14.59) | 2,582 (19.18) | 102 (27.87) | 863 (23.29)   |
| Never                                    | 2,848 (33.97) | 5,049 (37.51) | 148 (40.44) | 1,291 (34.84) |
| Unknown                                  | 3,635 (43.36) | 4,382 (32.56) | 89 (24.32)  | 1,087 (29.33) |
| <b>Region</b>                            |               |               |             |               |
| Midwest                                  | 4,263 (50.85) | 6,967 (51.76) | 165 (45.08) | 1,825 (49.24) |
| Northeast                                | 1,901 (22.67) | 3,032 (22.53) | 99 (27.05)  | 695 (18.75)   |
| South                                    | 975 (11.63)   | 1,718 (12.76) | 13 (3.55)   | 730 (19.70)   |
| West                                     | 814 (9.71)    | 1,138 (8.46)  | 70 (19.13)  | 286 (7.72)    |
| Unknown                                  | 431 (5.14)    | 604 (4.49)    | 19 (5.19)   | 170 (4.59)    |
| <b>Medical history<sup>b</sup></b>       |               |               |             |               |
| Allergic rhinitis                        | 1,004 (11.98) | 1,672 (12.42) | 44 (12.02)  | 593 (16.00)   |
| Anxiety                                  | 1,004 (11.98) | 1,672 (12.42) | 44 (12.02)  | 593 (16.00)   |
| Asthma                                   | 1,043 (12.44) | 2,052 (15.25) | 43 (11.75)  | 663 (17.89)   |
| Atrial fibrillation                      | 235 (2.80)    | 408 (3.03)    | 11 (3.01)   | 193 (5.21)    |
| Congestive heart failure                 | 204 (2.43)    | 402 (2.99)    | 15 (4.10)   | 209 (5.64)    |
| Chronic kidney disease                   | 412 (4.91)    | 812 (6.03)    | 25 (6.83)   | 329 (8.88)    |
| COPD                                     | 353 (4.21)    | 755 (5.61)    | 22 (6.01)   | 416 (11.23)   |
| Dementia                                 | 110 (1.31)    | 129 (0.96)    | 2 (0.55)    | 56 (1.51)     |
| Depression                               | 848 (10.11)   | 1,788 (13.28) | 43 (11.75)  | 610 (16.46)   |
| Diabetes                                 | 911 (10.87)   | 1,714 (12.73) | 42 (11.48)  | 524 (14.14)   |

|                                                              |               |               |             |               |
|--------------------------------------------------------------|---------------|---------------|-------------|---------------|
| Hospitalization in last 30 days                              | 83 (0.99)     | 165 (1.23)    | 3 (0.82)    | 100 (2.70)    |
| Hyperlipidemia                                               | 1,427 (17.02) | 2,663 (19.79) | 68 (18.58)  | 880 (23.75)   |
| Hypertension                                                 | 2,356 (28.10) | 4,167 (30.96) | 107 (29.23) | 1,372 (37.02) |
| Hyperthyroidism                                              | 44 (0.52)     | 99 (0.74)     | 4 (1.09)    | 39 (1.05)     |
| Inflammatory bowel disease<br>(UC or Crohn's disease)        | 56 (0.67)     | 119 (0.88)    | 7 (1.91)    | 69 (1.86)     |
| Liver disease                                                | 181 (2.16)    | 403 (2.99)    | 16 (4.37)   | 157 (4.24)    |
| Infection in last 30 days                                    | 434 (5.18)    | 860 (6.39)    | 21 (5.74)   | 399 (10.77)   |
| Malignancy excl NMSC                                         | 349 (4.16)    | 535 (3.98)    | 28 (7.65)   | 239 (6.45)    |
| Malnutrition                                                 | 284 (3.39)    | 593 (4.41)    | 13 (3.55)   | 250 (6.75)    |
| MI                                                           | 37 (0.44)     | 102 (0.76)    | 3 (0.82)    | 46 (1.24)     |
| Osteoporosis                                                 | 198 (2.36)    | 378 (2.81)    | 17 (4.64)   | 162 (4.37)    |
| Pregnancy                                                    | 308 (3.67)    | 513 (3.81)    | 12 (3.28)   | 139 (3.75)    |
| Respiratory failure                                          | 73 (0.87)     | 144 (1.07)    | 3 (0.82)    | 125 (3.37)    |
| Stroke                                                       | 100 (1.19)    | 206 (1.53)    | 5 (1.37)    | 82 (2.21)     |
| Anti-depressant use                                          | 250 (2.98)    | 507 (3.77)    | 16 (4.37)   | 207 (5.59)    |
| Anti-epileptic use                                           | 719 (8.58)    | 1,914 (14.22) | 48 (13.11)  | 711 (19.19)   |
| Inhaled steroids in last 90d                                 | 252 (3.01)    | 596 (4.43)    | 20 (5.46)   | 333 (8.99)    |
| OC/Hormone replacement<br>therapy                            | 44 (0.52)     | 104 (0.77)    | 5 (1.37)    | 26 (0.70)     |
| Proton pump inhibitors                                       | 904 (10.78)   | 2,165 (16.09) | 57 (15.57)  | 847 (22.85)   |
| Systemic steroids (oral or<br>intramuscular) in last 90 days | 434 (5.18)    | 1,517 (11.27) | 74 (20.22)  | 1,053 (28.41) |

AD, atopic dermatitis; BMI, body mass index; COPD, chronic obstructive pulmonary disease; EHR, electronic health records; IQR, interquartile range; MI, myocardial infarction; NMSC, non-melanoma skin cancer; OC, oral contraceptive; UC, ulcerative colitis; y, year.

<sup>a</sup>1,026 patients were excluded from all treatment subgroups because they took AD medication in the baseline period (excluding them from the "No AD Treatment" subgroup) but did not have treatment in follow-up.

<sup>b</sup>Any evidence of the condition.

Systemic therapies included oral and injectable corticosteroids, immunosuppressants/ immunomodulators (azathioprine, cyclosporine, interferon gamma, methotrexate, mycophenolic acid/mycophenolic mofetil), and monoclonal antibodies (dupilumab, omalizumab, rituximab).

**Supplementary Table S3.** Crude IRs (95% CI) per 1000 PY of Infections Among Patients with AD, Stratified by Age, Sex, Race, Ethnicity, Smoking Status and BMI in Optum® EHR (2016 to 2021)

|                            | Serious Infections         | Opportunistic Infections | Tuberculosis            | Herpes Zoster           | Herpes Simplex             | COVID-19                   | Conjunctivitis <sup>a</sup> |
|----------------------------|----------------------------|--------------------------|-------------------------|-------------------------|----------------------------|----------------------------|-----------------------------|
| <b>Age, years</b>          |                            |                          |                         |                         |                            |                            |                             |
| 18 to <65 years            | 28.728<br>(27.311, 30.219) | 4.380<br>(3.864, 4.965)  | 0.230<br>(0.136, 0.394) | 1.083<br>(0.844, 1.391) | 14.736<br>(13.745, 15.800) | 19.775<br>(18.641, 20.979) | 31.542<br>(30.035, 33.125)  |
| ≥65                        | 73.605<br>(69.287, 78.195) | 7.049<br>(5.880, 8.454)  | 0.239<br>(0.097, 0.612) | 2.712<br>(2.030, 3.629) | 7.731<br>(6.496, 9.204)    | 18.467<br>(16.509, 20.660) | 18.991<br>(16.953, 21.278)  |
| <b>Sex</b>                 |                            |                          |                         |                         |                            |                            |                             |
| Female                     | 34.009<br>(32.288, 35.822) | 4.600<br>(4.017, 5.269)  | 0.240<br>(0.135, 0.430) | 1.490<br>(1.176, 1.888) | 15.802<br>(14.664, 17.030) | 20.474<br>(19.197, 21.838) | 31.337<br>(29.671, 33.097)  |
| Male                       | 45.729<br>(43.135, 48.481) | 5.648<br>(4.820, 6.621)  | 0.220<br>(0.103, 0.478) | 1.395<br>(1.018, 1.915) | 8.711<br>(7.659, 9.910)    | 17.800<br>(16.278, 19.466) | 24.146<br>(22.309, 26.138)  |
| <b>Race</b>                |                            |                          |                         |                         |                            |                            |                             |
| Asian                      | 14.009<br>(10.517, 18.687) | 4.193<br>(2.514, 7.035)  | 0.595<br>(0.184, 2.150) | 1.191<br>(0.484, 3.050) | 14.495<br>(10.915, 19.275) | 15.073<br>(11.447, 19.871) | 38.144<br>(31.768, 45.822)  |
| African American/<br>Black | 47.410<br>(43.559, 51.607) | 6.796<br>(5.500, 8.403)  | 0.314<br>(0.128, 0.805) | 1.340<br>(0.841, 2.145) | 14.444<br>(12.465, 16.743) | 24.674<br>(22.071, 27.590) | 33.989<br>(30.759, 37.565)  |
| White                      | 38.136<br>(36.410, 39.945) | 4.479<br>(3.934, 5.099)  | 0.155<br>(0.080, 0.306) | 1.537<br>(1.234, 1.915) | 12.613<br>(11.661, 13.645) | 17.949<br>(16.823, 19.150) | 26.086<br>(24.670, 27.585)  |
| Unknown/Other              | 35.995<br>(31.139, 41.622) | 6.094<br>(4.348, 8.558)  | 0.547<br>(0.199, 1.599) | 1.095<br>(0.514, 2.384) | 13.754<br>(10.931, 17.321) | 24.615<br>(20.766, 29.191) | 34.324<br>(29.544, 39.889)  |
| <b>Ethnicity</b>           |                            |                          |                         |                         |                            |                            |                             |
| Hispanic                   | 39.606<br>(33.885, 46.308) | 5.559<br>(3.747, 8.271)  | 0.000<br>(0.000, 0.841) | 1.147<br>(0.505, 2.676) | 13.908<br>(10.770, 17.980) | 31.195<br>(26.334, 36.969) | 32.234<br>(27.104, 38.352)  |
| Non-Hispanic               | 39.549<br>(37.949, 41.218) | 4.935<br>(4.413, 5.521)  | 0.207<br>(0.122, 0.354) | 1.484<br>(1.212, 1.818) | 13.045<br>(12.164, 13.991) | 18.514<br>(17.474, 19.616) | 28.085<br>(26.745, 29.494)  |
| Unknown                    | 25.444<br>(21.620, 29.955) | 5.127<br>(3.600, 7.319)  | 0.677<br>(0.275, 1.734) | 1.354<br>(0.696, 2.667) | 13.146<br>(10.496, 16.479) | 21.152<br>(17.736, 25.237) | 31.241<br>(26.867, 36.339)  |
| <b>Smoking Status</b>      |                            |                          |                         |                         |                            |                            |                             |
| Current                    | 59.004<br>(53.346, 65.271) | 8.266<br>(6.441, 10.618) | 0.133<br>(0.032, 0.739) | 2.134<br>(1.321, 3.466) | 11.918<br>(9.657, 14.718)  | 16.506<br>(13.840, 19.694) | 28.276<br>(24.564, 32.559)  |
| Former                     | 53.887<br>(49.846, 58.261) | 7.395<br>(6.072, 9.012)  | 0.296<br>(0.120, 0.757) | 2.005<br>(1.382, 2.918) | 13.524<br>(11.661, 15.689) | 24.943<br>(22.403, 27.776) | 27.525<br>(24.742, 30.626)  |

|                              |                            |                          |                         |                         |                            |                            |                            |
|------------------------------|----------------------------|--------------------------|-------------------------|-------------------------|----------------------------|----------------------------|----------------------------|
| Never                        | 30.836<br>(28.723, 33.107) | 4.295<br>(3.577, 5.160)  | 0.298<br>(0.153, 0.587) | 1.232<br>(0.879, 1.730) | 13.565<br>(12.212, 15.070) | 23.064<br>(21.303, 24.972) | 29.662<br>(27.572, 31.913) |
| Unknown                      | 32.945<br>(30.717, 35.337) | 3.480<br>(2.823, 4.293)  | 0.159<br>(0.064, 0.406) | 1.192<br>(0.837, 1.701) | 12.751<br>(11.409, 14.252) | 13.671<br>(12.298, 15.199) | 28.116<br>(26.039, 30.361) |
| <b>BMI, kg/m<sup>2</sup></b> |                            |                          |                         |                         |                            |                            |                            |
| <18.5                        | 59.850<br>(44.187, 81.193) | 4.916<br>(1.995, 12.588) | 1.195<br>(0.289, 6.656) | 1.200<br>(0.290, 6.683) | 17.844<br>(10.701, 29.939) | 16.932<br>(10.154, 28.409) | 28.207<br>(18.519, 43.118) |
| 18.5-24.9                    | 35.389<br>(32.327, 38.745) | 5.853<br>(4.731, 7.246)  | 0.344<br>(0.151, 0.802) | 1.379<br>(0.896, 2.130) | 15.852<br>(13.885, 18.102) | 14.999<br>(13.130, 17.138) | 32.019<br>(29.092, 35.244) |
| 25.0-29.9                    | 37.049<br>(34.175, 40.168) | 5.288<br>(4.309, 6.492)  | 0.057<br>(0.014, 0.319) | 2.189<br>(1.597, 3.004) | 13.540<br>(11.881, 15.434) | 19.841<br>(17.846, 22.063) | 26.149<br>(23.751, 28.794) |
| 30.0-34.9                    | 38.399<br>(34.943, 42.201) | 4.705<br>(3.643, 6.082)  | 0.240<br>(0.087, 0.701) | 1.285<br>(0.795, 2.087) | 12.496<br>(10.653, 14.664) | 23.241<br>(20.702, 26.096) | 30.975<br>(27.886, 34.412) |
| 35-39.9                      | 39.691<br>(34.936, 45.103) | 4.459<br>(3.112, 6.404)  | 0.000<br>(0.000, 0.560) | 1.064<br>(0.525, 2.192) | 9.740<br>(7.606, 12.487)   | 24.880<br>(21.328, 29.033) | 32.755<br>(28.444, 37.730) |
| 40+                          | 56.616<br>(50.520, 63.460) | 5.850<br>(4.215, 8.136)  | 0.655<br>(0.266, 1.676) | 1.146<br>(0.566, 2.362) | 11.778<br>(9.315, 14.906)  | 30.686<br>(26.557, 35.469) | 32.547<br>(28.099, 37.710) |
| Unknown                      | 34.287<br>(31.393, 37.452) | 3.938<br>(3.056, 5.080)  | 0.198<br>(0.072, 0.580) | 1.126<br>(0.707, 1.803) | 12.272<br>(10.608, 14.202) | 13.612<br>(11.871, 15.614) | 23.105<br>(20.749, 25.733) |

AD, atopic dermatitis; BMI, body mass index; CI, confidence interval; COVID-19, coronavirus disease 2019; EHR, electronic health records; IR, incidence rate; PY, patient-years.

<sup>a</sup>May include conjunctivitis of infectious and non-infectious etiology (e.g., allergic).



|                              |                            |                          |                         |                         |                         |                          |                          |                          |                         |
|------------------------------|----------------------------|--------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|-------------------------|
| Hispanic                     | 11.281<br>(8.494, 15.001)  | 1.144<br>(0.504, 2.670)  | 2.078<br>(1.107, 3.944) | 0.457<br>(0.141, 1.649) | 0.000<br>(0.000, 0.841) | 1.148<br>(0.505, 2.678)  | 0.916<br>(0.372, 2.346)  | 0.228<br>(0.055, 1.272)  | 0.228<br>(0.055, 1.272) |
| Non-Hispanic                 | 18.246<br>(17.181, 19.379) | 1.803<br>(1.501, 2.168)  | 3.594<br>(3.152, 4.099) | 1.213<br>(0.970, 1.519) | 0.302<br>(0.194, 0.472) | 1.988<br>(1.668, 2.370)  | 5.081<br>(4.551, 5.674)  | 3.127<br>(2.719, 3.598)  | 1.933<br>(1.619, 2.310) |
| Unknown                      | 14.504<br>(11.693, 18.003) | 0.507<br>(0.184, 1.482)  | 3.776<br>(2.502, 5.716) | 0.508<br>(0.185, 1.486) | 0.169<br>(0.041, 0.941) | 2.546<br>(1.552, 4.199)  | 2.542<br>(1.550, 4.193)  | 2.031<br>(1.172, 3.548)  | 0.845<br>(0.372, 1.972) |
| <b>Smoking</b>               |                            |                          |                         |                         |                         |                          |                          |                          |                         |
| Current                      | 20.933<br>(17.808, 24.618) | 3.744<br>(2.597, 5.410)  | 2.825<br>(1.855, 4.318) | 0.133<br>(0.032, 0.740) | 0.265<br>(0.082, 0.958) | 2.676<br>(1.739, 4.132)  | 2.408<br>(1.530, 3.806)  | 0.932<br>(0.460, 1.920)  | 0.931<br>(0.460, 1.919) |
| Former                       | 24.482<br>(21.837, 27.452) | 3.205<br>(2.383, 4.317)  | 3.561<br>(2.681, 4.735) | 1.934<br>(1.323, 2.833) | 0.517<br>(0.255, 1.065) | 2.989<br>(2.198, 4.070)  | 7.634<br>(6.286, 9.276)  | 3.892<br>(2.972, 5.104)  | 3.796<br>(2.891, 4.992) |
| Never                        | 14.826<br>(13.393, 16.414) | 0.595<br>(0.368, 0.967)  | 3.564<br>(2.915, 4.362) | 1.046<br>(0.726, 1.512) | 0.260<br>(0.128, 0.536) | 1.764<br>(1.329, 2.346)  | 4.442<br>(3.711, 5.319)  | 2.959<br>(2.376, 3.688)  | 1.457<br>(1.068, 1.992) |
| Unknown                      | 15.826<br>(14.312, 17.502) | 1.350<br>(0.968, 1.887)  | 3.652<br>(2.976, 4.483) | 1.033<br>(0.707, 1.514) | 0.158<br>(0.064, 0.406) | 1.472<br>(1.070, 2.029)  | 3.881<br>(3.184, 4.735)  | 2.791<br>(2.211, 3.527)  | 1.192<br>(0.837, 1.701) |
| <b>BMI, kg/m<sup>2</sup></b> |                            |                          |                         |                         |                         |                          |                          |                          |                         |
| <18.5                        | 19.736<br>(12.033, 32.552) | 4.835<br>(1.962, 12.378) | 1.222<br>(0.296, 6.809) | 0.000<br>(0.000, 4.412) | 0.000<br>(0.000, 4.399) | 6.030<br>(2.656, 14.072) | 3.649<br>(1.326, 10.664) | 3.649<br>(1.326, 10.664) | 0.000<br>(0.000, 4.399) |
| 18.5-24.9                    | 19.669<br>(17.438, 22.191) | 1.932<br>(1.340, 2.792)  | 4.632<br>(3.644, 5.893) | 1.103<br>(0.683, 1.791) | 0.275<br>(0.112, 0.703) | 2.146<br>(1.515, 3.046)  | 5.572<br>(4.480, 6.934)  | 3.118<br>(2.334, 4.172)  | 2.484<br>(1.798, 3.439) |
| 25.0-29.9                    | 17.636<br>(15.693, 19.823) | 1.439<br>(0.977, 2.124)  | 2.217<br>(1.618, 3.043) | 1.441<br>(0.979, 2.127) | 0.459<br>(0.236, 0.904) | 2.144<br>(1.558, 2.955)  | 5.775<br>(4.746, 7.030)  | 3.822<br>(3.007, 4.863)  | 2.192<br>(1.599, 3.008) |
| 30-34.9                      | 18.223<br>(15.912, 20.875) | 1.763<br>(1.168, 2.669)  | 4.251<br>(3.246, 5.575) | 0.722<br>(0.385, 1.371) | 0.160<br>(0.049, 0.577) | 1.936<br>(1.305, 2.881)  | 4.537<br>(3.497, 5.891)  | 2.254<br>(1.563, 3.257)  | 2.008<br>(1.364, 2.964) |

|         |                            |                         |                         |                         |                         |                         |                         |                         |                         |
|---------|----------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 35-39.9 | 17.192<br>(14.197, 20.831) | 1.064<br>(0.525, 2.193) | 2.771<br>(1.761, 4.379) | 1.064<br>(0.525, 2.192) | 0.454<br>(0.165, 1.328) | 1.989<br>(1.171, 3.401) | 3.836<br>(2.606, 5.663) | 1.827<br>(1.054, 3.191) | 1.676<br>(0.945, 2.998) |
| 40+     | 16.106<br>(13.141, 19.753) | 1.971<br>(1.137, 3.442) | 4.002<br>(2.698, 5.955) | 0.164<br>(0.040, 0.912) | 0.490<br>(0.178, 1.434) | 1.645<br>(0.903, 3.025) | 1.149<br>(0.567, 2.367) | 0.819<br>(0.361, 1.911) | 0.164<br>(0.040, 0.912) |
| Unknown | 15.386<br>(13.505, 17.534) | 1.523<br>(1.018, 2.285) | 3.602<br>(2.764, 4.699) | 1.526<br>(1.020, 2.290) | 0.000<br>(0.000, 0.244) | 1.591<br>(1.073, 2.367) | 4.271<br>(3.348, 5.454) | 3.261<br>(2.470, 4.311) | 1.060<br>(0.656, 1.722) |

AD, atopic dermatitis; BCC, basal cell carcinoma; BMI, body mass index; CI, confidence interval; EHR, electronic health records; IR, incidence rate; NMSC, nonmelanoma skin cancer; PY, patient-years; SCC, squamous cell carcinoma.

**Supplementary Table S5.** Crude IRs (95% CI) per 1000 PY of Cardiovascular Events Among Patients with AD, Stratified by Age, Sex, Race, Ethnicity, Smoking Status and BMI in Optum® EHR (2016 to 2021)

|                           | MACE                       | MI                         | Stroke                     | Peripheral<br>arterial disease | VTE                        | DVT                       | PE                       |
|---------------------------|----------------------------|----------------------------|----------------------------|--------------------------------|----------------------------|---------------------------|--------------------------|
| <b>Age, years</b>         |                            |                            |                            |                                |                            |                           |                          |
| 18 to <65                 | 9.135<br>(8.371, 9.969)    | 4.489<br>(3.968, 5.080)    | 5.655<br>(5.064, 6.316)    | 5.180<br>(4.616, 5.814)        | 7.950<br>(7.240, 8.731)    | 3.549<br>(3.089, 4.080)   | 2.836<br>(2.429, 3.312)  |
| ≥65                       | 43.281<br>(40.098, 46.721) | 20.730<br>(18.622, 23.080) | 25.132<br>(22.761, 27.755) | 28.402<br>(25.852, 31.208)     | 22.220<br>(20.013, 24.674) | 11.204<br>(9.692, 12.955) | 8.868<br>(7.540, 10.435) |
| <b>Sex</b>                |                            |                            |                            |                                |                            |                           |                          |
| Female                    | 12.678<br>(11.674, 13.770) | 6.009<br>(5.336, 6.767)    | 8.573<br>(7.757, 9.476)    | 8.354<br>(7.549, 9.247)        | 9.932<br>(9.049, 10.903)   | 4.780<br>(4.185, 5.462)   | 3.679<br>(3.163, 4.281)  |
| Male                      | 23.108<br>(21.327, 25.040) | 11.702<br>(10.475, 13.075) | 12.154<br>(10.895, 13.561) | 13.308<br>(11.983, 14.783)     | 13.117<br>(11.805, 14.577) | 6.119<br>(5.253, 7.130)   | 5.040<br>(4.263, 5.962)  |
| <b>Race</b>               |                            |                            |                            |                                |                            |                           |                          |
| Asian                     | 8.133<br>(5.604, 11.833)   | 3.580<br>(2.065, 6.253)    | 4.816<br>(2.981, 7.820)    | 2.989<br>(1.642, 5.497)        | 3.893<br>(2.292, 6.657)    | 1.492<br>(0.657, 3.482)   | 0.297<br>(0.072, 1.655)  |
| African<br>American/Black | 19.058<br>(16.756, 21.681) | 8.544<br>(7.074, 10.324)   | 11.782<br>(10.017, 13.864) | 9.434<br>(7.869, 11.315)       | 12.515<br>(10.692, 14.656) | 6.067<br>(4.851, 7.594)   | 5.901<br>(4.704, 7.408)  |
| White                     | 17.115<br>(16.000, 18.308) | 8.527<br>(7.761, 9.370)    | 10.262<br>(9.412, 11.190)  | 11.309<br>(10.413, 12.283)     | 11.543<br>(10.638, 12.526) | 5.543<br>(4.932, 6.230)   | 4.172<br>(3.649, 4.772)  |
| Unknown/other             | 10.422<br>(8.035, 13.534)  | 6.070<br>(4.331, 8.525)    | 5.526<br>(3.880, 7.889)    | 5.908<br>(4.194, 8.340)        | 8.536<br>(6.408, 11.385)   | 3.298<br>(2.096, 5.212)   | 2.930<br>(1.814, 4.759)  |
| <b>Ethnicity</b>          |                            |                            |                            |                                |                            |                           |                          |
| Hispanic                  | 11.263<br>(8.506, 14.933)  | 5.995<br>(4.103, 8.785)    | 7.198<br>(5.082, 10.217)   | 7.914<br>(5.675, 11.059)       | 5.823<br>(3.956, 8.596)    | 2.762<br>(1.593, 4.825)   | 1.607<br>(0.793, 3.311)  |

|                              |                            |                            |                            |                            |                            |                         |                         |
|------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------|-------------------------|
| Non-Hispanic                 | 17.293<br>(16.275, 18.377) | 8.433<br>(7.739, 9.189)    | 10.494<br>(9.712, 11.340)  | 10.508<br>(9.724, 11.356)  | 11.873<br>(11.038, 12.772) | 5.597<br>(5.038, 6.219) | 4.487<br>(3.991, 5.046) |
| Unknown                      | 12.269<br>(9.735, 15.476)  | 6.319<br>(4.592, 8.710)    | 5.814<br>(4.169, 8.125)    | 8.407<br>(6.367, 11.114)   | 7.208<br>(5.340, 9.743)    | 3.746<br>(2.483, 5.672) | 3.056<br>(1.942, 4.830) |
| <b>Smoking</b>               |                            |                            |                            |                            |                            |                         |                         |
| Current                      | 21.577<br>(18.423, 25.280) | 10.209<br>(8.151, 12.797)  | 11.599<br>(9.375, 14.360)  | 16.702<br>(13.954, 20.002) | 11.928<br>(9.676, 14.713)  | 4.845<br>(3.506, 6.707) | 3.752<br>(2.603, 5.423) |
| Former                       | 28.705<br>(25.888, 31.833) | 15.234<br>(13.262, 17.504) | 15.778<br>(13.749, 18.110) | 18.226<br>(16.025, 20.734) | 17.379<br>(15.241, 19.822) | 8.037<br>(6.649, 9.720) | 7.248<br>(5.939, 8.852) |
| Never                        | 11.728<br>(10.487, 13.118) | 5.716<br>(4.878, 6.700)    | 7.959<br>(6.952, 9.114)    | 7.256<br>(6.299, 8.361)    | 10.191<br>(9.039, 11.492)  | 4.835<br>(4.068, 5.749) | 4.058<br>(3.363, 4.899) |
| Unknown                      | 13.927<br>(12.529, 15.485) | 6.326<br>(5.415, 7.393)    | 8.447<br>(7.379, 9.674)    | 7.304<br>(6.316, 8.449)    | 8.632<br>(7.549, 9.872)    | 4.411<br>(3.662, 5.316) | 2.869<br>(2.280, 3.613) |
| <b>BMI, kg/m<sup>2</sup></b> |                            |                            |                            |                            |                            |                         |                         |
| <18.5                        | 16.128<br>(9.495, 27.579)  | 7.308<br>(3.428, 15.906)   | 8.604<br>(4.245, 17.729)   | 6.091<br>(2.682, 14.214)   | 6.178<br>(2.721, 14.417)   | 1.210<br>(0.293, 6.742) | 2.418<br>(0.748, 8.736) |
| 18.5-24.9                    | 15.582<br>(13.649, 17.794) | 7.521<br>(6.233, 9.081)    | 10.135<br>(8.607, 11.939)  | 10.673<br>(9.099, 12.524)  | 9.004<br>(7.576, 10.705)   | 4.308<br>(3.364, 5.523) | 2.834<br>(2.092, 3.844) |
| 25.0-29.9                    | 17.872<br>(15.953, 20.024) | 9.314<br>(7.977, 10.880)   | 10.322<br>(8.900, 11.975)  | 11.802<br>(10.271, 13.565) | 12.414<br>(10.843, 14.215) | 5.362<br>(4.374, 6.575) | 4.402<br>(3.520, 5.510) |
| 30-34.9                      | 18.893<br>(16.583, 21.530) | 9.795<br>(8.195, 11.712)   | 11.443<br>(9.690, 13.520)  | 11.815<br>(10.028, 13.926) | 13.089<br>(11.199, 15.305) | 6.116<br>(4.883, 7.666) | 5.358<br>(4.215, 6.817) |
| 35-39.9                      | 17.265<br>(14.308, 20.845) | 7.753<br>(5.888, 10.222)   | 10.516<br>(8.288, 13.355)  | 12.108<br>(9.695, 15.133)  | 14.514<br>(11.829, 17.820) | 7.305<br>(5.501, 9.715) | 5.402<br>(3.892, 7.513) |

|         |                            |                          |                          |                           |                            |                          |                          |
|---------|----------------------------|--------------------------|--------------------------|---------------------------|----------------------------|--------------------------|--------------------------|
| 40+     | 17.894<br>(14.776, 21.681) | 7.833<br>(5.898, 10.416) | 9.806<br>(7.593, 12.676) | 11.282<br>(8.876, 14.354) | 17.911<br>(14.777, 21.723) | 9.797<br>(7.586, 12.665) | 7.710<br>(5.788, 10.284) |
| Unknown | 13.128<br>(11.412, 15.105) | 6.257<br>(5.116, 7.657)  | 7.841<br>(6.545, 9.397)  | 5.547<br>(4.478, 6.877)   | 6.346<br>(5.195, 7.758)    | 2.992<br>(2.240, 4.004)  | 2.517<br>(1.837, 3.455)  |

AD, atopic dermatitis; BMI, body mass index; CI, confidence interval; DVT, deep venous thrombosis; EHR, electronic health records; IR, incidence rate; MACE, major adverse cardiovascular event; MI, myocardial infarction; PE, pulmonary embolism; PY, patient-years; VTE, venous thromboembolism.

**Supplementary Table S6.** Crude IRs (95% CI) per 1000 PY of Mental Health Outcomes, Asthma, Fracture, and Death Events Among Patients with AD, Stratified by Age, Sex, Race, Ethnicity, Smoking Status and BMI in Optum® EHR (2016 to 2021)

|                           | Anxiety<br>IR (95% CI)       | Depression<br>IR (95% CI)  | Asthma<br>IR (95% CI)      | Asthma requiring<br>hospitalization<br>IR (95% CI) | Fracture<br>IR (95% CI)    | Death<br>IR (95% CI)       |
|---------------------------|------------------------------|----------------------------|----------------------------|----------------------------------------------------|----------------------------|----------------------------|
| <b>Age, years</b>         |                              |                            |                            |                                                    |                            |                            |
| 18 to <65                 | 88.179<br>(85.331, 91.123)   | 64.759<br>(62.406, 67.202) | 65.622<br>(63.183, 68.157) | 18.039<br>(16.936, 19.214)                         | 20.679<br>(19.492, 21.939) | 4.991<br>(4.442, 5.609)    |
| ≥65                       | 66.978<br>(62.651, 71.608)   | 59.352<br>(55.330, 63.670) | 31.448<br>(28.640, 34.536) | 16.066<br>(14.220, 18.155)                         | 42.994<br>(39.806, 46.441) | 39.410<br>(36.518, 42.535) |
| <b>Sex</b>                |                              |                            |                            |                                                    |                            |                            |
| Female                    | 101.151<br>(97.682, 104.745) | 75.099<br>(72.222, 78.092) | 62.146<br>(59.513, 64.898) | 20.054<br>(18.762, 21.436)                         | 25.490<br>(24.019, 27.052) | 9.289<br>(8.449, 10.214)   |
| Male                      | 57.529<br>(54.450, 60.785)   | 46.557<br>(43.843, 49.441) | 49.042<br>(46.185, 52.078) | 13.450<br>(12.121, 14.927)                         | 25.787<br>(23.890, 27.836) | 18.834<br>(17.278, 20.534) |
| <b>Race</b>               |                              |                            |                            |                                                    |                            |                            |
| Asian                     | 38.587<br>(32.162, 46.317)   | 24.298<br>(19.399, 30.457) | 54.978<br>(46.819, 64.583) | 7.258<br>(4.893, 10.800)                           | 11.989<br>(8.785, 16.389)  | 3.266<br>(1.841, 5.843)    |
| African<br>American/Black | 72.703<br>(67.544, 78.261)   | 67.523<br>(62.567, 72.876) | 75.177<br>(69.599, 81.210) | 30.563<br>(27.544, 33.919)                         | 21.060<br>(18.619, 23.828) | 9.179<br>(7.663, 11.001)   |
| White                     | 91.117<br>(88.059, 94.283)   | 66.528<br>(64.021, 69.134) | 52.575<br>(50.359, 54.891) | 15.331<br>(14.277, 16.463)                         | 28.363<br>(26.892, 29.916) | 14.853<br>(13.839, 15.943) |
| Unknown/Other             | 69.814<br>(62.402, 78.119)   | 55.196<br>(48.699, 62.573) | 61.720<br>(54.550, 69.847) | 16.649<br>(13.506, 20.536)                         | 19.284<br>(15.879, 23.431) | 8.551<br>(6.439, 11.371)   |
| <b>Ethnicity</b>          |                              |                            |                            |                                                    |                            |                            |

|                              |                               |                              |                            |                            |                            |                            |
|------------------------------|-------------------------------|------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Hispanic                     | 83.867<br>(74.419, 94.532)    | 74.737<br>(65.957, 84.705)   | 63.517<br>(55.198, 73.112) | 23.278<br>(19.054, 28.456) | 23.471<br>(19.251, 28.632) | 7.295<br>(5.179, 10.299)   |
| Non-Hispanic                 | 84.508<br>(81.871, 87.231)    | 64.624<br>(62.391, 66.938)   | 56.726<br>(54.613, 58.922) | 17.686<br>(16.651, 18.786) | 26.647<br>(25.355, 28.006) | 13.871<br>(12.982, 14.823) |
| Unknown                      | 69.013<br>(61.995, 76.838)    | 45.637<br>(40.137, 51.903)   | 54.554<br>(48.264, 61.678) | 12.502<br>(9.935, 15.744)  | 16.394<br>(13.391, 20.084) | 6.244<br>(4.538, 8.606)    |
| <b>Smoking</b>               |                               |                              |                            |                            |                            |                            |
| Current                      | 117.724<br>(108.169, 128.136) | 100.193<br>(91.629, 109.571) | 53.751<br>(47.907, 60.319) | 23.157<br>(19.851, 27.024) | 34.516<br>(30.373, 39.233) | 15.116<br>(12.589, 18.159) |
| Former                       | 91.096<br>(85.134, 97.483)    | 73.513<br>(68.294, 79.138)   | 45.479<br>(41.470, 49.882) | 19.904<br>(17.592, 22.525) | 35.854<br>(32.649, 39.379) | 25.531<br>(22.981, 28.368) |
| Never                        | 73.930<br>(70.246, 77.810)    | 55.689<br>(52.597, 58.965)   | 49.062<br>(46.079, 52.241) | 16.846<br>(15.329, 18.516) | 23.060<br>(21.258, 25.017) | 9.441<br>(8.351, 10.677)   |
| Unknown                      | 80.530<br>(76.658, 84.599)    | 58.367<br>(55.181, 61.739)   | 71.569<br>(67.918, 75.420) | 15.571<br>(14.083, 17.218) | 20.543<br>(18.811, 22.437) | 9.029<br>(7.932, 10.280)   |
| <b>BMI, kg/m<sup>2</sup></b> |                               |                              |                            |                            |                            |                            |
| <18.5                        | 111.897<br>(87.542, 143.165)  | 80.715<br>(61.300, 106.413)  | 72.010<br>(53.892, 96.355) | 24.708<br>(15.887, 38.585) | 40.249<br>(28.259, 57.458) | 38.157<br>(27.086, 53.866) |
| 18.5-24.9                    | 86.391<br>(80.878, 92.286)    | 57.409<br>(53.180, 61.978)   | 46.454<br>(42.607, 50.653) | 13.717<br>(11.907, 15.806) | 29.765<br>(26.984, 32.838) | 16.885<br>(14.905, 19.132) |
| 25.0-29.9                    | 74.112<br>(69.521, 79.010)    | 56.396<br>(52.529, 60.552)   | 44.432<br>(40.980, 48.180) | 14.915<br>(13.176, 16.887) | 29.090<br>(26.570, 31.852) | 13.858<br>(12.220, 15.718) |
| 30-34.9                      | 85.905<br>(79.969, 92.289)    | 69.504<br>(64.288, 75.150)   | 49.786<br>(45.447, 54.545) | 18.441<br>(16.149, 21.065) | 27.444<br>(24.588, 30.638) | 11.819<br>(10.065, 13.884) |

|         |                               |                              |                            |                            |                            |                            |
|---------|-------------------------------|------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 35-39.9 | 83.850<br>(75.849, 92.707)    | 72.632<br>(65.318, 80.777)   | 52.948<br>(46.692, 60.056) | 19.326<br>(16.158, 23.126) | 22.866<br>(19.385, 26.982) | 9.691<br>(7.596, 12.376)   |
| 40+     | 112.681<br>(102.474, 123.921) | 100.628<br>(91.086, 111.185) | 67.326<br>(59.563, 76.117) | 33.526<br>(29.015, 38.752) | 20.963<br>(17.526, 25.085) | 13.722<br>(11.091, 16.989) |
| Unknown | 77.053<br>(72.391, 82.019)    | 57.112<br>(53.196, 61.321)   | 82.754<br>(77.810, 88.016) | 16.574<br>(14.623, 18.790) | 18.695<br>(16.607, 21.049) | 8.328<br>(6.998, 9.915)    |

AD, atopic dermatitis; BMI, body mass index; CI, confidence interval; EHR, electronic health records; IR, incidence rate; PY, patient-years.