

Supplementary Table 1 Characteristics of the studies included in the meta-analysis

| Study | Design | Location | Age | Gender | No. of participants | No. of cases | Lymphoma | Allergic information source | Adjusted factors |
|------------------------------|-------------------------------------|--------------------|----------|--------|---------------------|--------------|----------|--|---|
| Wang/2015 ⁴ | Population-based case-control | USA | All ages | M/F | 324 | 162 | NHL | Self-report history of allergies, and atopic diseases | None |
| Liu/2015 ⁸ | Registry-based retrospective cohort | Sweden | 2-74 | M/F | 439455 | 363 | NHL HL | Medical record of asthma | None |
| Hollander/2015 ¹³ | Population-based case-control | Denmark and Sweden | 18-74 | M/F | 3772 | 585 | HL | Self-report history of atopic disorders and | Age, sex, country, smoking, number of siblings, history of infectious mononucleosis, mother's age at participant's birth, maternal socioeconomic status |
| Hofmann/2015 ⁹ | Prospective population-based cohort | USA | Nr | M/F | 82370 | 710 | NHL | Self-report of allergic symptoms and history of atopic | Age, sex, state of residence, race, family history of lymphohematopoietic cancer, alcohol |

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| | | | | | | | | conditions (hay fever, eczema) diagnosed by a physician | consumption, smoking, and BMI |
| Helby/2015 ¹⁴ | Prospective population-based cohort | Denmark | 48-67 | M/F | 37747 | 53 | NHL HL | Plasma IgE level | Age, sex, BMI, alcohol, smoking status, cumulative smoking in pack-years, duration of schooling, and income |
| Hemminki/2014 ¹⁸ | Register-based retrospective cohort | Sweden | Median: 24 | M/F | 138723 | 102 | NHL | Medically diagnosed hay fever and allergic rhinitis | None |
| Nieters/2014 ¹⁵ | Nested case-control with prospective cohort | European countries | Nr | M/F | 2040 | 870 | NHL | Plasma IgE level | Sex, smoking status, alcohol consumption at recruitment and highest school level |
| Linabery/2014 ¹⁶ | Prospective population-based cohort | USA | 55-69 | F | 22601 | 327 | NHL | Self-report of allergic conditions told by doctor | Age, education, BMI, smoking status, and residence |
| Linabery/2014 ¹⁷ | Population-based | USA and | Mostly | M/F | 1301 | 517 | HL | Parental | Household income |

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| | case-control | Canada | 0-14 | | | | | report of medical histories for allergic conditions | at birth, mother's education and birth order |
| Dikalioti/2012 ⁵ | Hospital based case-control | Greece | 0-14 | M/F | 554 | 277 | NHL HL | Guardians' report of history for allergic symptoms | Maternal age at birth, maternal education, maternal smoking during pregnancy, breastfeeding, birth order and residential crowding index |
| Chen/2012 ¹⁹ | Register-based retrospective cohort | China | 5.9-63 | M/F | 12720 | 35 | NHL | Medical records of urticaria | None |
| Rudant/2011 ² | Population based case-control | France | Less than 15 | M/F | 1604 | 164 | NHL | Parental report of allergic conditions histories | Age, gender, parental professional category, degree of urbanization, maternal age at child birth and housing, for contact with animals |
| Koshiol/2011 ¹⁰ | Prospective hospital-based cohort | USA | 18-100 | M | 4 million | 9496 | NHL | Hospital discharge diagnosis | Attained age, attained calendar year, race, number of hospital visits, |

and latency
between study entry
and exit

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|----------------------------|-------------------------------------|--------------------|-------|-----|--------|------|--------|--|---|
| Cerhan/2011 ²⁰ | Hospital based case-control | USA | Nr | M/F | 2160 | 915 | NHL HL | Self-report of allergic conditions | Age, sex and residence |
| El-Zein/2010 ²¹ | Population-based case-control | Canada | 35-70 | M | 709 | 197 | NHL | Self-report history of medically diagnosed allergic conditions | Age, income, respondent status, ancestry, birthplace, and smoking |
| Erber/2009 ²³ | Prospective population-based cohort | USA | 45-75 | M/F | 193050 | 939 | NHL | Self-report history of allergic conditions | Age, education, BMI, and alcohol use |
| Pahwa/2009 ²² | Population-based case-control study | Canada | >=19 | M | 1822 | 316 | HL | Self-report history of allergic conditions | Age and province of residence |
| Cozen/2009 ²⁴ | Population-based case-control study | USA | <51 | M/F | 376 | 188 | HL | Self-report history of allergic conditions | Age, ethnicity, sibship size, and childhood socioeconomic were matched because the study enrolled twins |
| Melbye/2007 ²⁵ | Population-based case-control | Denmark and Sweden | 18-74 | M/F | 6242 | 3055 | NHL | Self-report history of allergic | Age, sex, country, birth order, education, and |

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|--------------------------------------|--|--------------------|--|-----|--------|-------|--------|--|---|
| Melbye/2007 ²⁵ | Nested case-control with prospective population based cohort | Finland | Nr | F | 792 | 198 | NHL | conditions Circulating IgE level | outdoor occupation None |
| Ellison-Loschmann/2007 ²⁶ | Hospital based case-control | Spain | Mean: Cases: 60.5 Controls :58.0 | M | 1011 | 247 | NHL HL | Circulating IgE level | Age, sex, center, smoking status, any treated asthma or eczema |
| Cozen/2007 ²⁷ | Population-based case-control | USA | 20-74 | M/F | 2378 | 1321 | NHL | Self-report medical history of allergic conditions | Study center, age, gender, race, and education |
| Becker/2007 ²⁸ | Population and hospital based case-control | European countries | <=71 | M/F | 4827 | 2362 | NHL HL | self-reported medical history of atopic disorders | Age, sex |
| Soderberg/2006 ²⁹ | Population-based case-control study | Sweden | Median: Cases: 70 Controls :67 | M/F | 169924 | 18186 | NHL | Registry data of asthma | Sex, socioeconomic status and age at diagnosis (cases) or age at selection (controls) |
| Bracci/2006 ³⁰ | Population-based case-control | USA | 21-74 | M/F | 3706 | 1304 | NHL | Self-reported history of allergic conditions | Age, sex |

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|------------------------------|-------------------------------------|-----------|------------|-----|-------|------|--------|---|--|
| Grulich/2005 ⁶ | Population based case-control | Australia | 20-74 | M/F | 1398 | 704 | NHL | Self-reported history of allergic conditions | Age, sex, state and ethnicity |
| Eriksson/2005 ³¹ | Prospective hospital based cohort | Sweden | Median: 32 | M/F | 13811 | 8 | NHL | Skin prick test result | None |
| Becker/2005 ³² | Population-based case-control | Germany | 18-80 | M/F | 1414 | 704 | NHL HL | Self-reported medical history of atopic disorders | Smoking |
| Zhang/2004 ³³ | Population-based case-control | USA | 21-84 | F | 1318 | 601 | NHL | Self-reported history of allergic conditions | Age, BMI, menopausal status, and family history of NHL |
| Soderberg/2004 ³⁴ | Prospective population based cohort | Sweden | Median: 56 | M/F | 16539 | 112 | NHL | Self-reported history of allergic conditions | Age, sex |
| Holly/2003 ³⁵ | Population-based case-control | USA | Nr | M/F | 3706 | 1304 | NHL | Medical records or self-reported history of allergic conditions | Age, sex |
| Briggs/2002 ³⁶ | Population based case-control | USA | 32-60 | M | 2643 | 952 | NHL | Self-reported medical history of allergy | Age, cancer registry, ethnicity, and education |

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|-------------------------------------|---|---------|-------------|-----|-------|------|--------|--|--|
| Fabbro-Peray/ 2001 ³⁷ | Population-based case-control | France | >=18 | M/F | 1470 | 445 | NHL | Self-reported history of allergic conditions | Age, sex, ethnicity, education, setting (rural or urban) |
| Vineis/2000 ³⁸ | Population-based case-control | Italy | 20-74 | M/F | 4387 | 1742 | NHL HL | Self-reported history of allergic conditions | Age, sex |
| Holly/1999 ³⁹ | Population-based case-control | USA | 21-74 | M/F | 3376 | 1281 | NHL | Medical records or self-reported history of allergic conditions | Age |
| Vesterinen/1993 ⁴⁰ | Prospective population based cohort | Finland | 35-84 | M/F | 78000 | 65 | NHL | Medical information of asthma diagnosis | None |
| La Vecchia/1992 ⁴¹ | Hospital based case-control | Italy | 17-79 | M/F | 738 | 177 | NHL | Self-reported history of allergic conditions | Age, sex |
| Doody/1992 ⁴² | Hospital based case-control | USA | >=15 | M/F | 291 | 100 | NHL | Medical records of allergic conditions | None |
| Bernstein/1992 ⁴³ | Population-based case-control | USA | Mean: 57 | M/F | 1238 | 619 | NHL | Self-reported medical history of allergic | None |

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| Franceschi/1989 ⁴⁴ | Hospital based case-control study | Italy | 17-80 | M/F | 609 | 208 | NHL | conditions Self-reported medical history of allergic conditions | Age, sex |
| Cartwright/1988 ⁴⁵ | Hospital based case-control study | UK | Nr | M/F | 1161 | 437 | NHL | Self-reported medical history of allergic conditions | None |
| Tielsch/1987 ⁴⁶ | Hospital based case-control study | USA | >=18 | M/F | 218 | 109 | NHL | Self-reported medical history of allergic conditions | Nr |

Nr: not reported; NHL: non-hodgkin lymphoma; HL: hodgkin lymphoma; BMI: body mass index;