**Supplemental digital content**

**Long-term consequences of undiagnosed celiac seropositivity**

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# **Supplemental material, supplemental digital content 1:** Description of the included studies

## The Health2006 study

The Health2006 study was a cross-sectional population-based study. A detailed description of the Health2006 cohort profile has been published elsewhere.1 The participants invited to the baseline Health2006 study were drawn as a random sample from the background population aged 18–69 years, living in 11 municipalities in the western part of Copenhagen. All eligible participants in the Health2006 baseline study were invited to a 5-year follow-up examination including essentially the same study protocol 2, 3 with the addition of screening for CD by measurements of CD biomarkers. The screening for CD has also been described elsewhere.3, 4 A total of 3,405 participants were eligible for invitation and 2,308 individuals (54.2% female) were re-examined, and 2,297 participants were screened for CD (11 were not included due to missing blood sample or technical reasons). The mean age at the 5-year-follow-up examination was 55.7 years (range: 24-76 years). The study included self-administered questionnaires and a physical examination including collection of blood samples.

## The Inter99 Study

The Inter99 study5, 6 was a population-based intervention study (CT00289237, ClinicalTrials.gov) investigating the effects of lifestyle intervention on cardiovascular disease (N=61,301).6 We used baseline data and blood sample drawn before participants were invited to the lifestyle intervention program. A random sample of 12,934 men and women aged between 30-60 years, living in 11 municipalities in the western part of Copenhagen, were invited to participate in a health examination during 1999-2001. A total of 6784 individuals participated (participation rate: 52%). For this present study blood samples from 6,423 individuals were screened for CD antibodies.

## 1936-cohort study (baseline examination at 40 years)

The 1936-cohort study7 is a longitudinal population-based study. A sample of 1,200 persons aged 40 years at the time of the study living in 4 municipalities (Broendby, Glostrup, Herlev, and Ledoeje-Smoerum) in the western part of Copenhagen were invited to a health examination focused on cardiovascular risk factors. The participants completed a questionnaire on medical history, health and lifestyle. Between 1976 and 1977, a total of 1,052 persons were examined (participation rate=88%).7, 8 For this present study blood samples from 1,035 individuals were screened for CD antibodies.

## The Monica studies

The MONICA studies was a part of an international World Health Organization (WHO) co-ordinated study, MONItoring of trends and determinants in CArdiovascular Diseases.9 Between 1982 and 1995 three repeated cross-sectional studies (MONICA I, II, and III) were carried out, inviting random samples of equal numbers of men and women in the age groups 30, 40, 50 and 60 years drawn from the Danish Civil Registration System (in which all inhabitants in Denmark are registered).10

*The Monica-I study*

The Monica-I study10 took place from 1982 to 1984. A total of 4,807 persons born in 1922, 1932, 1942 or 1952 from the referral area of Glostrup County Hospital, in the western part of Copenhagen, was invited to participate in the Danish MONICA I health survey, 3,785 persons participated, and thus the participation rate was 79%. For this present study only blood samples from 1,839 women were included and screened for CD antibodies, because there was no remaining serum in the biobank from male participants in the study.

*The Monica-II study*

The Monica-II study11 took place from 1986 to 1987. For the Monica-II study 2,000 individuals were invited and 1,504 participated (participation rate: 75%). For the present study blood samples from 1,274 individuals were screened for CD antibodies.

*The Monica-III study*

The Monica-III study10, 11 took place from 1991 to 1992. For the Monica-III study 2,927 individuals were invited and 2,027 participated (participation rate: 69%). For the present study blood samples from 2,009 individuals were screened for CD antibodies.

## The 1914-cohort study (examination at 70 years)

The 1914-cohort study12, 13 is a longitudinal study of health and aging, initially aimed to investigate risk factors for heart diseases, but the purpose was widened in 1984 to also include the aging process. In 1964, a total of 976 individuals born in 1914 and living in seven municipalities in the western part of Copenhagen were invited, and 802 (436 men and 366 women) participated. Repeated assessments occurred at 10-year intervals from age 50, and every 5 years from age 75. For the examination at 70 and 75 years of age, the sample was refreshed in order to increase the sample size, here individuals born in 1914 were drawn from the National Person Register.

For this study we use the blood samples from the examination at age 70 years of age where data was obtained from two groups of individuals born in 1914 and aged 70 years: 1) follow-up from the baseline of the 1914-cohort started in 1964, where 726 individuals were eligible for invitation and 537 participated (73%). 2) The additional 383 individuals invited to supplement the cohort, where 267 participated (70%). Thus, in total the study population for the 1914-cohort study examination at 70 years was 804 individuals (participation rate in total: 72%).12, 13 For the present study blood samples from 798 individuals were screened for CD antibodies.

## The Allergy90 study

The Allergy90 study14, 15, also known as The Copenhagen Allergy study, was a cross-sectional study conducted in 1990. In a first phase, a screening questionnaire of respiratory symptoms, was mailed to a random sample of 15- to 69- year old individuals living in 11 municipalities in the western part of Copenhagen. 6,998 individuals responded to the questionnaire (87.5%). A random group of 793 individuals and a symptom group of 788 individuals were selected among the respondents and invited to a health examination. 599 (75.5%) in the random group and 635 (80.6%) in the symptom group were examined (122 individuals were in both groups). Thus, 1,112 individuals (77.5%) were examined in total. The examinations were conducted from February 1990 until January 1991.14, 15 For the present study blood samples from 1,101 individuals were screened for CD antibodies.

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# **Supplementary tables**

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| **Table S1,** **supplemental digital content 2:** Registry-based International classification of disease (ICD) diagnoses from the National Patient Register used for the study. | | | | | | | |
| **Diagnosis** | |  | | **ICD-8** | | **ICD-10** | |
| Cancers | | All cancers except NMSC | | 140-209 excl. 173 | | C00-97 excl. C44 | |
|  | | Gastrointestinal cancers | | 150-154 | | C15-21 | |
|  | | Colon cancer | | 153 | | C18 | |
|  | | Rectum cancer | | 154 | | C19-21 | |
|  | | Small intestine cancer | | 152 | | C17 | |
|  | | Liver and gallbladder cancer | | 155-156 | | C22-24 | |
|  | | Liver cancer | | 155 | | C22 | |
|  | | Breast cancer | | 174 | | C50 | |
|  | | Lung cancer | | 162 | | C34 | |
|  | | Urinary organ cancers | | 188-189 | | C64-68 | |
|  | | Cancer uteri, ovary cancers and female genitalia | | 180-184 | | C51-58 | |
|  | | Cancer of the uterus | | 182 | | C54-55 | |
|  | | Cancer cervix uteri | | 180 | | C53 | |
|  | | Ovary cancer | | 183 | | C56 | |
|  | | Prostate cancer | | 185 | | C61 | |
|  | | Head and neck cancers | | 140-149 160-161 | | C00-14 C30-32 | |
|  | | Lip | | 140 | | C00 | |
|  | | Mouth | | 141, 144-145 | | C01-06 | |
|  | | Nose | | 160 | | C30-31 | |
|  | | Salvia glands | | 142-143 | | C07-09 | |
|  | | Larynx/pharynx | | 146-149 161 | | C10-14 C32 | |
|  | | Lymphoma | | 200-202, 275.59 | | C81-86, C88, C915 | |
|  | | NHL | | 200, 202 | | C82-86 | |
| Cardiovascular disease | | Total cardiovascular disease | | 410-414 + 430-438 + 440-441 + 444-445 | | I20–25, I60–69, I70–71, I739A, I739C, I74, K550–551 | |
|  | | Coronary artery disease | | 410-414 | | I20–I25 | |
|  | | Cerebrovascular disease | | 430-438 | | I60–I69 | |
|  | | Peripheral artery disease | | 440-441 + 444-445 | | I70–71, I739A, I739C, I74, K550–551 | |
| Inflammatory Bowel disease: | | Ulcerative colitis | | 563.01 | | K51 | |
|  | | Crohn’s disease | | 563.19 | | K50 | |
| Autoimmune diseases: | | Alopecia areata | | 704.00 | | L63 | |
|  | | Ankylosing spondylitis | | 712.49 | | M45 | |
|  | | Autoimmune hemolytic anemia | | 283.90-91 | | D59.1 | |
|  | | Autoimmune hepatitis | | 571.93 | | K75.4 | |
|  | | Autoimmune thyroiditis | | 245.03 | | E06.3 | |
|  | | Crohn’s disease | | 563.19 | | K50 | |
|  | | Dermatopolymyositis | | 716 | | M33 | |
|  | | Diabetes Mellitus Type 1 | | 249 | | E10 | |
|  | | Guillain-Barre syndrome | | 354 | | G61.0 | |
|  | | Idiopathic thrombocytopenic purpura | | 446.49 | | D69.3 | |
|  | | Iridocyclitis | | 364 | | H20 | |
|  | | Juvenile arthritis | | 712.09 | | M08 | |
|  | | Multiple sclerosis | | 340 | | G35 | |
|  | | Myasthenia gravis | | 733.09 | | G70.0 | |
|  | | Pemphigoid | | 694.05 | | L12 | |
|  | | Pemphigus | | 694 | | L10 | |
|  | | Pernicious anemia | | 281.0 | | D51.0 | |
|  | | Polymyalgia rheumatica | | 446.30-31, 446.39 | | M31.5-6, M35.3 | |
|  | | Primary adrenocortical insufficiency | | 255.1 | | E27.1 | |
|  | | Primary biliary cirrhosis | | 571.90 | | K74.3 | |
|  | | Psoriasis vulgaris | | 696.09-10, 696.19 | | L40 | |
|  | | Seropositive rheumatoid arthritis | | 712.19, 712.39, 712.59 | | M05-06 | |
|  | | Sjögren’s syndrome | | 734.90 | | M35.0 | |
|  | | Systemic lupus erythematosus | | 734.19 | | M32 | |
|  | | Systemic sclerosis | | 734.0 | | M34 | |
|  | | Thyrotoxicosis | | 242.00 | | E05.0 | |
|  | | Ulcerative colitis | | 563.01 | | K51 | |
|  | | Vitiligo | | 709.01 | | L80 | |
|  | | Wegener’s granulomatosis | | 446.29 | | M31.3 | |
| ICD-9 codes were not implemented in the Danish health care system | | | | | | | |
| **Table S2, supplemental digital content 3:** Registry-based International classification of disease (ICD) diagnoses from The Danish Cancer Registry used for the study. | | | | | |
|  | | **ICD-7** | | **ICD-10** | |
| All cancers except NMSC | | 140-204 excl. 191 | | C00-97 excl. C44 | |
| Gastrointestinal cancers | | 150-154 | | C15-21 | |
| Colon cancer | | 153 | | C18 | |
| Rectum cancer | | 154 | | C19-21 | |
| Small intestine cancer | | 152 | | C17 | |
| Liver and gallbladder cancer | | 155-156 | | C22-24 | |
| Liver cancer | | 155 | | C22 | |
| Breast cancer | | 170 | | C50 | |
| Lung cancer | | 162 | | C34 | |
| Urinary organ cancers | | 180-181 | | C64-68 | |
| Cancer uteri, ovary cancers and female genitalia | | 171-176 | | C51-58 | |
| Cancer of the uterus | | 172-174 | | C54-55 | |
| Cancer cervix uteri | | 171 | | C53 | |
| Ovary cancer | | 175 | | C56 | |
| Prostate cancer | | 177 | | C61 | |
| Head and neck cancers | | 140-148 160-161 | | C00-14 C30-32 | |
| Lip | | 140 | | C00 | |
| Mouth | | 141, 143-144 | | C01-06 | |
| Nose | | 146, 160 | | C30-31 | |
| Salvia glands | | 142 | | C07-09 | |
| Larynx/pharynx | | 145, 147-148, 161 | | C10-14 C32 | |
| Lymphoma | | 200-202, 202.3 | | C81-86, C88, C915 | |
| NHL | | 200, 202 | | C82-86 | |
| ICD-8-9 codes were not implemented in the Danish Cancer Registry. | | | | | |

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| **Table S3, supplemental digital content 4**: Results from the screening for celiac diseasea when using alternative definitions of celiac disease antibody positivity | | | | |
| **Study** | **Examination year** | **Tissue transglutaminase**  **above 7 U/ml**  (IgA or IgG-TTG ≥ 7 U/ml) | **Tissue transglutaminase**  **above 10 U/ml**  (IgA or IgG-TTG ≥ 10 U/ml) | **IgG Deamidated gliadin peptide above 10 U/ml** |
| The 1936-cohort study | 1976-1977 | 0.4% (4/1035) | 0.2% (2/1035) | 0.5% (5/1035) |
| The Monica-1 study b | 1982-1984 | 0.5% (9/1839) | 0.3% (5/1839) | 0.5% (9/1839) |
| The 1914-cohort study | 1984-1985 | 0.6% (5/798) | 0.4% (3/798) | 0.4% (3/798) |
| The Monica-2 study | 1986-1987 | 0.7% (9/1274) | 0.5% (7/1274) | 0.7% (9/1274) |
| The Allergy90 study | 1990-1991 | 0.9% (10/1101) | 0.3% (3/1101) | 0.2% (2/1101) |
| The Monica-3 study | 1991-1992 | 0.5% (11/2009) | 0.3% (7/2009) | 0.6% (11/2009) |
| The Inter99 study | 1999-2001 | 0.8% (49/6423) | 0.4% (28/6423) | 0.7% (44/6423) |
| The Health 2006 study,  5-year follow-up | 2011-2012 | 0.6% (13/2297) | 0.5% (12/2297) | 0.5% (12/2297) |
| **Total** |  | **0.7% (110/16776)** | **0.4% (67/16776)** | **0.6% (95/16776)** |
| Test for trend per year c | 1976-2012 | OR: 1.01 95% CI:0.99-1.03, P=0.449 | OR: 1.02 95% CI:1.00-1.04 P=0.127 | OR: 1.01 95% CI: 0.99-1.03  P=0.404 |
| a The participants were screened for celiac disease antibodies by Elia™ Celikey® tissue transglutaminase (TTG) anti-IgA and anti-IgG assays and deamidated gliadin peptide (DGP) anti-IgG assays  b only women were screened for celiac disease because serum was not available for men  c test for trend per year by logistic regression  Abbreviations; Ig: immunoglobulin, TTG: tissue transglutaminase, DGP: deamidated gliadin peptide, OR: Odds ratio, CI: Confidence interval | | | | |

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| **Table S4, supplemental digital content 5:** Hazard ratios for mortality, cancers and diseases among participants with tissue transglutaminase antibodies (IgA or IgG) above 7 U/ml. A total of 0.7 % (110/16776) participants were celiac disease antibody positive when using this definition. | | | | | | | | |
|  | **HR** a **(95 % CI)** | | **p-value** | | **Adjusted HR** b **(95 % CI)** | | **p-value** | |
| Mortality | 1.12 (0.77-1.63) | | 0.541 | | 1.11 (0.77-1.61) | | 0.581 | |
| All cancers except NMSC c | 1.56 (1.10-2.23) | | 0.014 | | 1.55 (1.08-2.20) | | 0.016 | |
| Gastrointestinal cancers | 2.23 (1.16-4.31) | | 0.017 | | 2.14 (1.10-4.13) | | 0.024 | |
| Lymfoma | 2.18 (0.54-8.81) | | 0.273 | | 2.09 (0.52-8.45) | | 0.301 | |
| Liver and gallbladder cancer | 2.60 (0.36-18.81) | | 0.343 | | 2.41 (0.33-17.48) | | 0.384 | |
| Breast cancer d | 1.75 (0.73-4.23) | | 0.212 | | 1.74 (0.72-4.20) | | 0.219 | |
| Lung cancer | 0.82 (0.26-2.55) | | 0.733 | | 0.82 (0.27-2.56) | | 0.737 | |
| Urinary organ cancer | 1.46 (0.36-5.87) | | 0.596 | | 1.34 (0.33-5.41) | | 0.680 | |
| Cancer uterus, ovary and female genitalia d | 1.48 (0.37-5.95) | | 0.582 | | 1.47 (0.37-5.92) | | 0.586 | |
| Prostate cancer d | 1.32 (0.49-3.54) | | 0.579 | | 1.28 (0.48-3.44) | | 0.623 | |
| Head and neck cancers | 2.22 (0.55-8.94) | | 0.264 | | 2.13 (0.53-8.60) | | 0.290 | |
| Autoimmune diseases | 1.19 (0.67-2.10) | | 0.548 | | 1.20 (0.68-2.13) | | 0.521 | |
| Cardiovascular disease | 1.19 (0.81-1.74) | | 0.389 | | 1.14 (0.78-1.68) | | 0.499 | |
| a The hazard ratios were estimated by cox regression with age as the underlying time scale  b Adjusted for sex and study, with age as the underlying time scale.  c First date for cancers diagnosed in The Danish Cancer Registry and/or The National Patient Register except non-melanoma skin cancer (NMSC)  d  Sex related cancers were not adjusted for sex; Prostate cancer analyzed only for men and cancer of the uterus, ovary and female genitalia and breast cancer analyzed only for women. | | | | | | | | |
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| **Table S5,** **supplemental digital content 6 :** Hazard ratios for mortality, cancers and diseases among participants with IgG deamidated gliadin peptide above 10 U/ml. A total of 0.4 % (59/16666) participants were celiac disease antibody positive when using this definition, when excluding individuals positive for tissue transglutaminase (IgA and IgG) | | | | | | | | |
|  | | **HR** a **(95 % CI)** | | **p-value** | | **Adjusted HR** b **(95 % CI)** | | **p-value** |
| Mortality | | 1.35 (0.78-12.33) | | 0.281 | | 1.37 (0.79-2.36) | | 0.258 |
| All cancers except NMSC c | | 1.57 (0.91-2.70) | | 0.106 | | 1.57 (0.91-2.70) | | 0.107 |
| Gastrointestinal cancers | | 2.56 (0.96-6.85) | | 0.061 | | 2.60 (0.97-6.96) | | 0.057 |
| Lymfoma | | 0.00 (0.00- -) | | 0.978 | | 0.00 (0.00- -) | | 0.978 |
| Liver and gallbladder cancer | | 0.00 (0.00- -) | | 0.986 | | 0.00 (0.00- -) | | 0.986 |
| Breast cancer d | | 2.34 (0.87-6.26) | | 0.091 | | 2.32 (0.87-6.22) | | 0.093 |
| Lung cancer | | 0.72 (0.10-5.14) | | 0.746 | | 0.73 (0.10-5.18) | | 0.752 |
| Urinary organ cancer | | 0.00 (0.00-8.36E287) | | 0.975 | | 0.00 (0.00-4.83E292) | | 0.975 |
| Cancer uterus, ovary and female genitalia d | | 3.85 (1.23-12.03) | | 0.020 | | 3.78 (1.21-11.80) | | 0.022 |
| Prostate cancer d | | 1.22 (0.17-8.69) | | 0.842 | | 1.20 (0.17-8.57) | | 0.855 |
| Head and neck cancers | | 5.17 (1.28-20.89) | | 0.021 | | 5.53 (1.37-22.40) | | 0.017 |
| Autoimmune diseases | | 1.80 (0.90-3.61) | | 0.096 | | 1.80 (0.90-3.60) | | 0.098 |
| Cardiovascular disease | | 1.78 (1.11-2.87) | | 0.018 | | 1.84 (1.14-2.96) | | 0.012 |
| a The hazard ratios were estimated by cox regression with age as the underlying time scale  b Adjusted for sex and study, with age as the underlying time scale.  c First date for cancers diagnosed in The Danish Cancer Registry and/or The National Patient Register except non-melanoma skin cancer (NMSC)  d  Sex related cancers were not adjusted for sex; Prostate cancer analyzed only for men and cancer of the uterus, ovary and female genitalia and breast cancer analyzed only for women. | | | | | | | | |

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| **Table S6,**  **supplemental digital content 7**: Adjusted hazard ratios for mortality, cancers and diseases among participants with undiagnosed celiac disease as defined by celiac disease antibody positivity a | | | | | | | | | | | | | | | | |
|  | **Number of events** | **Mean follow-up time** | Unadjusted b | | | Adjusted for sex and study b | | | | Adjusted for sex, bmi, smoking, alcohol and study b | | | | Adjusted for sex, bmi, smoking, alcohol, study and education b | | | | |
|  | **HR (95 % CI)** | **p-value** | | **Adjusted** c **HR**  **(95 % CI)** | | **p-value** | | **Adjusted HR**  **(95 % CI)** | | **p-value** | | **Adjusted HR**  **(95 % CI)** | | **p-value** | | |
| Mortality | 4185 | 19.6 | 1.19 (0.87-1.61) | 0.276 | 1.18 (0.87-1.61) | | 0.286 | | 1.17 (0.85-1.61) | | 0.328 | | 1.17 (0.85-1.61) | | 0.323 | | |
| All cancers excl. NMSC c | 2988 | 18.7 | 1.57 (1.16-2.11) | 0.003 | 1.55 (1.15-2.09) | | 0.004 | | 1.56 (1.15-2.11) | | 0.004 | | 1.56 (1.15-2.12) | | 0.005 | | |
| GastrointestinaIe cancers | 609 | 19.4 | 2.33 (1.35-4.04) | 0.003 | 2.27 (1.31-3.93) | | 0.004 | | 2.42 (1.40-3.20) | | 0.002 | | 2.49 (1.43-4.31) | | 0.001 | | |
| Small intestine cancer | 11 | 19.6 | 0.00 (0.00- - ) | 0.992 | 0.00 (0.00- - ) | | 0.997 | | 0.00 (0.00- - ) | | 0.999 | | 0.00 (0.00- - ) | | 0.999 | | |
| Colon cancer | 349 | 19.5 | 2.84 (1.47-5.51) | 0.002 | 2.81 (1.45-5.45) | | 0.002 | | 2.97 (1.53-5.76) | | 0.001 | | 3.03 (1.56-5.89) | | 0.001 | | |
| Rectum cancer | 165 | 19.5 | 0.65 (0.09-4.69) | 0.672 | 0.63 (0.09-4.47) | | 0.640 | | 0.65 (0.09-4.62) | | 0.664 | | 0.66 (0.09-4.71) | | 0.677 | | |
| Lymphoma | 137 | 19.6 | 1.55 (0.38-6.24) | 0.541 | 1.52 (0.38-6.14) | | 0.559 | | 1.61 (0.40-6.52) | | 0.503 | | 1.65 (0.41-6.69) | | 0.480 | | |
| Non-Hodgkin Lymphoma | 123 | 19.6 | 1.73 (0.43-6.98) | 0.444 | 1.69 (0.42-6.83) | | 0.463 | | 1.80 (0.44-7.29) | | 0.410 | | 1.83 (0.45-7.40) | | 0.398 | | |
| Liver and gallbladder cancer | 56 | 19.6 | 1.87 (0.26-13.53) | 0.535 | 1.77 (0.25-12.80) | | 0.572 | | 1.93 (0.27-14.01) | | 0.514 | | 1.99 (0.28-14.43) | | 0.496 | | |
| Liver cancer | 42 | 19.6 | 2.48 (0.34-18.04) | 0.370 | 2.29 (0.32-16.69) | | 0.413 | | 2.53 (0.35-18.45) | | 0.360 | | 2.59 (0.36-18.93) | | 0.348 | | |
| Breast cancer d | 550 | 19.3 | 1.98 (1.02-3.82) | 0.043 | 1.96 (1.01-3.79) | | 0.045 | | 2.06 (1.06-3.98) | | 0.032 | | 1.87 (0.93-3.77) | | 0.078 | | |
| Lung cancer | 528 | 19.5 | 0.79 (0.30-2.12) | 0.645 | 0.80 (0.30-2.13) | | 0.652 | | 0.86 (0.32-2.31) | | 0.772 | | 0.86 (0.32-2.30) | | 0.761 | | |
| Urinary organs cancer | 200 | 19.5 | 1.06 (0.26-4.28) | 0.931 | 1.01 (0.25-4.08) | | 0.985 | | 1.08 (0.27-4.33) | | 0.921 | | 1.08 (0.27-4.37) | | 0.910 | | |
| Cancer uterus, ovary and female genitalia d | 255 | 19.5 | 2.36 (0.97-5.72) | 0.058 | 2.34 (0.96-5.67) | | 0.060 | | 2.39 (0.98-5.79) | | 0.054 | | 2.43 (1.00-5.91) | | 0.049 | | |
| Ovary cancer | 92 | 19.6 | 1.28 (0.18-9.16) | 0.808 | 1.26 (0.18-9.06) | | 0.817 | | 1.35 (0.19-9.71) | | 0.764 | | 1.37 (0.19-9.85) | | 0.754 | | |
| Cancer cervix uteri | 41 | 19.6 | 0.00 (0.00- - ) | 0.986 | 0.00 (0.00- - ) | | 0.986 | | 0.00 (0.00- - ) | | 0.987 | | 0.00 (0.00- - ) | | 0.987 | | |
| Cancer of the uterus | 123 | 19.5 | 3.95 (1.46-10.69) | 0.007 | 3.95 (1.46-10.70) | | 0.007 | | 3.94 (1.45-10.69) | | 0.007 | | 3.98 (1.46-10.81) | | 0.007 | | |
| Prostate cancer d | 353 | 19.5 | 1.30 (0.54-3.15) | 0.559 | 1.26 (0.52-3.06) | | 0.603 | | 0.99 (0.37-2.65) | | 0.977 | | 1.04 (0.39-2.79) | | 0.937 | | |
| Head and neck cancers | 137 | 19.6 | 3.12 (1.15-8.43) | 0.025 | 3.09 (1.14-8.37) | | 0.026 | | 2.65 (0.84-8.35) | | 0.096 | | 2.75 (0.87-8.66) | | 0.085 | | |
| Lip | 5 | 19.6 | 0.00 (0.00- - ) | 0.995 | 0.00 (0.00- - ) | | 0.999 | | 0.00 (0.00- - ) | | 0.999 | | 0.00 (0.00- - ) | | 0.999 | | |
| Mouth | 55 | 19.6 | 4.02 (0.98-16.52) | 0.053 | 4.15 (1.01-17.11) | | 0.049 | | 4.77 (1.16-19.70) | | 0.031 | | 4.93 (1.19-20.39) | | 0.028 | | |
| Nose | 12 | 19.6 | 0.00 (0.00- - ) | 0.992 | 0.00 (0.00- - ) | | 0.992 | | 0.00 (0.00- - ) | | 0.993 | | 0.00 (0.00- - ) | | 0.993 | | |
| Salvary glands | 28 | 19.6 | 3.78 (0.51-27.85) | 0.191 | 4.04 (0.55-29.80) | | 0.171 | | 4.38 (0.59-32.37) | | 0.148 | | 4.69 (0.63-34.80) | | 0.131 | | |
| Larynx, Pharynx | 71 | 19.6 | 2.93 (0.72-11.94) | 0.134 | 2.73 (0.67-11.19) | | 0.162 | | 1.55 (0.21-11.20) | | 0.664 | | 1.60 (0.22-11.55) | | 0.644 | | |
| Autoimmune diseases | 1569 | 18.8 | 1.38 (0.89-2.15) | 0.150 | 1.39 (0.90-2.16) | | 0.142 | | 1.47 (0.94-2.28) | | 0.089 | | 1.51 (0.97-2.34) | | 0.070 | | |
| Inflammatory Bowel disease | 160 | 19.5 | 0.00 (0.00-1.11E276) | 0.971 | 0.00 (0.00-1.87E277) | | 0.971 | | 0.00 (0.00-4.39E278) | | 0.971 | | 0.00 (0.00-6.21E282) | | 0.972 | | |
| Total cardiovascular disease | 3481 | 18.0 | 1.37 (1.01-1.85) | 0.041 | 1.35 (1.00-1.82) | | 0.052 | | 1.37 (1.01-1.86) | | 0.046 | | 1.34 (0.97-1.83) | | 0.072 | | |
| Coronary artery disease | 1976 | 18.7 | 0.90 (0.56-1.45) | 0.663 | 0.87 (0.54-1.41) | | 0.575 | | 0.85 (0.52-1.40) | | 0.525 | | 0.82 (0.49-1.36) | | 0.438 | | |
| Peripheral artery disease | 792 | 19.3 | 1.62 (0.92-2.87) | 0.097 | 1.55 (0.88-2.75) | | 0.132 | | 1.71 (0.97-3.03) | | 0.065 | | 1.73 (0.98-3.05) | | 0.061 | | |
| Cerebrovascular disease | 1691 | 18.9 | 1.43 (0.93-2.20) | 0.103 | 1.40 (0.91-2.16) | | 0.123 | | 1.41 (0.91-2.20) | | 0.124 | | 1.37 (0.87-2.16) | | 0.172 | | |
| a Tissue transglutaminase (IgA or IgG) above 7 U/ml and/or IgG deamidated gliadin peptide ≥ 10  b The hazard ratios were estimated by cox regression with age as the underlying time scale  c First date for cancers diagnosed in The Danish Cancer Registry and/or The National Patient Register except non-melanoma skin cancer (NMSC)  d Sex related cancers were not adjusted for sex; Prostate cancer analyzed only for men and cancer of the uterus, ovary and female genitalia and breast cancer analyzed only for women | | | | | | | | | | | | | | | | |