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Complete cancer prevalence in Switzerland in 2025: a population-based study using registry data

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Summary

INTRODUCTION: The number of individuals living with a prior cancer diagnosis has increased steadily worldwide over recent decades. This increasing prevalence places substantial demands on healthcare systems to address the diverse healthcare needs of cancer survivors, particularly long-term survivors. The primary objective of this study was to estimate complete cancer prevalence in Switzerland as of the end of 2025 and to examine trends over the past two decades.

METHODS: Population-based data from the National Agency for Cancer Registration was used, including incidence years 1980–2021 and all primary malignant cancer diagnoses, excluding non-melanoma skin cancer. Complete prevalence was estimated using modelled completeness indexes based on Swiss data for 34 cancer reporting groups and on EUROCARE-6 data for 11 sex-specific cancer reporting groups. For one cancer group, only the Swiss empirical completeness index was available. Average annual percentage changes (AAPC) in cancer prevalence counts were calculated for major cancer types.

RESULTS: By the end of 2025, an estimated 242,260 men (5.4% of the male population) and 253,040 women (5.6% of the female population) in Switzerland were living with a previous cancer diagnosis. Among men, 24% were classified as long-term survivors (5–10 years after diagnosis) and 40% as very long-term survivors (>10 years after diagnosis); the corresponding proportions among women were 22% and 49%, respectively. Between 2005 and 2025, cancer prevalence increased annually by 3.6% in men and 3.0% in women, resulting in an almost 2-fold increase in the number of prevalence cases. Both complete and limited-duration prevalence, as well as AAPCs, varied by cancer type and age group.

CONCLUSIONS: The implemented methodologies provide a basis for regularly updated cancer prevalence estimates in Switzerland. The findings offer essential evidence to support policy-makers and healthcare planners in developing strategies to manage the growing cancer burden and to address the heterogeneous needs of cancer survivor populations.

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Introduction

The number of individuals living with a history of cancer has increased steadily worldwide over several decades [1]. This rise is driven by population growth and ageing, with more people reaching cancer-prone ages, as well as by earlier detection through screening and improved diagnostics, which increase both incidence and survival. Advances in cancer treatment have further contributed to improved survival, resulting in a growing population of cancer survivors.

In Switzerland, approximately 48,000 new cancer diagnoses are recorded annually, with a continuing upward trend [2]. At the same time, survival has improved substantially for many cancer types: currently, 62% of men and 64% of women are alive five years after diagnosis. As a result, cancer survivorship has increasingly become a long-term or permanent condition. This shift has drawn attention to survivors' quality of life and their specific healthcare needs [3]. However, healthcare systems have not yet fully adapted to the complex physical, psychological, informa-

tional and supportive care needs of cancer survivors, who frequently report persistent symptoms, psychological distress, and challenges related to work, finances, access to high-quality information and help in processing it [4-6].

Reliable estimates of the number of cancer survivors, particularly long-term survivors, are essential for healthcare planning, resource allocation and policy-making. Most countries, including Switzerland, routinely report limited-duration prevalence, typically restricted to diagnoses within one, five or ten years before a reference date [7]. The 1-year limited-duration includes patients immediately after their diagnoses, many of whom are in intensive care; the 1- to 5-year prevalence includes patients having regular check-ups and maybe additional treatment; and the 5- to 10-year prevalence includes 'long-term survivors', who are mainly under surveillance for recurrence.

The complete cancer prevalence, or lifetime cancer prevalence, quantifies all individuals alive at a given time who have ever been diagnosed with cancer. This estimate is still not part of routine cancer surveillance in most countries, including Switzerland, because cancer registration often does not span the full lifespan of older populations and because it requires complex modelling to estimate missed cancer diagnoses before registration started, as well as the expected survival of these individuals. Complete cancer prevalence is needed to estimate the number of 'very long-term survivors' with ten or more years since diagnosis, a group in which impairments in quality of life may persist or worsen [6].

In Switzerland, the first reporting of complete cancer prevalence dated to 2013 [8] and 2014 [9], both for date of reference 31 December 2010, with predictions to dates of reference 2015 and 2020, and have not been updated since then. This study addresses this gap by providing complete cancer prevalence estimates in Switzerland for the end of 2025. We also describe complete cancer prevalence trends over the past two decades for major cancer types in an international context.

Methods

For this population-based study, the Swiss national cancer dataset of the National Agency for Cancer Registration (NACR) was used. In Switzerland, cancer cases are collected and registered separately by cantonal cancer registries. The NACR is legally mandated to coordinate cancer registration in Switzerland, to collect the data recorded in the cantonal cancer registries and the Childhood Cancer Registry, to harmonise their collection and coding, and to ensure data quality. The NACR also processes the data, evaluates it, makes it available to the Federal Statistical Office (FSO) and to researchers and is responsible for national health reporting on cancer. Population coverage by cancer registration in Switzerland has progressively expanded since 1970 and has become complete nationwide for diagnoses since 2020 (figure S1 in the appendix). In 2020, the Cancer Registration Act (CRA) came into force in Switzerland, obliging all private and public healthcare institutions to report cancer cases to the corresponding cancer registry [10].

Complete cancer prevalence was estimated by modelling temporal trends in cancer incidence and survival, with backward extrapolation to incorporate cases diagnosed prior to the start of registration and their survival up to the prevalence date.

Diagnoses

Primary malignant cancer diagnoses from 1980 to 2021 were selected from the Swiss national cancer dataset. Analysis groups were all cancer types together (excluding non-melanoma skin cancer) and 26 specific cancer types, each stratified by sex (table 1). People diagnosed with multiple cancers belonging to different reporting groups were included separately in each group, whereas for multiple diagnoses within a single reporting group, only the first-occurring diagnosis was considered. Diagnoses based on DCO (Death Certificate Only) and diagnoses after death were excluded.

Population

The Swiss population from 1980 to 2023, as well as predictions for future population in 2024 and 2025, stratified by canton, age and sex were provided by the FSO. For predictions, we employed the "reference" scenario for future growth [11].

Estimation of x-year limited duration prevalence (LDPx) by the counting method

Cancer prevalence is the number of people alive at a given reference date who were previously diagnosed with cancer. Limited-duration prevalence (LDP_x) represents the number of people at the reference date who were diagnosed with cancer within the past *x* years (e.g. *x* = 1,2,5 or 10 years). For example, the LDP_{10} for 31 December 2025 comprises all people alive at that date, and diagnosed between 1 January 2016 and 31 December 2025.

There is active vital status follow-up implemented in Switzerland. Vital status is based on information provided to the cantonal cancer registries by the Central Compensation Office, cantonal census registries/inhabitant control and the FSO. For people who were lost to follow-up or were without active vital status follow-up, the probability of still being alive at the reference date, conditional on the length of observed survival, was estimated as described by Gigli et al. [12]. Survival probabilities were estimated by flexible parametric models using the *stpm2* command written for the Stata® language (version 11, 2009) [13]. In brief, flexible parametric models are modified Weibull models where the time after diagnosis is incorporated as a restricted cubic spline function. LDP_x was estimated separately for the predominantly German-speaking and the predominantly French-/Italian-speaking part of Switzerland in order to adjust for heterogeneous registration coverage. Counts specific for cancer type, attained age, sex and language region were extrapolated from partially covered language regions to full language regions. Swiss prevalence counts were estimated as the sum of both extrapolated language regions. Prevalence proportions for the whole of Switzerland were estimated as the weighted sum of observed language region-specific proportions. Weights were the population ratios of language region with the whole of Switzerland.

More comprehensive descriptions of the methods used to estimate limited-duration prevalence and to project prevalence to future reference dates (see below) are provided in Chapter 4 of the official documentation on the statistical methods employed by the NACR, the FSO and the Childhood Cancer Registry for calculating the main cancer epidemiological indicators [14].

Projection of LDP_{10} for reference date 31 December 2025

LDP_{10} was estimated for the reference date 31 December 2021 with the counting method based on 21 of 26 Swiss cantons (about 74% Swiss population coverage) providing diagnoses from 2012 to 2021 at the time of analysis (figure S1 in the appendix). The 21 cantons and their regional language (German unless otherwise noted) were: Appenzell Ausserrhoden (AR), Appenzell Innerrhoden (AI), Basel-Landschaft (BL), Basel-Stadt (BS), Fribourg (FR – French), Geneva (GE – French), Glarus (GL), Graubünden (GR), Jura (JU – French), Luzern (LU), Neuchâtel (NE – French), Nidwalden (NW), Obwalden (OW), Sankt Gallen (SG), Thurgau (TG), Ticino (TI – Italian), Uri (UR), Valais (VS – French), Vaud (VD – French), Zürich (ZH) and Zug (ZG). The data from the cancer registries of Aargau (AG), Bern (BE), Solothurn (SO), Schwyz (SZ) and Schaffhausen (SH) was not used because they began operating after 2012.

Projection of LDP_{10} to reference date 31 December 2025 required separate projection of incidence rates and survival proportions for the years 2022 to 2025 as suggested by Pisani et al. [15]. Incidence projection was conducted with age-period models implemented as Stata® (version 3.1, 1993) commands *predmap* and *outmap* written by Dyba and Hakulinen [16]. The projection is based on observed incidence trends within the period 2012–2021, and takes the predicted population growth until 2025 into account. Restricted cubic spline regression was applied to observed and projected incidences in 10-year age groups for calendar years 2012 to 2025 in order to interpolate them for single years of age.

Future survival proportions were estimated by applying the period method to patients with very recent dates of follow-up (2017 to 2021), a validated approach of survival prediction [17, 18]. The survival functions were estimated with flexible parametric models using the *stpm2* command of the Stata® language [19]. Models included the covariate age at diagnosis as linear term. Proportional hazards were assumed. Survival probabilities at 0.5, 1.5, ..., 9.5 years after diagnosis for single years of age from age 0 to age 95 were predicted.

The projected incidence counts and survival probabilities for single years of age and for each calendar year were processed for future LDP_{10} counts as described by Pisani et al. [15].

Modelled completeness index (Rmod)

We applied the completeness index method [20], which has been validated extensively with US SEER data [21]. The method has also recently been endorsed for the European Cancer Information System (ECIS) [22]. Completeness indexes (or R indexes) specific for dates of reference and LDP_x duration indicate which fraction of complete cancer prevalence the LDP_x represents. For example, an R index of 0.6 (or 60%) for LDP_{10} indicates that the LDP_{10} count represents 60% of the complete cancer prevalence count for the same date of reference.

We used the software COMPREV version 3.0.29 [23], developed by the US National Cancer Institute, to estimate R indexes based on modelled trends in incidence and survival. Incidence and survival trend data was based on diagnoses from all Swiss cantons registering cancer cases (figure S1 in the appendix).

Incidence trends were estimated in a 2-step process. First, aggregated incidence rates were calculated for eight 5-year periods (1982–1986, ..., 2017–2021) and nineteen 5-year age groups (0–4, ..., 90–94). Methodology details are provided in chapter 2 of [14]. Second, the incidence rates were modelled using Poisson regression on the number of cases, adjusting for 6th degree polynomial for centred (using reference age 55) and scaled (using scale factor 30) age group (for example, for the age group 40–44, the middle age 42 would be used, and converted to (42 – 55)/30 or -0.43), as well as birth cohort (derived as the difference of middle age and middle period minus the minimum observed birth cohort 1890) and its squared and cubed terms in order to adjust for risk trends across different birth cohorts (see supplementary appendix of the EUROCARE-6 report [1]):

$$n_{\text{cases}}(\text{age}_c) = \beta_0 + \beta_1\text{age}_c + \beta_2\text{age}_c^2 + \ldots + \beta_6\text{age}_c^6 + \gamma_1\text{coh} + \gamma_2\text{coh}^2 + \gamma_3\text{coh}^3 + \text{offset}\left(\log\left(\sum \text{py}\right)\right) \quad (1)$$

with age_c as the centred and scaled age at diagnosis, *coh* as the birth cohort and using the sum of population years at risk (*py*) as an offset term. The intercept β_0 (representing the oldest birth cohort) and 6 age coefficients were exported to COMPREV (in a format described at https://surveillance.cancer.gov/help/comprev/file-formats/data-source-files). The rational for using the incidence function of the oldest birth cohort and other analytical details are described by Capocaccia et al. [20] and Merrill et al. [24].

Survival trends were estimated by first calculating relative survival rates for eight incidence periods (1980–1985, 1986–1990, 1991–1995, 1996–2000, 2001–2005, 2006–2011, 2012–2016, 2017–2021), five age groups (0–44, 45–54, 55–64, 65–74, 75+) and survival durations up to 10 years after diagnosis. The relative survival rates were then fitted with Weibull mixture cure models using non-linear regression (see supplementary appendix of the EUROCARE-6 report [1]):

$$S(t, x-t, y) = \left((1-C) + C^*\exp\left(-(\text{scale}^*(x-t))^{\text{shape}}\right)\right)^{\text{shape}} \quad (2)$$

where *S(t, x-t, y)* is the period-specific relative survival probability from age at diagnosis *t* until attained age *x*, *C* is the proportion not cured of cancer, *t* is the middle age at diagnosis in the age group, reference age at diagnosis is 65, *y* is the middle year in the incidence period, reference period is 1997, and scale and shape are parameters of the Weibull distribution. The coefficients for attained age, period, scale and shape were exported to COMPREV.

The incidence modelling with equation 1 and the survival modelling with equation 2 were done in R (version 4.5.2; 2025-10-31).

The fitted parameters for both models as well as their variance-covariance matrix were processed by COMPREV in order to obtain completeness indexes R_{mod} for LDP_{10} at reference dates 31 December 2005, 31 December 2015, 31 December 2021 and 31 December 2025. Upper and lower 95% confidence limits for R_{mod} were derived in COMPREV using the delta method.

Empirical completeness indexes (Remp)

The empirical completeness index is a simple approximation of the R_{mod} index as derived with modelling. Estimating R_{emp} was relatively straightforward and relied on fewer assumptions than R_{mod}. Its main purpose was to provide a validation check for R_{mod}. LDP_{10}, LDP_{36} and LDP_{41} were estimated by the counting method for reference date 31 December 2021 based on nine Swiss cantons – AI, AR, BL, BS, GE, NE, SG, VD, ZH – which provided diagnoses from 1981 to 2021 (figure S1 in the appendix). The empirical completeness index R_{emp}, specific for LDP_{10}, was estimated as

$$R_{\text{emp}} = \frac{\text{LDP}_{10}}{\text{LDP}_{41}} \quad (3)$$

when the following criteria were met: LDP_{41}/LDP_{36} ≤1.05, i.e. when LDP appeared to have reached a maximum and LDP_{41} can be regarded as an approximation of complete cancer prevalence, and LDP_{41} ≥20 cases.

Complete prevalence estimation using completeness indexes (empirical or modelled)

Complete prevalence counts were estimated by

$$\mathrm{CP} = \frac{\mathrm{LDP}_{10}}{R} \quad (4)$$

using LDP_{10} and R indexes specific for cancer reporting group, sex, age and date of reference. Upper and lower 95% confidence limits for complete cancer prevalence were derived by applying the delta method to the logit transformation of complete cancer prevalence. Complete prevalence proportions are counts per 100,000 people alive at the date of reference.

Complete cancer prevalence estimated with Swiss R_{mod} was preferred but data models did not converge for every reporting group, in which case either the R index for EUROCARE-6 (EC-6) data was used [1], if the cancer definition was the same as in EC-6, or the empirical R index Swiss R_{emp}, if the cancer definition deviated from that of EC-6. The EC-6 R indexes were calculated with COMPREV based on modelled incidence and survival trend parameters for the pool of 29 European countries including Switzerland kindly provided by the EUROCARE-6 study group (see Acknowledgements).

Completeness index validation

Swiss modelled indexes R_{mod} for 31 December 2021 were validated by comparing them with Swiss empirical indexes R_{emp} for the same date. Both indexes overlapped in almost every case, except for head/neck cancer in men and for lung cancer (figure S2 in the appendix). For cancer reporting groups without Swiss R_{mod}, Swiss R_{emp} were compared to the EUROCARE-6 indexes and the overlap justified their use as proxies for missing Swiss R_{mod} (figure S3 in the appendix).

Average annual percentage change (AAPC)

The AAPC of prevalence counts were calculated as

$$\mathrm{AAPC}_x = 100^* \left(\left(\frac{C_x}{C_0} \right)^{\frac{1}{x}} - 1 \right) \quad (5)$$

with the number of years *x* between beginning and end, the counts C_0 at the beginning and C_x at the end.

The Stata® and R codes used to generate the results are available on request.

Table 1: Definition of reporting groups for 27 types of cancer. In 35 sex-specific cancer reporting groups, the R index was based on Swiss data (CH) and in 11 on EUROCARE-6 (EC-6) data. Empirical R indexes are labelled "Yes" if they met the acceptance criteria listed in Methods.

Cancer reporting group	ICD-10*	Data source for modelled R, in men	Data source for modelled R, in women	Swiss empirical R acceptable, in men	Swiss empirical R acceptable, in women
All cancer types#	C00–C43, C45–C97	CH	CH	Yes	Yes
Head, neck#	C00–C14	CH	CH (R_{emp})$	Yes	Yes
Oesophagus	C15	EC-6	EC-6	Yes	Yes
Stomach	C16	CH	CH	Yes	Yes
Colon, rectum, anus	C18–C21	CH	CH	Yes	Yes
Liver	C22	CH	CH	Yes	Yes
Gallbladder	C23–C24	EC-6	EC-6	Yes	Yes
Pancreas	C25	CH	EC-6	Yes	Yes
Larynx	C32	EC-6	EC-6	Yes	Yes
Lung	C33–C34	CH	CH	Yes	Yes
Bone#	C40–C41	–	–	No	No
Skin melanoma	C43	CH	CH	Yes	No
Soft tissue#	C47, C49	CH	CH	No	Yes
Breast (female)	C50	–	CH	–	Yes
Cervix uteri	C53	–	EC–6	–	No
Corpus uteri	C54–C55	–	CH	–	Yes
Ovary	C56	–	CH	–	No
Prostate	C61	CH	–	Yes	–
Testis	C62	CH	–	No	–
Kidney, other urinary organs	C64–C66, C68	CH	EC–6	Yes	Yes
Urinary bladder#	C67	CH	CH	Yes	Yes
Brain#	C70–C72	CH	CH	No	No
Thyroid	C73	CH	CH	No	No
Hodgkin lymphoma (HL)	C81	CH	EC–6	No	No
Non-Hodgkin lymphoma (NHL)#	C82–C86, C96	CH	CH	Yes	Yes
Multiple myeloma	C90	EC–6	CH	Yes	Yes
Leukaemia	C91–C95	CH	CH	Yes	Yes

* International Classification of Diseases 10th revision [reference = https://icd.who.int/browse10/2019/en].

Cancer definition in EUROCARE-6 (EC-6) differs from this report.

$ None of the modelled R indexes were adequate, and the Swiss empirical R index was applied.

Results

We estimated the complete prevalence for 46 sex-specific cancer reporting groups using 3 types of R indexes (table 1). In 34 reporting groups, R indexes were modelled with Swiss data, but in 11 groups, Swiss data models did not converge and the R index of the EUROCARE-6 (EC-6) study was applied instead, and in 1 group (head and neck tumours in women), the Swiss empirical R index was used, because Swiss data models did not converge and the cancer definition deviated from that of EC-6. For every reporting group where EC-6 R indexes were applied, we found that they overlapped with Swiss empirical R indexes (figure S3 in the appendix).

As of the end of 2025, a considerable number of people in Switzerland were estimated to be living with a past diagnosis of malignant cancer: about 242,260 men or 5.4% of the male population (table 2) and about 253,040 women or 5.6% of the female population (table 3). It is estimated that 55% of the affected men (table 2) and 51% of the affected women (table 3) were aged 70 or over. About 96,350 (40%) of the affected men will have had a past diagnosis of prostate cancer and about 110,320 (44%) of the affected women breast cancer. Second and third in proportion are skin melanoma (11% in men and in women) and colorectal cancer (10% in men and 9% in women). About 27% of the Swiss male population aged 80 or over will have been diagnosed with malignant cancer, 48% of them with prostate cancer. Among women, 19% of those aged 80 or over will have been diagnosed with malignant cancer, 46% of them with breast cancer. For individuals aged be-

low 50, 0.7% men will have had a cancer diagnosis, predominantly testicular cancer (22%) or skin melanoma (12%). In women aged below 50, the corresponding estimates were 1.1%, predominantly breast cancer (31%) or skin melanoma (12%).

Table 2: Complete prevalence by attained age in men (date of reference: 31 December 2025). The predicted male population on 31 December 2025 was 4,501,331 in total, distributed among age groups as follows: 2,726,106 (0–49 years); 624,769 (50–59); 555,300 (60–69); 363,488 (70–79); 231,668 (80+).

		Attained age: 0–49		Attained age: 50–59		Attained age: 60–69		Attained age: 70–79		Attained age: 80+		All attained ages	
		Count[#]	Proportion[$]	Count[#]	Proportion[$]	Count[#]	Proportion[$]	Count[#]	Proportion[$]	Count[#]	Proportion[$]	Count[#]	Proportion[$]
Head, neck	n	511	19	1258	201	2463	443	2766	761	1735	749	8732	194
	95% CI	188; 1394	7; 51	1010; 1566	162; 251	2151; 2819	387; 508	2360; 3240	649; 891	1113; 2706	480; 1168	7688; 9918	171; 220
Oesophagus	n	65	2	235	38	504	91	612	168	479	207	1896	42
	95% CI	9; 449	0; 16	176; 315	28; 50	430; 592	77; 107	527; 712	145; 196	357; 641	154; 277	1675; 2146	37; 48
Stomach	n	221	8	554	89	1041	187	1303	358	1339	578	4457	99
	95% CI	83; 589	3; 22	431; 712	69; 114	888; 1220	160; 220	1131; 1501	311; 413	1062; 1689	458; 729	4008; 4957	89; 110
Colon, rectum, anus	n	1298	48	2643	423	5269	949	7180	1975	7347	3172	23; 738	527
	95% CI	426; 3954	16; 145	1941; 3600	311; 576	4447; 242	801; 1124	6212; 8298	1709; 2283	5777; 9345	2494; 4034	21,110; 26,693	469; 593
Liver	n	177	6	382	61	728	131	746	205	382	165	2415	54
	95% CI	35; 884	1; 32	290; 503	46; 81	624; 850	112; 153	637; 872	175; 240	255; 574	110; 248	2066; 2824	46; 63
Gallbladder	n	49	2	90	14	170	31	227	62	176	76	712	16
	95% CI	13; 191	0; 7	61; 132	10; 21	135; 214	24; 39	188; 273	52; 75	128; 243	55; 105	610; 832	14; 18
Pancreas	n	160	6	379	61	618	111	583	160	336	145	2075	46
	95% CI	52; 487	2; 18	295; 487	47; 78	524; 728	94; 131	490; 695	135; 191	214; 527	92; 227	1804; 2387	40; 53
Larynx	n	71	3	239	38	582	105	753	207	548	237	2193	49
	95% CI	10; 504	0; 19	174; 327	28; 52	490; 691	88; 125	639; 888	176; 244	385; 780	166; 337	1916; 2510	43; 56
Lung	n	335	12	1368	219	3141	566	3945	1085	3147	1358	11; 936	265
	95% CI	17; 6587	1; 242	940; 1992	151; 319	2629; 3751	473; 676	3343; 4654	920; 1280	2128; 4654	919; 2009	10; 201; 13; 965	227; 310
Skin melanoma	n	2263	83	4123	660	5989	1079	7104	1954	6704	2894	26; 184	582
	95% CI	1229; 4169	45; 153	3211; 5295	514; 848	5031; 7129	906; 1284	6156; 8198	1694; 2255	5367; 8375	2317; 3615	23; 612; 29; 035	525; 645
Soft tissue	n	539	20	471	75	564	102	591	163	603	260	2769	62
	95% CI	423; 689	15; 25	372; 596	60; 95	465; 684	84; 123	499; 701	137; 193	493; 737	213; 318	2523; 3038	56; 67
Prostate	n	1190	44	6301	1009	22; 177	3994	36; 277	9980	30; 406	13; 125	96; 352	2141
	95% CI	0; 27,573,986	0; 1,011,479	3298; 12,037	528; 1927	18,118; 27,146	3263; 4888	31,074; 42,352	8549; 11,651	20,812; 44,422	8984; 19,175	79,475; 116,812	1766; 2595
Testis	n	4249	156	4275	684	4051	729	2338	643	1140	492	16; 053	357
	95% CI	3693; 4889	135; 179	1312; 13,926	210; 2229	933; 17,581	168; 3166	19; 289,250	5; 79; 576	0; 207,991,840	0; 89,780,136	4775; 53,974	106; 1199
Kidney	n	836	31	1334	213	2542	458	3132	862	2573	1111	10; 417	231
	95% CI	333; 2098	12; 77	1046; 1701	167; 272	2190; 2950	394; 531	2732; 3590	752; 988	1939; 3416	837; 1474	9242; 11,741	205; 261
Bladder	n	188	7	602	96	1622	292	2819	775	3234	1396	8465	188
	95% CI	6; 6039	0; 222	383; 948	61; 152	1341; 1962	242; 353	2477; 3208	681; 883	2675; 3909	1155; 1687	7477; 9583	166; 213
Brain	n	825	30	565	90	527	95	345	95	129	56	2390	53
	95% CI	709; 960	26; 35	480; 666	77; 107	445; 624	80; 112	266; 446	73; 123	47; 354	20; 153	2163; 2641	48; 59
Thyroid	n	777	28	903	145	929	167	737	203	404	174	3749	83
	95% CI	449; 1343	16; 49	526; 1550	84; 248	566; 1524	102; 274	361; 1504	99; 414	54; 2995	23; 1293	2687; 5232	60; 116
HL	n	1239	45	921	147	855	154	587	162	277	119	3878	86
	95% CI	1099; 1398	40; 51	712; 1191	114; 191	638; 1144	115; 206	419; 823	115; 226	118; 650	51; 281	3422; 4396	76; 98
NHL	n	1453	53	1895	303	2713	489	3113	857	2601	1123	11; 775	262
	95% CI	856; 2465	31; 90	1471; 2440	235; 391	2288; 3218	412; 579	2688; 3606	740; 992	2033; 3328	878; 1437	10,557; 13,134	235; 292
Multiple myeloma	n	175	6	416	67	870	157	1049	289	676	292	3186	71
	95% CI	37; 824	1; 30	300; 577	48; 92	727; 1041	131; 187	896; 1227	247; 338	490; 932	211; 402	2778; 3654	62; 81
Leukaemia	n	1587	58	1166	187	1524	274	1786	491	1585	684	7648	170
	95% CI	1133; 2224	42; 82	917; 1484	147; 238	1297; 1790	234; 322	1564; 2038	430; 561	1281; 1961	553; 846	6913; 8460	154; 188
All cancers	n	19; 481	715	31,742	5081	58,047	10,453	69,928	19,238	63,066	27,223	242,264	5382
	95% CI	7739; 49,038	284; 1799	23,353; 43,145	3738; 6906	49,730; 67,754	8956; 12; 201	60,981; 80,188	16,777; 22,061	47,521; 83,696	20,512; 36,128	213,913; 274,372	4752; 6095

[#] Absolute number of people alive on the date of reference in the indicated age range with a history of the cancer indicated.

[$] Relative number of people alive on the date of reference in the indicated age range with a history of the cancer indicated, expressed as per 100,000 people.

CI: confidence interval; HL: Hodgkin lymphoma; NHL: non-Hodgkin lymphoma.

Table 3: Complete prevalence by attained age in women (date of reference: 31 December 2025). The predicted female population on 31 December 2025 was 4,557,006 in total, distributed among age groups as follows: 2,628,566 (0–49 years); 624,072 (50–59); 563,248 (60–69); 410,397 (70–79); 330,723 (80+).

		Attained age: 0–49		**Attained age: 50–59**		**Attained age: 60–69**		**Attained age: 70–79**		**Attained age: 80+**		**All attained ages**	
		Count[#]	**Proportion[$]**	**Count[#]**	**Proportion[$]**	**Count[#]**	**Proportion[$]**	**Count[#]**	**Proportion[$]**	**Count[#]**	**Proportion[$]**	**Count[#]**	**Proportion[$]**
Head, neck	n	366	14	617	99	1048	186	1177	287	896	271	4124	91
	95% CI	78; 1717	3; 65	364; 1046	58; 168	762; 1441	135; 256	852; 1626	208; 396	488; 1647	147; 498	3213; 5293	71; 116
Oesophagus	n	22	1	78	12	189	34	216	53	165	50	670	15
	95% CI	0; 9980	0; 380	34; 180	5; 29	128; 280	23; 50	147; 317	36; 77	72; 377	22; 114	475; 944	10; 21
Stomach	n	217	8	368	59	578	103	683	166	870	263	2717	60
	95% CI	73; 646	3; 25	246; 551	39; 88	433; 773	77; 137	523; 893	127; 218	615; 1231	186; 372	2276; 3242	50; 71
Colon, rectum, anus	n	1549	59	2501	401	4569	811	6408	1561	8225	2487	23.253	510
	95% CI	561; 4282	21; 163	1764; 3546	283; 568	3698; 5645	657; 1002	5382; 7629	1311; 1859	6551; 10–327	1981; 3123	20.448; 26.441	449; 580
Liver	n	109	4	135	22	213	38	240	58	162	49	858	19
	95% CI	8; 1514	0; 58	57; 321	9; 51	128; 355	23; 63	153; 375	37; 91	60; 443	18; 134	550; 1339	12; 29
Gallbladder	n	35	1	67	11	142	25	221	54	237	72	703	15
	95% CI	7; 177	0; 7	42; 108	7; 17	109; 186	19; 33	181; 270	44; 66	179; 314	54; 95	601; 822	13; 18
Pancreas	n	172	7	358	57	565	100	625	152	400	121	2119	47
	95% CI	55; 536	2; 20	268; 478	43; 77	470; 679	83; 121	525; 743	128; 181	265; 603	80; 182	1828; 2458	40; 54
Larynx	n	24	1	67	11	141	25	180	44	124	37	535	12
	95% CI	0; 7113	0; 271	23; 194	4; 31	77; 259	14; 46	99; 326	24; 80	27; 571	8; 173	317; 903	7; 20
Lung	n	456	17	1532	245	3321	590	3745	912	2632	796	11.686	256
	95% CI	32; 6445	1; 245	1078; 2178	173; 349	2807; 3930	498; 698	3185; 4404	776; 1073	1764; 3925	534; 1187	9949; 13.727	218; 301
Skin melanoma	n	3424	130	5263	843	6521	1158	6594	1607	6232	1884	28.034	615
	95% CI	2229; 5259	85; 200	4190; 6611	671; 1059	5329; 7980	946; 1417	5392; 8064	1314; 1965	4584; 8472	1386; 2562	24.939; 31,513	547; 692
Soft tissue	n	486	19	331	53	390	69	411	100	444	134	2061	45
	95% CI	368; 642	14; 24	243; 450	39; 72	298; 510	53; 91	321; 526	78; 128	331; 594	100; 180	1818; 2336	40; 51
Breast	n	8893	338	17,019	2727	26,073	4629	29,517	7192	28–820	8714	110–321	2421
	95% CI	5257; 15,043	200; 572	14,055; 20,608	2252; 3302	22,092; 30,771	3922; 5463	24,609; 35,404	5996; 8627	20,823; 39,888	6296; 12,061	98,103; 124,061	2153; 2722
Cervix uteri	n	891	34	1334	214	1665	296	1452	354	1257	380	6599	145
	95% CI	730; 1088	28; 41	1090; 1633	175; 262	1284; 2161	228; 384	958; 2201	233; 536	422; 3738	128; 1130	5185; 8400	114; 184
Corpus uteri	n	477	18	1531	245	3186	566	4485	1093	4869	1472	14,548	319
	95% CI	104; 2194	4; 83	1141; 2054	183; 329	2674; 3797	475; 674	3769; 5337	918; 1301	3425; 6921	1036; 2093	12,557; 16,855	276; 370
Ovary	n	674	26	1099	176	1558	277	1690	412	1401	424	6421	141
	95% CI	417; 1089	16; 41	889; 1358	142; 218	1307; 1856	232; 330	1394; 2048	340; 499	925; 2120	280; 641	5649; 7298	124; 160
Kidney	n	525	20	531	85	992	176	1338	326	1373	415	4759	104
	95% CI	77; 3567	3; 136	280; 1009	45; 162	681; 1445	121; 257	975; 1836	238; 447	815; 2316	246; 700	3546; 6387	78; 140
Bladder	n	103	4	165	26	422	75	732	178	987	298	2408	53
	95% CI	0; 73–415	0; 2793	33; 828	5; 133	209; 853	37; 152	455; 1176	111; 287	522; 1865	158; 564	1548; 3746	34; 82
Brain	n	604	23	364	58	418	74	313	76	155	47	1854	41
	95% CI	491; 743	19; 28	286; 461	46; 74	337; 520	60; 92	233; 421	57; 103	57; 424	17; 128	1617; 2126	35; 47
Thyroid	n	2605	99	2738	439	2753	489	2090	509	1335	404	11–521	253
	95% CI	2175; 3121	83; 119	2344; 3198	376; 512	2275; 3333	404; 592	1011; 4319	246; 1052	212; 8417	64; 2545	8877; 14,953	195; 328
HL	n	1043	40	674	108	560	99	471	115	335	101	3083	68
	95% CI	902; 1205	34; 46	451; 1008	72; 161	363; 865	64; 154	310; 716	76; 175	159; 707	48; 214	2616; 3634	57; 80
NHL	n	979	37	1269	203	2021	359	2587	630	2523	763	9380	206
	95% CI	435; 2203	17; 84	886; 1817	142; 291	1618; 2525	287; 448	2170; 3084	529; 752	1899; 3353	574; 1014	8142; 10,805	179; 237
Multiple myeloma	n	104	4	274	44	577	103	773	188	520	157	2248	49
	95% CI	7; 1450	0; 55	165; 453	27; 73	443; 753	79; 134	635; 942	155; 229	350; 772	106; 233	1859; 2719	41; 60
Leukaemia	n	1248	47	763	122	973	173	1177	287	1198	362	5360	118
	95% CI	790; 1973	30; 75	533; 1093	85; 175	757; 1251	134; 222	959; 1445	234; 352	887; 1618	268; 489	4612; 6229	101; 137
All cancer	n	28,291	1076	38,070	6100	57,877	10,276	65,824	16,039	62,975	19,042	253,036	5553
	95% CI	15,030; 53,250	572; 2026	29,617; 48,935	4746; 7841	47,898; 69,934	8504; 12,416	54,483; 79,527	13,276; 19,378	44,658; 88,805	13,503; 26,852	221,235; 289,408	4855; 6351

[#] Absolute number of people alive on the date of reference in the indicated age range with a history of the cancer indicated.

$ Relative number of people alive on the date of reference in the indicated age range with a history of the cancer indicated, expressed as per 100,000 people.

CI: confidence interval; HL: Hodgkin lymphoma; NHL: non-Hodgkin lymphoma.

A high percentage of those estimated to have ever had a malignant cancer at the end of 2025, about 40% of men and almost 50% of women, belong to the group of very long-term survivors, i.e. the diagnosis will have occurred 10 or more years in the past (see "All cancer types" in figures 1 and 2). Around a quarter, 24%, of the affected men and 22% of the affected women were estimated to be long-term survivors, i.e. the diagnosis will have occurred between 5 and 10 years previously. About 17% of affected men and 13% of affected women will have had a recent diagnosis (less than two years previously). Cancer types in figures 1 and 2 are sorted by the proportion of very long-term survivors and, as expected, cancers with a good prognosis and being diagnosed at relatively young ages are at the top: testis cancer in men and cervical cancer in women, with over 70% very long-term survivors. In pancreatic cancer, on the other hand, many men (29%) and women (27%) will have had their diagnosis less than a year previously.

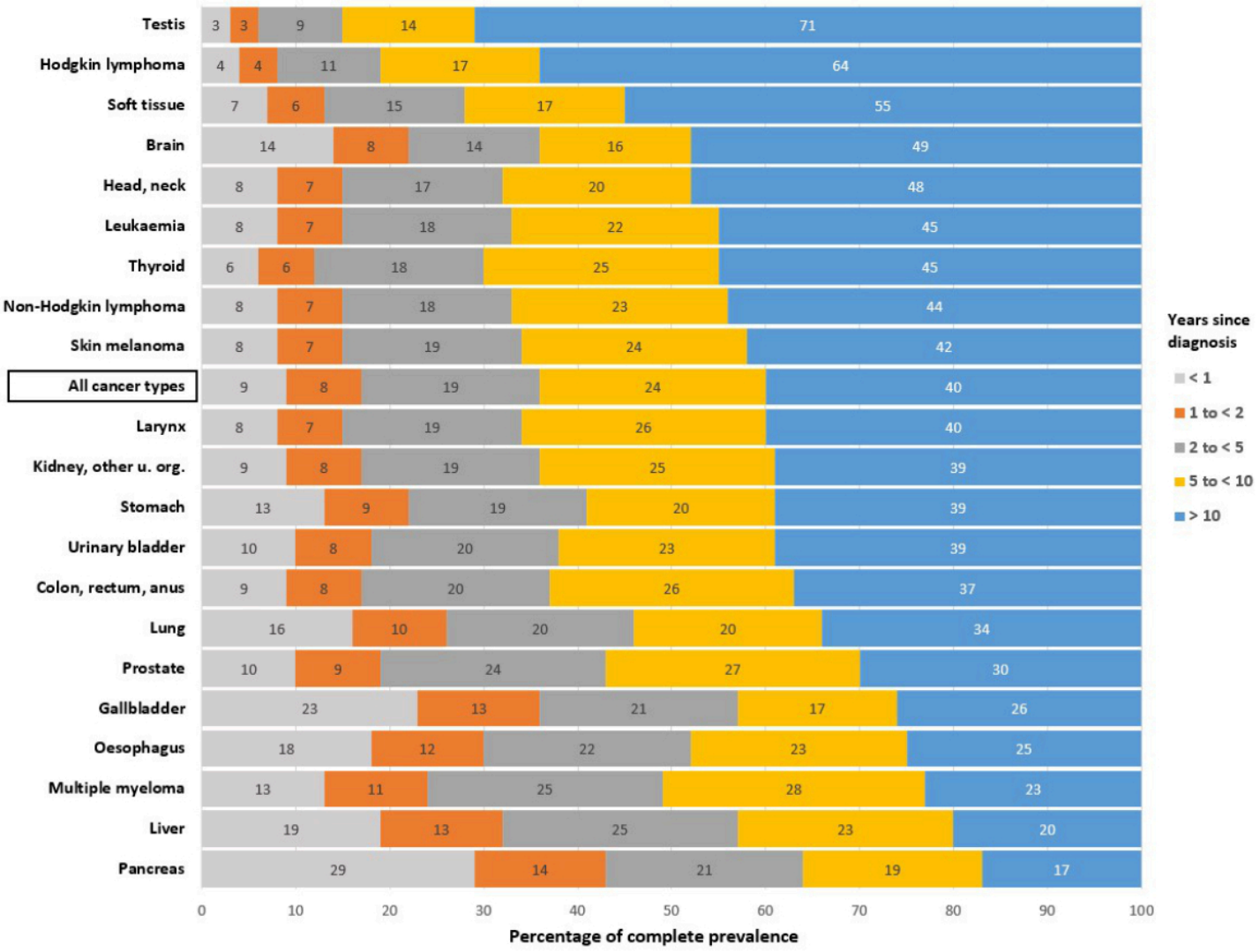


Figure 1: Percentage distribution of patient groups by time since diagnosis in men (all attained ages combined). The date of reference is 31 December 2025. Sorting from top to bottom is by decreasing proportion of very long-term survivors (>10 years).

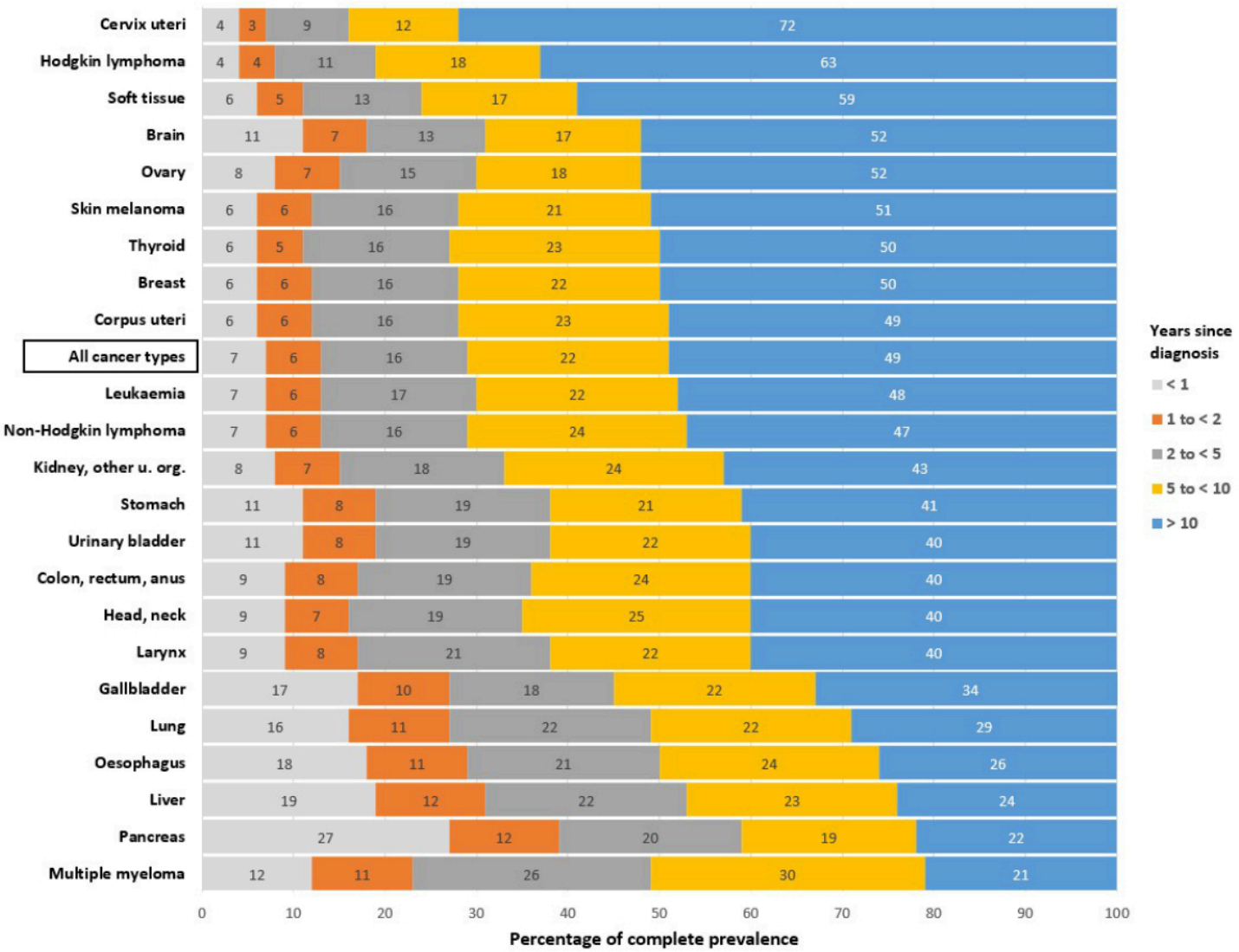


Figure 2: Percentage distribution of patient groups by time since diagnosis in women (all attained ages combined). The date of reference is 31 December 2025. Sorting from top to bottom is by decreasing proportion of very long-term survivors (>10 years).

Table 4 shows the change in complete cancer prevalence for the last 20 years in seven leading cancer types. Based on our incidence and survival trend models, we also derived R indexes for LDP_{10} estimates published previously in the context of Swiss national cancer monitoring with dates of reference 31 December 2005 and 31 December 2015. Figure 3 shows the huge increase in prevalent cancer patients over time as a bar chart.

In men, the number of affected cancer patients on 31 December 2025 is expected to be twice that of 31 December 2005, with an average increase of 3.6% per year (AAPC in table 4). In women, there is a 1.8-fold increase in number, or 3.0% AAPC since 2005. Although the numbers involved are small, the largest observed AAPC of 11.4% between 2005 and 2025 concerned prostate cancer in men under 50 years of attained age (table 4). In women, the largest increase was seen for those over 80 years of age with a history of lung cancer (AAPC of 10.2% between 2005 and 2025). For lung cancer, skin melanoma and breast cancer, the age group 80+ expressed the largest AAPC values (between 4.3% and 10.2%). For colorectal and corpus uteri cancer, the youngest age group expressed the highest AAPC (between 2.9% and 4.9%). Increases were also substantial for thyroid cancer at every attained age (between 3.3% and 11.3%). There was, in contrast, very little change over time for cancer of the corpus uteri (between 0.2% and 2.3%), and only moderate increases for colon, rectum and anus combined (between 1.4% and 4.9%).

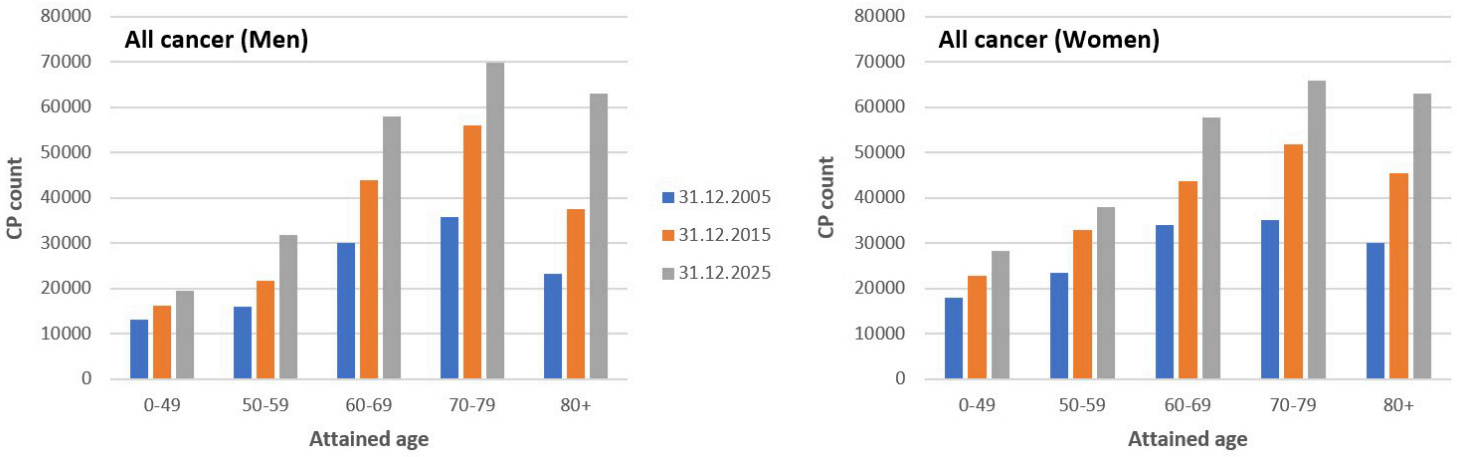


Figure 3: Trend in complete cancer prevalence counts of all patients with malignant primary cancer by attained age in Switzerland for the last 20 years. Dates of reference are 31 December 2005, 31 December 2015 and 31 December 2025.

Table 4: Trend in complete cancer prevalence by attained age in Switzerland for the last 20 years in seven major cancers. Dates of reference are 31 December 2005, 31 December 2015 and 31 December 2025. The percentage refers to the relative contribution of each attained age group to the total. The average annual percentage change (AAPC) is a measure of the increase in complete prevalence counts over time.

			31 Dec 2005						31 Dec 2015						31 Dec 2025					
			0–49	50–59	60–69	70–79	80+	All ages	0–49	50–59	60–69	70–79	80+	All ages	0–49	50–59	60–69	70–79	80+	All ages
Colon, rectum, anus	Men	n	555	1659	3973	5353	4069	15,609	760	2047	4922	7102	6566	21,398	1298	2643	5269	7180	7347	23,737
		%	3.6%	10.6%	25.5%	34.3%	26.1%	100.0%	3.6%	9.6%	23.0%	33.2%	30.7%	100.0%	5.5%	11.1%	22.2%	30.2%	31.0%	100.0%
		AAPC#	-	-	-	-	-	-	3.2%	2.1%	2.2%	2.9%	4.9%	3.2%	4.3%	2.4%	1.4%	1.5%	3.0%	2.1%
	Women	n	598	1581	2992	4652	5328	15,151	922	2068	3875	5892	7035	19,793	1549	2501	4569	6408	8225	23,252
		%	3.9%	10.4%	19.7%	30.7%	35.2%	100.0%	4.7%	10.5%	19.6%	29.8%	35.5%	100.0%	6.7%	10.8%	19.6%	27.6%	35.4%	100.0%
		AAPC#	-	-	-	-	-	-	4.4%	2.7%	2.6%	2.4%	2.8%	2.7%	4.9%	2.3%	2.1%	1.6%	2.2%	2.2%
Lung	Men	n	190	826	1510	1963	878	5367	221	920	2402	2979	1734	8256	335	1368	3141	3945	3147	11,936
		%	3.5%	15.4%	28.1%	36.6%	16.4%	100.0%	2.7%	11.1%	29.1%	36.1%	21.0%	100.0%	2.8%	11.5%	26.3%	33.1%	26.4%	100.0%
		AAPC#	-	-	-	-	-	-	1.5%	1.1%	4.8%	4.3%	7.0%	4.4%	2.9%	2.6%	3.7%	3.6%	6.6%	4.1%
	Women	n	259	662	886	785	379	2971	282	968	1799	2137	1070	6257	456	1532	3321	3745	2632	11,686
		%	8.7%	22.3%	29.8%	26.4%	12.7%	100.0%	4.5%	15.5%	28.7%	34.2%	17.1%	100.0%	3.9%	13.1%	28.4%	32.0%	22.5%	100.0%
		AAPC#	-	-	-	-	-	-	0.9%	3.9%	7.3%	10.5%	10.9%	7.7%	2.9%	4.3%	6.8%	8.1%	10.2%	7.1%
Skin melanoma	Men	n	1678	1791	2339	2069	1350	9227	1902	2971	3803	4510	3602	16,788	2263	4123	5989	7104	6704	26,184
		%	18.2%	19.4%	25.3%	22.4%	14.6%	100.0%	11.3%	17.7%	22.7%	26.9%	21.5%	100.0%	8.6%	15.7%	22.9%	27.1%	25.6%	100.0%
		AAPC#	-	-	-	-	-	-	1.3%	5.2%	5.0%	8.1%	10.3%	6.2%	1.5%	4.3%	4.8%	6.4%	8.3%	5.4%
	Women	n	2836	2417	2454	2300	2089	12,096	3132	3947	4148	4271	4056	19,554	3424	5263	6521	6594	6232	28,034
		%	23.4%	20.0%	20.3%	19.0%	17.3%	100.0%	16.0%	20.2%	21.2%	21.8%	20.7%	100.0%	12.2%	18.8%	23.3%	23.5%	22.2%	100.0%
		AAPC#	-	-	-	-	-	-	1.0%	5.0%	5.4%	6.4%	6.9%	4.9%	0.9%	4.0%	5.0%	5.4%	5.6%	4.3%
Breast	Women	n	5334	11,615	18,546	16,543	12,319	64,357	6613	15,519	21,383	26,252	19,827	89,594	8893	17,019	26,073	29,517	28,820	110,321
		%	8.3%	18.0%	28.8%	25.7%	19.1%	100.0%	7.4%	17.3%	23.9%	29.3%	22.1%	100.0%	8.1%	15.4%	23.6%	26.8%	26.1%	100.0%
		AAPC#	-	-	-	-	-	-	2.2%	2.9%	1.4%	4.7%	4.9%	3.4%	2.6%	1.9%	1.7%	2.9%	4.3%	2.7%
Corpus uteri	Women	n	301	1160	2735	3947	3898	12,040	366	1435	2791	4515	4513	13,620	477	1531	3186	4485	4869	14,548
		%	2.5%	9.6%	22.7%	32.8%	32.4%	100.0%	2.7%	10.5%	20.5%	33.2%	33.1%	100.0%	3.3%	10.5%	21.9%	30.8%	33.5%	100.0%
		AAPC#	-	-	-	-	-	-	2.0%	2.2%	0.2%	1.4%	1.5%	1.2%	2.3%	1.4%	0.8%	0.6%	1.1%	1.0%
Prostate	Men	n	137	2385	10,936	18,248	12,210	43,916	256	3106	15,808	27,994	18,031	65,195	1190	6301	22,177	36,277	30,406	96,352
		%	0.3%	5.4%	24.9%	41.6%	27.8%	100.0%	0.4%	4.8%	24.2%	42.9%	27.7%	100.0%	1.2%	6.5%	23.0%	37.7%	31.6%	100.0%
		AAPC#	-	-	-	-	-	-	6.4%	2.7%	3.8%	4.4%	4.0%	4.0%	11.4%	5.0%	3.6%	3.5%	4.7%	4.0%
Thyroid	Men	n	401	290	290	199	107	1288	669	800	634	583	270	2956	777	903	929	737	404	3749
		%	31.1%	22.6%	22.5%	15.5%	8.3%	100.0%	22.6%	27.1%	21.4%	19.7%	9.1%	100.0%	20.7%	24.1%	24.8%	19.7%	10.8%	100.0%
		AAPC#	-	-	-	-	-	-	5.3%	10.7%	8.1%	11.3%	9.7%	8.7%	3.4%	5.8%	6.0%	6.8%	6.9%	5.5%
	Women	n	1372	1045	1001	784	606	4808	2364	2429	2070	1564	941	9368	2605	2738	2753	2090	1335	11,521
		%	28.5%	21.7%	20.8%	16.3%	12.6%	100.0%	25.2%	25.9%	22.1%	16.7%	10.0%	100.0%	22.6%	23.8%	23.9%	18.1%	11.6%	100.0%
		AAPC#	-	-	-	-	-	-	5.6%	8.8%	7.5%	7.2%	4.5%	6.9%	3.3%	4.9%	5.2%	5.0%	4.0%	4.5%
All cancer	Men	n	13,256	15,949	30,179	35,905	23,219	118,509	16,334	21,713	43,966	56,109	37,471	175,593	19,481	31,742	58,047	69,928	63,066	242,264
		%	11.2%	13.5%	25.5%	30.3%	19.6%	100.0%	9.3%	12.4%	25.0%	32.0%	21.3%	100.0%	8.0%	13.1%	24.0%	28.9%	26.0%	100.0%
		AAPC#	-	-	-	-	-	-	2.1%	3.1%	3.8%	4.6%	4.9%	4.0%	1.9%	3.5%	3.3%	3.4%	5.1%	3.6%
	Women	n	18,048	23,537	34,093	35,177	30,190	141,045	22,826	32,936	43,790	51,810	45,393	196,754	28,291	38,070	57,877	65,824	62,975	253,036
		%	12.8%	16.7%	24.2%	24.9%	21.4%	100.0%	11.6%	16.7%	22.3%	26.3%	23.1%	100.0%	11.2%	15.0%	22.9%	26.0%	24.9%	100.0%
		AAPC#	-	-	-	-	-	-	2.4%	3.4%	2.5%	3.9%	4.2%	3.4%	2.3%	2.4%	2.7%	3.2%	3.7%	3.0%

Average annual percentage change since date of reference: 31 December 2005.

Discussion

This study estimated the number of individuals living with a previous cancer diagnosis in Switzerland at the end of 2025 and examined the evolution of complete cancer prevalence over the past two decades (2005–2025).

Cancer prevalence is determined by cancer incidence, cancer-specific survival, general life expectancy and the population age structure. While the interpretation of incidence and survival statistics are relatively straightforward, prevalence is inherently more complex. Depending on the reasons why cancer prevalence is high or low, it might indicate either a problem or a success. High cancer prevalence may reflect improved survival and treatment outcomes, increased incidence

due to higher exposure to risk factors, demographic changes such as population ageing or a combination of these factors. Consequently, cancer prevalence alone is difficult to interpret aetiologically and is primarily used in health services research to quantify cancer burden for healthcare planning, resource allocation and characterisation of the survivorship population.

We estimated complete cancer prevalence in Switzerland using statistical modelling based on observed cancer incidence and survival data from 1980 to 2021. The completeness index (R index) method has become a key approach for estimating complete prevalence, particularly when cancer registry data cover a limited time span [20]. The R index is a cancer-, sex- and time-specific correction factor that converts limited-duration prevalence into complete prevalence by accounting for diagnoses occurring before the start of registration.

This method is currently the most extensively validated approach for estimating complete cancer prevalence in Europe [25] and the United States [21], notably through large collaborative efforts like the EC-6 project [26]. It is implemented in software tools such as COMPREV [23], promoted by institutions including the US National Cancer Institute and SEER Program [21], facilitating its application without advanced statistical expertise. Despite this, routine implementation of complete prevalence in national cancer reporting remains limited.

Recently, the EC-6 Working Group published complete cancer prevalence estimates for 29 European countries, including Switzerland [1]. Incidence and survival data up to 2013 from 61 national or regional cancer registries (including 4 of the 13 Swiss registries) were pooled to model R indexes, which were then applied to registry-specific limited-duration prevalence estimates extrapolated to a reference date of 1 January 2020. EC-6 R indexes were compared with those derived from pooled US-SEER cancer registries [21] and found to be comparable for most cancer sites, except where known differences in incidence and prognosis exist (e.g. corpus uteri, thyroid, stomach or brain) [26]. The authors concluded that, for many cancer types, applying R indexes derived from foreign populations, such as the pool of European or US-SEER registries, approximates the "gold standard" of country-specific statistical modelling. However, they caution that for cancers with marked geographical heterogeneity in incidence or prognosis, area-specific R indexes may be required, and that the validity of foreign R indexes decreases when applied to limited-duration prevalence intervals shorter than 25 years [26].

We modelled Swiss-specific R indexes because cancer incidence and survival patterns in Switzerland may differ from those of the European pooled population, and because we used R indexes for relative short limited-duration prevalence intervals (LDP_{10}) to maximise the number of contributing Swiss cantons. An additional advantage of modelling R indexes nationally is the full control over cancer reporting group definitions and temporal specificity, both of which are essential for the routine integration of complete prevalence into Swiss cancer surveillance.

Comparison of Swiss-specific and EC-6 modelled R indexes (figure S4 in the appendix) revealed smaller Swiss R indexes for colorectal, lung and prostate cancer. A smaller R index indicates higher incidence in age groups not captured by the LDP_{10}, or better survival, or both. According to the Swiss Cancer Report 2021 [27], 5-year relative survival in Switzerland ranked at least second best when compared with nine other countries in Europe for colorectal and lung cancer, but ranked only eighth for prostate cancer. For prostate cancer, differences in incidence rates might contribute more to the observed difference in R index than differences in survival, because Switzerland has experienced a pronounced increase in prostate cancer since 2011, largely driven by early-stage disease [28].

Approximately 5.5% of the Swiss population in 2025 was estimated to be living with a past cancer diagnosis, a proportion very similar to that of other high-income countries, including Germany (2017: 5.6%) [29], Italy (2014: 5.8%) [30], the United Kingdom (predicted to 2030: 5.8%) [31] and the United States (2022: 5.4%) [21]. This estimate is also similar to the EC-6 estimate for Switzerland in 2020 (5.2%) [1], although the latter included non-malignant brain and bladder tumours.

The number of individuals living with a malignant cancer diagnosis in Switzerland has increased 1.9-fold over the past 20 years, from 259,600 in 2005 to 495,300 in 2025. This increase is slightly lower than the 2.1-fold increase observed in the first Swiss publication of 139,700 in 1990 to 289,800 in 2010 [8]. Overall, this amounts to a 3.5-fold increase between 1990 and 2025, corresponding to an average annual increase of approximately +3.7%. Over the same period, the Swiss population grew only 1.4-fold, from 6,712,300 in 1990 to about 9,058,300 in 2025, equivalent to an annual growth of about +0.86%.

To put these trends into context, we compared them to trends in the US. The SEER Cancer Statistical Report estimated complete prevalence for date of reference 1999 with 8,928,100 patients in a total population of about 267,829,100 [32], and for 2022 with about 18,000,110 patients in a total population of about 333,340,000 [21]. This corresponds to an annual increase in prevalence of 3.1%, compared with a 0.96% annual increase in population. Thus, cancer prevalence has been growing slightly faster in Switzerland than in the US over the past two to three decades. Different age-specific trends in population size and structure, cancer incidence, cancer survival and competing all-cause mortality are the most likely explanatory factors [33].

The female-to-male ratio in the affected population in Switzerland balanced out over time: it was 1.19 in 2005, 1.12 in 2015 and 1.04 in 2025. It is also more balanced as compared with the EC-6 estimate for the pool of European countries: 1.18 in 2020 [1].

A vast majority of affected men and women are long-term and very long-term survivors, with 24% of men and 22% of women diagnosed with cancer 5–10 years ago, and 40% of men and 49% of women diagnosed more than 10 years ago. Long-term cancer survivors have needs that extend beyond medical follow-up and include psychosocial, economic and spiritual dimensions. Addressing these needs requires new models of survivorship care. In Switzerland, consensus-based recommendations for cancer survivorship care were recently published to establish a common framework for structured, high-quality care [3].

Strengths and limitations

This study has several strengths. The underlying data is of high quality, supported by regular quality checks at both cantonal registry and National Agency for Cancer Registration (NACR) levels. Proportions of diagnoses based on information from death certificates were small and case ascertainment completeness sufficient [34]. Swiss R indexes were derived from modelled incidence and survival trends spanning 40 years of observed data. Extensive validation was performed by comparing modelled Swiss R indexes, as well as indexes based on EC-6 incidence and survival data, with Swiss empirical R indexes based on 41-year limited-duration prevalence estimates in cantons with long-standing cancer registration (see supplement figures 2 and 3). Despite wide confidence intervals due to small sample sizes, empirical and modelled R indexes showed strong agreement in almost every case, except for head/neck cancer in men and in lung cancer.

Several limitations should be noted. For certain cancer types, Swiss-specific R indexes could not be modelled, including head and neck (women), oesophagus, gallbladder, pancreas (women), larynx, bone, cervix uteri, kidney (women) and Hodgkin lymphoma (women). As some of these cancers tend to affect younger people, the age group specifications used may not have been optimal. For these cancers, we had to rely on R indexes of the EC-6 study (if the cancer definitions permitted it) or by using an empirical Swiss R index (if the acceptance criteria were met), which may have introduced greater biases. Further methodological work is planned but was beyond the scope of the present study.

Data of some Swiss cantons was unavailable for early diagnosis years, which might have biased the incidence and survival trends used in modelling. Sensitivity analyses comparing incidence and survival trends between cantons covering the whole period 1980 to 2021, and trends derived from all cantons, no matter when registration started, showed only minor differences in incidence rates (see figure S5 in the appendix for major cancer types) and survival proportions (see figure S6 in the appendix for major cancer types). We therefore concluded that bias due to incomplete registration coverage is likely to be small.

Conclusions

This study provides up-to-date information on the number and proportion of cancer patients alive in Switzerland. The number of cancer survivors has substantially increased during past decades. With the baby boomer generation (those born 1946–1964) entering their 8th decade of life, the burden of cancer is bound to increase further and challenge the Swiss healthcare system. Given the huge numbers of long-term cancer survivors, addressing cancer survivors' needs has become a high priority. Our study can serve to provide regular and systematic prevalence estimates and develop evidence-based strategies for cancer survival in Switzerland.

Data sharing statement

The dataset used in this work is held by the National Agency for Cancer Registration (NACR). The NACR data is not publicly available but can be obtained upon reasonable request. Data in anonymised or aggregated form can be made available to third parties for the purposes of research. Research projects are regulated by the Human Research Act and require, if data is not used in anonymised or aggregated form, informed consent from patients in addition to approval from the relevant ethics committee. Exceptionally, the relevant ethics committee can authorise transmission of non-anonymised data. Data intended for publication must always be anonymised.

Notes

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Author contributions: ML conceived the study. FS, CR, SH and ML carried out analyses. ML, FS, CR and KS contributed to the interpretation of the data and the writing of the manuscript. All authors critically revised the manuscript and approved the final version.

Use of AI: Generative artificial intelligence (AI) tools were used to assist with language editing and grammar improvement during manuscript preparation.

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Potential competing interests

All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflict of interest related to the content of this manuscript was disclosed.

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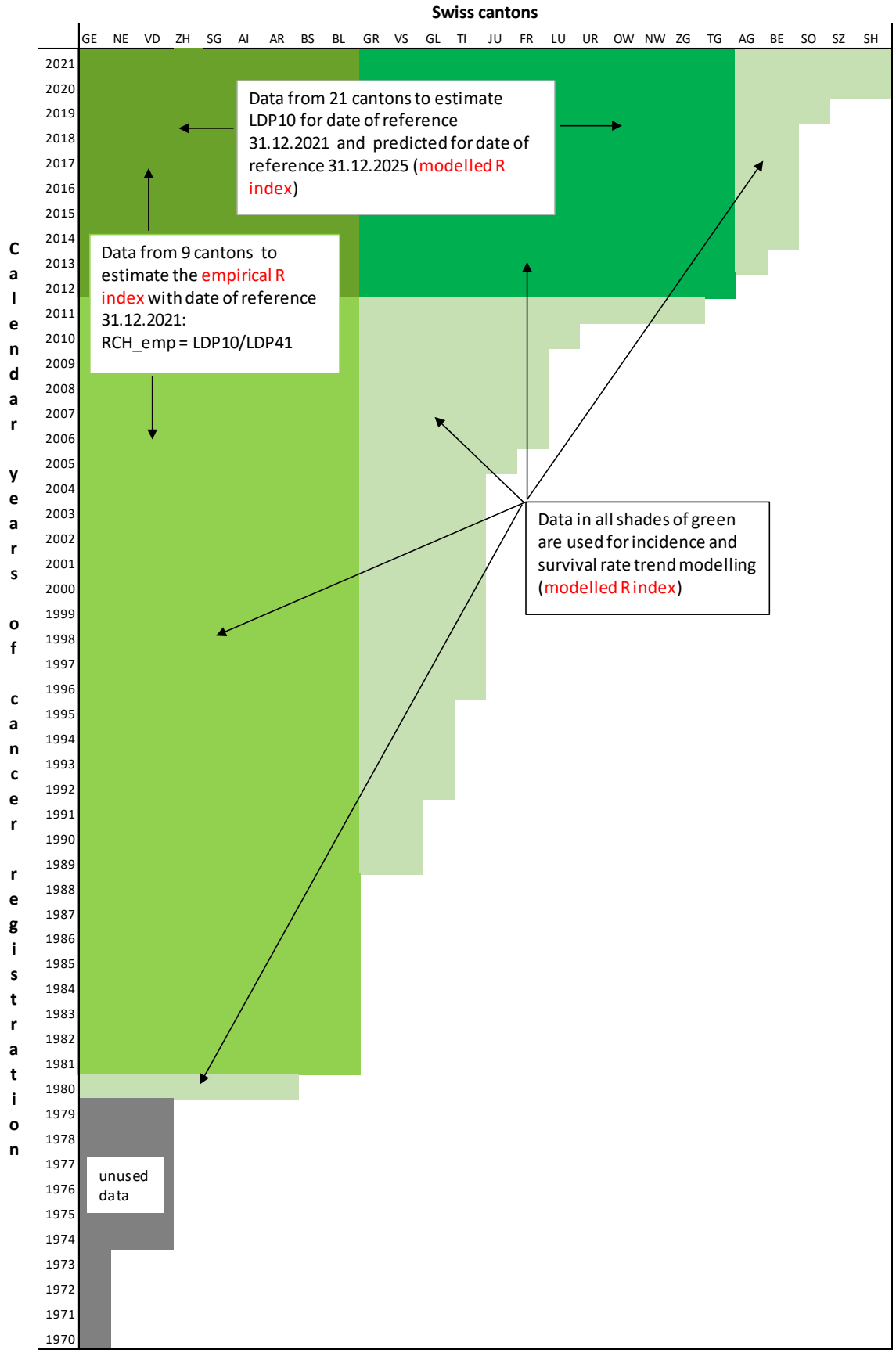


Figure S1. Data use for different statistical endpoints. The 26 Swiss Cantons: Appenzell Ausserrhoden (AR), Appenzell Innerrhoden (AI), Basel-Landschaft (BL), Basel-Stadt (BS), Fribourg (FR,

French), Geneva (GE, French), Glarus (GL), Graubünden (GR), Jura (JU, French), Luzern (LU), Neuchâtel (NE, French), Nidwalden (NW), Obwalden (OW), Sankt Gallen (SG), Thurgau (TG), Ticino (TI, Italian), Uri (UR), Valais (VS, French), Vaud (VD, French), Zürich (ZH), Zug (ZG), Aargau (AG), Bern (BE), Solothurn (SO), Schwyz (SZ), and Schaffhausen (SH); all cantons not otherwise noted are in the German speaking region).

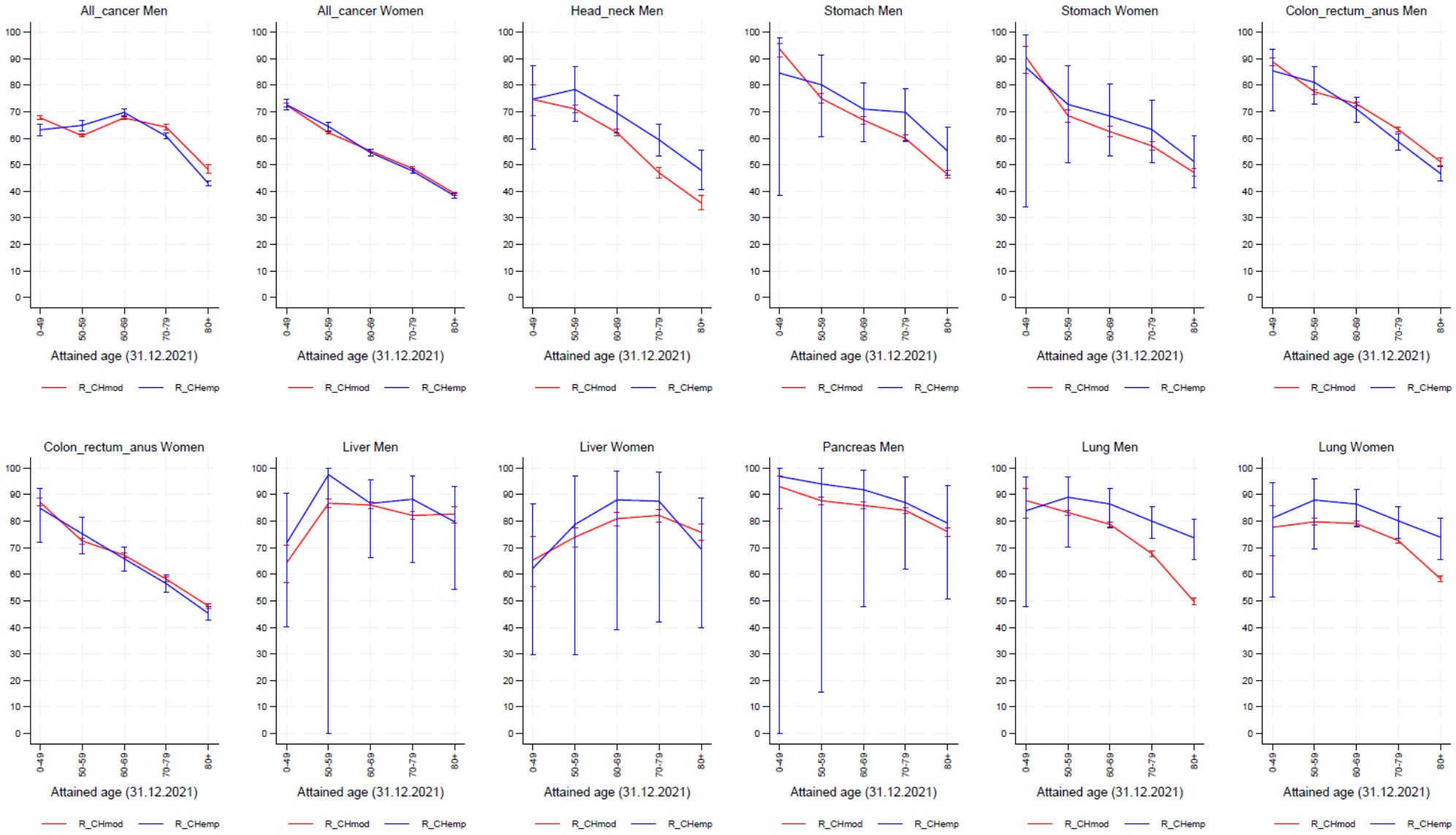


Figure S2. Comparison of Swiss empirical (R_CH_{emp}) and modelled (R_CH_{mod}) completeness indexes for LDP_{10}, by cancer reporting groups and sex. Indexes are scaled from 0% to 100%. Date of reference 31.12.2021. The displayed cancer reporting groups are based on Table 1.

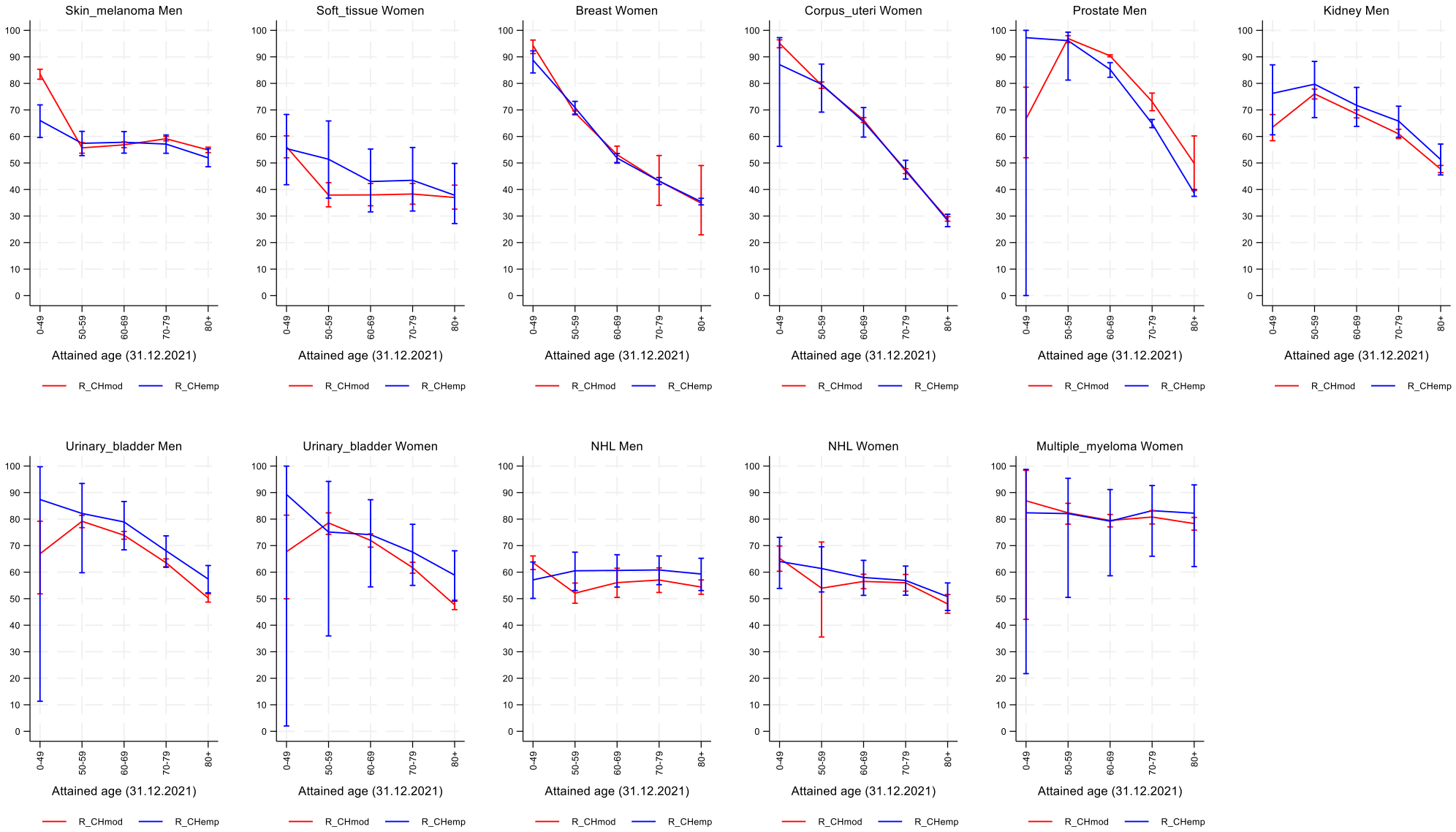


Figure S2 (continued). Comparison of Swiss empirical (R_CH_{emp}) and modelled (R_CH_{mod}) completeness indexes for LDP_{10}, by cancer reporting groups and sex. Indexes are scaled from 0% to 100%. Date of reference 31.12.2021. The displayed cancer reporting groups are based on Table 1.

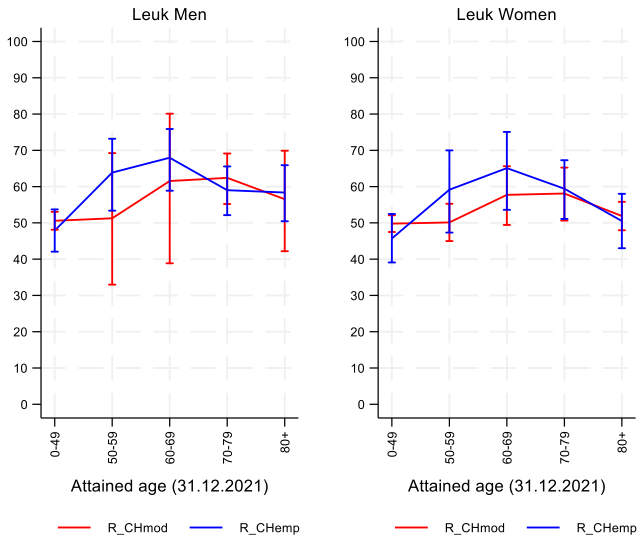


Figure S2 (continued). Comparison of Swiss empirical (R_CH_{emp}) and modelled (R_CH_{mod}) completeness indexes for LDP_{10}, by cancer reporting groups and sex. Indexes are scaled from 0% to 100%. Date of reference 31.12.2021. The displayed cancer reporting groups are based on Table 1.

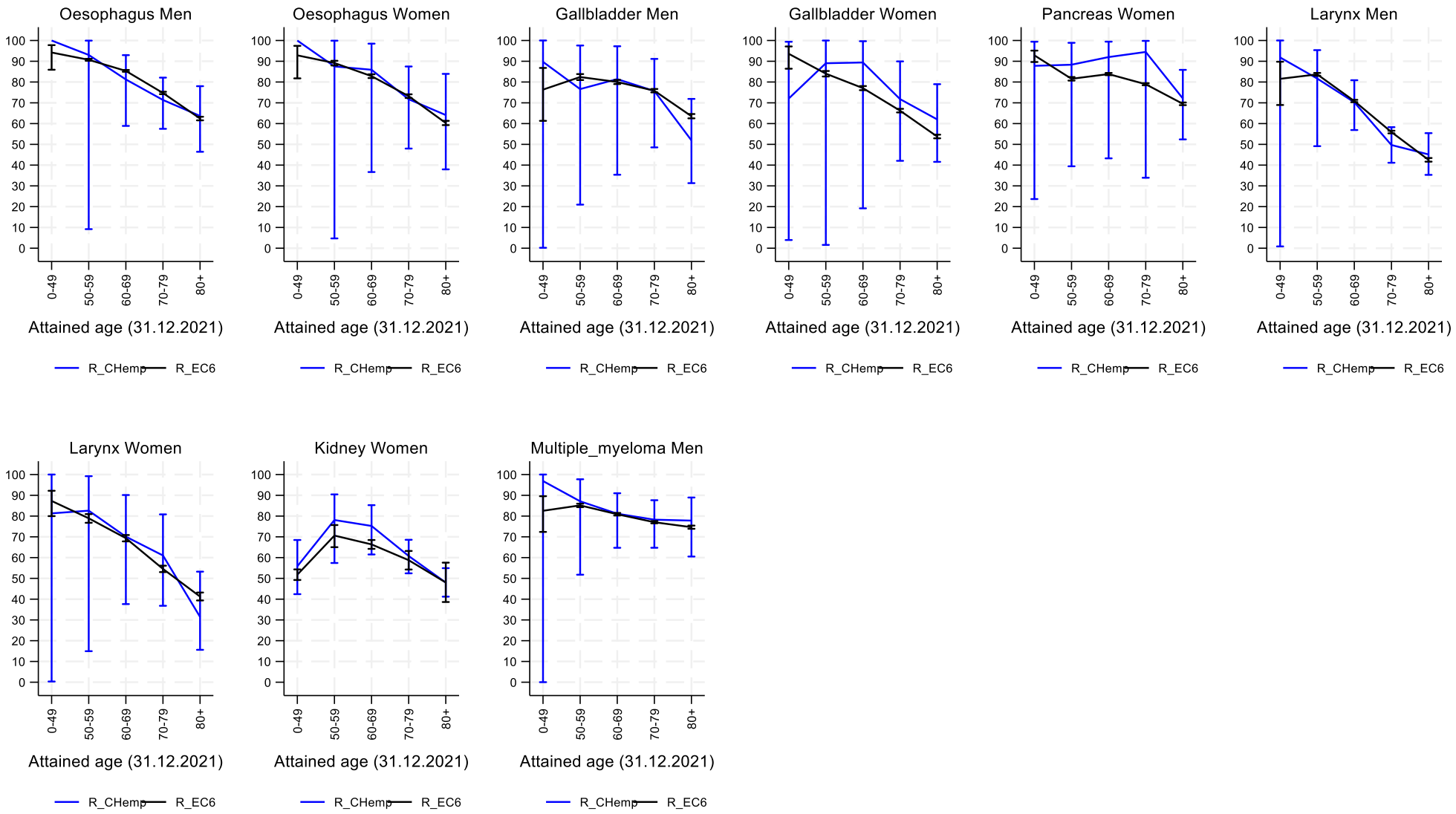


Figure S3. Comparison of empirical completeness indexes for LDP_{10} in Switzerland (R_CH_{emp}) with EUROCARE-6 indexes (R_EC6), for date of reference 31.12.2021 and cancer reporting groups for which Swiss modelled indexes were not available (Table 1). Indexes are scaled from 0% to 100%. The overlays show that large differences between Swiss modelled indexes and EUROCARE-6 indexes are not expected for these types of cancer.

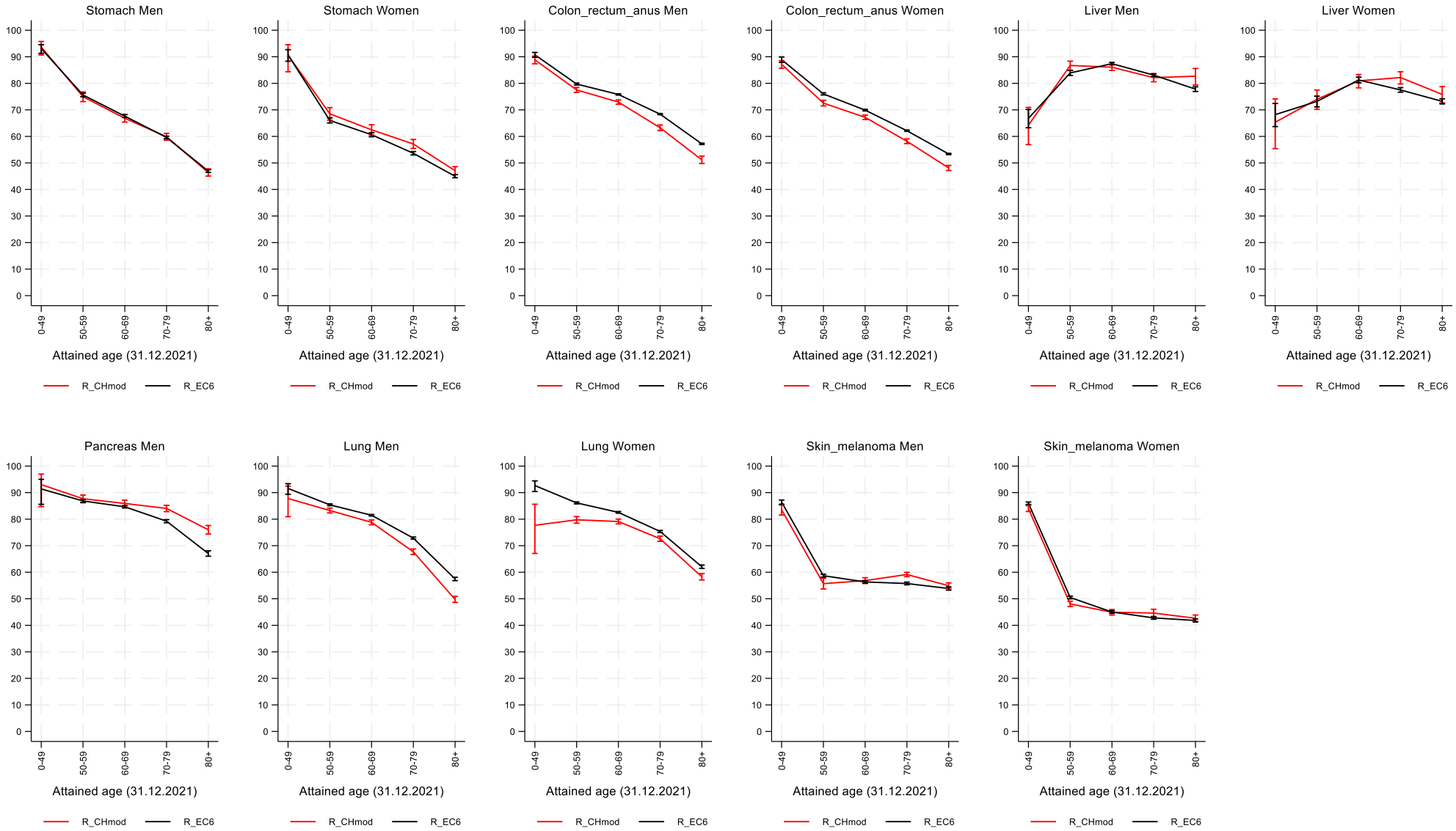


Figure S4. Comparison of modelled completeness indexes for LDP_{10} in Switzerland (R_CH_{mod}) with EUROCARE-6 indexes (R_EC6), for cancer reporting groups with comparable cancer definitions and where R_CH_{mod} was available. Indexes are scaled from 0% to 100%. Date of reference 31.12.2021.

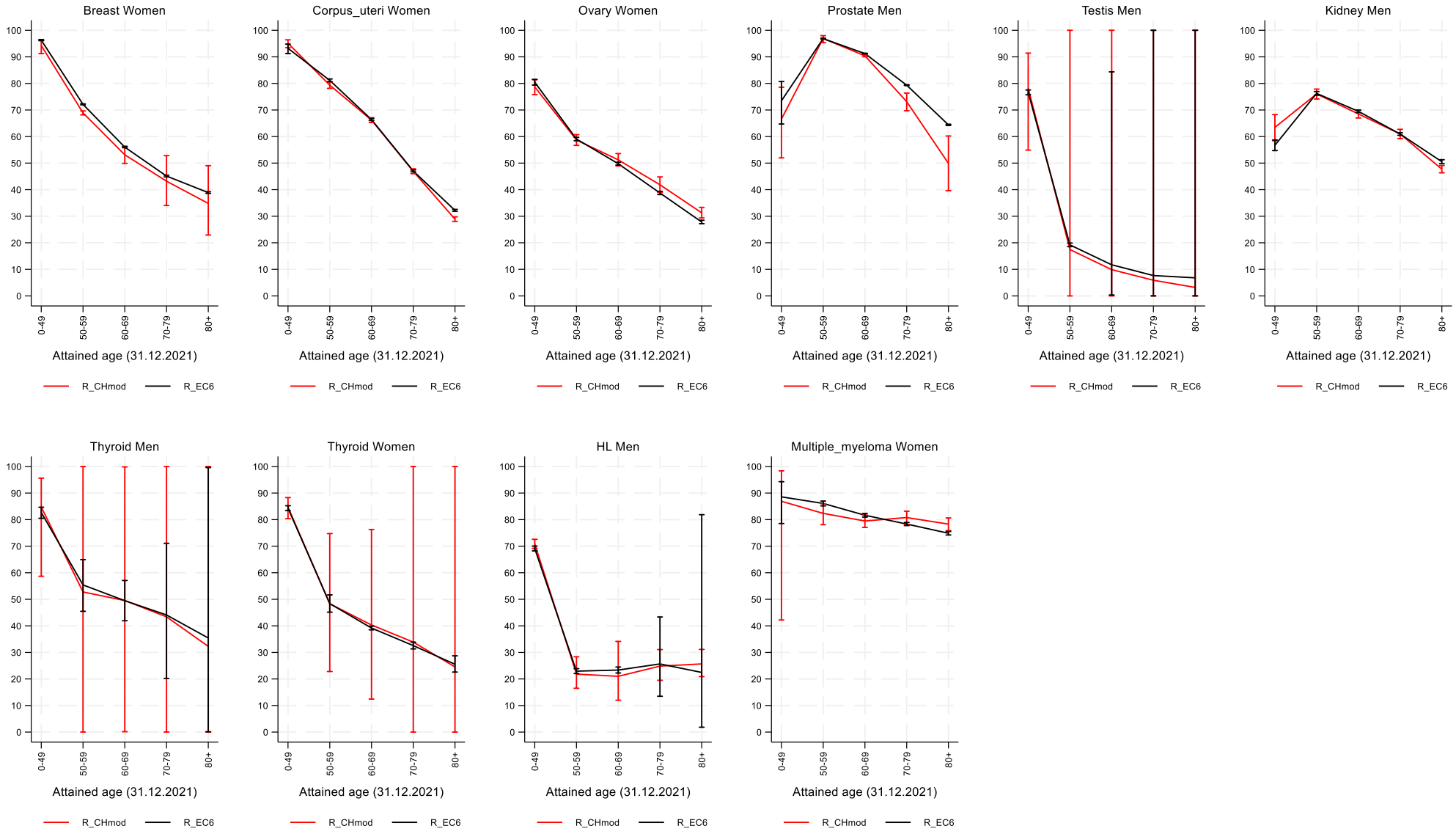


Figure S4 (continued). Comparison of modelled completeness indexes for LDP_{10} in Switzerland (R_CH_{mod}) with EUROCARE-6 indexes (R_EC6), for cancer reporting groups with comparable cancer definitions and where R_CH_{mod} was available. Indexes are scaled from 0% to 100%. Date of reference 31.12.2021.

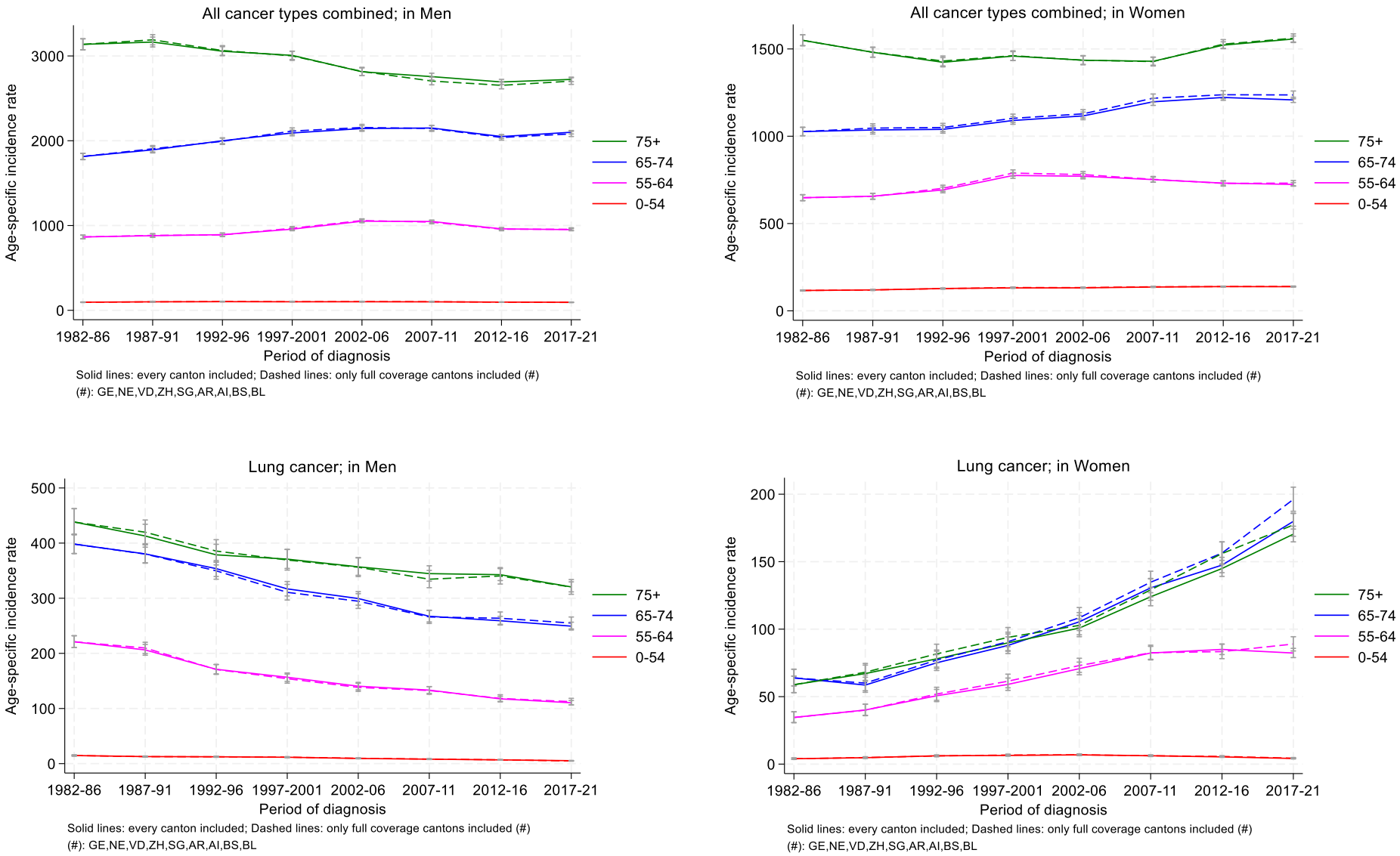
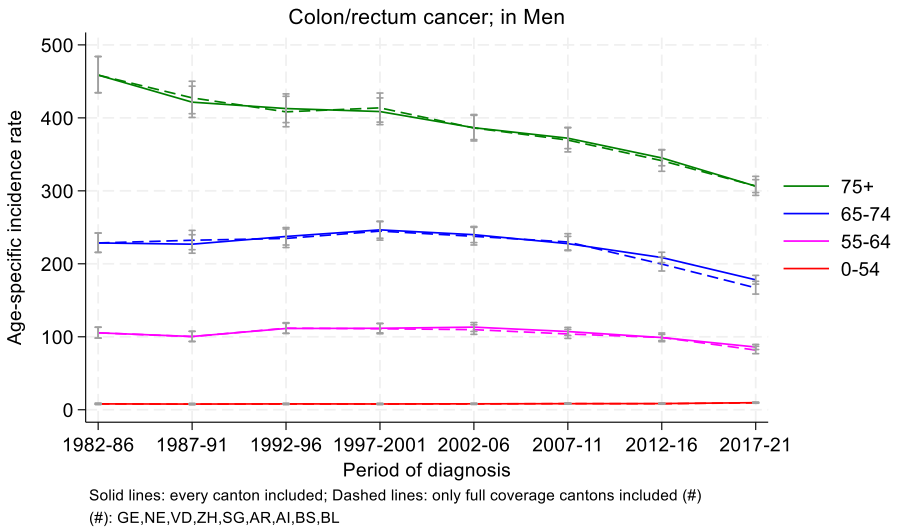
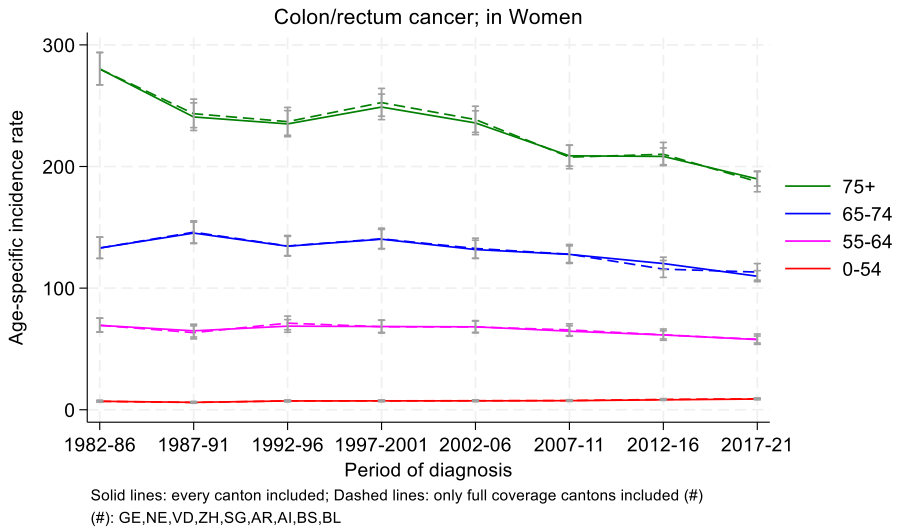
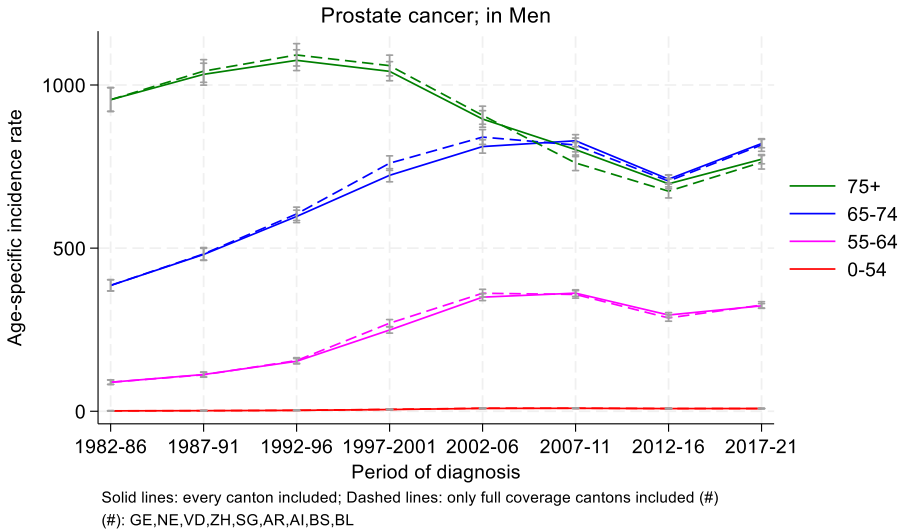


Figure S5. Comparison of age-specific **incidence rates** based on every canton included when data became available, and rates based only on cantons with data from 1982 to 2021 (full coverage cantons: GE, NE, VD, ZH, SG, AR, AI, BS, BL).







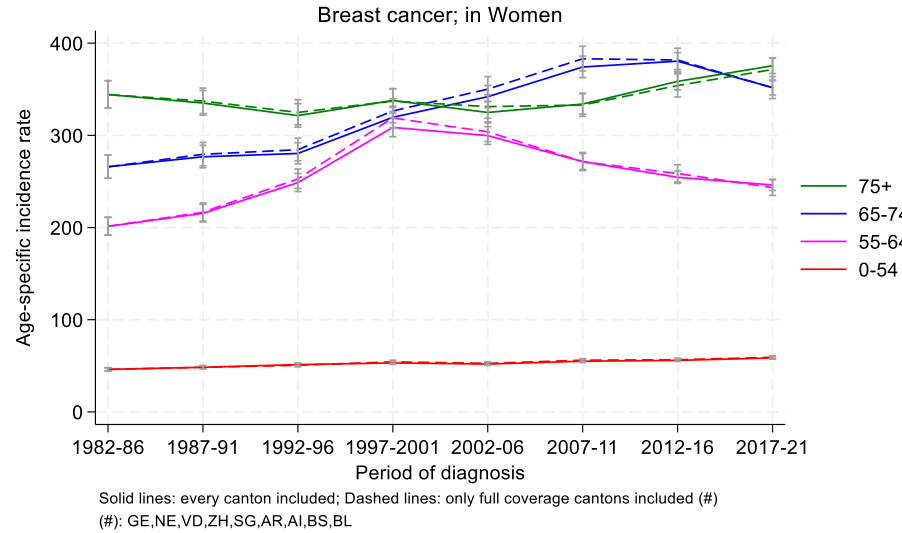


Figure S5 (continued). Comparison of age-specific **incidence rates** based on every canton included when data became available, and rates based only on cantons with data from 1982 to 2021 (full coverage cantons: GE, NE, VD, ZH, SG, AR, AI, BS, BL).

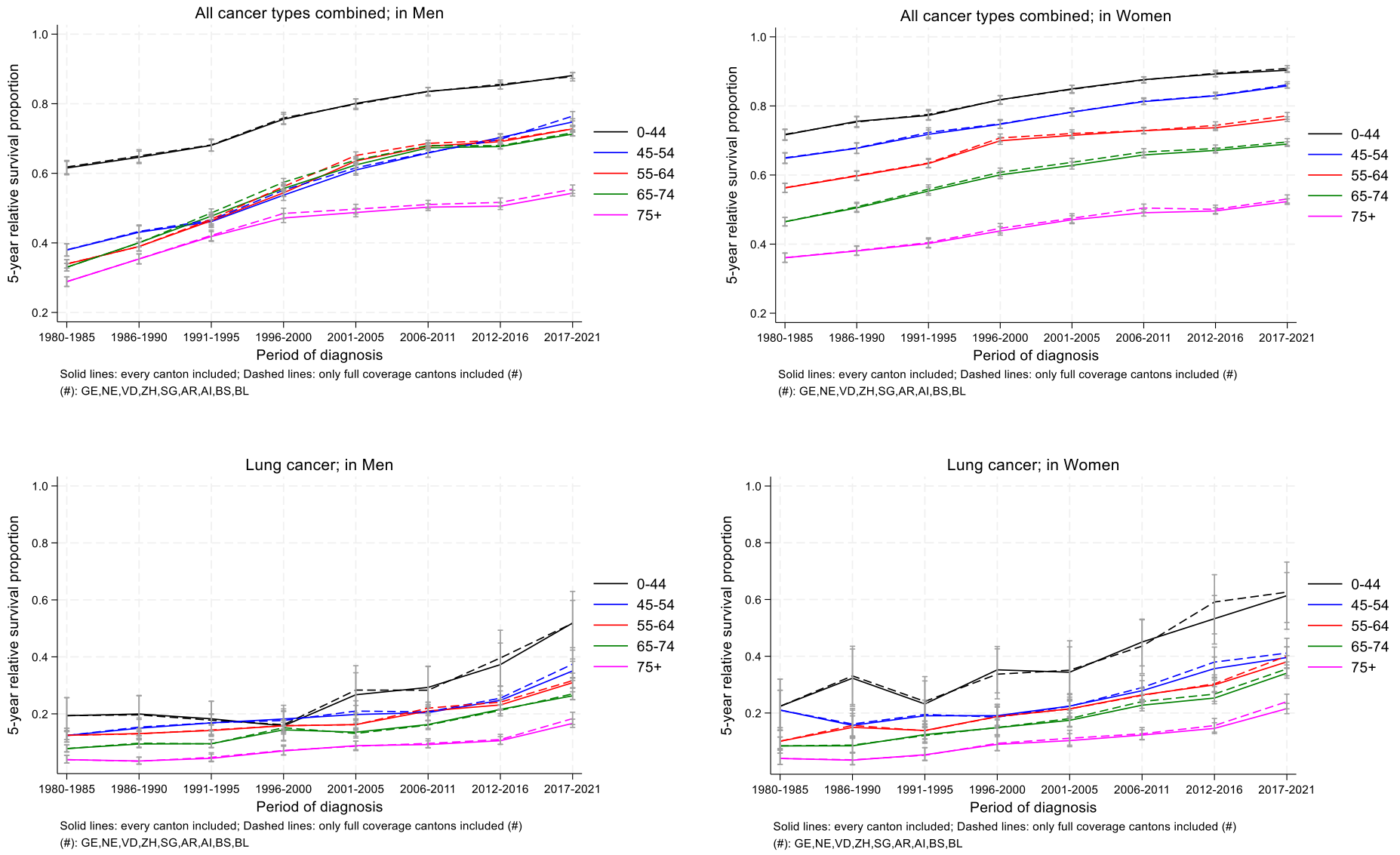


Figure S6. Comparison of age-specific **relative survival proportions** based on every canton included when data became available, and proportions based only on cantons with data from 1980 to 2021 (full coverage cantons: GE, NE, VD, ZH, SG, AR, AI, BS, BL).

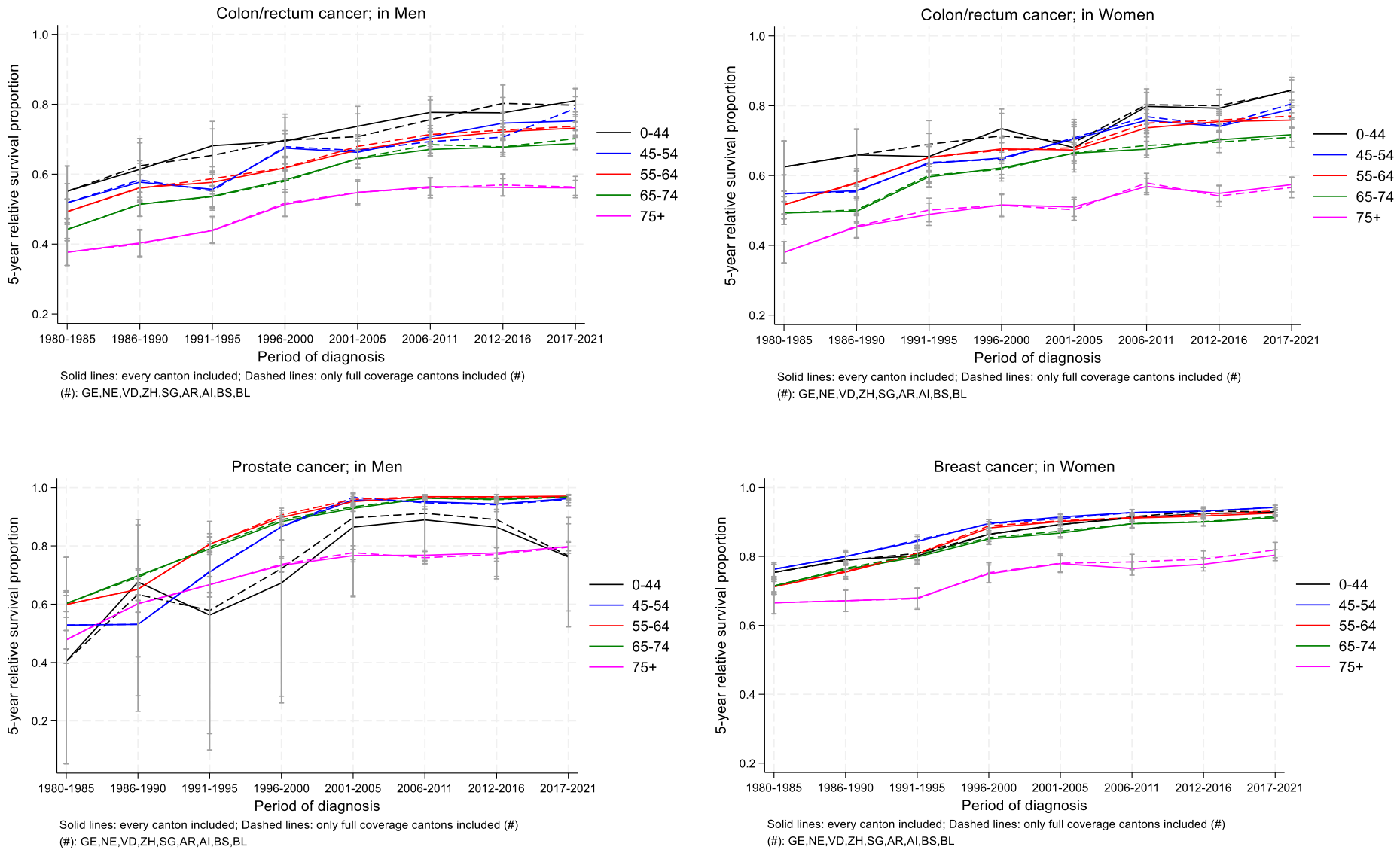


Figure S6 (continued). Comparison of age-specific **relative survival proportions** based on every canton included when data became available, and proportions based only on cantons with data from 1980 to 2021 (full coverage cantons: GE, NE, VD, ZH, SG, AR, AI, BS, BL).