

**Supplementary Tables – Chronic diseases among older cancer survivors**

## Supplementary Tables - Chronic diseases among older cancer survivors

**e-Table 1.** Selection of ICPC codes

Category	ICPC-code	
Sensory diseases	F83	Retinopathy
	F84	Macular degeneration
	F94	Blindness
	H83	Otosclerosis
	H86	Deafness
Cardiovascular diseases	K74	Ischemic heart disease with angina
	K75	Acute myocardial infarction
	K76	Ischemic heart disease without angina
	K77	Heart failure
	K82	Pulmonary heart disease
	K87	Hypertension with organ damage
	K90	Stroke/cerebrovascular accident
	K91	Atherosclerosis
	K92	Peripheral vascular disease
K93+K94	Venous thrombosis	
Locomotor impairments	L84	Back syndrome without radiating pain
	L85	Acquired deformity of spine
	L88	Rheumatoid/seropositive arthritis
	L89	Osteoarthritis hip
	L90	Osteoarthritis knee
	L91	Osteoarthritis other
	L95	Osteoporosis
	L98	Acquired deformity of limb
Neurological - Disability	N70	Poliomyelitis
	N85	Congenital neurological anomaly
	N86	Multiple sclerosis
	N87	Parkinsonism
	N88	Epilepsy
Neurological - Pain	N89	Migraine
	N90	Cluster headache
	N92	Trigeminal neuralgia
Psychological disorders	P28	Limited function/disability
	P70	Dementia
	P71	Organic psychosis
	P72	Schizophrenia
	P73	Affective psychosis
	P74	Anxiety disorder/anxiety state
	P75	Somatisation disorder
	P76	Depressive disorder
	P77	Suicide/suicide attempt
	P79	Phobia/compulsive disorder
	P80	Personality disorder
	P85	Mental retardation
	P98	Psychosis NOS/other
Respiratory diseases	R91	Chronic bronchitis
	R95	Chronic obstructive pulmonary disease (COPD)
	R96	Asthma

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Category	ICPC-code	
Skin diseases	S87	Dermatitis/atopic eczema
	S91	Psoriasis
	S97	Chronic ulcer skin
Endocrine diseases	T85	Hyperthyroidism/thyrototoxicosis
	T86	Hypothyroidism/myxoedema
	T90	Diabetes mellitus
	T92	Gout
	T93	Lipid disorders
	T99	Endocrine/metabolic/nutritional disease other
Urogenital diseases	U04	Incontinence urine
	U85	Congenital anomaly urinary tract
	U88	Glomerulonephritis/nephritis
	Y85	Benign prostatic hypertrophy

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**e-Table 2.** Lifetime prevalence of pre-existing chronic diseases at time of cancer diagnosis or reference date

	Cancer patients		Non-cancer patients		P-value	OR <sup>2</sup>	(95% CI)
	N	Prev <sup>1</sup>	N	Prev <sup>1</sup>			
<b>Sensory diseases</b>							
Retinopathy	79	20.60	304	25.39	0.07	0.79	(0.62 - 1.02)
Macular degeneration	62	16.17	193	16.12	0.66	0.94	(0.70 - 1.25)
Blindness	52	13.56	139	11.61	0.50	1.12	(0.81 - 1.54)
Otosclerosis	16	4.17	40	3.34	0.45	1.25	(0.70 - 2.24)
Deafness	246	64.15	625	52.20	0.03	1.19	(1.02 - 1.39)
<b>Cardiovascular diseases</b>							
Ischemic heart disease with angina	459	119.69	1326	110.75	0.73	1.02	(0.91 - 1.14)
Acute myocardial infarction	405	105.61	1162	97.05	0.86	1.01	(0.90 - 1.14)
Ischemic heart disease without angina	393	102.48	1151	96.13	0.98	1.00	(0.88 - 1.13)
Heart failure	184	47.98	508	42.43	0.61	1.05	(0.88 - 1.25)
Pulmonary heart disease	7	1.83	19	1.59	0.91	1.05	(0.44 - 2.51)
Hypertension with organ damage	212	55.28	706	58.97	0.21	0.90	(0.77 - 1.06)
Stroke/cerebrovascular accident	246	64.15	841	70.24	0.03	0.84	(0.73 - 0.98)
Atherosclerosis	129	33.64	379	31.65	0.95	0.99	(0.81 - 1.22)
Peripheral vascular disease	239	62.32	693	57.88	0.82	1.02	(0.87 - 1.19)
Venous thrombosis	131	34.16	379	31.65	0.65	1.05	(0.86 - 1.28)
<b>Locomotor impairment</b>							
Back syndrome without radiating pain	281	73.27	888	74.17	0.70	0.97	(0.85 - 1.12)
Acquired deformity of spine	111	28.94	381	31.82	0.40	0.91	(0.74 - 1.13)
Rheumatoid/seropositive arthritis	97	25.29	389	32.49	0.02	0.77	(0.61 - 0.97)
Osteoarthritis hip	272	70.93	885	73.92	0.47	0.95	(0.82 - 1.09)
Osteoarthritis knee	312	81.36	1054	88.03	0.17	0.91	(0.80 - 1.04)
Osteoarthritis other	184	47.98	619	51.70	0.47	0.94	(0.79 - 1.11)
Osteoporosis	196	51.11	674	56.29	0.55	0.95	(0.80 - 1.12)
Acquired deformity of limb	169	44.07	531	44.35	0.81	1.02	(0.86 - 1.22)
<b>Neurological - Disability</b>							
Poliomyelitis	11	2.87	38	3.17	0.70	0.88	(0.45 - 1.72)
Congenital neurological anomaly	6	1.56	19	1.59	0.90	0.94	(0.38 - 2.37)
Multiple sclerosis	4	1.04	22	1.84	0.34	0.60	(0.20 - 1.73)
Parkinsonism	32	8.34	145	12.11	0.03	0.64	(0.44 - 0.95)
Epilepsy	46	11.99	179	14.95	0.15	0.79	(0.57 - 1.09)
<b>Neurological - Pain</b>							
Migraine	66	17.21	301	25.14	0.02	0.73	(0.55 - 0.95)
Cluster headache	8	2.09	24	2.00	0.96	1.02	(0.46 - 2.27)
Trigeminal neuralgia	16	4.17	36	3.01	0.26	1.41	(0.78 - 2.55)
<b>Psychological disorders</b>							
Limited function/disability	5	1.30	32	2.67	0.13	0.48	(0.19 - 1.24)
Dementia	60	15.65	344	28.73	<b>0.00</b>	<b>0.48</b>	<b>(0.36 - 0.64)</b>

## Supplementary Tables - Chronic diseases among older cancer survivors

	Cancer patients		Non-cancer patients		P-value	OR <sup>2</sup>	(95% CI)
	N	Prev <sup>1</sup>	N	Prev <sup>1</sup>			
Organic psychosis	9	2.35	54	4.51	0.06	0.51	(0.25 - 1.04)
Schizophrenia	3	0.78	34	2.84	0.03	0.28	(0.08 - 0.90)
Affective psychosis	19	4.95	79	6.60	0.32	0.78	(0.47 - 1.28)
Anxiety disorder/anxiety state	68	17.73	181	15.12	0.15	1.23	(0.93 - 1.63)
Somatization disorder	44	11.47	130	10.86	0.71	1.07	(0.76 - 1.51)
Depressive disorder	249	64.93	763	63.73	0.56	1.05	(0.90 - 1.21)
Suicide/suicide attempt	26	6.78	80	6.68	0.81	1.06	(0.68 - 1.65)
Phobia/compulsive disorder	22	5.74	96	8.02	0.20	0.74	(0.46 - 1.18)
Personality disorder	21	5.48	127	10.61	<b>0.01</b>	<b>0.53</b>	<b>(0.33 - 0.84)</b>
Mental retardation	14	3.65	58	4.84	0.43	0.79	(0.44 - 1.42)
Psychosis NOS/other	9	2.35	36	3.01	0.50	0.77	(0.37 - 1.61)
<b>Respiratory diseases</b>							
Chronic bronchitis	107	27.90	284	23.72	0.38	1.11	(0.88 - 1.39)
Chronic obstructive pulmonary disease	382	99.61	944	78.84	<b>0.00</b>	<b>1.21</b>	<b>(1.06 - 1.37)</b>
Asthma	181	47.20	583	48.69	0.75	0.97	(0.82 - 1.15)
<b>Skin diseases</b>							
Dermatitis/atopic eczema	50	13.04	143	11.94	0.49	1.12	(0.81 - 1.55)
Psoriasis	150	39.11	434	36.25	0.39	1.09	(0.90 - 1.31)
Chronic ulcer skin	45	11.73	164	13.70	0.36	0.85	(0.61 - 1.19)
<b>Endocrine diseases</b>							
Hyperthyroidism/thyrotoxicosis	111	28.94	301	25.14	0.11	1.20	(0.96 - 1.50)
Hypothyroidism/myxoedema	114	29.73	374	31.24	0.93	1.01	(0.81 - 1.25)
Diabetes mellitus	586	152.80	1864	155.68	0.48	0.96	(0.87 - 1.07)
Gout	142	37.03	419	35.00	0.93	0.99	(0.81 - 1.20)
Lipid disorder	508	132.46	1559	130.21	0.60	1.03	(0.92 - 1.15)
Endocrine/metabolic/nutritional disease	49	12.78	125	10.44	0.17	1.26	(0.90 - 1.76)
<b>Urogenital diseases</b>							
Incontinence urine	101	26.34	404	33.74	0.10	0.83	(0.66 - 1.04)
Congenital anomaly urinary tract	17	4.43	62	5.18	0.50	0.83	(0.48 - 1.42)
Glomerulonephritis/nephrosis	23	6.00	64	5.35	0.60	1.14	(0.70 - 1.83)
Benign prostatic hypertrophy	297	77.44	740	61.81	0.33	1.08	(0.93 - 1.25)
<b>Total number of patients</b>	<b>3835</b>		<b>11973</b>				

<sup>1</sup> Prev: lifetime prevalence per 1000 persons

<sup>2</sup> OR: odds ratio adjusted for sex and age

Supplementary Tables - Chronic diseases among older cancer survivors

**e-Table 3.** Incidence of subsequent chronic diseases after cancer diagnosis or reference date

	Cancer patients		Non-cancer patients		P-value	OR	(95% CI)
	N	Inc <sup>1</sup>	N	Inc <sup>1</sup>			
<b>Sensory diseases</b>							
Retinopathy	14	1.21	101	2.16	0.05	0.57	(0.32 - 0.99)
Macular degeneration	25	2.15	126	2.67	0.33	0.81	(0.53 - 1.24)
Blindness	3	0.26	16	0.34	0.67	0.77	(0.22 - 2.63)
Otosclerosis	0	0.00	2	0.04	-	-	-
Deafness	30	2.72	80	1.77	0.06	1.50	(0.99 - 2.29)
<b>Cardiovascular diseases</b>							
Ischemic heart disease with angina	65	6.29	294	7.03	0.36	0.88	(0.67 - 1.15)
Acute myocardial infarction	54	5.10	226	5.20	0.70	0.94	(0.70 - 1.27)
Ischemic heart disease without angina †	71	6.76	308	7.17	0.50	0.92	(0.71 - 1.19)
Heart failure <sup>Ω</sup>	94	8.31	380	8.28	0.80	0.97	(0.77 - 1.22)
Pulmonary heart disease <sup>β</sup>	7	0.59	14	0.29	0.15	1.94	(0.78 - 4.83)
Hypertension with organ damage	41	3.67	250	5.55	<b>0.01</b>	<b>0.66</b>	<b>(0.48 - 0.92)</b>
Stroke/cerebrovascular accident	92	8.27	435	9.81	0.08	0.82	(0.65 - 1.03)
Atherosclerosis	26	2.27	128	2.76	0.31	0.80	(0.53 - 1.22)
Peripheral vascular disease	60	5.43	206	4.54	0.24	1.19	(0.89 - 1.59)
Venous thrombosis							
Baseline – 2 years	45	9.27	40	2.11	<b>0.00</b>	<b>4.20</b>	<b>(2.74 - 6.44)</b>
2 years – end of follow-up <sup>β</sup>	20	3.10	58	2.11	0.15	1.45	(0.87 - 2.41)
<b>Locomotor impairment</b>							
Back syndrome without radiating pain	36	3.31	143	3.22	0.79	1.05	(0.73 - 1.51)
Acquired deformity of spine	7	0.61	39	0.84	0.46	0.74	(0.33 - 1.65)
Rheumatoid/seropositive arthritis †	12	1.04	66	1.43	0.31	0.73	(0.39 - 1.35)
Osteoarthritis hip	66	6.05	268	6.11	0.95	1.01	(0.77 - 1.32)
Osteoarthritis knee	61	5.68	270	6.25	0.60	0.93	(0.70 - 1.23)
Osteoarthritis other	26	2.32	149	3.30	0.12	0.72	(0.48 - 1.09)
Osteoporosis	99	8.93	354	7.90	0.15	1.18	(0.94 - 1.47)
Acquired deformity of limb	11	0.97	65	1.42	0.28	0.70	(0.37 - 1.33)
<b>Neurological - Disability</b>							
Poliomyelitis	0	0.00	0	0.00	-	-	-
Congenital neurological anomaly	0	0.00	2	0.04	-	-	-
Multiple sclerosis	1	0.08	1	0.02	0.32	4.12	(0.26 - 65.91)
Parkinsonism	19	1.62	59	1.24	0.35	1.28	(0.76 - 2.15)
Epilepsy	12	1.03	39	0.82	0.55	1.22	(0.64 - 2.33)
<b>Neurological - Pain</b>							
Migraine	1	0.09	18	0.38	0.14	0.22	(0.03 - 1.67)
Cluster headache	0	0.00	3	0.06	-	-	-
Trigeminal neuralgia	2	0.17	5	0.10	0.53	1.69	(0.33 - 8.72)
<b>Psychological disorders</b>							
Limited function/disability <sup>Δ</sup>	5	0.42	13	0.27	-	-	-
Dementia †	83	7.16	417	8.93	0.07	0.81	(0.64 - 1.02)
Organic psychosis	12	1.02	38	0.79	0.52	1.24	(0.64 - 2.37)

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	Cancer patients		Non-cancer patients		P-value	OR	(95% CI)
	N	Inc <sup>1</sup>	N	Inc <sup>1</sup>			
Schizophrenia	0	0.00	5	0.10	-	-	-
Affective psychosis	4	0.34	7	0.15	0.21	2.18	(0.64 - 7.48)
Anxiety disorder/anxiety state	12	1.03	43	0.91	0.64	1.16	(0.61 - 2.21)
Somatization disorder	1	0.09	4	0.08	1.00	0.99	(0.11 - 8.92)
Depressive disorder	35	3.17	97	2.16	0.05	1.47	(1.00 - 2.17)
Suicide/suicide attempt	1	0.08	8	0.17	0.52	0.51	(0.06 - 4.07)
Phobia/compulsive disorder	1	0.08	3	0.06	0.78	1.37	(0.14 - 13.26)
Personality disorder	4	0.34	31	0.65	0.23	0.53	(0.19 - 1.49)
Mental retardation	1	0.08	2	0.04	0.46	2.48	(0.22 - 27.92)
Psychosis NOS/other	4	0.34	11	0.23	0.51	1.47	(0.47 - 4.62)
<b>Respiratory diseases</b>							
Chronic bronchitis	7	0.61	19	0.40	0.36	1.50	(0.63 - 3.56)
Chronic obstructive pulmonary disease	95	8.81	378	8.56	0.97	1.00	(0.80 - 1.25)
Asthma	14	1.25	91	2.00	0.10	0.62	(0.36 - 1.10)
<b>Skin diseases</b>							
Dermatitis/atopic eczema	7	0.60	16	0.34	0.24	1.70	(0.70 - 4.13)
Psoriasis	22	1.94	67	1.45	0.22	1.35	(0.83 - 2.18)
Chronic ulcer skin	4	0.34	50	1.05	0.03	0.33	(0.12 - 0.91)
<b>Endocrine diseases</b>							
Hyperthyroidism/thyrotoxicosis	24	2.10	63	1.35	0.06	1.57	(0.98 - 2.51)
Hypothyroidism/myxoedema	20	1.75	91	1.96	0.75	0.93	(0.57 - 1.50)
Diabetes mellitus <sup>β</sup>	133	13.46	589	14.79	0.31	0.91	(0.75 - 1.09)
Gout	34	2.99	141	3.06	0.78	0.95	(0.65 - 1.38)
Lipid disorder							
Baseline – 2 years	16	3.66	129	7.62	<b>0.01</b>	<b>0.49</b>	<b>(0.29 - 0.82)</b>
2 years – end of follow-up	31	5.27	171	7.08	0.16	0.76	(0.52 - 1.11)
Endocrine/metabolic/nutritional disease							
Baseline – 7 years	13	1.25	40	0.95	0.37	1.33	(0.71 - 2.49)
7 years – end of follow-up	0	0.00	7	1.30	-	-	-
<b>Urogenital diseases</b>							
Incontinence urine	23	2.00	64	1.38	0.09	1.51	(0.94 - 2.43)
Congenital anomaly urinary tract	1	0.08	3	0.06	0.76	1.42	(0.15 - 13.66)
Glomerulonephritis/nephrosis <sup>δ</sup>	6	0.51	21	0.44	0.76	1.15	(0.46 - 2.85)
Benign prostatic hypertrophy	27	5.05	223	10.87	<b>0.00</b>	<b>0.46</b>	<b>(0.31 - 0.69)</b>
<b>Total number of patients</b>	<b>3835</b>		<b>11973</b>				

<sup>1</sup> Inc: incidence per 1000 person years at risk

<sup>2</sup> HR: hazard ratio adjusted for sex, age, diabetes, cardiovascular, and respiratory diseases

<sup>†</sup> Adjusted for cardiovascular diseases as time varying coefficient

<sup>Ω</sup> Adjusted for age, and sex as time varying coefficient

<sup>β</sup> Adjusted for age as time varying coefficient

<sup>Δ</sup> Cox proportional hazards assumption was violated due to small numbers we were unable to split survival time

<sup>δ</sup> Adjusted for sex as time varying coefficient