

**Title of manuscript:** Leukocyte Telomere Length, Cancer Incidence and All-cause Mortality among Chinese Adults: Singapore Chinese Health Study

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**SUPPLEMENTARY TABLE 1**

Associations between relative telomere length and risk of all-cause or cause-specific mortality, the Singapore Chinese Health Study

<b>Disease category</b>	<b>Q1 (0.70- 0.80)§</b>	<b>Q2 (0.86- 0.92)§</b>	<b>Q3 (0.97- 1.02)§</b>	<b>Q4 (1.08- 1.15)§</b>	<b>Q5 (1.24- 1.42)§</b>	<b>P trend</b>
<b>Number of participants</b>	5625	5625	5625	5625	5625	-
<b>Person-years of follow-up</b>	72610	76082	77884	79268	81339	-
<b>All-cause mortality</b>						
Deaths (n)	2098	1605	1463	1264	1179	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.90 (0.84, 0.96)	0.91 (0.85, 0.97)	0.90 (0.84, 0.97)	0.93 (0.86, 1.00)	0.03
<b>Cancer mortality</b>						
Deaths (n)	634	524	529	468	505	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.94 (0.84, 1.06)	1.02 (0.91, 1.15)	1.02 (0.90, 1.15)	1.19 (1.05, 1.34)	0.005
<b>Non-cancer mortality</b>						
Deaths (n)	1464	1081	934	796	674	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.88 (0.82, 0.96)	0.86 (0.79, 0.93)	0.85 (0.78, 0.93)	0.80 (0.73, 0.88)	<0.0001
<b>Cardiovascular diseases mortality</b>						
Deaths (n)	644	506	425	388	331	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.93 (0.83, 1.04)	0.87 (0.77, 0.98)	0.90 (0.79, 1.03)	0.85 (0.74, 0.98)	0.01

**SUPPLEMENTARY TABLE 1; Cont'd.**

<b>Disease category</b>	<b>Q1 (0.70- 0.80)§</b>	<b>Q2 (0.86- 0.92)§</b>	<b>Q3 (0.97- 1.02)§</b>	<b>Q4 (1.08- 1.15)§</b>	<b>Q5 (1.24- 1.42)§</b>	<b>P trend</b>
<b>Ischemic heart diseases mortality</b>						
Deaths (n)	353	308	238	224	176	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.04 (0.89, 1.21)	0.91 (0.77, 1.07)	0.97 (0.82, 1.15)	0.85 (0.70, 1.02)	0.07
<b>Stroke mortality</b>						
Deaths (n)	183	105	120	104	97	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.66 (0.52, 0.85)	0.84 (0.66, 1.05)	0.83 (0.65, 1.05)	0.84 (0.65, 1.09)	0.38
<b>COPD and pneumonia mortality</b>						
Deaths (n)	507	332	291	208	185	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.82 (0.71, 0.94)	0.84 (0.72, 0.97)	0.74 (0.63, 0.87)	0.76 (0.64, 0.91)	0.0002
<b>Digestive diseases‡ mortality</b>						
Deaths (n)	42	46	35	18	17	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.27 (0.83, 1.93)	1.05 (0.67, 1.65)	0.60 (0.35, 1.06)	0.64 (0.36, 1.14)	0.02
<b>Urinary tract diseases¶ mortality</b>						
Deaths (n)	92	72	76	58	51	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.90 (0.66, 1.23)	1.07 (0.79, 1.45)	0.90 (0.65, 1.26)	0.89 (0.63, 1.27)	0.60

**SUPPLEMENTARY TABLE 1; Cont'd.**

<b>Disease category</b>	<b>Q1 (0.70- 0.80)§</b>	<b>Q2 (0.86- 0.92)§</b>	<b>Q3 (0.97- 1.02)§</b>	<b>Q4 (1.08- 1.15)§</b>	<b>Q5 (1.24- 1.42)§</b>	<b><i>P</i> trend</b>
<b>Other diseases mortality</b>						
Deaths (n)	312	243	218	200	158	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.90 (0.76, 1.06)	0.88 (0.74, 1.05)	0.89 (0.74, 1.07)	0.77 (0.63, 0.94)	0.02

Abbreviations: CI, confidence intervals; COPD, chronic obstructive pulmonary disease; HR, hazard ratio.

§ Numbers inside the parentheses are interquartile ranges.

‡ Based on the International Classification of Diseases (ICD) 9th revision codes of 520-579 and the ICD 10th revision codes of K00-K95.

¶ Based on the International Classification of Diseases (ICD) 9th revision codes of 580-629 and the ICD 10th revision codes of N00-N99.

<sup>1</sup> Hazard ratio and P values were derived from the Cox proportional hazard regression model that included age at blood collection (years), sex (men or women), dialect group (Hokkien or Cantonese), BMI (<18.5, 18.5-<23, 23-<27.5, 27.5+ kg/m<sup>2</sup>), level of education (no formal education, primary school, or secondary school and above), smoking status (never, former, or current smoker), number of cigarettes per day, number of years of smoking, alcohol consumption (non-drinker, <7, or ≥7 drinks per week), weekly vigorous work or strenuous sports (no or yes), number hours of sleep per night (≤6, 7–8, or ≥9), self-reported history of physician-diagnosed diabetes mellitus (yes or no), and hypertension (yes or no).

**SUPPLEMENTARY TABLE 2**

Associations between relative telomere length and risk of total cancer and cancer-specific incidence, the Singapore Chinese Health Study

Type of cancer	Q1 (0.70- 0.80)§	Q2 (0.86- 0.92)§	Q3 (0.97- 1.02)§	Q4 (1.08- 1.15)§	Q5 (1.24- 1.42)§	<i>P</i> trend
<b>Number of participants</b>	5308	5308	5308	5308	5308	-
<b>Person-years of follow-up</b>	63126	65745	66825	67927	69324	-
<b>Total cancer</b>						
Cases (n)	927	822	874	819	911	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.96 (0.88,1.06)	1.08 (0.99,1.19)	1.09 (0.99,1.20)	1.30 (1.18,1.43)	<0.0001
<b>Head and neck cancer</b>						
Cases (n)	36	31	40	32	28	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.95 (0.59,1.54)	1.29 (0.82,2.04)	1.14 (0.70,1.86)	1.07 (0.64,1.78)	0.55
<b>Stomach cancer</b>						
Cases (n)	77	44	48	55	48	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.65 (0.45,0.94)	0.76 (0.53,1.10)	0.95 (0.67,1.36)	0.93 (0.64,1.35)	0.82
<b>Colon cancer</b>						
Cases (n)	116	107	107	108	96	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.02 (0.78,1.33)	1.08 (0.83,1.41)	1.19 (0.91,1.55)	1.15 (0.87,1.53)	0.17

**SUPPLEMENTARY TABLE 2; Cont'd.**

Type of cancer	Q1 (0.70- 0.80)§	Q2 (0.86- 0.92)§	Q3 (0.97- 1.02)§	Q4 (1.08- 1.15)§	Q5 (1.24- 1.42)§	P trend
<b>Rectal cancer</b>						
Cases (n)	67	64	62	47	73	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.09 (0.77,1.53)	1.15 (0.81,1.63)	0.96 (0.66,1.41)	1.67 (1.18,2.35)	0.02
<b>Pancreatic cancer</b>						
Cases (n)	21	22	27	16	32	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.17 (0.64,2.14)	1.55 (0.87,2.75)	1.01 (0.52,1.95)	2.21 (1.25,3.90)	0.02
<b>Squamous cell carcinoma</b>						
Cases (n)	29	33	20	20	16	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.41 (0.86,2.33)	0.99 (0.55,1.76)	1.21 (0.68,2.17)	1.13 (0.60,2.12)	0.87
<b>Lung adenocarcinoma cancer</b>						
Cases (n)	47	54	66	50	92	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.30 (0.88,1.92)	1.71 (1.17,2.50)	1.45 (0.97,2.17)	2.87 (1.99,4.13)	<.0001
<b>Breast cancer</b>						
Cases (n)	59	71	90	121	128	-
HR <sup>2</sup> (95% CI)	1.00 (ref)	1.04 (0.74,1.47)	1.20 (0.86,1.67)	1.44 (1.05,1.98)	1.43 (1.04,1.96)	0.003
<b>Uterine cancer</b>						
Cases (n)	26	16	24	42	41	-
HR <sup>2</sup> (95% CI)	1.00 (ref)	0.52 (0.28,0.97)	0.72 (0.41,1.26)	1.13 (0.69,1.86)	1.03 (0.62,1.70)	0.14

**SUPPLEMENTARY TABLE 2; Cont'd.**

Type of cancer	Q1 (0.70- 0.80)§	Q2 (0.86- 0.92)§	Q3 (0.97- 1.02)§	Q4 (1.08- 1.15)§	Q5 (1.24- 1.42)§	P trend
<b>Bladder cancer</b>						
Cases (n)	30	22	16	25	24	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.88 (0.51,1.53)	0.72 (0.39,1.33)	1.3 (0.75,2.23)	1.45 (0.83,2.53)	0.12
<b>Prostate cancer</b>						
Cases (n)	79	86	91	71	71	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	1.29 (0.95,1.76)	1.52 (1.12,2.06)	1.42 (1.03,1.97)	1.60 (1.15,2.23)	0.004
<b>Lymphoma cancer</b>						
Cases (n)	29	22	37	21	23	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.79 (0.45,1.38)	1.37 (0.84,2.25)	0.82 (0.46,1.45)	0.94 (0.54,1.66)	0.92
<b>Other cancers</b>						
Cases (n)	182	157	159	157	168	-
HR <sup>1</sup> (95% CI)	1.00 (ref)	0.95 (0.76,1.17)	1.02 (0.82,1.27)	1.09 (0.88,1.36)	1.26 (1.01,1.57)	0.02

Abbreviations: CI, confidence intervals; HR, hazard ratio.

§ Numbers inside the parentheses are interquartile ranges.

<sup>1</sup> Hazard ratio and P values were derived from the Cox proportional hazard regression model that included age at blood collection (years), sex (men or women), dialect group (Hokkien or Cantonese), BMI (<18.5, 18.5-<23, 23-<27.5, 27.5+ kg/m<sup>2</sup>), level of education (no formal education, primary school, or secondary school and above), smoking status (never, former, or current smoker), number of cigarettes per day, number of years of smoking, alcohol consumption (non-drinker, <7, or ≥7 drinks per week), weekly vigorous work or strenuous sports (no or yes), number hours of sleep per night (≤6, 7–8, or ≥9), self-reported history of physician-diagnosed diabetes mellitus (yes or no), and hypertension (yes or no).

<sup>2</sup> Hazard ratio and P values were derived from the Cox proportional hazard regression model that included age at blood collection (years), dialect group (Hokkien or Cantonese), BMI (<18.5, 18.5-<23, 23-<27.5, 27.5+ kg/m<sup>2</sup>), level of education (no formal education, primary school, or secondary school and above), age when period became regular, age at first live birth (<10, 21-25, 26-30, or ≥31 years), number of live births (0, 1-2, 3-4, or ≥5), age at menopause (≤49, 50-54, or ≥55 years), use of hormone therapy (never, ever, or current), use of oral contraceptives (no or yes), family history of breast cancer (no or yes), smoking status (never, former, or current smoker), alcohol consumption (non-drinker, <7, or ≥7 drinks per week), weekly vigorous work or strenuous sports (no or yes), number hours of sleep per night (≤6, 7-8, or ≥9), self-reported history of physician-diagnosed diabetes mellitus (yes or no), and hypertension (yes or no).