

Supplementary table 1. Chronological age and morphometric skin characteristics.

	Chronological age (years)					
	Model 1		Model 2		Model 3	
	β (SE)	P-value	β (SE)	P-value	β (SE)	P-value
Epidermis*						
Thickness based on EDJ, μm	-0.26 (0.06)	<0.001	-0.21 (0.08)	<0.01	-0.22 (0.09)	0.01
Curvature based on SEB [♦]	2.56 (0.62)	<0.001	2.62 (0.78)	0.001	2.96 (0.91)	0.001
Dermis						
Elastic fibres, layer 1*						
Area covered by fibres [♦]	0.35 (0.17)	0.06	0.27 (0.24)	0.26	0.12 (0.27)	0.67
Number of fibres	0.66 (0.37)	0.07	0.62 (0.46)	0.18	0.28 (0.51)	0.59
Area of a single fibre, μm^2	0.16 (0.08)	0.05	0.10 (0.10)	0.35	0.05 (0.12)	0.68
Length of a fibre, μm	0.06 (0.03)	0.08	0.04 (0.04)	0.30	0.02 (0.05)	0.66
Thickness of a fibre, nm	-1.46 (1.83)	0.43	-2.26 (2.22)	0.31	-2.16 (2.67)	0.42
Curl of an elastic fibre [♦]	-1.21 (0.51)	0.02	-0.88 (0.53)	0.10	-0.71 (0.61)	0.24
Elastic fibres, layers 2-5 [#]						
Area covered by fibres [♦]	0.93 (0.28)	0.001	0.78 (0.34)	0.02	0.58 (0.40)	0.14
Number of fibres	1.17 (0.31)	<0.001	1.03 (0.38)	0.01	0.95 (0.44)	0.03
Area of a single fibre, μm^2	0.18 (0.17)	0.29	0.22 (0.22)	0.31	0.06 (0.26)	0.82
Length of a fibre, μm	0.02 (0.05)	0.68	0.02 (0.06)	0.70	-0.02 (0.07)	0.74
Thickness of a fibre, nm	1.51 (1.60)	0.35	2.26 (2.02)	0.26	0.80 (2.37)	0.74
Curl of a fibre [♦]	-0.30 (0.44)	0.49	-0.02 (0.56)	0.97	-0.02 (0.65)	0.98

*N=286, [#]N=277, [♦]= $\times 10^3$. EDJ=epidermal-dermal junction, SEB=stratum corneum epidermis boundary. Linear regression analysis: β =Estimate; SE=Standard error. Model 1: gender adjusted, model 2: as model 1 plus external factors (smoking, alcohol and sun damage), model 3: as model 2 plus health status (no. of co-morbidities, no. of medication categories).

Supplementray table 2. Comparison of offspring and partner status and morphometric skin characteristics.

	Familial longevity					
	Model 1		Model 2		Model 3	
	β (SE)	P-value	β (SE)	P-value	β (SE)	P-value
Epidermis, mean (SD)*						
Thickness based on EDJ, μm	-0.06 (0.79)	0.94	0.63 (0.85)	0.46	-0.16 (0.95)	0.87
Curvature based on SEB [†]	-4.00 (8.13)	0.62	-10.7 (8.76)	0.22	-1.80 (10.1)	0.86
Dermis, mean (SD)						
Elastic fibres, layer 1*						
Area covered by fibres [‡]	-0.95 (2.49)	0.70	-2.54 (2.71)	0.35	-1.75 (3.03)	0.56
Number of fibres	-1.24 (4.83)	0.91	-5.24 (5.20)	0.91	-3.49 (5.67)	0.91
Area of a single fibre, μm^2	-1.10 (1.07)	0.31	-1.54 (1.15)	0.18	-1.22 (1.30)	0.35
Length of a fibre, μm	-0.60 (0.44)	0.18	-0.67 (0.47)	0.15	-0.52 (0.52)	0.32
Thickness of a fibre, nm	19.4 (24.1)	0.42	11.9 (25.1)	0.64	25.1 (23.4)	0.40
Curl of a fibre [‡]	4.17 (6.66)	0.53	8.69 (5.96)	0.15	9.48 (6.66)	0.16
Elastic fibres, layers 2-5 [#]						
Area covered by fibres [‡]	0.21 (3.64)	0.95	-1.79 (3.90)	0.65	-0.76 (4.37)	0.86
Number of fibres	-0.57 (4.03)	0.89	-4.25 (4.27)	0.32	-3.12 (4.81)	0.52
Area of a single fibre, μm^2	-1.81 (2.26)	0.42	-2.02 (2.45)	0.41	-2.64 (2.83)	0.35
Length of a fibre, μm	-0.69 (0.62)	0.27	-0.68 (0.67)	0.31	-1.09 (0.76)	0.16
Thickness of a fibre, nm	-30.6 (21.0)	0.15	-36.0 (22.9)	0.12	-32.7 (26.1)	0.21
Curl of a fibre [‡]	-8.44 (5.80)	0.15	-9.36 (6.38)	0.14	-10.3 (7.15)	0.15

*N=286, [#]N=277, [‡]= $\times 10^3$. EDJ=epidermal-dermal junction, SEB=stratum corneum epidermis boundary. Linear regression analysis: β =Estimate; SE=Standard error. Model 1: partner (1) and offspring (0), age and gender, model 2: as model 1 plus external factors (smoking, alcohol and sun damage), model 3: as model 2 plus health status (no. of co-morbidities, no. of medication categories).

Supplementary table 3. Framingham heart risk prediction and epidermal morphometric characteristics.

	FHR score	
	β (SE)	P-value
Thickness based on EDJ, μm		
Model 1: logFHR	-0.95 (0.64)	0.14
Model 2: as model 1 offspring/partner	- 0.95 (0.64)	0.14
Model 3: as model 2 plus sun damage	-0.56 (0.65)	0.39
Curvature based on SEB [♦]		
Model 1: logFHR	9.88 (7.36)	0.18
Model 2: as model 1 offspring/partner	9.92 (7.37)	0.18
Model 3: as model 2 plus sun damage	8.83 (7.65)	0.25

Models 1 and 2: N=182, Model 3: N=173. EDJ=epidermal-dermal junction, SEB=stratum corneum epidermis boundary. ♦= $\times 10^3$. Linear regression analysis: β =Estimate; SE=Standard error. Model 1: the log of Framingham Heart Risk, FHR (%), 10-year risk prediction of cardiovascular disease, model 2: as model 1 plus offspring/partner, model 3: as model 2 plus sun damage.

Supplementary table 4. Framingham heart risk prediction and elastic fibre morphometric characteristics.

	FHR score			
	Layer 1*		Layers 2-5#	
	β (SE)	P-value	β (SE)	P-value
Area of dermis covered by elastic fibres*				
Model 1: logFHR	-2.97 (2.36)	0.21	-1.70 (3.33)	0.61
Model 2: as model 1 offspring/partner	-2.99 (2.36)	0.21	-1.78 (3.33)	0.59
Model 3: as model 2 and sun damage	-4.06 (2.43)	0.10	-3.80 (3.37)	0.26
Number of elastic fibres				
Model 1: logFHR	-5.68 (4.33)	0.19	0.73 (3.59)	0.84
Model 2: as model 1 offspring/partner	-5.70 (4.34)	0.19	0.68 (3.60)	0.85
Model 3: as model 2 and sun damage	-7.51 (4.47)	0.10	-1.73 (3.60)	0.63
Area of a single elastic fibre, μm^2				
Model 1: logFHR	-2.00 (0.91)	0.03	-1.43 (2.02)	0.48
Model 2: as model 1 offspring/partner	-2.01 (0.91)	0.03	-1.41 (2.03)	0.49
Model 3: as model 2 and sun damage	-2.37 (0.93)	0.01	-1.79 (2.13)	0.40
Length of an elastic fibre, μm				
Model 1: logFHR	-0.97 (0.38)	0.01	-0.68 (0.54)	0.21
Model 2: as model 1 offspring/partner	-0.97 (0.38)	0.01	-0.67 (0.54)	0.22
Model 3: as model 2 and sun damage	-1.01 (0.40)	0.01	-0.77 (0.57)	0.18
Thickness of an elastic fibre, nm				
Model 1: logFHR	-15.6 (22.6)	0.49	20.1 (17.3)	0.25
Model 2: as model 1 offspring/partner	-16.0 (22.5)	0.48	20.5 (17.3)	0.24
Model 3: as model 2 and sun damage	-21.4 (23.1)	0.36	20.1 (18.0)	0.27
Curl of an elastic fibre*				
Model 1: logFHR	-1.78 (5.30)	0.74	3.61 (4.98)	0.47
Model 2: as model 1 offspring/partner	-1.83 (5.30)	0.73	3.79 (4.96)	0.45
Model 3: as model 2 and sun damage	1.61 (5.11)	0.75	6.11 (5.12)	0.23

* Models 1 and 2: N=182, Model 3: N=173, # Models 1, 2 and 3: N=178, Model 4: N=169.

♦= $\times 10^3$. Linear regression analysis: β =Estimate; SE=Standard error. Model 1: the log of Framingham Heart Risk, FHR (%), 10-year risk prediction of cardiovascular disease, model 2: as model 1 plus offspring/partner, model 3: as model 2 plus sun damage.