Supplementary Table S1. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Ya5ACE of *ACE* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.705	–	–	–
	DI	0.124	–	–	–
	II	0.145	–	–	–
	D / I	0.585	–	–	–
Elderly	DD	1.000	0.696	–	–
	DI	0.939	0.094	–	–
	II	0.928	0.132	–	–
	D / I	1.000	0.573	–	–
Old seniors	DD	0.887	0.605	0.940	–
	DI	0.604	**0.028**	0.732	–
	II	0.705	0.051	0.811	–
	D / I	0.891	0.471	0.961	–
Long-livers	DD	0.393	0.665	0.377	0.263
	DI	0.445	0.503	0.381	0.187
	II	1.000	0.195	1.000	0.787
	D / I	0.548	0.279	0.577	0.583

Here and in Tables 2-10: results in bold type correspond to $P<0.05$

Supplementary Table S2. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Ya5NBC182 of *HECW1* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	**0.016**	–	–	–
	DI	0.226	–	–	–
	II	0.826	–	–	–
	D / I	0.190	–	–	–
Elderly	DD	**0.003**	1.000	–	–
	DI	0.368	0.591	–	–
	II	0.319	0.589	–	–
	D / I	**0.029**	0.698	–	–
Old seniors	DD	0.126	0.192	0.081	–
	DI	0.228	0.691	0.819	–
	II	0.873	0.624	0.148	–
	D / I	0.589	0.305	**0.044**	–
Long-livers	DD	0.853	0.073	**0.029**	0.315
	DI	1.000	0.281	0.476	0.350
	II	0.917	0.905	0.473	0.781
	D / I	0.874	0.289	0.087	0.835

Supplementary Table S3. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Yb8NBC597 of *SEMA6A* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.275	–	–	–
	DI	0.145	–	–	–
	II	0.412	–	–	–
	D / I	0.518	–	–	–
Elderly	DD	0.204	1.000	–	–
	DI	0.092	0.908	–	–
	II	0.377	1.000	–	–
	D / I	0.487	1.000	–	–
Old seniors	DD	0.752	0.373	0.275	–
	DI	0.292	0.410	0.371	–
	II	0.154	1.000	0.740	–
	D / I	0.843	0.408	0.294	–
Long-livers	DD	0.368	0.063	**0.035**	0.178
	DI	0.757	0.273	0.292	0.641
	II	**0.006**	0.138	0.053	0.077
	D / I	0.059	**0.029**	**0.010**	0.055

Supplementary Table S4. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Yb8NBC516 of *CDH4* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.166	–	–	–
	DI	1.000	–	–	–
	II	0.204	–	–	–
	D / I	0.075	–	–	–
Elderly	DD	0.799	0.233	–	–
	DI	1.000	1.000	–	–
	II	0.762	0.317	–	–
	D / I	0.719	0.139	–	–
Old seniors	DD	0.286	**0.011**	0.143	–
	DI	0.387	0.579	0.408	–
	II	0.931	0.175	0.802	–
	D / I	0.615	**0.019**	0.336	–
Long-livers	DD	0.070	0.886	0.105	**0.001**
	DI	0.591	0.702	0.602	0.927
	II	**0.027**	0.584	0.052	**0.015**
	D / I	**0.008**	0.653	**0.018**	**3×10^{-4}***

Here and in Tables 10: * indicates P-value that retain statistical significance after adjusting for multiple comparisons ($P_{Bonf}<0.05$).

Supplementary Table S5. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Ya5ac2145 of *STK38L* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.691	–	–	–
	DI	0.678	–	–	–
	II	1.000	–	–	–
	D / I	0.719	–	–	–
Elderly	DD	0.822	0.894	–	–
	DI	0.722	1.000	–	–
	II	0.773	1.000	–	–
	D / I	1.000	0.812	–	–
Old seniors	DD	0.847	0.558	0.636	–
	DI	0.765	0.467	0.375	–
	II	0.776	0.732	0.426	–
	D / I	0.930	0.670	0.864	–
Long-livers	DD	0.398	0.220	0.231	0.395
	DI	0.262	0.157	0.104	0.323
	II	0.704	0.663	0.326	0.739
	D / I	0.512	0.381	0.514	0.560

Supplementary Table S6. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Yb8AC702 of *PKHD1L1* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.624	–	–	–
	DI	0.225	–	–	–
	II	0.411	–	–	–
	D / I	0.831	–	–	–
Elderly	DD	0.401	0.902	–	–
	DI	**0.032**	0.618	–	–
	II	0.104	0.630	–	–
	D / I	0.674	0.890	–	–
Old seniors	DD	0.125	0.055	**0.007**	–
	DI	0.940	0.182	**0.013**	–
	II	0.086	0.661	0.930	–
	D / I	0.045	0.166	0.122	–
Long-livers	DD	0.067	**0.030**	**0.005**	0.470
	DI	0.639	0.112	**0.013**	0.516
	II	0.182	0.795	0.910	1.000
	D / I	0.046	0.117	0.108	0.645

Supplementary Table S7. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Ya5ac2013 of *TEAD1* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.558	–	–	–
	DI	0.467	–	–	–
	II	0.819	–	–	–
	D / I	0.826	–	–	–
Elderly	DD	0.922	0.650	–	–
	DI	0.797	0.314	–	–
	II	0.700	0.500	–	–
	D / I	0.717	0.943	–	–
Old seniors	DD	0.603	0.835	0.684	–
	DI	0.644	0.708	0.423	–
	II	1.000	0.757	0.625	–
	D / I	0.744	1.000	0.959	–
Long-livers	DD	0.735	0.376	0.589	0.331
	DI	0.846	0.656	0.639	0.863
	II	0.522	0.809	0.295	0.448
	D / I	0.492	0.434	0.288	0.274

Supplementary Table S8. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus TPA25 of *PLAT* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.921	–	–	–
	DI	0.195	–	–	–
	II	0.092	–	–	–
	D / I	0.264	–	–	–
Elderly	DD	0.535	0.479	–	–
	DI	0.870	0.136	–	–
	II	0.353	**0.012**	–	–
	D / I	0.299	**0.041**	–	–
Old seniors	DD	0.820	0.719	0.643	–
	DI	0.482	0.405	0.355	–
	II	0.618	0.155	0.098	–
	D / I	0.921	0.287	0.175	–
Long-livers	DD	0.704	0.832	0.331	0.494
	DI	0.417	0.056	0.526	0.128
	II	0.607	**0.041**	0.762	0.262
	D / I	0.950	0.287	0.374	0.865

Supplementary Table S9. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Ya5ac1986 of *COL13A1* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.093	–	–	–
	DI	0.685	–	–	–
	II	0.695	–	–	–
	D / I	0.303	–	–	–
Elderly	DD	0.329	0.397	–	–
	DI	0.180	0.117	–	–
	II	0.070	0.292	–	–
	D / I	0.065	0.652	–	–
Old seniors	DD	0.477	0.196	0.692	–
	DI	0.883	0.531	0.157	–
	II	0.567	1.000	0.112	–
	D / I	0.452	0.578	0.152	–
Long-livers	DD	0.122	0.864	0.530	0.247
	DI	0.399	0.747	**0.030**	0.258
	II	1.000	0.681	0.094	0.585
	D / I	0.510	0.683	0.297	1.000

Supplementary Table S10. Results of a pairwise comparative analysis of the genotype/alleles frequencies of the Alu-polymorphic locus Ya5-MLS19 of *LAMA2* gene in the different age groups.

Age group	Genotype/ allele	Young Adults	Middle-age Adults	Elderly	Old
Young	DD	–	–	–	–
	DI	–	–	–	–
	II	–	–	–	–
	D / I	–	–	–	–
Middle-aged	DD	0.135			
	DI	0.161			
	II	1.000			
	D / I	0.290			
Elderly	DD	0.338	0.498		
	DI	0.746	0.267		
	II	0.547	0.568		
	D / I	0.326	0.895		
Old seniors	DD	**0.027**	0.932	0.252	
	DI	0.291	0.506	0.491	
	II	0.180	0.246	0.595	
	D / I	**0.021**	0.440	0.256	
Long-livers	DD	0.200	**0.010**	**0.029**	**5×10^{-4}**
	DI	**0.010**	**2×10^{-4}***	**0.003**	**6×10^{-5}***
	II	0.072	0.099	0.213	0.416
	D / I	0.851	0.442	0.458	0.061

Supplementary Table S11. Estimation of the individual ORs for elements of the identified polygenic predictors of longevity.

Genotype/ allele	P	OR	CI_{OR}
Comparable age periods – 18-74			
CDH4 Yb8NBC516*D	0.033	1.509	1.033-2.204
LAMA2 Ya5-MLS19*ID	2.081×10^{-4}	1.781	1.313-2.415
SEMA6A Yb8NBC597*I	0.049	1.406	1.001-1.974
Comparable age periods – 18-89			
CDH4 Yb8NBC516*D	0.014	1.565	1.094-2.239
CDH4 Yb8NBC516*DD	0.006	1.709	1.162-2.513
LAMA2 Ya5-MLS19*ID	4.246×10^{-5}	1.833	1.372-2.451
HECW1 Ya5NBC182*D	0.945	0.988	0.703-1.388
Comparable age periods – 60-89			
LAMA2 Ya5-MLS19*ID	6.417×10^{-5}	1.841	1.365-2.483
HECW1 Ya5NBC182*I	0.110	1.612	0.897-2.897
Comparable age periods – 75-89			
CDH4 Yb8NBC516*DD	0.001	2.106	1.365-3.249
LAMA2 Ya5-MLS19*D	0.364	1.210	0.802-1.826
HECW1 Ya5NBC182*I	0.741	1.063	0.739-1.531
ACE Ya5ACE*I	0.234	1.234	0.873-1.744

Note. P – P-value; OR – odds ratio; CI_{OR} – 95% confidence interval for OR.