SUPPLEMENTARY TABLES

Supplementary Table 1. Sensitivity analysis of mean heart rate over 24 h and during sleep and awake periods in groups that differ in familial longevity status or chronological age excluding participants using medication possibly influencing HR or HRV.

|                        | Offspring of long-lived families (N = 35) | Partners of the offspring (N = 25) | Middle-aged* (N = 60) | Young (N = 35) | P value* | P value** |
|------------------------|------------------------------------------|----------------------------------|----------------------|----------------|----------|----------|
| Heart rate - 24 h [bpm]| 71.91 (8.95)                             | 72.63 (6.74)                     | 72.34 (8.06)         | 75.36 (8.80)  | 0.734    | 0.087    |
| Heart rate - sleep     |                                          |                                  |                      |                | 0.843    | 0.139    |
| Heart rate - awake     |                                          |                                  |                      |                | 0.853    | 0.009    |

Data presented as estimated mean (standard deviation). The linear regression analyses between offspring of long-lived families and their partners as controls were adjusted for sex and calendar age. The linear regression model analyses between the middle-aged group and young were adjusted for sex. *Data of offspring and partners combined. **P-value for difference between offspring of long-lived parents and their partners as controls.

Supplementary Table 2. Sensitivity analysis of detrended fluctuation analysis (DFA) as a measure of heart rate variability (HRV) in groups that differ in familial longevity status or chronological age excluding participants using medication possibly influencing HR or HRV.

|                        | Offspring of long-lived families (N = 35) | Partners of the offspring (N = 25) | Middle-aged* (N = 60) | Young (N = 35) | P value* | P value** |
|------------------------|------------------------------------------|----------------------------------|----------------------|----------------|----------|----------|
| Sleep period           |                                          |                                  |                      |                |          |          |
| alpha-1 (4–45)         | 1.09 (0.19)                              | 1.05 (0.24)                      | 1.07 (0.21)          | 1.08 (0.12)    | 0.476    | 0.811    |
| alpha-2 (64–1000)      | 0.94 (0.12)                              | 1.01 (0.15)                      | 0.97 (0.14)          | 0.85 (0.11)    | 0.055    | <0.001   |
| Awake period           |                                          |                                  |                      |                |          |          |
| alpha-1 (4–45)         | 0.99 (0.15)                              | 0.98 (0.19)                      | 0.99 (0.17)          | 1.00 (0.13)    | 0.897    | 0.770    |
| alpha-2 (64–1000)      | 1.09 (0.11)                              | 1.12 (0.10)                      | 1.11 (0.10)          | 1.04 (0.10)    | 0.343    | 0.003    |

Data presented as mean (standard deviation). The linear mixed model analyses between offspring of long-lived parents and their partners as controls were adjusted for sex and calendar age. The linear mixed model analyses between the middle-aged and young groups were adjusted for sex. Alpha-1 represents brief fluctuations and alpha-2 long-term fluctuations. *Data of offspring and partners combined. **P-value for difference between offspring of long-lived parents and their partners as controls.
Supplementary Table 3. Sensitivity analysis of measures of 24-h rhythms in heart rate in groups that differ in familial longevity status or chronological age excluding participants using medication possibly influencing HR or HRV.

|                      | Offspring of long-lived families (N = 35) | Partners of the offspring (N = 25) | Middle-aged* (N = 60) | Young (N = 35) | P value* | P value** |
|----------------------|------------------------------------------|-----------------------------------|------------------------|----------------|----------|----------|
| Mesor [bpm]          | 71.65 (7.49)                             | 72.88 (7.04)                      | 72.21 (7.30)           | 75.47 (7.51)   | 0.514    | 0.039    |
| Absolute amplitude [bpm]* | 11.44 (5.62)                           | 11.90 (3.74)                      | 11.44 (5.05)           | 14.82 (5.58)   | 0.605    | 0.001    |
| Relative amplitude percentage [%]* | 15.07 (6.72)                          | 16.10 (5.18)                      | 15.56 (6.17)           | 19.43 (5.73)   | 0.524    | <0.001   |
| Trough time [hh:mm]* | 03:54 (00:30)                           | 03:42 (00:18)                     | 03:54 (00:24)          | 04:30 (00:30)  | 0.491    | 0.030    |
| Minimum heart rate [bpm] | 59.59 (7.60)                            | 60.29 (6.86)                      | 59.82 (7.26)           | 58.64 (6.86)   | 0.711    | 0.439    |
| Peak time [hh:mm]*   | 13:54 (00:48)                           | 15:12 (00:54)                     | 14:24 (00:48)          | 17:54 (01:00)  | 0.289    | 0.007    |
| Maximum heart rate [bpm] | 82.61 (9.56)                            | 83.76 (9.42)                      | 83.22 (9.45)           | 89.44 (10.04)  | 0.648    | 0.004    |

Data presented as mean (standard deviation) unless otherwise stated. The linear mixed model analyses between offspring of long-lived parents and their partners as controls were adjusted for sex and calendar age. The linear mixed model analyses between the middle-aged and young groups were adjusted for sex. *For these measures, data are presented as median (interquartile range) and non-parametric tests without correction for confounders were performed (Mann-Whitney U) due to no normal distribution. ‡For these measures, data is shown as circular mean (standard deviation) and non-parametric circular tests without adjustment for confounders (Watson-Wheeler test) were performed. *Data of offspring and partners combined. ‡P-value for difference between offspring of long-lived parents and their partners as controls. **P-value for difference between middle-aged group and young.