

## SUPPLEMENTARY TABLES

**Supplementary Table 1. Age and sex distribution of control and cancer cohorts.**

| Age category [y] | Control cohort |            |           | Cancer cohort |            |           |
|------------------|----------------|------------|-----------|---------------|------------|-----------|
|                  | Male (n)       | Female (n) | Total (n) | Male (n)      | Female (n) | Total (n) |
| 20.0 - 29.9      | 10             | 8          | 18        | 1             | 0          | 1         |
| 30.0 - 39.9      | 14             | 6          | 20        | 6             | 1          | 7         |
| 40.0 - 49.9      | 19             | 4          | 23        | 3             | 2          | 5         |
| 50.0 - 59.9      | 16             | 5          | 21        | 8             | 8          | 16        |
| 60.0 - 69.9      | 17             | 1          | 18        | 13            | 13         | 26        |
| > 70             | 2              | 0          | 2         | 25            | 20         | 45        |

**Supplementary Table 2. Statistical comparisons of the chronological age distributions of the three study cohorts.**

| Sample group comparison | p-value                 |
|-------------------------|-------------------------|
| Control vs. hematologic | 7.753*10 <sup>-7</sup>  |
| Control vs. solid       | 3.659*10 <sup>-14</sup> |
| Solid vs. hematologic   | 1.000                   |

Dunn test with bonferroni correction.

**Supplementary Table 3. Logistic regression analysis on the u75 study cohort and control samples.**

| Tested variables              | p-value               |
|-------------------------------|-----------------------|
| (Intercept)                   | 3.53*10 <sup>-8</sup> |
| Absolute age estimation error | 0.06772               |
| Chronological age             | 5.93*10 <sup>-9</sup> |
| Sex                           | 0.00503               |

Dependent variable: disease status (healthy/cancer), independent variables: absolute estimation error, chronological age, sex.

**Supplementary Table 4. Percentage of cancer samples above the MAE/RMSE of the control cohort per age category.**

| Age category | Cancer subgroup | % of samples above MAE | % of samples above RMSE |
|--------------|-----------------|------------------------|-------------------------|
| 20.0 - 29.9  | Solid           | -                      | -                       |
| 30.0 - 39.9  | Solid           | 60                     | 40                      |
| 40.0 - 49.9  | Solid           | 50                     | 50                      |
| 50.0 - 59.9  | Solid           | 46                     | 31                      |
| 60.0 - 69.9  | Solid           | 48                     | 38                      |
| 70.0 - 74.9  | Solid           | 55                     | 55                      |
| > 75.0       | Solid           | 45                     | 32                      |
| 20.0 - 29.9  | Hematologic     | -                      | -                       |
| 30.0 - 39.9  | Hematologic     | 50                     | 50                      |
| 40.0 - 49.9  | Hematologic     | 33                     | 33                      |
| 50.0 - 59.9  | Hematologic     | 33                     | 33                      |
| 60.0 - 69.9  | Hematologic     | 40                     | 40                      |
| 70.0 - 74.9  | Hematologic     | 33                     | 33                      |
| > 75.0       | Hematologic     | 33                     | 33                      |

**Supplementary Table 5. Mean errors (ME) per age category in all three subgroups.**

| Age category [y] | Control | Solid  | Hematologic | p-value SvsC | p-value HvsC |
|------------------|---------|--------|-------------|--------------|--------------|
| 20.0 - 29.9      | -0.397  | -1.56  | -           | 0.842        | -            |
| 30.0 - 39.9      | -0.178  | 0.676  | 2.05        | 0.575        | 0.312        |
| 40.0 - 49.9      | -1.35   | -0.280 | 4.65        | 0.427        | 0.003*       |
| 50.0 - 59.9      | -1.55   | -1.94  | 16.0        | 0.780        | 0.271        |
| 60.0 - 69.9      | -0.361  | -0.111 | -2.40       | 0.813        | 0.403        |
| 70.0 - 74.9      | 1.15    | -1.09  | 3.44        | 0.641        | 0.800        |
| > 75.0           | -       | -1.67  | -1.63       | -            | -            |

\* p-value < 0.05.

Control = control group, Solid = Solid tumours, Hematologic = Hematologic tumours. SvsC = Solid vs. Controls, HvsC = Hematologic vs. Controls.