

Supplementary data

Table S1. Patients characteristic in the training, testing and exploratory sets.

| | Training set | Testing set | Exploratory set |
|--|--------------------|--------------------|--------------------|
| n | 190 | 49 | 656 |
| age (years) | 54.0 (46.0 - 59.0) | 48.0 (42.0 - 56.0) | 48.0 (37.7 - 55.0) |
| female, n (%) | 67 (35.3%) | 16 (32.7%) | 289 (44.1%) |
| neoplasia | | | |
| DLBCL, n(%) | 90 (47.4%) | 49 (100%) | 656 (100%) |
| MCL, n(%) | 100 (52.6%) | - | - |
| BMI (kg/m ²) | 25.6 (22.3 - 28.1) | 23.3 (21.0 - 25.7) | 24.1 (21.8 - 27.7) |
| SMI (cm ² /m ²) | 52.5 (45.6 - 58.7) | 49.1 (44.8 - 57.4) | 50.3 (44.6 - 57.2) |
| MA (HU) | 34.9 (29.9 - 39.9) | 38.6 (33.4 - 42.5) | 36.1 (30.4 - 42.0) |

DLBCL diffuse large B cell lymphoma; MCL mantle cell lymphoma; BMI body mass index; SMI skeletal muscle index; MA muscle attenuation. Unless otherwise stated, numbers are given as median (IQR).

Table S2. Causes of death in the exploratory set.

| Cause | Muscular hypodensity (n=65) | | Control (n=591) | | p |
|--------------------|--------------------------------|----------------|--------------------|---------------|--------------|
| Lymphoma | 6 | (9.2%) | 39 | (6.6%) | 0.43 |
| Toxicity | 4 | (6.2%) | 11 | (1.9%) | 0.05 |
| Concurrent illness | 3 | (4.6%) | 5 | (0.8%) | 0.03 |
| Other reason | 1 | (1.5%) | 3 | (0.5%) | 0.34 |
| Unknown | 1 | (1.5%) | 0 | (0.0%) | 0.10 |
| Total | 15 | (23.1%) | 58 | (9.8%) | 0.003 |

Numbers are given as n(%).

Table S3. Performances of previously published neural networks.

| Study | Training sample, n | Validation sample, n | Dice |
|----------------------|-----------------------|-------------------------|--------------------|
| Burns et al. | 51 | 51 | 0.94 ± 0.03 |
| Lee et al. | 250 | 150 | 0.93 ± 0.02 |
| Edwards et al. | 682 | 137 | 0.92 ± 0.02 |
| Dabiri et al. | 3774 | 1327 | 0.99 ± 0.01 |
| Present study | 190 | 49 | 0.97 ± 0.03 |

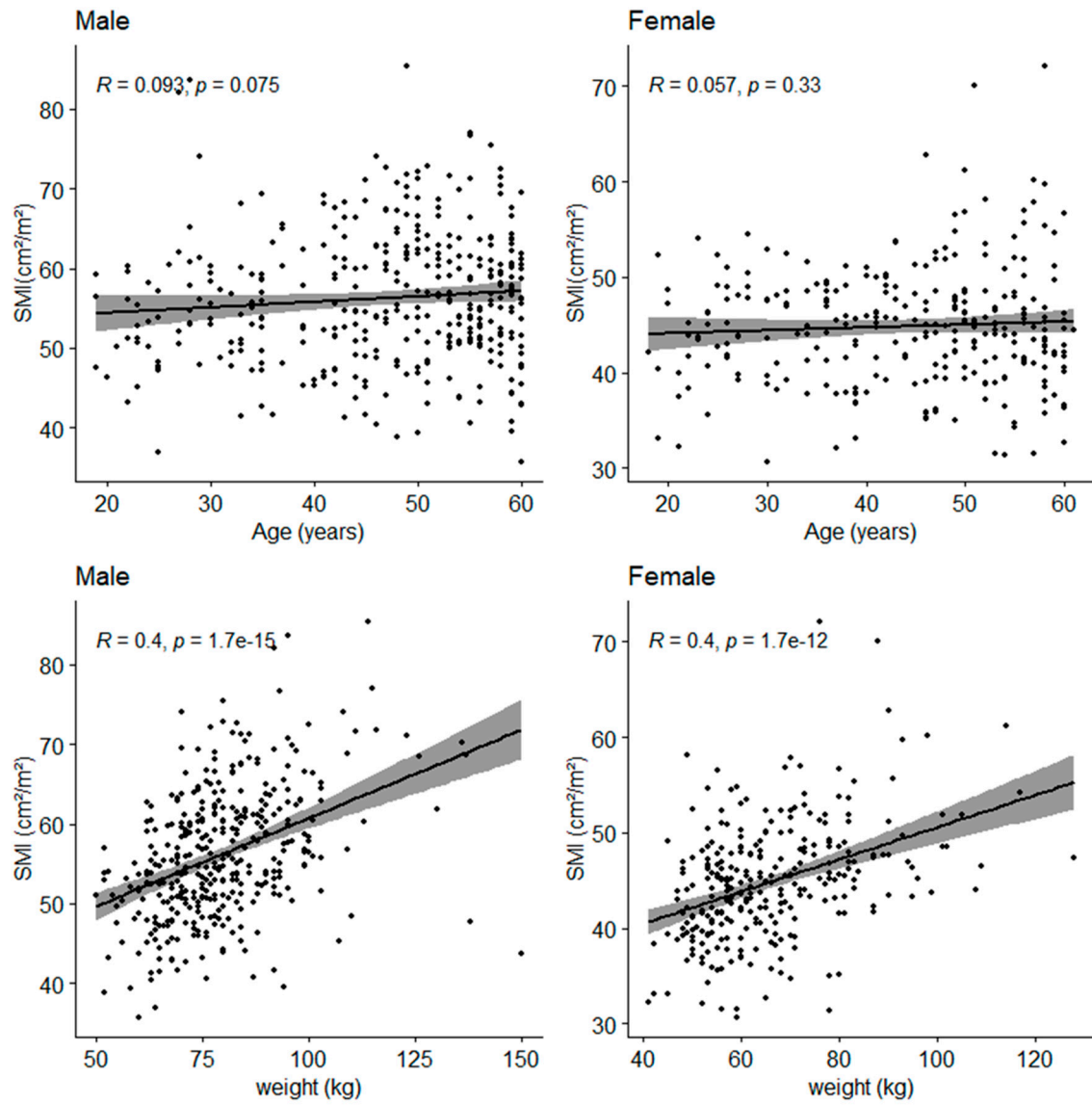


Figure S1. Correlations of SMI with age and weight.

SMI skeletal muscle index; body mass index.

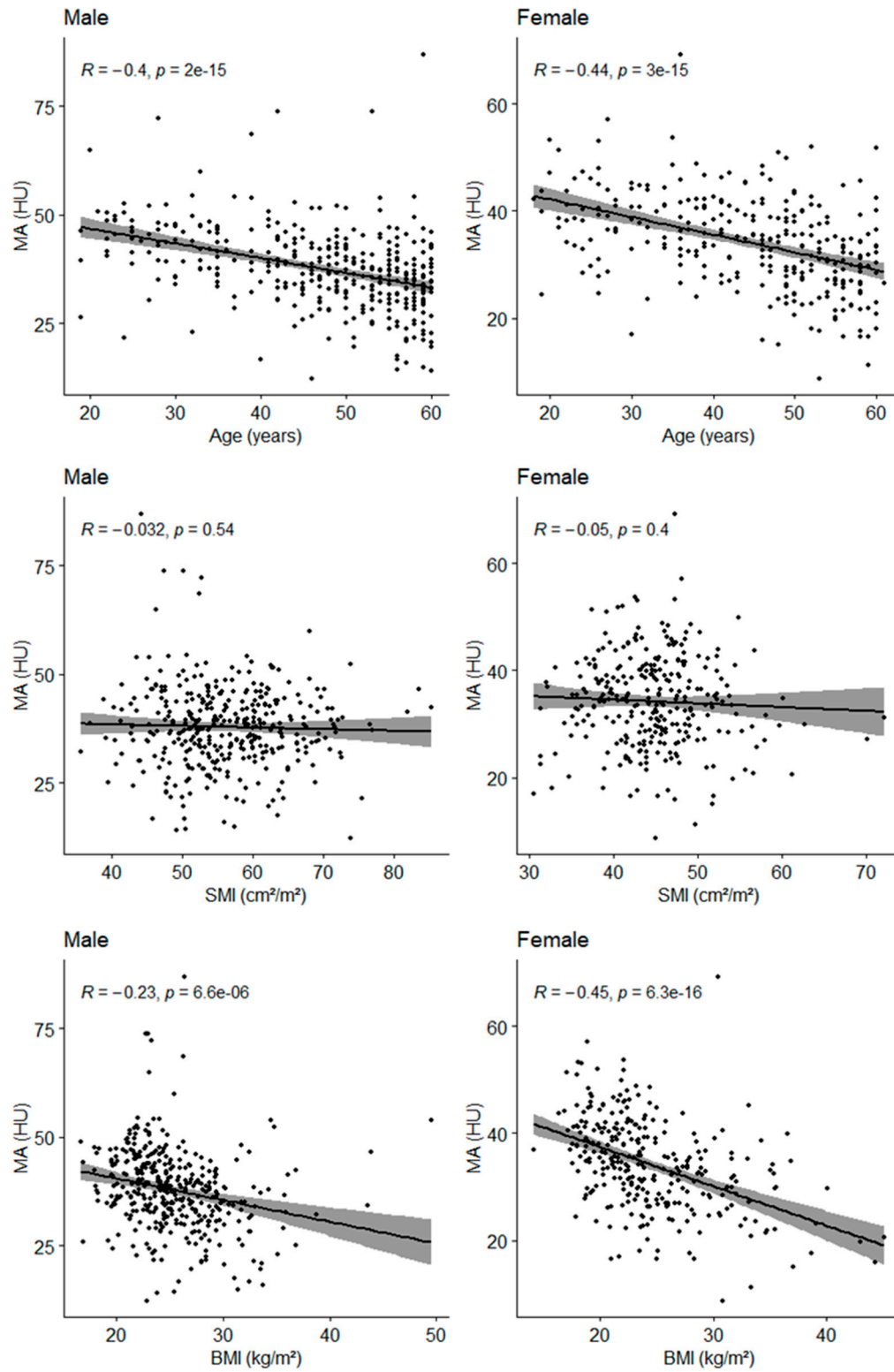
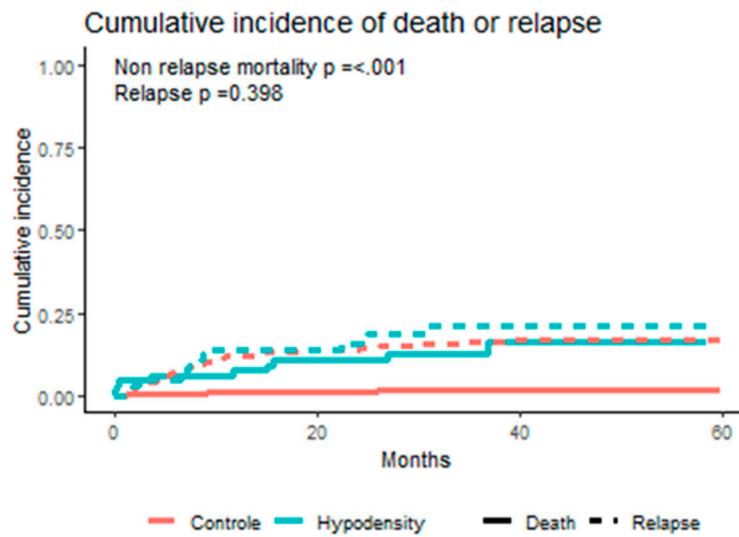
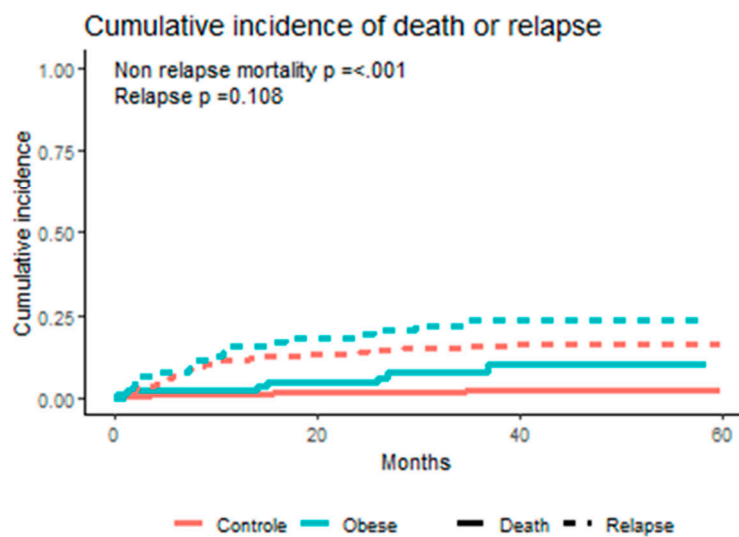


Figure S2. Correlation of MA with age, SMI and BMI

MA muscle attenuation; SMI skeletal muscle index; BMI body mass index.



36M NRM : $12.7 \pm 1.8\%$ vs 2.0 ± 0.0 , $p < 0.001$



36M NRM : $8.1 \pm 0.9\%$ vs 2.2 ± 0.0 , $p < 0.001$

Figure S3. Cumulative incidence of death or relapse according to muscular hypodensity or obesity.
NRM non relapse mortality.