Supplementary Data 1. Evolution in maximal oxygen uptake (\(\dot{V}O_2\)max) during HDBR.

| Group | D43 | D71 | R+2 | Global ANOVA |
|-------|-----|-----|-----|--------------|
| \(\dot{V}O_2\)max, \(\Delta mL.kg^{-1}.min^{-1}\) CON | -7.0±1.2 | -8.3±0.8 | -8.5±0.9 | Bedrest \(<0.0001\) CM \(p=0.004\) |
| RES | -2.6±0.8* | -3.6±1.2* | -5.1±1.1* |
| RUN | -0.6±1.2* | -2.2±0.9* | -1.6±1.3* |
| \(\dot{V}O_2\)max, \(\Delta L.min^{-1}\) CON | -0.5±0.1* | -0.6±0.1* | -0.6±0.1* | Bedrest \(<0.0001\) CM \(p=0.0002\) |
| RES | -0.2±0.0* | -0.2±0.1* | -0.3±0.1* |
| RUN | -0.1±0.1* | -0.2±0.1* | -0.2±0.1* |

Variations (mean±SEM) are calculated as \(\Delta =value_{\text{post}} - value_{\text{pre}}\)

*\(p<0.05\) vs. CON; \(^#\)\(p<0.05\) vs. Pre

Supplementary Data 2. Evolution in body mass, body composition and fluid compartments during HDBR.

| Group | D30 | D57 | D85 | Global ANOVA |
|-------|-----|-----|-----|--------------|
| Body mass, \(\Delta kg\) CON | -0.8±0.4 | -1.2±0.9 | -2.0±1.0 | Bedrest \(p=0.39\) CM \(p=0.19\) |
| RES | 0.7±0.6 | 0.7±0.7 | 0.4±0.9 |
| RUN | -0.9±0.5 | -0.4±0.8 | -0.4±0.9 |
| Fat mass, \(\Delta kg\) CON | 2.5±0.5 | 3.5±0.4 | 4.0±0.7 | Bedrest \(<0.0001\) CM \(p=0.34\) |
| RES | 1.3±0.4 | 2.5±0.5 | 3.2±0.5 |
| RUN | 1.4±0.6 | 2.3±0.7 | 3.7±0.8 |
| Lean mass, \(\Delta kg\) CON | -3.3±0.6* | -4.7±0.8* | -5.9±1.1* | Bedrest \(<0.0001\) CM \(p=0.008\) |
| RES | -0.6±0.3* | -1.7±0.5* | -2.7±0.6* |
| RUN | -1.6±0.7 | -2.0±0.4* | -3.3±0.7* |
| Total body water, \(\Delta L\) CON | -2.4±0.4 | -3.5±0.6 | -4.3±0.8 | Bedrest \(<0.0001\) CM \(p=0.008\) |
| RES | -0.4±0.2* | -1.3±0.4* | -2.0±0.4 |
| RUN | -1.2±0.5 | -1.4±0.3* | -2.4±0.5 |
| Extracellular fluid, \(\Delta L\) CON | -0.9±0.2 | -1.0±0.2 | -1.0±0.2 | Bedrest \(<0.0001\) CM \(p=0.37\) |
| RES | -0.3±0.2 | -0.6±0.4 | -0.6±0.2 |
| RUN | -0.7±0.2 | -0.9±0.4 | -0.8±0.2 |
| Intracellular fluid, \(\Delta L\) CON | -1.6±0.3* | -2.5±0.4* | -3.3±0.6* | Bedrest \(<0.0001\) CM \(p=0.001\) |
| RES | -0.1±0.1* | -0.7±0.3* | -1.4±0.2* |
| RUN | -0.5±0.3* | -0.5±0.2* | -1.7±0.3* |

Variations (mean±SEM) are calculated as \(\Delta =value_{\text{post}} - value_{\text{pre}}\)

*\(p<0.05\) vs. CON; \(^#\)\(p<0.05\) vs. Pre
Supplementary Data 3. Evolution in thigh and calf circumferences during HDBR.

|                      | Group | D28       | D56       | D84       | global ANOVA         |
|----------------------|-------|-----------|-----------|-----------|----------------------|
| **Thigh circumference, Δcm** |       |           |           |           |                      |
|                      | CON   | -2.2±0.5* | -3.0±0.4* | -3.5±0.5* | Bedrest p<0.0001     |
|                      | RES   | -0.9±0.2* | -0.8±0.3* | -1.0±0.4* | CM p=0.0003          |
|                      | RUN   | -0.2±0.4* | -0.4±0.4* | -0.3±0.5* |                      |
| **Calf circumference, Δcm** |       |           |           |           |                      |
|                      | CON   | -1.7±0.2* | -3.2±0.2* | -3.8±0.2* | Bedrest p<0.0001     |
|                      | RES   | -1.4±0.3* | -2.3±0.2* | -2.5±0.3* | CM p=0.0001          |
|                      | RUN   | -0.8±0.1* | -1.5±0.2* | -1.8±0.2* |                      |

Variations (mean±SEM) are calculated as Δ=value_{post} – value_{pre}

*p<0.05 vs. CON*