



# Corrigendum: High-Protein Energy-Restriction: Effects on Body Composition, Contractile Properties, Mood, and Sleep in Active Young College Students

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## A Corrigendum on

**High-Protein Energy-Restriction: Effects on Body Composition, Contractile Properties, Mood, and Sleep in Active Young College Students**

by Roth, C., Rettenmaier, L., and Behringer, M. (2021). *Front. Sports Act. Living* 3:683327. doi: 10.3389/fspor.2021.683327

In the original article, there was a mistake in **Supplementary Table 7** as published. There was a computation error in  $V_c$  week 3, as well as a rounding error in  $T_r$ . The corrected table has been renamed “**Supplementary Table 2**” and appears below.

In the original article, there were rounding errors as well as wrongly used signs in **Table 2** as published. The corrected **Table 2** appears below.

In the original article, there was a mistake in the legend for **Supplementary Table 7** as published. Since the  $V_c$  values for week 3 were corrected due to a computation error, the sign for significance is no longer needed. The name of the table has been corrected to “**Supplementary Table 2**” and the corrected legend appears below.

**Supplementary Table 2** Overview of the TMG analysis [energy-restricted (ER) and control group (CG)].

In the original article, the computation error in  $V_c$  as well as a rounding error in  $T_r$  have been corrected.

A correction has been made to **Results**, Contractile Properties, Paragraph 1:

For TMG, no significant differences were found for  $T_s$  (ER:  $\Delta$  -4.82 ms; CG:  $\Delta$  16.63 ms),  $T_r$  (ER:  $\Delta$  -16.63 ms; CG:  $\Delta$  16.90 ms) and  $T_d$  (ER:  $\Delta$  1.28 ms; CG:  $\Delta$  0.34 ms, all  $p > 0.05$ ). Although group allocation had no effect on  $T_c$  (ER:  $\Delta$  3.04 ms; CG:  $\Delta$  -0.47 ms),  $D_m$  (ER:  $\Delta$  0.91 mm; CG:  $\Delta$  0.66 mm), and  $V_c$  (ER:  $\Delta$  3.84 mm/s; CG:  $\Delta$  10.85 mm/s) change, there appears to be an increasing trend in the ER group ( $p = 0.10$ ) as well as in the ER and the CG ( $p = 0.066$ ) for  $T_c$  and  $D_m$  over time, respectively (Figure 4; **Supplementary Table 2**).

**Supplementary Table 2** | Overview of the TMG analysis [energy-restricted (ER) and control group (CG)].

|                       |    | Week 1         | Week 3         | Week 5         |
|-----------------------|----|----------------|----------------|----------------|
| T <sub>c</sub> (ms)   | ER | 32.27 ± 7.86   | 34.24 ± 7.33   | 35.31 ± 6.83   |
|                       | CG | 31.08 ± 6.70   | 33.12 ± 7.33   | 30.61 ± 5.82   |
| T <sub>s</sub> (ms)   | ER | 196.19 ± 64.26 | 178.37 ± 53.89 | 191.37 ± 51.65 |
|                       | CG | 152.18 ± 53.25 | 180.11 ± 50.65 | 168.81 ± 48.87 |
| T <sub>r</sub> (ms)   | ER | 135.85 ± 68.71 | 108.56 ± 49.62 | 119.22 ± 53.04 |
|                       | CG | 81.03 ± 49.34  | 105.10 ± 69.12 | 97.93 ± 66.99  |
| D <sub>m</sub> (mm)   | ER | 9.29 ± 2.47    | 10.68 ± 2.58   | 10.20 ± 2.20   |
|                       | CG | 9.65 ± 2.56    | 9.86 ± 1.61    | 10.31 ± 2.35   |
| T <sub>d</sub> (ms)   | ER | 27.82 ± 3.82   | 28.54 ± 2.46   | 29.10 ± 3.66   |
|                       | CG | 26.39 ± 2.29   | 27.19 ± 2.73   | 26.73 ± 2.36   |
| V <sub>c</sub> (mm/s) | ER | 157.67 ± 45.23 | 173.09 ± 48.70 | 161.51 ± 43.15 |
|                       | CG | 171.67 ± 53.36 | 167.80 ± 41.74 | 182.52 ± 48.65 |

**TABLE 2** | Overview of body composition changes in the energy-restricted group (ER) and the control group (CG).

|                          |    | Week 0       | Week 1                    | Week 2                    | Week 3                     | Week 4                    | Week 5                    | Week 6                      | Δ     |
|--------------------------|----|--------------|---------------------------|---------------------------|----------------------------|---------------------------|---------------------------|-----------------------------|-------|
| Body mass (kg)           | ER | 82.24 ± 8.18 | 80.58 ± 8.18              | 80.14 ± 8.85 <sup>#</sup> | 79.93 ± 8.47 <sup>#</sup>  | 79.13 ± 8.41 <sup>#</sup> | 77.92 ± 7.76 <sup>#</sup> | 77.36 ± 8.00 <sup>xx#</sup> | -3.22 |
|                          | CG | 79.19 ± 6.43 | 77.49 ± 6.62              | 78.41 ± 6.34 <sup>#</sup> | 79.79 ± 6.19 <sup>†#</sup> | 79.37 ± 6.81 <sup>#</sup> | 79.26 ± 6.58 <sup>#</sup> | 79.39 ± 6.09 <sup>xx#</sup> | 1.90  |
| BMI (kg/m <sup>2</sup> ) | ER | 24.68 ± 2.19 | 24.11 ± 2.41              |                           |                            |                           |                           | 23.13 ± 2.19 <sup>xx#</sup> | -0.98 |
|                          | CG | 24.55 ± 2.54 | 23.71 ± 2.46              |                           |                            |                           |                           | 24.29 ± 2.45 <sup>xx#</sup> | 0.58  |
| Lean body mass (kg)      | ER | 65.87 ± 6.19 | 64.81 ± 5.89 <sup>§</sup> | 64.82 ± 6.50              | 64.98 ± 6.18 <sup>#</sup>  | 64.54 ± 5.85 <sup>#</sup> | 63.69 ± 5.78 <sup>#</sup> | 63.32 ± 5.84 <sup>xx#</sup> | -1.49 |
|                          | CG | 64.04 ± 5.36 | 63.33 ± 5.33              | 63.93 ± 5.31              | 64.94 ± 5.12 <sup>†#</sup> | 64.46 ± 5.63 <sup>#</sup> | 64.11 ± 4.96 <sup>#</sup> | 64.01 ± 5.14 <sup>#</sup>   | 0.68  |
| Body cell mass (kg)      | ER | 37.92 ± 3.69 | 37.69 ± 3.80              | 37.69 ± 4.03 <sup>#</sup> | 37.89 ± 3.76 <sup>#</sup>  | 37.41 ± 3.71 <sup>#</sup> | 37.05 ± 3.72 <sup>#</sup> | 36.84 ± 3.82 <sup>xx#</sup> | -0.85 |
|                          | CG | 36.95 ± 3.44 | 36.66 ± 3.48              | 37.26 ± 3.71 <sup>#</sup> | 37.50 ± 3.44 <sup>†#</sup> | 37.32 ± 3.74 <sup>#</sup> | 37.19 ± 3.49 <sup>#</sup> | 37.25 ± 3.74 <sup>#</sup>   | 0.59  |
| Body fat (%)             | ER | 20.12 ± 3.90 | 19.44 ± 4.50              | 18.91 ± 4.56 <sup>#</sup> | 18.58 ± 4.36 <sup>†#</sup> | 18.24 ± 4.64 <sup>#</sup> | 17.85 ± 4.39 <sup>#</sup> | 17.70 ± 4.40 <sup>xx#</sup> | -1.74 |
|                          | CG | 19.16 ± 3.48 | 17.96 ± 3.90              | 18.33 ± 3.87 <sup>#</sup> | 18.72 ± 3.72 <sup>†#</sup> | 18.74 ± 3.96 <sup>#</sup> | 18.92 ± 4.14 <sup>#</sup> | 19.18 ± 3.57 <sup>xx#</sup> | 1.22  |
| Intracellular water (l)  | ER | 28.32 ± 1.94 | 27.98 ± 1.90 <sup>§</sup> | 27.91 ± 2.03              | 28.09 ± 1.94               | 27.91 ± 1.86              | 27.65 ± 1.90 <sup>#</sup> | 27.40 ± 1.96 <sup>xx#</sup> | -0.58 |
|                          | CG | 27.43 ± 2.22 | 27.25 ± 2.11              | 27.49 ± 2.20              | 27.79 ± 2.07               | 27.86 ± 1.76              | 27.82 ± 1.65 <sup>#</sup> | 27.80 ± 1.73 <sup>#</sup>   | 0.55  |
| Extracellular water (l)  | ER | 19.92 ± 2.68 | 19.47 ± 2.44              | 19.49 ± 2.74              | 19.47 ± 2.60               | 19.35 ± 2.45              | 18.99 ± 2.36              | 18.96 ± 2.38                | -0.51 |
|                          | CG | 19.42 ± 3.12 | 19.11 ± 2.28              | 19.32 ± 2.19              | 19.71 ± 2.50               | 19.32 ± 2.39              | 19.09 ± 2.04              | 19.07 ± 2.08                | -0.04 |

In the original article, there was a rounding error in the body mass (ER group). A correction has been made to **Materials and Methods**, Participants, Paragraph Number 2:

Thirty-five healthy males with no experience in resistance training, as assessed by a pre-study questionnaire, were recruited from local sports clubs and University courses (see **Figure 2**). One participant declined to participate and three participants were excluded due to lacking protocol compliance (did not adhere to dietary intake). Finally, 28 healthy males (ER: age 26.57 ± 4.20 years; height 1.83 ± 0.05 m; body mass 82.24 ± 8.18 kg; CG: age 25.29 ± 2.97 years; height 1.81 ± 0.09 m; body mass 79.19 ± 6.43 kg) were used for data analysis. Due to hormonal fluctuations (Cumberledge et al., 2018), only male participants were included in order to increase reliability. The participants,

who all reported that anabolic-androgenic drugs have never been consumed before, undertook at least two sport sessions per week. Since we only aimed for including lean participants, participants were excluded if their body fat was above 25%; this is the cut-off value for obesity, as suggested by Beals et al. (2019). During the study, the participants were asked to continue their habitual training. All participants were informed about the goal of the study as well as its conduction; in particular, interventional strains and requirements were highlighted. Every individual voluntarily agreed and gave written and informed consent to participate in the study.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

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