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CORRECTION

Correction to: Considerations in the Use of Body Mass Change to Estimate Change in Hydration Status During a 161-Kilometer Ultramarathon Running Competition

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In Table 2 of the original publication, an error was made in the calculations for endogenous substrate oxidation which, subsequently, altered the values for total change in body mass. A corrected version of Table 2 is provided below. With the revised calculations, our conclusions are adjusted to indicate that the percentage of body mass loss required to sustain body water balance to maintain euhydration during an ~ 25–30 h 161-km mountain ultramarathon is 3.0% (rather than 4.2% as originally stated) for the 'average runner' and 1.2–3.5% (rather than 1.9–5.0% as originally stated) across a variety of other realistic assumptions. While the magnitude of the effect is slightly less with the corrected calculations, the key message that "universal guidelines to avoid body mass loss over 2% during exercise are not suitable to circumstances when the exercise is prolonged running of several hours" is unchanged.

The original article can be found online at https://doi.org/10.1007/s40279-017-0782-3.

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Table 2 Required change in body mass to sustain body water balance to maintain euhydration during a 161-km mountain ultramarathon under various conditions

	Average runner	10% of energy derived from protein	67% less water linked with glycogen	25% less glycogen	25% more glycogen	30% more calories consumed	30% less calories consumed	Less water linked with glycogen + less glycogen + more calories consumed
Conditions								
Energy cost (kcal)	14,500	14,500	14,500	14,500	14,500	14,500	14,500	14,500
Exogenous energy (kcal)	8228	8228	8228	8228	8228	*10,696*	*5760*	*10,696*
Carbohydrate (%)	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5
Fat (%)	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
Protein (%)	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Pre-race body mass (kg)	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8
Endogenous glycogen used (kg)	0.400	0.400	0.400	*0.300*	*0.500*	0.400	0.400	*0.300*
Water released per g of glycogen (g)	3	3	*1*	3	3	3	3	*1*
Energy derived from protein (%)	5	*10*	5	5	5	5	5	5
Accumulated peripheral edema (kg)	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
Contributions to body mass change								
Endogenous substrate oxidation (kg)								
Carbohydrate	− 0.160	− 0.160	− 0.160	− 0.120	− 0.200	− 0.160	− 0.160	− 0.120
Fat	0.062	0.052	0.062	0.068	0.056	0.030	0.094	0.036
Protein	− 0.020	− 0.100	− 0.020	− 0.020	− 0.020	− 0.002	− 0.038	− 0.002
Water release from glycogen (kg)	− 1.200	− 1.200	− 0.400	− 0.900	− 1.500	− 1.200	− 1.200	− 0.300
Water of oxidation (kg)								
Carbohydrate	− 0.240	− 0.240	− 0.240	− 0.180	− 0.300	− 0.240	− 0.240	− 0.180
Fat	− 0.541	− 0.453	− 0.541	− 0.591	− 0.491	− 0.261	− 0.821	− 0.310
Protein	− 0.017	− 0.086	− 0.017	− 0.017	− 0.017	− 0.002	− 0.033	− 0.002
Accumulated peripheral edema (kg)	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
Total change in body mass								
Absolute (kg)	− 2.1	− 2.1	− 1.3	− 1.7	− 2.4	− 1.8	− 2.4	− 0.8
Relative to pre-race (%)	− 3.0	− 3.1	− 1.9	− 2.5	− 3.5	− 2.6	− 3.4	− 1.2

Italicized text in the section outlining the conditions is used to show adjustments relative to the 'average runner'. See text for support for the defined conditions for the 'average runner'