

Plasma zinc, copper, leptin, and body composition are associated in elite female judo athletes.

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This study evaluated levels of plasma zinc, copper, and leptin, body composition, and their relationship in nine elite female judo athletes under two different training conditions. Body composition and biochemical measurements (hematological indexes, plasma zinc, plasma copper, and plasma leptin) were analyzed 24 h after intense training and following a 5-d period without training (no-training). Plasma leptin and plasma zinc increased with no-training. Plasma zinc correlated negatively with percent fat mass ($r = -0.62$; $r = 0.05$) and positively with plasma leptin ($r = 0.83$; $p = 0.002$) in the no-training condition. Plasma copper did not change during the study and correlated positively with plasma leptin ($r = 0.66$; $p = 0.05$) and with percent fat mass ($r = 0.80$; $p = 0.007$) after training. Percent fat mass was associated negatively with plasma zinc ($r = -0.62$; $p = 0.05$) in the no-training condition. Moreover, percent fat mass was negatively associated with the Zn/Cu plasma ratio under both training conditions ($r < -0.78$, $p < 0.001$). These results are consistent with the possible function of zinc as a lipid-mobilizing factor and of copper as a limiting factor in energy metabolism.