

American Journal of Clinical Nutrition{ADDIN CSL\_CITATION { "citationItems": [ { "id": "ITEM-1", "itemData": { "DOI": "10.3945/ajcn.115.119339", "ISBN": "1938-3207 (Electronic)", "ISSN": "19383207", "PMID": "26817506", "abstract": "BACKGROUND: A dietary protein intake higher than the Recommended Dietary Allowance during an energy deficit helps to preserve lean body mass (LBM), particularly when combined with exercise. OBJECTIVE: The purpose of this study was to conduct a proof-of-principle trial to test whether manipulation of dietary protein intake during a marked energy deficit in addition to intense exercise training would affect changes in body composition. DESIGN: We used a single-blind, randomized, parallel-group prospective trial. During a 4-wk period, we provided hypoenergetic (40% reduction compared with requirements) diets providing 33 kcal/kg LBM to young men who were randomly assigned (n = 20/group) to consume either a lower-protein (1.2 g/kg(-1) d(-1)) control diet (CON) or a higher-protein (2.4 g/kg(-1) d(-1)) diet (PRO). All subjects performed resistance exercise training combined with high-intensity interval training for 6 d/wk. A 4-compartment model assessment of body composition was made pre- and postintervention. RESULTS: As a result of the intervention, LBM increased (P < 0.05) in the PRO group (1.2 ± 1.0 kg) and to a greater extent (P < 0.05) compared with the CON group (0.1 ± 1.0 kg). The PRO group had a greater loss of fat mass than did the CON group (PRO: -4.8 ± 1.6 kg; CON: -3.5 ± 1.4 kg; P < 0.05). All measures of exercise performance improved similarly in the PRO and CON groups as a result of the intervention with no effect of protein supplementation. Changes in serum cortisol during the intervention were associated with changes in body fat (r = 0.39, P = 0.01) and LBM (r = -0.34, P = 0.03). CONCLUSIONS: Our results showed that, during a marked energy deficit, consumption of a diet containing 2.4 g protein/kg(-1) d(-1) was more effective (r = 0.34, P = 0.03). CONCLUSIONS: Our results showed that, during a marked energy deficit, consumption of a diet containing 2.4 g protein/kg(-1) d(-1) was more effective than consumption of a diet containing 1.2 g protein/kg(-1) d(-1) in promoting increases in LBM and losses of fat mass when combined with a high volume of resistance and anaerobic exercise. Changes in serum cortisol were associated with changes in body fat and LBM, but did not explain much variance in either measure. This trial was registered at clinicaltrials.gov as NCT01776359.", "author": [ { "dropping-particle": "", "family": "Longland", "given": "Thomas M.", "non-dropping-particle": "", "parse-names": false, "suffix": "" }, { "dropping-particle": "", "family": "Oikawa", "given": "Sara Y.", "non-dropping-particle": "", "parse-names": false, "suffix": "" }, { "dropping-particle": "", "family": "Mitchell", "given": "Cameron J.", "non-dropping-particle": "", "parse-names": false, "suffix": "" }, { "dropping-particle": "", "family": "DeVries", "given": "Michaela C.", "non-dropping-particle": "", "parse-names": false, "suffix": "" }, { "dropping-particle": "", "family": "Phillips", "given": "Stuart M.", "non-dropping-particle": "", "parse-names": false, "suffix": "" } ], "container-title": "American Journal of Clinical Nutrition", "id": "ITEM-1", "issue": "3", "issued": { "date-parts": [ [ "2016" ] ] }, "page": "738-746", "title": "Higher compared with lower dietary protein during an energy deficit combined with intense exercise promotes greater lean mass gain and fat mass loss: A randomized trial", "type": "article-journal", "volume": "103" }, "uris": [ "http://www.mendeley.com/documents/?uuid=87464471-8e87-465d-bc5c-7c6d6cfa0cba" ] }, "mendeley": { "formattedCitation": "<sup>2</sup>", "plainTextFormattedCitation": "2", "previouslyFormattedCitation": "<sup>2</sup>" }, "properties": { "noteIndex": 1 }, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json" } }