Nutrition interventions in bed rest trials

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TO THE EDITOR: In a recent journal article, Krainski and colleagues (5) reported that high-intensity, short-duration rowing ergometry and supplemental resistive strength exercise preserved skeletal muscle function and structure while partially preventing atrophy. This finding is important concerning bed-ridden patients in routine practice; however, we needed to acknowledge some of our criticisms with regards the methodology.

First, the study by Krainski et al. stratified participants according to baseline characteristics including age, sex, race, weight, height, and body mass index, but no allocation according to fitness level was performed. An earlier study by Hastings et al. (3), which evaluated effectiveness of rowing ergometry, did allocate their participants according to their fitness status. We suggest this point should have been discussed by the authors.

Second, vitamin D deficiency is quite prevalent in young individuals and adults, even among athletes (2). Moreover, studies in athletes revealed dose-dependent improvement in physical performance after vitamin D supplementation (1, 2). Thus determining vitamin D level and then replacement in case of insufficiency are essential for optimum physical performance, although this response may not be rapid (6). Finally, as most of our readers know, dietary control and nutrient intake are critical aspects in metabolic studies. An earlier study by Inniss et al. (4) showed that standard nutrition protocols in bed rest studies might be suboptimal, particularly that of vitamin D. Moreover, Morgan et al. (6) revealed that adding 800 IU/day vitamin D supplements to standard protocol in their bed rest trial was effective to maintain optimum vitamin D level. The article by Krainski et al. referenced its nutrition protocol by a study that had not clearly defined a standardized nutrition protocol as well (3). We believe these points need to be addressed by the authors.

DISCLOSURES

No conflicts of interest, financial or otherwise, are declared by the author(s).

AUTHOR CONTRIBUTIONS

Author contributions: U.S. and I.T. conception and design of research; U.S. and U.C. drafted manuscript; I.T. approved final version of manuscript; V.B.S. edited and revised manuscript.

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