JSM

JOURNAL of SPORTS SCIENCE & MEDICINE

Journal homepage ISSN: 1303 - 2968

Search on JSS Available on the App Store

by Google play

Sear

Views 4895 Download 175 from September 2014

Citations in ScholarGoogle

Share this article

Full Text

PDF

©Journal of Sports Science and Medicine (2009) 08 , 225 - 229

Research article

Validity of a Dietary Calcium Questionnaire Modified to Include Supplement Use in Athletes

Morgan B. Henry, Hawley C. Almstedt

Author Information Publish Date How to Cite

Email link to this article

ABSTRACT

When conducting research in the area of bone health, accurate measurement of calcium intake is crucial. The rapid assessment method (RAM) is one technique that has frequently been used for its measurement of calcium intake. However, the RAM and other currently established questionnaires lack the assessment of dietary supplement use, which is common for athletes. Our objective was to evaluate the validity of a RAM questionnaire designed to assess daily calcium consumption which was further modified to meet the needs of athletes who frequently consume dietary supplements. Usefulness of the modified RAM for athletes and non-athletes was evaluated as well as utility among those who do and do not use supplements. The 47 volunteers (n = 31 women, 16 men) were between the ages of 18 and 25 including, 33 athletes and 14 controls. The population also contained 23 supplement users and 24 non-supplement users. Participants completed the modified RAM and were instructed to complete a three-day diet record (3DR), logging food intake for 2 weekdays and 1 weekend day. The data collected via the modified RAM was compared with the 3DR. Mean calcium intake was 935mg ± 420mg and 1085mg ± 573mg, for the modified RAM and 3DR respectively. A strong positive correlation (r) was found between calcium intake measured with the modified RAM and 3DRs ($r(45) = 0.854$, $p < 0.01$). Intraclass correlation coefficients (ICC) revealed that agreement between the two instruments was good (ICC = 0.76, df = 45, $p < 0.01$) and much improved when compared to agreements without consideration of supplements (ICC = 0.05, df = 21, $p > 0.05$).

We have found the modified RAM to be a valid tool which can be used to estimate calcium intake in the athletes and controls we strive to study. The accuracy of this instrument improved by including assessment of dietary supplement sources of calcium.

Key words: Sports nutrition, rapid assessment, athletic, bone health, osteoporosis.

Key Points

- When conducting research on bone health, accurate measurement of calcium intake is crucial. The rapid assessment method (RAM) is one technique that has frequently been used for its measurement; however, currently established questionnaires lack assessment of dietary supplement use, which is common for athletes.
- We report that estimated calcium intake from the LMU RAM modified to evaluate supplement use has good agreement with three-day diet records (3DRs). There was a strong correlation between the two methods with about 69% ($r = 0.83$, $r = 0.69$) of the variability in calcium intake quantified via the LMU RAM being accounted for by the 3DR.
- Calculated intraclass correlation coefficients between 0.63 and 0.77 reveal that the LMU RAM appears to be a valid tool of measuring daily calcium intake in athletes and non-athletes and among those who do and do not use supplements.
- When evaluating calcium intake without considering supplements, agreement (ICC) and correlation (r) values decreased considerably.
- We found the LMU RAM to be a valid measurement of calcium intake in athletes and controls. Without the addition of a section on supplement use, estimated calcium intake would have decreased an average of 32%.

JSSM | Copyright 2001-2018 | All rights reserved. | **LEGAL NOTICES** | **Publisher**

It is forbidden the total or partial reproduction of this web site and the published materials, the treatment of its database, any kind of transition and for any means, either electronic, mechanic or other methods, without the previous written permission of the JSSM.

This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.