

Letter to the Editor

What is the importance of saving lean mass in the treatment of obesity and related diseases?

Dear Editor,

A sub-optimal quality of food, caloric excess and consequent obesity are the main causes of chronic non-communicable diseases, such as diabetes mellitus, hypertension, cardiovascular disease, non-alcoholic fatty liver disease, arthritis, osteoporosis, sarcopenia and cancer¹. According to the World Obesity Federation "obesity is a chronic process of relapsing disease". The chronic trait was evidenced by the poor long-term results of dietary therapies, for the recovery of lost weight². The results obtained by Keys, in the Minnesota Experiment, showed that after a caloric restriction there is an increase in hunger, the overshoot of the initial weight and the collateral fattening. These are physiological strategies useful for the recovery of the lean mass lost during the restriction³. For these reasons in a pilot study, Merra et al^{4,5} proved and showed that a very-low-calorie ketogenic diet (VLCKD) with amino acid supplement was able to preserve muscle mass, reduce inflammation and oxidative stress during loss weight, compared to an unsupported VLCKD⁶. Based on this evidence, we wonder if it is possible to improve the long-term efficacy of obesity therapies. Furthermore, it could be proposed to improve VLCKD with an amino acid supplement with the introduction of hypoglucidic foods rich in polyphenols, such as vegetables, nuts and extra virgin olive oil, useful to counteract inflammation and the onset of chronic degenerative diseases⁷. During a VLCKD, lean savings could be improved by customizing the amount of protein and amino acid supplement. The intake of these could be estimated based on the lean mass present in the subject, studied through body composition techniques, already useful in the definition of the obesity phenotype¹, and metabolic assessments of protein turnover⁸. The progress of research into low-calorie therapies is necessary, also considering the spread of obesity and, above all, based on recent evidence on the possibility to revert diabetes mellitus type II (DMTII)⁹. In fact, Lean et al⁹ demonstrated the effectiveness of an 8-week VLCD in reversing of DMTII, thanks to weight reduction. However, to avoid overshooting of the weight and the resilience of the DMTII it is necessary a constant improvement of the knowledge around the human metabolism and the VLCKD protocols, as already proposed for lean mass saving to prevent the chronicity of obesity, and it is important to customize dietary treatment, in the new perspective of the omics and personalized medicine¹⁰.

Conflict of interest

The authors declare no conflicts of interest.

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