

Is β -hydroxy β -methylbutyrate an effective anabolic agent to improve outcome in older diseased populations?

Engelen MPKJ¹, Deutz NEP.

Author information

1 Department of Health and Kinesiology, Center for Translational Research in Aging & Longevity, Texas A&M University, College Station, Texas, USA.

Abstract

PURPOSE OF REVIEW: β -Hydroxy β -methylbutyrate (HMB) has been used for many years in athletes for muscle buildup and strength, and endurance enhancement. In recent years, its interest quickly expanded in older (diseased) populations and during (exercise) rehabilitation and recovery from hospitalization and surgery. We will discuss recent literature about HMB metabolism, its pharmacokinetics compared with the frequently used metabolite leucine, effectiveness of HMB to improve outcome in older diseased adults, and novel approaches for HMB use.

RECENT FINDINGS: HMB supplementation resulted in positive outcomes on muscle mass and functionality, related to its anabolic and anticatabolic properties and prolonged half-life time in blood. Furthermore, it was able to increase the benefits of (exercise) rehabilitation programs to enhance recovery from illness or medical procedures. There is promising evidence that HMB might support bone density, improve cognitive function, and reduce abdominal obesity, which is of importance particularly in the older (diseased) population.

SUMMARY: The older diseased population might benefit from dietary HMB because of its established positive properties as well as its long lasting (pharmacological) effect. In addition to evaluating its efficacy and application in various clinical conditions, more research is needed into the mechanisms of action, the optimal dosage, and its potential additional beneficial effects on outcome.