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THE POWER OF HMB

MANAGING MUSCLE LOSS IN AT-RISK PATIENTS

Sarcopenia, or the loss of muscle mass and strength, is a major health issue that may affect more than 5% of adults in the UK, aged 40-70 years.¹ The condition, which is closely linked with malnutrition, increasing age and chronic health problems, is known to negatively affect patient outcomes.^{1,2} For example, among patients with frailty, muscle loss is associated with poorer quality of life, extended hospital stays and compromised wound healing.³ Similarly, in patients with cancer, muscle loss is linked to post-operative complications, treatment toxicity and extended hospital admissions.⁴⁻⁶ While for patients with COPD, muscle dysfunction is associated with increased risk of hospitalisation and reduced quality of life.⁷⁻⁹ And across all three of these patient groups, sarcopenia is associated with poorer overall prognoses.³⁻⁷

MUSCLE WEAKNESS ACCOUNTS FOR £2.5 BILLION INCREMENTAL HEALTHCARE EXPENDITURE¹⁰

Given its associated outcomes, it is no surprise that sarcopenia incurs significant healthcare costs. A recent study estimated that in older patients (71-80 years) in the UK, muscle weakness accounted for £2.5 billion of additional annual healthcare expenditure, or an average of excess of £2,707 per person per year.¹⁰ Detailed analysis revealed that these costs were driven by increased needs for primary and secondary care, formal and informal care and prescriptions.¹⁰

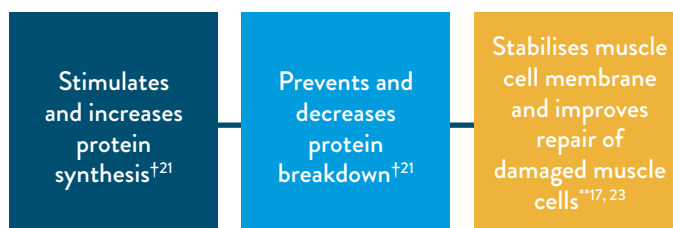
IDENTIFYING THE RISK

Early diagnosis and intervention are fundamental for reducing the impact of sarcopenia upon both patients and healthcare budgets.¹¹ In the past decade, several groups have developed diagnostic criteria for sarcopenia using low muscle mass, low muscle strength, and low physical performance as clinical markers. Additionally, there are several screening tools available for GPs, practice nurses, and community-based clinicians to identify at-risk patients. The Strength, Assistance with walking, Rising from a chair, Climbing stairs, and Falls (SARC-F) questionnaire is one such tool specifically designed to assess muscle loss. It can be used alongside other screening tools like the Malnutrition Universal Screening Tool ('MUST'), which identifies malnutrition risk. Combining these tools, such as through the Remote - Malnutrition APP, also known as R-MAPP (and accessible via rmappnutrition.com), allows healthcare professionals to screen patients for both risk of muscle loss and malnutrition.¹²⁻¹⁴ Patients identified at risk can then be advised on appropriate nutritional interventions such as higher protein intakes, or diets supplemented with clinically proven oral nutritional supplements to aid muscle strength and advised on suitable exercise.

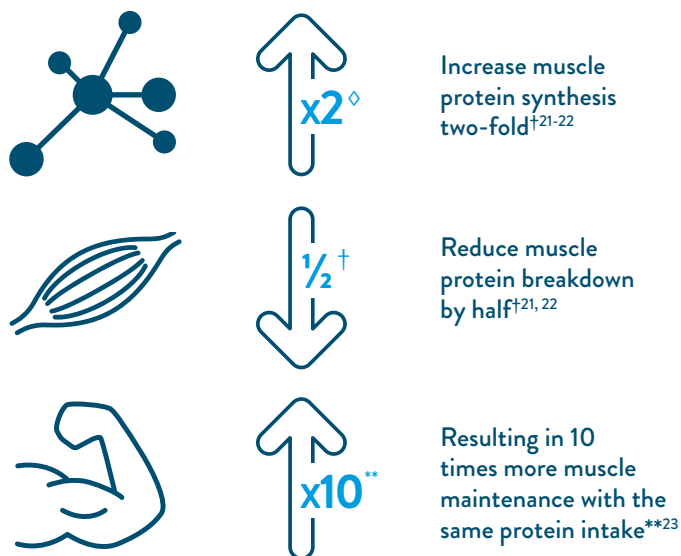
PRESERVING MUSCLE MASS IN AT-RISK PATIENTS

Maintaining body muscle mass is dependent upon the balance between muscle synthesis and breakdown.¹⁵ Various strategies to increase muscle mass, or reduce its loss, and have been investigated for at-risk patients. These include exercise, adequate or protein rich intake and if the patient is also at risk of malnutrition a nutritional supplement that includes additional protein, vitamin D and beta-hydroxy-beta-methylbutyrate (HMB).¹⁶ The beneficial effects of the leucine metabolite, HMB, on human skeletal muscle has been studied since the mid-1990s.¹⁷ Since then, the weight of evidence supporting its use as a supplement for people with sarcopenia has steadily increased. Studies have shown that HMB upregulates anabolic signalling pathways, which can enhance protein synthesis two-fold.¹⁸⁻²² And via downregulation of catabolic signalling pathways HMB may reduce muscle breakdown by up to half.^{18-21, 23} This evidence is further bolstered by trials demonstrating that oral nutritional supplements containing HMB are clinically proven to support muscle mass in a variety of patient types and clinical conditions.^{16, 24-29}

HMB MODE OF ACTION



HMB HAS BEEN CLINICALLY PROVEN TO:



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HMB, β -hydroxy- β -methylbutyrate. *The 'Malnutrition Universal Screening Tool' ('MUST') is reproduced here with the kind permission of BAPEN (British Association for Parenteral and Enteral Nutrition). For further information on 'MUST' see <https://www.bapen.org.uk/> Permission for the reproduction of 'MUST' is not an endorsement or recommendation for any commercially available manufactured products. LIC2104. Report is generated and HCP will send it to themselves to add to patient's medical history. Abbott do not hold or retain any personal details. †Studied in healthy young males, over a period of 2.5 hours after receiving HMB supplementation. ‡Compared to baseline at post absorptive state. **In a RCT including 19 healthy adults aged ≥ 60 years confined to bed rest for 10 days. CaHMB (3 g/ daily) prevented the decline in total lean body mass over bed rest (-0.17 ± 0.19 kg; $p = 0.23$) in treated group versus control group (-2.05 ± 0.66 kg; $p = 0.02$).

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UK-N/A-2300120 March 2023

