



GENESTRA
BRANDS®

HMF® Metabolic

Probiotic to support healthy weight management

- Assists in weight management when used with a program of reduced intake of dietary calories and increased physical activity
- Includes a combination of five proprietary human strains clinically studied in adults
- Supports gastrointestinal health and promotes a favourable gut flora
- Provides 50 billion CFU per capsule

HMF® Metabolic was specifically formulated with a combination of five proprietary probiotic strains, which were studied in a recent randomized, double-blind, placebo-controlled trial in adults.¹ Results of the study demonstrated that HMF® Metabolic's probiotic strains significantly increased quality of life scores, including general wellness and state of health.¹ These strains have also been examined in various other preclinical and clinical studies for their beneficial health effects, including their ability to promote a healthy gut flora composition.²⁻⁶ Emerging research demonstrates that diet and weight play an important role in the composition of the intestinal microflora, with the typical Western diet and larger body composition being associated with a greater proportion of *Firmicutes* than *Bacteroidetes*.⁷ These alterations in the normal gut flora composition may impact intestinal function, including short-chain fatty acid production and energy metabolism.⁸ Available in a convenient, once-daily capsule format, HMF® Metabolic can be easily added to any lifestyle regimen to support overall health and an optimal gut flora composition.

This formula offers the four core HMF® Probiotic strains, which are backed by over 20 years of clinical evidence.

- *Lactobacillus acidophilus* (CUL-60 & CUL-21)
- *Bifidobacterium animalis* subsp. *lactis* (CUL-34)
- *Bifidobacterium bifidum* (CUL-20)

In addition to providing the GI benefits you've come to expect from all HMF® Probiotics, this formula offers additional support with the beneficial probiotic strain *Lactobacillus plantarum* (CUL-66).



EACH CAPSULE CONTAINS:

Probiotic Consortium	50 billion CFU
<i>Lactobacillus acidophilus</i> (CUL-60 & CUL-21)	25.2 billion CFU
<i>Lactobacillus plantarum</i> (CUL-66)	16.5 billion CFU
<i>Bifidobacterium animalis</i> subsp. <i>lactis</i> (CUL-34) & <i>Bifidobacterium bifidum</i> (CUL-20)	8.3 billion CFU

Non-Medicinal Ingredients: Cellulose, hypromellose, sunflower lecithin, silica

Recommended Dose

Adults: Take 1 capsule daily, at least 2-3 hours before or after taking antibiotics, or as recommended by your healthcare practitioner.

Size
30 Vegetarian Capsules

Product Code
10341

NPN 80094306



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HMF[®] Metabolic

Scientific Rationale:

Weight gain results from an imbalance between energy intake and expenditure.¹ In addition to genetic and hormonal mechanisms, lifestyle factors play a large role in weight gain.¹ Specifically, the Western lifestyle – which is associated with decreased physical activity and greater intake of fatty, caloric foods and an absence of dietary fibre – has been linked to the development of energy imbalances.²

An individual's weight may also be associated with their gut microflora composition.¹ Research has reported that leaner individuals have a greater bacterial diversity as well as a higher proportion of *Bacteroidetes*.¹ Likewise, the intestinal microflora can be impacted by dietary intake.¹ Animal models report that a typical Western diet (high in fat and sugar) leads to a greater proportion of *Firmicutes* and a reduced number of *Bacteroidetes*, while a low-calorie diet aimed at supporting weight management may increase *Bacteroidete* populations in certain individuals.¹ Additionally, animal and human models have shown that dietary changes, including replacing a low-fat, plant-based diet with a typical Western diet, can shift this microbial composition within a day, resulting in altered intestinal function.¹

The intestinal microflora has been found to play an important role in metabolic function and energy balance of the host, as it helps absorb, store and spend energy derived from the diet.^{1,2} As a result, alterations in microbial populations may lead to changes in energy metabolism and body weight.^{1,2} Probiotics are well-recognized for their ability to support gastrointestinal health, including support for intestinal barrier function, competition with other microorganisms, vitamin synthesis and the immune system.² Recent research has also focused on the ability of probiotics to help maintain healthy weight by promoting healthy gut flora; however, the favourable actions of probiotics may be specific to the species and strains.²

HMF[®] Metabolic is formulated with proprietary HMF[®] probiotics, which have been shown to support healthy metabolism across all three levels of research, including one of the largest human studies on the effects of probiotics on weight management.³⁻⁵ In this randomized, double-blind, placebo-controlled

study, 220 participants 30-65 years old consumed HMF[®] Metabolic's probiotic formula daily for six months, without changing their normal diet and exercise regimes.³ Probiotic supplementation was demonstrated to significantly reduce body weight (-1.3 kg), body mass index (BMI; -0.47 kg/m²), waist circumference (-0.93 cm), and waist to height ratio (-0.006) when compared to the placebo (Figure 1).³ Subgroup analyses revealed greater weight loss after probiotic intake in participants who were overweight, over 50 and female; however, the highest weight loss (nearly 4% of body weight) when compared to the placebo was observed in older participants with the highest baseline lipid level.³

In addition to these beneficial effects on weight management, probiotic supplementation significantly improved quality of life (QOL) measures after three months, including general wellness and states of health, energy and mood (Figure 2).³ Likewise, probiotic intake significantly supported immune health, decreasing the occurrence of coughs and sneezes.³ HMF[®] Probiotics also significantly supported immune health when combined with vitamin C in a six-month randomized, double-blind, placebo-controlled trial.⁶

Results of this study are in line with other studies investigating the effects of probiotics on weight management.^{7,8} When compared to studies included in two recent meta-analyses, this study had a longer duration, larger study population, and led to greater mean weight loss (1.3 kg compared to 0.59 and 0.6 kg).^{7,8} Collectively, this demonstrates the potential of probiotics, including HMF[®] Metabolic's probiotic formula, to support healthy body composition.

Favourable effects on body weight may also be associated with healthy metabolic profiles, including the promotion of healthy lipid metabolism.¹ Research involving HMF[®] Metabolic's probiotic strains suggest these microorganisms may contribute to healthy cholesterol metabolism by supporting healthy bile metabolism and gene expression.^{4,5}

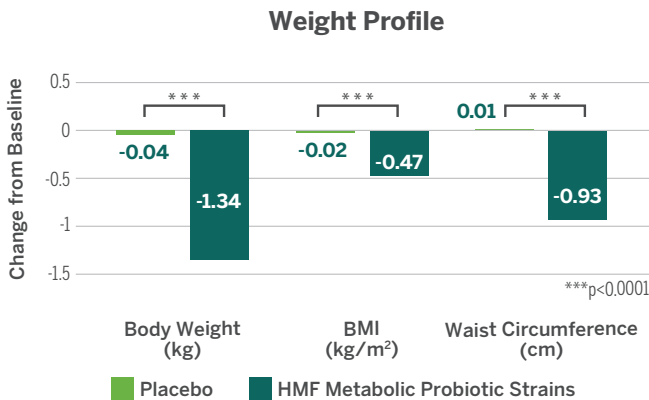


Figure 1: Supplementation with HMF Metabolic probiotic strains significantly reduced body weight, BMI and waist circumference.

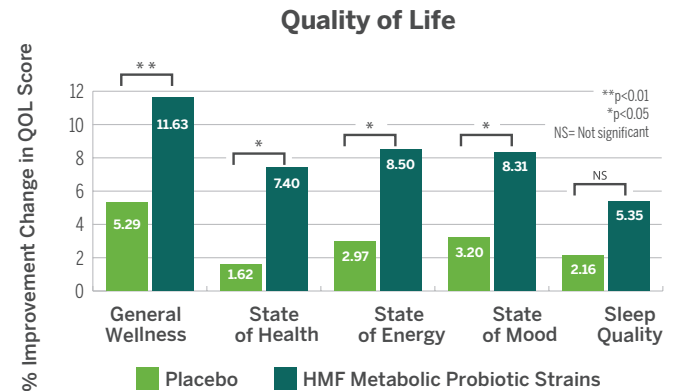


Figure 2: Supplementation with HMF Metabolic probiotic strains significantly improved QOL scores, including general wellness and states of health, energy and mood.

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