



GENESTRA
BRANDS®

HMF™ Fit For School (shelf-stable)

Children's immune support formula[‡]

- Provides 12.5 billion CFU per dose from a combination of four proprietary human strain probiotics, plus vitamins C and D
- Helps to support respiratory tract health in children[‡]
- Supports immune health, gastrointestinal health, and healthy bone development[‡]
- Chewable tablets with a delicious natural strawberry-vanilla flavor
- No refrigeration necessary
- Guaranteed potency through expiration

HMF™ Fit for School (shelf-stable) includes a combination of research-driven human strain probiotics with vitamins C and D₃ to support children's gastrointestinal health, respiratory health, and immune function. Research utilizing the probiotic strains included in HMF™ Fit for School's formula (*Lactobacillus acidophilus* CUL-21 and CUL-60, *Bifidobacterium bifidum* CUL-20 and *Bifidobacterium animalis* subsp. *lactis* CUL-34) plus 50 mg of vitamin C for 6 months demonstrated a significant improvement in respiratory tract health and a 30% decrease in school absenteeism in the probiotic group when compared to placebo. The probiotic-supplemented group also exhibited significantly reduced levels of plasma cytokines (IFN- γ and IL-2/IL-5), with no similar reductions observed in the placebo group. HMF™ Fit for School (shelf-stable) also includes 25 mcg (1,000 IU) of vitamin D₃ per chewable tablet for additional immune support and to promote vitamin D status for healthy bone development. This convenient shelf-stable chewable tablet has guaranteed potency through expiration and a delicious, natural strawberry-vanilla flavor.[‡]



Supplement Facts

Serving Size 1 Tablet
Servings per Container 25

	Amount Per Serving	% DV
Calories	5	
Total Carbohydrate	1 g	<1% [^]
Vitamin C (as ascorbic acid)	50 mg	56%
Vitamin D ₃ (as cholecalciferol)	25 mcg (1,000 IU)	125%
Probiotic Consortium	12.5 billion CFU	*
<i>Lactobacillus acidophilus</i> (CUL-60 & CUL-21)		
<i>Bifidobacterium animalis</i> subsp. <i>lactis</i> (CUL-34)		
& <i>Bifidobacterium bifidum</i> (CUL-20)		

* Daily value (DV) not established

[^] Percent Daily Values are based on a 2,000 calorie diet

Other Ingredients: Xylitol, fructooligosaccharides (FOS), natural flavors (strawberry, vanilla), carboxymethylcellulose sodium, magnesium stearate, silica

Recommended Dose

Adolescents and Children (4 years and older): Chew 1 tablet daily or as recommended by your health professional.

Size

25 Chewable Tablets

Product Code

10665-25U



Non
GMO



Gluten
Free



Soy
Free



Dairy
Free



No
FOS



Vegetarian

Tried, tested and true.

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HMF™ Fit For School (shelf-stable)

Scientific Rationale:

Several clinical trials have observed an association between probiotic supplementation and upper respiratory immune health.¹⁻⁸ A recent meta-analysis of 23 randomized, double-blind, placebo-controlled trials found that probiotic supplementation – particularly with *Lactobacillus* and *Bifidobacterium* strains – helps to support respiratory immune function in children.^{9†} Additional *in vitro* research has examined the mechanisms of action of the HMF probiotic consortium with respect to the innate immune system. Results demonstrated enhanced production of IL-12 and IL-1β by macrophages undergoing simulated viral challenge, thus indicating the potential to support the immune response.^{10†}

A randomized, double-blind, placebo-controlled study evaluated the effect of HMF probiotics and vitamin C on immune health in young schoolchildren. Fifty-seven children (aged 3-6) attending preschool were randomized to consume one chewable placebo or probiotic/vitamin C tablet (the same probiotic consortium and vitamin C level present in HMF™ Fit For School) daily for six months. Respiratory tract health was monitored through weekly diaries completed by guardians and during at least three physician's appointments. When compared to the placebo, the HMF/vitamin C combination significantly promoted respiratory tract health and immune function. The probiotic-supplemented group also exhibited significantly reduced levels of plasma cytokines (IFN-γ and IL-2/IL-5), with no similar reductions observed in the placebo group.¹¹ Further research included a larger study size (171 children) and a wider age range of children (ages 3-10) utilizing the same probiotic consortium and vitamin C dosage daily for six months. This study demonstrated significant improvement in respiratory tract health and a reduction in school absenteeism.¹² The results of both studies demonstrate the beneficial impact of supplementation with the HMF probiotic consortium and vitamin C on immune function in children.[‡]

Vitamin D supplementation has been shown to have beneficial effects on the function of a variety of immune cells, including dendritic cells, macrophages, and T cells.¹³ Adequate vitamin D status has also been associated with proper respiratory immune function.^{14,15} In a recent

controlled clinical trial involving children, daily supplementation with 25 mcg (1,000 IU) of vitamin D for three months was shown to significantly increase plasma vitamin D levels and modulate cytokine production.¹⁶ Following supplementation, levels of the cytokines IL-2, IL-4, IL-6, and IFN-γ were all significantly modified.^{16†}

Vitamin D is also well-recognized for its beneficial effects on bone health.¹⁷ It helps absorb and use calcium, an important structural component of bones and teeth.⁹ Vitamin D is especially critical for proper bone development in children and adolescents, with adequate intake required for optimal bone growth, mineralization and density.¹⁸⁻²⁰ Clinical research has reported that vitamin D supplementation supports bone mineral density, as well as bone strength in young, healthy children.^{18,20} Vitamin D also plays an important role in achieving peak bone mass, which occurs between the ages of 18 and 23 and has a major impact on bone health in later life.^{18†}

Children may be at an increased risk of vitamin D insufficiency due to inadequate sun exposure, limited consumption of vitamin D-containing foods, and low intake of vitamin D supplements.²¹ Specifically, vitamin D production from the skin is limited in the winter months due to America's latitude, while the use of sunscreen and long sleeve clothing reduce its production in the summer.^{19,21} Additionally, the few foods that naturally contain vitamin D (fatty fish, egg yolk, nuts and some mushrooms) may not be commonly consumed by children, and dietary restrictions may further limit the consumption of dairy products fortified with vitamin D.^{18,21†}

In an analysis of 380 infants and toddlers, approximately 12% and 40% of those sampled had suboptimal vitamin D levels, respectively.²² As low vitamin D levels were strongly associated with breastfed infants who did not take supplements, the study authors stressed the importance of vitamin D supplementation when breastfeeding.²² Similarly, other researchers have reported that vitamin D supplementation can help individuals achieve adequate vitamin D status, closing the gap between intake levels and recommended values.^{18†}

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