



HOWARU® PROTECT 55+

Supports Immune Enhancement in Aging Adults

Gut Microbiota and Immune Function Evolve Hand-In-Hand Throughout Life

As people age changes in the gut microbiota composition, including loss of beneficial *bifidobacteria*, are associated with decline in immune function and may be indicative of dysbiosis and poorer health. Aging Adults typically experienced declined immune function, increased susceptibility to infections, decreased vaccine responses and discomfort linked to slow colonic transit time. The use of probiotics have been shown to provide health benefits to the aging adults by promoting a healthy immune system.

Helping Aging Adults Stay Healthy Around the Globe




Adults 55 and older represent the fastest growing population globally. By 2050, the global population of aging adults is projected to be nearly 2.1B. Probiotics offer a natural way for this growing population to maintain a healthy and active immune system. But not all probiotics are the same. HOWARU® Protect 55+ is a unique proprietary probiotic formulation designed to provide immune enhancement for aging adults.



Product Attributes

5B CFU

HOWARU® *Bifidobacterium lactis* HN019™

-  Helps maintain a healthy, active immune system
-  Shifts microbial balance in favor of a healthy gut
-  Enhances Immune Cell Function



Immune Health



Digestive Health

Proven Benefits of HOWARU® Protect 55+

- ⊙ A systemic review and meta-analysis of 4 clinical trials was done to determine the efficacy of probiotic HOWARU® *Bifidobacterium lactis* HN019™ supplementation on cellular immune activity in healthy elderly.
- ⊙ The review was conducted by searching databases for clinical trials on phagocytic capacity or NK cell activity following HN019™ use in the elderly. Phagocytosis kills harmful pathogenic bacteria helping to maintain intestinal homeostasis while NK-cell activity kills virus infected cells and restricts the spread of viral infection. In the elderly phagocytic capacity and NK cell activity are reduced.
- ⊙ The random effects meta-analysis was performed with standardized mean difference (SMD) and 95% confidence interval between probiotic and control groups for each outcome.
- ⊙ These four clinical studies document the effect on cellular immunity showing daily consumption of HOWARU® *Bifidobacterium lactis* HN019™ enhances immune function in healthy elderly adults (Arunachalam et al. 2000; Chiang et al. 2000; Gill et al. 2001a, and Gill et al. 2001b). Specifically, HN019™ improves phagocytic capacity and improves NK cell activity (Miller et al. 2017).
- ⊙ In another study, HOWARU® *Bifidobacterium lactis* HN019™ was shown to increase the number of bifidobacteria in the intestine of elderly (Ahmed et al. 2007).
- ⊙ Another study shows HN019™ significantly improves the colonic transit time in healthy adults helping to maintain regularity. (Waller et. al. 2011). With over 70% of the immune system in the gut, the gut microbiota is important for immune health especially in the elderly.

Key Findings

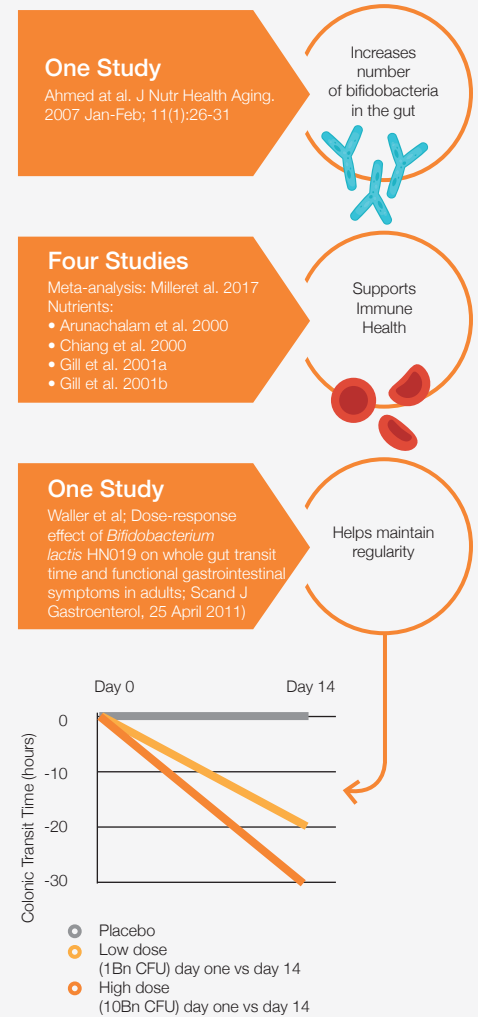
Improves immune function by:

- ✔ Increasing phagocytic capacity
- ✔ Improving NK-cell activity
- ✔ Increasing the number of bifidobacteria in the intestine of aging adults

References

1. Gill H.S., Rutherford K.J., Cross M.L., Gopal P.K. Enhancement of immunity in the elderly by dietary supplementation with the probiotic *bifidobacterium lactis* HN019™. Am J Clin Nutr 2001a, 74, 833-839.
2. Gill H.S., Rutherford K.J., Cross M.L. Dietary probiotic supplementation enhances natural killer cell activity in the elderly: An investigation of age-related immunological changes. J Clin Immunol 2001b, 21, 264-271.
3. Arunachalam K., Gill H.S., Chandra R.K. Enhancement of natural immune function by dietary consumption of *bifidobacterium lactis* (HN019™). Eur J Clin Nutr 2000, 54, 263-267.
4. Chiang B.L., Sheih Y.H., Wang L.H., Liao C.K., Gill H.S. Enhancing immunity by dietary consumption of a probiotic lactic acid bacterium
5. (*bifidobacterium lactis* HN019™): Optimization and definition of cellular immune responses. Eur J Clin Nutr 2000, 54, 849-855.
6. Ahmed M1, Prasad J, Gill H, Stevenson L, Gopal P. Impact of consumption of different levels of *Bifidobacterium lactis* HN019™ on the intestinal microflora of elderly human subjects. J Nutr Health Aging. 2007, 11(1):26-31.
7. Scand J Gastroenterol. 2011 Sep;46(9):1057-64. doi: 10.3109/00365521.2011.584895. Epub 2011 Jun 13.

Unique clinical documentation – Six HN019™ studies shows relevant benefits for adults 55+.



OUR HOWARU® PROMISE

As a trusted global leader in probiotic solutions, we offer the broadest range of robust, clinically-studied strains. You can be confident that our extensive portfolio, strong consumer insights, and unmatched global support and services make us your ideal partner in probiotic innovation.







Our Strains Area:

- ✓ Backed by Science
- ✓ Identified with complete genome. Every strain has been sequenced and fully assembled
- ✓ Tested for virulence and toxigenic properties and the absence of antibiotic resistance transfer potential
- ✓ Tested for toxicity to confirm safety for human consumption
- ✓ Formulated and evaluated to ensure viability through end of shelf life
- ✓ Generally Recognized as Safe (GRAS) or FDA notified without objection as a New Dietary Ingredient
- ✓ Manufactured in the USA under FDA Good Manufacturing Practices

Exceptional Quality

-  High Performance
-  High Stability
-  High Functionality

Our Areas of Expertise

-  Women
-  Weight Management
-  Immune
-  Oral
-  Digestive
-  Brain

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