

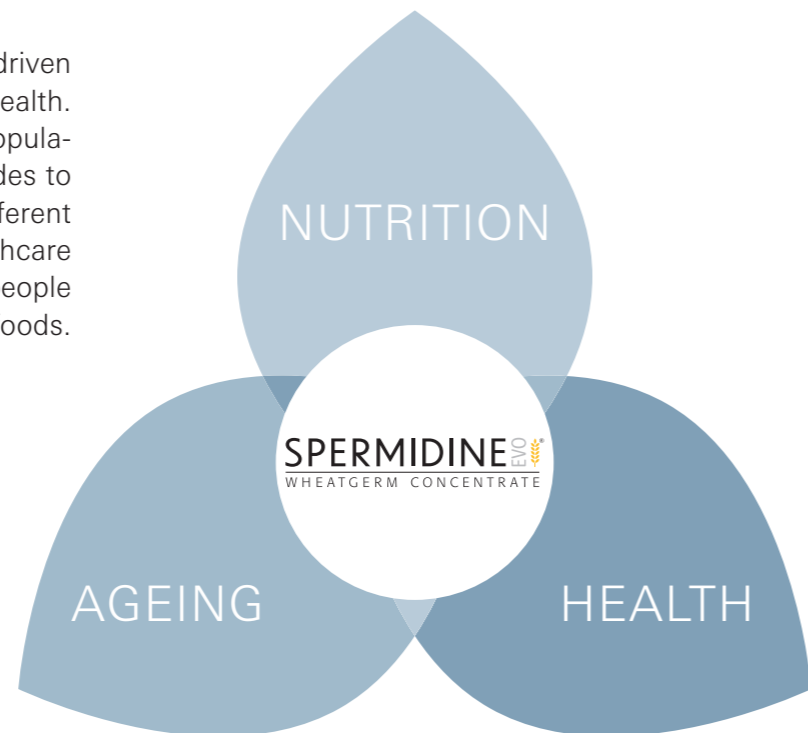




STOP THE CLOCK WITH NATURAL NUTRITION FOR HEALTHY AGEING

SpermidineEvo® – THE HEALTHY AGEING INGREDIENT BY GOODMILLS INNOVATION

The search for new functional ingredients is driven by three related factors: ageing, nutrition and health. Ageing is a demographic factor – the world population is not only growing but living longer. Attitudes to nutrition are changing as people learn how different ingredients affect their health. Improving healthcare conditions raises population numbers and lets people live longer, thereby driving interest in functional foods. One ingredient answers these three concerns: spermidine.



AGEING MADE HEALTHY

In a dynamic nutrition market there are many opportunities for a natural ingredient like SpermidineEvo®. The connections between nutrition, health and longevity are clearer than ever and they bring with them a general change in mindset: the focus is changing from lifespan to healthspan, from being alive to living healthily, from quantity to quality.

People are starting earlier to make provisions for a longer, healthier life. In the Innova Health & Nutrition Survey 2021, 48 % of Gen Z interviewees aged between 18 and 25 said they were taking action toward their health, or they would soon. For them, it's no longer just about staying slim or beefing up.

Using nutrition to stay healthy longer has become a trend in all age segments. Best Agers are leading the way, looking for cell regeneration products to maintain their quality of life. But the young are also proactively seeking to protect their cells and immune systems.

THE TIME IS NOW

Almost **50 %** of Generation Z consumers report taking steps to age healthily from the age of 20; approximately 60% of Generation X and Baby Boomers say their current age is the time to start.

Innova Health & Nutrition Survey 2021

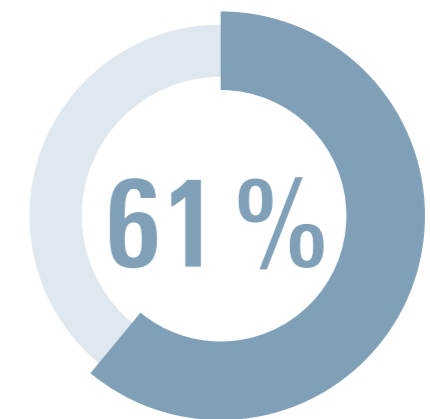
147 %
rise in launches of new products with spermidine as main functional ingredient.

Innova Database 2022 (CAGR 2017-2021)

1 in 4 people

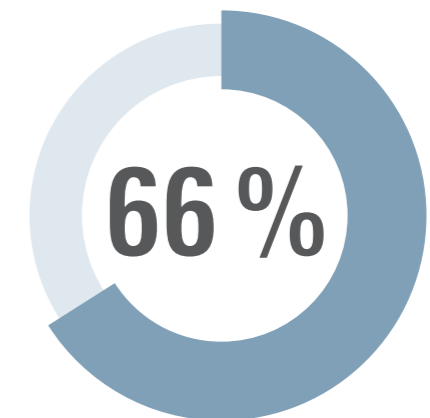
in Europe are aged 60 years or older. That proportion is projected to increase to reach 1 in 3 in 2050

United Nations Department of Economic and Social Affairs 2022



of consumers globally intend to increase spending on their health and wellbeing in the next 12 months.

Innova Health & Nutrition Survey 2021



of consumers globally say that healthy ageing is "very/extremely important" to them.

Innova Health & Nutrition Survey 2021





SCIENCE IS DRIVING CONSUMER INTEREST

A constant stream of scientific papers is commending the nutritional benefits of spermidine. The main idea is that regular consumption of spermidine can slow the ageing process by supporting cell purification as a natural autophagy-promoting polyamine. Spermidine also appears to have positive effects on age-related neurological disorders. It may help to reduce the risk of age-related cognitive impairment.

A recent scientific study on spermidine* showed that memory performance improved moderately in a spermidine group compared to a placebo group. In the 2021 Cell Reports article “Dietary spermidine improves cognitive function” **, researchers link higher dietary spermidine intake with the prevention of age-related or disease-driven cognitive decline.



SpermidineEvo® – A QUALITY INGREDIENT FOR QUALITY OF LIFE

SpermidineEvo® is a wheatgerm concentrate with very high spermidine content. We use wheatgerm because it has the highest spermidine concentration of any foodstuff, higher than soybeans, buckwheat, or rice. What makes our product even more special is the sourcing and production. Firstly, we monitor spermidine content in wheat varieties in Europe so we can source the best quality wheatgerm. Then we apply sophisticated milling processes to extract only the best parts, even if it means some of the wheatgerm is left over. This allows us to provide a high-purity material that can be used with scientific certainty as a primary product in supplements and nutraceuticals, or added to foods of all kinds. Our concentrate has a high and specified content of the natural plant ingredient spermidine as well as other valuable nutrients such as vitamins and minerals.

With the quality promise of GoodMills Innovation

When you use SpermidineEvo® in your products, you can back up your nutritional claims. For example, to claim a product is “rich in spermidine”, the specific portion needs to cover 30 % of the recommended dietary intake (RDI). With SpermidineEvo® you have all the wheat processing experience and knowhow of GoodMills Innovation and the support of Europe’s leading milling corporation, the GoodMills Group.



* The effect of spermidine on memory performance in older adults at risk for dementia: A randomized controlled trial / Wirth M., Benson G., Schwarz C., Kobe T., Grittner U., Schmitz D., Sigrist S.J., (...), Floel A. / (2018) Cortex, 109, pp. 181-188.

** Dietary spermidine improves cognitive function / Schroeder et al., 2021, Cell Reports 35, 108985 / April 13, 2021

SPERMIDINE: THE NATURAL CELL PROTECTOR

Spermidine is a polyamine compound and a natural component of all living organisms. The name comes from the fact that it was first detected in male seminal fluid. It is present in all our body cells and is significantly related to healthy cell maintenance.

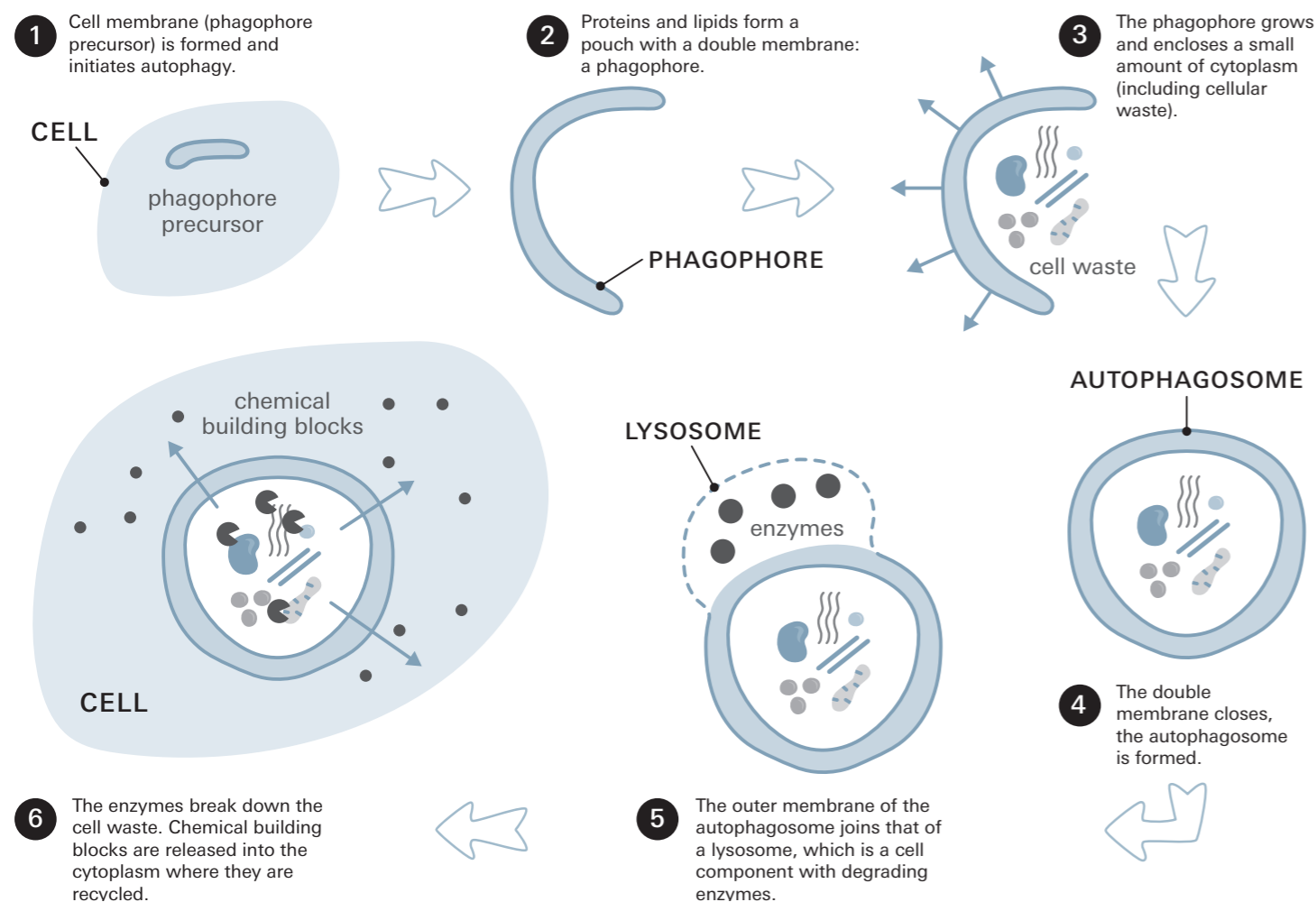
With growing age, our body's own production of spermidine decreases, and the consumption of dietary spermidine becomes more necessary. As the ageing body is also more susceptible to oxidative stress and inflammation, spermidine can play an important role in protecting cells from damage.

AUTOPHAGY: FINE-TUNING YOUR CELLS

Research shows that the consumption of spermidine-rich foods has a positive effect on cell regeneration, known technically as autophagy (from the Greek for self-eating). This is a process in which damaged organelles – subcellular structures that perform specific tasks in the cell – are recycled and used in the biosynthesis of new cell generation, thus promoting sustained cell health.

The 2016 Nobel Prize in Physiology or Medicine was awarded to Yoshinori Ohsumi of the Tokyo Institute of Technology for his discoveries of mechanisms for autophagy. Thanks to the research carried out by Ohsumi and others, we understand better how autophagy controls important physiological functions where cellular components need to be degraded and recycled.

Cell recycling is an important process for healthy ageing and spermidine is the only endogenous substance that has a positive effect on autophagy. Defects in the autophagy process have been associated with immunity loss, cognitive loss, and ageing. Autophagy is said to protect against diseases and slow down the ageing process. In brief, cell care is self-care.



ONE INGREDIENT, MANY ADVANTAGES

NATURAL

SpermidineEvo® is produced by purely physical methods. There is no extraction, so it does not fall under EU Novel Foods regulation. And it specifically serves the trend towards more naturalness and intrinsic functionality.

SUSTAINABLE

Although it is by far the most nutritious component of the wheat kernel, wheatgerm has long been a by-product of flour production. GoodMills Innovation has recognized its value and is upcycling and refining the ingredient.

HEALTHY

SpermidineEvo® is a highly functional food with a specified content of 500 mg spermidine per kilo. It is rich in essential nutrients such as vitamin E, folic acid, vitamin B1, vitamin B2, vitamin B6, iron, potassium, magnesium, phosphorus, and zinc. The high natural content of E and B vitamins protects cells from oxidative stress.

TRUST-WORTHY

Each batch is controlled for its spermidine content and carries the IFS Food Certificate. SpermidineEvo® is backed by the wheatgerm expertise and experience of Europe's largest milling group.

VERSATILE

SpermidineEvo® is suitable for almost all applications, including food supplements, nutraceuticals, smoothies, bread, muesli bars, and pasta.

BACKED BY SCIENCE

A growing number of studies is reporting on the effects of spermidine in the areas of cardiovascular function, cellular health, immunity, anti-aging, longevity, and cognitive function.

THE HIDDEN STRENGTH OF WHEATGERM

We make SpermidineEvo® wheatgerm concentrate from carefully selected, high-quality wheatgerm. Our milling process is specifically designed to separate the germ from the bran and other grain components. This is followed by a gentle thermal treatment to increase stability. A final grinding process produces a fine powder with a nutty-aromatic taste. It can be used in many different applications. The strength, purity and nutritional values of SpermidineEvo® are controlled by elaborate analytical measures.

SOURCING THE BEST

As Europe's largest milling group, we have established spermidine monitoring across the continent. Different wheatgerm batches have different spermidine concentrations and only particularly pure wheat batches are suitable. We use wheatgerm with an extremely high spermidine content – up to five times higher than standard. We ensure high availability so we can deliver the highest quality even in large quantities, always with a defined minimum spermidine content. No other manufacturer in Europe can offer this.

MULTIPLE NUTRITIONAL APPLICATIONS

You can use SpermidineEvo® as the main functional ingredient of hard capsules, tablets, instant powder drinks (sachets), and new nutraceutical applications such as gummy bears and chewing gum. It can also be added as a supplement to muesli bars, protein bars, smoothies, muesli, wheatgerm milk, and bread.

We deliver the wheatgerm concentrate in different forms to suit the final product: as a stabilized raw germ for manufacturer extraction, as a ground powder, or as a micronized powder for better solubility.

” **TO AGE IS NATURAL, BUT THE QUALITY OF YOUR AGEING IS SOMETHING YOU CAN SHAPE IN YOUR FAVOUR**

Max Weber
Product Manager Health & Nutrition



EXPLORE THE MANY APPLICATIONS OF SpermidineEvo®

The sweet temptation of nutraceuticals like gummy bears and chewing gum



Giving meal replacement or other powders the competitive edge



Delivering functionality in sachets with instant powder drinks



Smoothies and wheatgerm milk with the special ingredient



Extra punch for healthy snacks like muesli bars and protein bars



Cell maintenance in nutritional supplements and vitamin tablets



Ready to join the healthy ageing trend?

Ask our experts about the key ingredient.

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