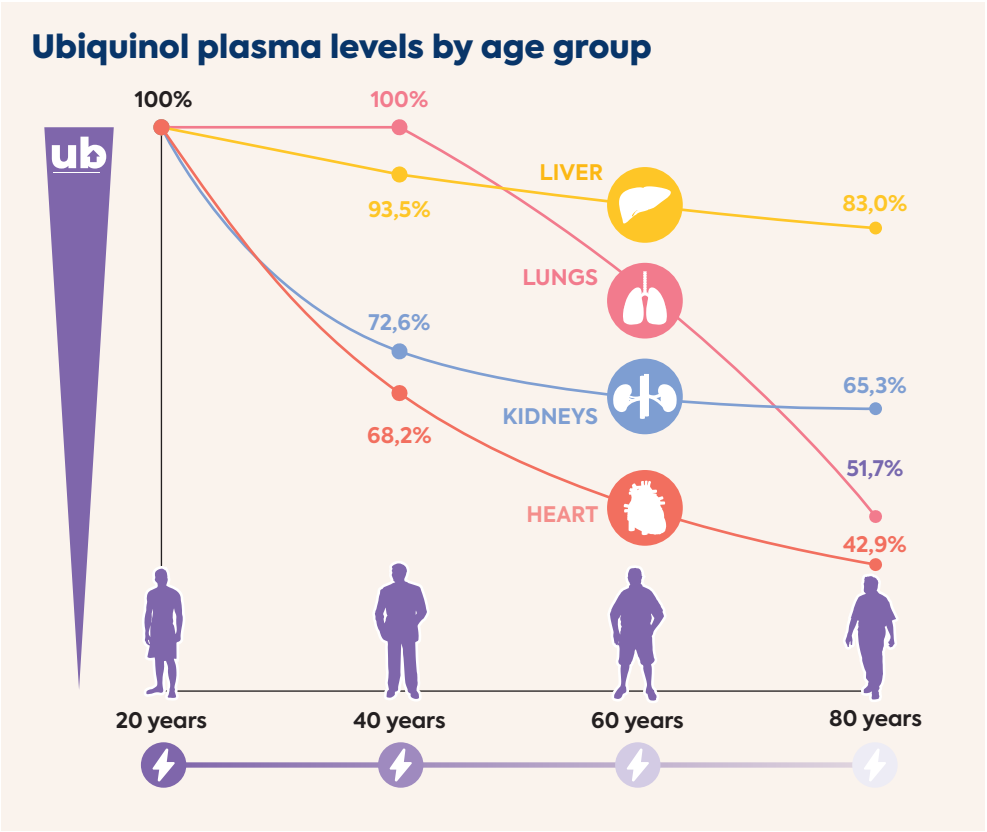
ubIQUINOL™ by Kaneka

SCIENCE UPDATE

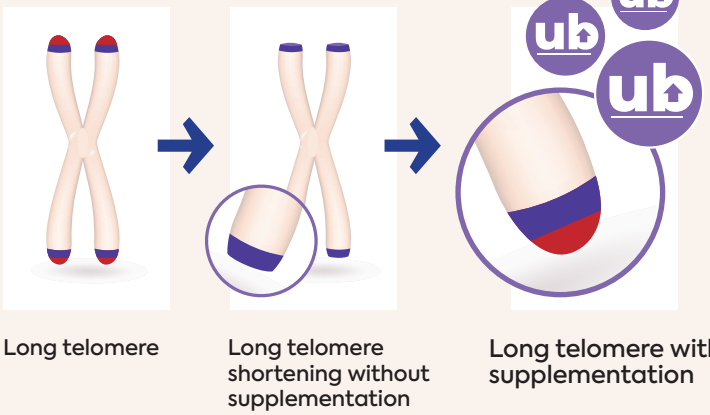
Ubiquinol: essential for longevity and healthy aging

Kaneka Science Publications

The decline of endogenous levels of ubiquinol as we age is a well-documented phenomenon. As we grow older, our ability to produce ubiquinol naturally declines. The impact of this decline is significant, with ubiquinol deficiency being linked to various age-related conditions, such as cardiovascular disease, neurodegenerative disorders, and reduced energy levels. Understanding this decline at the cellular level is vital to developing strategies to mitigate the consequences of ubiquinol depletion and maintain optimal health to support longevity as we age.



Ubiquinol positively affects telomere length



Long telomere

Long telomere shortening without supplementation

Long telomere with supplementation

Telomeres, which are nucleotide tandem repeats found at the ends of eukaryotic chromosomes, play a critical role in maintaining the integrity of our genetic material. As telomeres gradually shorten, cells undergo senescence and apoptosis, contributing to the aging process and age-related diseases.

A recent human clinical study aimed to investigate the impact of 6 month supplementation of nutraceutical supplements containing vitamins, plant-based oils and probiotics, and 50 mg of ubiquinol on telomere length (TL) in a cohort of healthy individuals with no history of medical conditions. Results revealed a significant increase ($P<0.05$) in the length of the entire telomere genome of leukocytes. In a preliminary human leukocytes in vitro study, ubiquinol supplementation also showed the significant increase of mean telomere length.

Although the underlying mechanisms of the effects of the supplements remain unclear, their effects on several key mechanisms, including oxidative stress and chronic inflammation, could be linked to telomere maintenance.

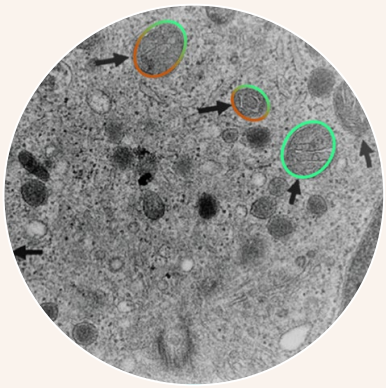
Antioxidants and anti-inflammatory agents have been shown to reduce the pace of TL shortening.

It has been suggested that the mechanisms through which these nutritional factors attenuate telomere attrition are antioxidant activity, DNA methylation and the prevention of DNA damage.

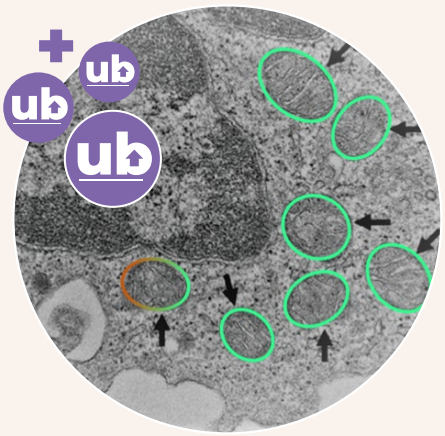
Ubiquinol, the active form of Coenzyme Q10 (CoQ10), naturally present in the body, plays a pivotal role in promoting longevity through various mechanisms at the cellular l evel. It plays a crucial role in cellular energy production in the mitochondria. This results in enhanced energy levels, which is vital for proper functioning of various physiological processes. It is closely linked to the mitochondrial biogenesis and longevity. Moreover, ubiquinol acts as a potent antioxidant, protecting our cells from oxidative stress by neutralizing harmful free radicals.

Ubiquinol stimulates mitochondrial biogenesis

Before ubiquinol intake

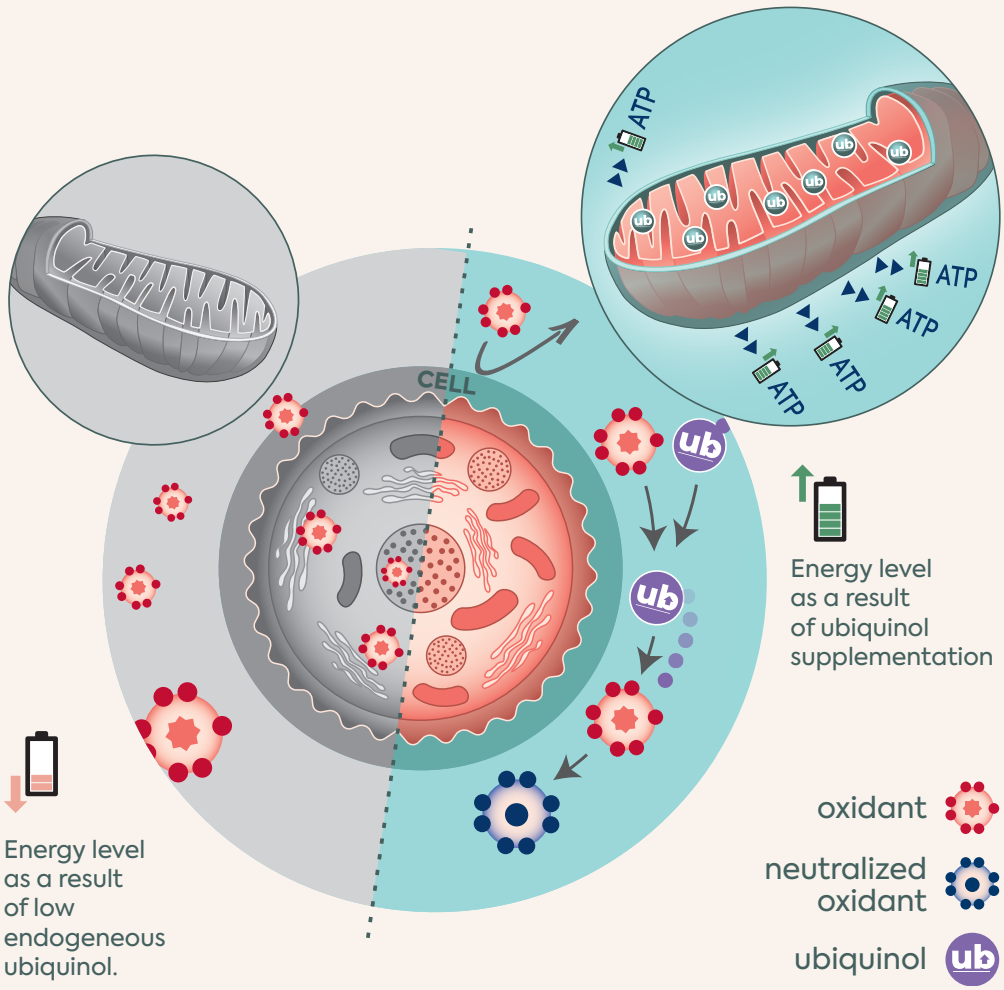


After ubiquinol intake



Its ability to safeguard DNA from oxidative damage further contributes to longevity by maintaining genetic integrity.

Ubiquinol mode of action



Ubiquinol prevents senescence induced by ROS and prevents cells aging by maintaining mitochondrial function.

Clinical research confirmed the remarkable effects of ubiquinol intake in senior individuals. It was found that a two-week intake of ubiquinol significantly increased the plasmatic ubiquinol levels in senior individuals. This finding is of great importance as ubiquinol deficiency has been linked to the aging process.

In Japanese studies conducted on senior individuals, the benefits of ubiquinol supplementation were further emphasized. In the super-aging region Kamijima, it was observed that the long-term use (up to 2 years) of 100 to 150 mg of ubiquinol helped maintain and improve cognitive performance. Similarly, a study conducted at the Institute of Geriatrics Tokyo revealed that a 6-month intake of 100 mg/day of ubiquinol improved vitality and mental health scores in healthy seniors aged 73-87 years. The University of Tsukuba also found that an 8-week daily intake of ubiquinol boosted oral immunity and mental health-related quality of life in senior individuals.

Furthermore, a consumer survey, involving over 100 consumers aged 50+, found that a daily intake of 100 mg of Kaneka Ubiquinol™ for a short 28-day period had positive effects. These effects included increased mitochondrial Q10 levels and improved cellular energy production, antioxidant protection, and mitochondrial biogenesis.

The clinical evidence gathered from these studies highlights the potential benefits of ubiquinol intake in senior individuals. It not only increases plasmatic levels of ubiquinol but also improvs cognitive performance, vitality, mental health, and oral immunity. These findings further emphasize the importance of ubiquinol supplementation in promoting longevity, healthy aging and overall well-being in seniors.

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