

Ubiquinol and Women's Wellness: Supporting Mitochondrial Health

Ubiquinol, the active antioxidant form of coenzyme Q10 (CoQ10), plays a vital role in mitochondrial and cellular health by promoting cellular energy production and antioxidant action, thus supporting women's health throughout adulthood.

As ubiquinol levels decline with age, the increase of free radicals associated with aging can contribute to oxidative stress, which may affect mitochondrial and cellular function, leading to common conditions associated with aging.

Mitochondrial Health, Oxidative Stress, and Women's Health

Women's health is uniquely influenced by reproductive biology, monthly cycles, and menopause. The response of mitochondria to cellular energy demands and oxidative stress associated with these stages can affect overall health.



- Chronic oxidative stress affects mitochondrial function, influencing **how cells produce energy** and maintain homeostasis.¹
- Mitochondrial efficiency and oxidative stress may influence **ovarian reserve** and the availability of healthy eggs.^{2,3}
- Decreased estrogen levels** contribute to an increase in oxidative stress observed during menopause.⁴
- Reduced mitochondrial function and increased oxidative stress during the menopausal years are associated with **changes in lipid profiles** that can influence cardiovascular health.⁴
- Oxidative stress is linked to the **oxidation of LDL cholesterol** and cell membranes, which can affect vascular health and endothelial function, particularly with aging.^{5,6}

Ubiquinol and Women's Health

Preconception Health Benefits

Ubiquinol, a powerful, lipid-soluble antioxidant, supports:

- Mitochondrial function essential for egg health^{2,7}
- Cellular energy requirements for healthy oocyte and egg function^{7,8}
- Mitigation of excess ROS, protecting reproductive cells from oxidative stress⁹

Healthy Aging Benefits

Kaneka Ubiquinol® supplementation helps maintain a healthy CoQ10 balance, which is essential for:

- Cardiovascular health¹³
- Muscle health in older adults¹⁶
- Physical functioning in older adults^{16,17}

Menopausal Well-Being Benefits

- Kaneka Ubiquinol® supports general health and well-being during and after menopause.^{10,11}
- In a consumer use study, 80% of menopausal women taking 200 mg of Kaneka Ubiquinol® per day reported decreased irritability, sensitivity, stress, and mood swings after 60 days of supplementation.¹²

Cardiovascular Health Benefits

Kaneka Ubiquinol® supplementation is shown to:

- Support the high energy requirements of the heart¹²
- Protect LDL cholesterol from oxidation^{13,14}
- Support vessel health¹³
- Replenish CoQ10 blood levels depleted by statin cholesterol medicines¹⁵



Studies reveal that Kaneka Ubiquinol® is more bioavailable than conventional CoQ10 supplements and increases blood ubiquinol levels.

2x

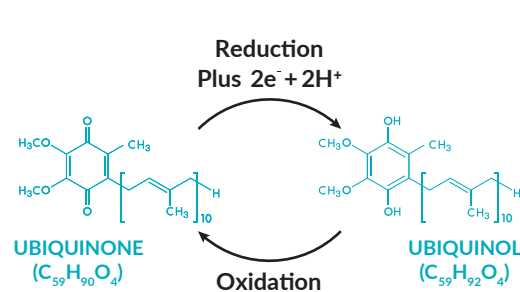
Kaneka Ubiquinol®
Conventional CoQ10

Kaneka Ubiquinol® is **2x better absorbed** than conventional CoQ10 supplements.¹⁸

8x

Kaneka Ubiquinol®
Baseline

Research demonstrates that 200 mg of Kaneka Ubiquinol® **increases ubiquinol levels by approximately 8x** compared to baseline in healthy adults when taken daily for at least 30 days.¹⁹



Unlike CoQ10, Ubiquinol requires **no conversion** to be absorbed in the body to perform its antioxidant functions.^{13,20}

The Kaneka Ubiquinol® Advantage

50

50 years of ubiquinone and ubiquinol research and testing

100+

Subject of 100+ clinical studies

18+

18+ years of positive consumer experience with Kaneka Ubiquinol® supplementation



Free of impurities commonly found in synthetic CoQ10



Bioidentical to the ubiquinol naturally produced in the human body



Made in the USA

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References:

- Lima T, Li TY, Mottili A, Auwerx J. Pleiotropic effects of mitochondria in aging. *Nat Aging*. 2022;2(3):199-213.
- Zhu Z, Xu W, Liu L. Ovarian aging: mechanisms and intervention strategies. *Med Rev* (2021). 2022;2(6):590-610.
- Adhikari D, Lee IW, Yuen WS, Carroll J. Oocyte mitochondria—key regulators of oocyte function and potential therapeutic targets for improving fertility. *Biol Reprod*. 2022;106(2):366-77.
- Oliveira PJ, Carvalho RA, Portincasa P, Bonfrate L, Sardo VA. Fatty acid oxidation and cardiovascular risk during menopause: a mitochondrial connection? *J Lipids*. 2012;2012:365798.
- Zhao Y, Vanhoose PM, Leung SW. Vascular nitric oxide: beyond eNOS. *J Pharmacol Sci*. 2015;129(2):83-94.
- Rajendran P, Renegarajan T, Thangavel J, et al. The vascular endothelium and human diseases. *Int J Biol Sci*. 2013;9(10):1057-69.
- Bentov Y, Casper RF. The aging oocyte—can mitochondrial function be improved? *Fertil Steril*. 2013;99(1):18-22.
- Ben-Meir A, Burstein E, Borrego-Alvarez A, et al. Coenzyme Q10 restores oocyte mitochondrial function and fertility during reproductive aging. *Aging Cell*. 2015;14(3):687-95.
- Zhang M, ShiYang X, Zhang Y, et al. Coenzyme Q10 ameliorates the quality of postovulatory aged oocytes by suppressing DNA damage and apoptosis. *Free Radic Biol Med*. 2019;143:84-94.
- Kaneka Internal Report. Real-life UBIQUINOL study on 200 postmenopausal women. Expansion Consultation. 2024.
- Palacios S, Ramirez M, Lluze M, Barahona S, Rodriguez D. Estudio clinico para conocer la eficacia de la coenzima Q-10 sobre la calidad de vida en mujeres postmenopausicas. *Toko-Gin Pract*. 2019;78(1):3-7. [Proprietary English version on file.]
- Li A, Shami GJ, Griffiths L, Lal S, Irving H, Braet F. Giant mitochondria in cardiomyocytes: cellular architecture in health and disease. *Basic Res Cardiol*. 2023;118(1):39.
- Subbathinelli J, Orlando P, Calaszi R, et al. Ubiquinol ameliorates endothelial dysfunction in subjects with mild-to-moderate dyslipidemia: a randomized clinical trial. *Nutrients*. 2020;12(4):1098.
- Stocker R, Bowry VV, Frei B. Ubiquinol-10 protects human low density lipoprotein more efficiently against lipid oxidation than does alpha-tocopherol. *Proc Natl Acad Sci U S A*. 1991;88(5):1646-50.
- Zlatohlavek L, Vrablik M, Grauova B, Motykova E, Ceska R. The effect of coenzyme Q10 in statin myopathy. *Neuro Endocrinol Lett*. 2012;33(Suppl 2):98-101.
- Fischer A, Onur S, Niklowitz P, et al. Coenzyme Q10 status as a determinant of muscular strength in two independent cohorts. *PLoS One*. 2016;11(12):e0167124.
- de la Bella-Garzon R, Fernandez-Portero C, Alarcon D, Amin JG, Lopez-Luchi G. Levels of plasma coenzyme Q10 are associated with physical capacity and cardiovascular risk in the elderly. *Antioxidants (Basel)*. 2022;11(2):279.
- Langjean PH, Langjean AM. Comparison study of plasma coenzyme Q10 levels in healthy subjects supplemented with ubiquinol versus ubiquinone. *Clin Pharmacol Drug Dev*. 2014;3(1):13-7.
- Hosoe K, Kitano M, Kishida H, Kubo H, Fujii K, Kitahara M. Study on safety and bioavailability of ubiquinol (Kaneka QH) after single and 4-week multiple oral administration to healthy volunteers. *Regul Toxicol Pharmacol*. 2007;47(1):19-28.
- Kubo H, Yamamoto Y, Fujisawa A. Orally ingested ubiquinol-10 or ubiquinone-10 reaches the intestinal tract and is absorbed by the small intestine of mice mostly in its original form. *J Clin Biochem Nutr*. 2023;72(2):101-6.