



Fertilovit®
for a new life

**Premium fertility
nutraceuticals**
for highest demands



Company

10

Team members

15

Years in business

125 k

Happy customers

Gonadosan is a Swiss-Austrian healthcare company dedicated to innovative orthomolecular solutions for fertility, pregnancy and women's health. In our interdisciplinary team and international cooperations, we work at developing nutraceutical concepts for research-based dietetic support for men and women. From preconception to pregnancy, from endometriosis to limited semen quality and IVF – we have the optimized dietetic solution!

Timeline

innovative fertility supplements
from IVF experts

2010

Founded by Prof Dr
H Zech, Dr J
Wogatzky, Dr B
Wogatzky

2012

Studies published
on male fertility
FSMP

2014

Completion of
female product line
of fertility
supplements

2018

Joining Nextclinics
group

2025

Expansion of
Resilovit product
line

Meet the Team



Norbert Feurstein
CEO



Birgit Wogatzky
Co-Founder &
Medical Advisor



Daniel Matthes
Regulatory Affairs
Manager



Karin Schmoll
Senior Key account
Manager

Mission

premium orthomolecular concepts

At Gonadosan, our mission is to empower individuals on their journey towards optimal reproductive and women's health. We are dedicated to providing advanced fertility supplements for both men and women, with targeted formulations catering for the specific needs of mature women, pregnancy, breastfeeding, endometriosis, PCOS, and Hashimoto's.





Science

Carefully selected
ingredients based
on latest research



Certified

ISO 22000
Food GMP



German

Made in Northern
Bavaria



Pure

Very low in food
additives



Control

Every batch is
checked by
independent labs

Fertilovit *for her*



Premium preconceptional care with mitochondrial booster for

- >30 years
- ovarian ageing
- oocyte quality
- IVF



G



Fertilovit® F35plus

oocyte quality

- Comprehensive preconceptional micronutrient and mineral supply
- 800 µg folic acid / folate
- Vitamin C with sustained release
- Mitochondrial booster CoQ10
- 1 vegan capsule daily





- Supplemental folate intake increases maternal folate status.
- Increasing maternal folate status contributes to the reduction of the risk of neural tube disorders.
- Carriers of MTHFR 677T polymorphism benefit from higher dosage of 800 µg (Thaler et al, 2014).
- Fertilovit contains a mixture of folic acid and active folate for superior care.

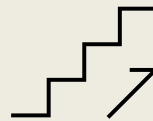


Folic acid:

benefits of 800 mcg / day



Ensures adequate
supply for carriers of
MTHFR polymorphism
Thaler 2014



Allows for fast
increase of folic acid
on protective level
within only 4 weeks
Pietrzik et al, 2005



Decreases risk of early
pregnancy loss
Chavarro et al, 2016



Supplement facts:

The composition of **Fertilovit® F 35 plus** corresponds to the special requirements of mature women planning for pregnancy.

	Daily dose (1 capsule)	% NRV*
Vitamin C	100 mg	125
Vitamin E	20 mg	166
Vitamin B1	3 mg	272
Vitamin B2	3 mg	214
Pantothenic acid	12 mg	200
Vitamin B6	4 mg	285
Vitamin B12	7 µg	280
Folic acid	800 µg	100
Vitamin D	20 µg	400
Niacin	35 mg	218
Biotin	150 µg	300
Zinc	5 mg	50
Magnesium	100 mg	26
Iodine	150 µg	100
Iron	7.5 mg	54
Coenzyme Q10	35 mg	-

*) Nutrient reference values (according to EU guidelines)

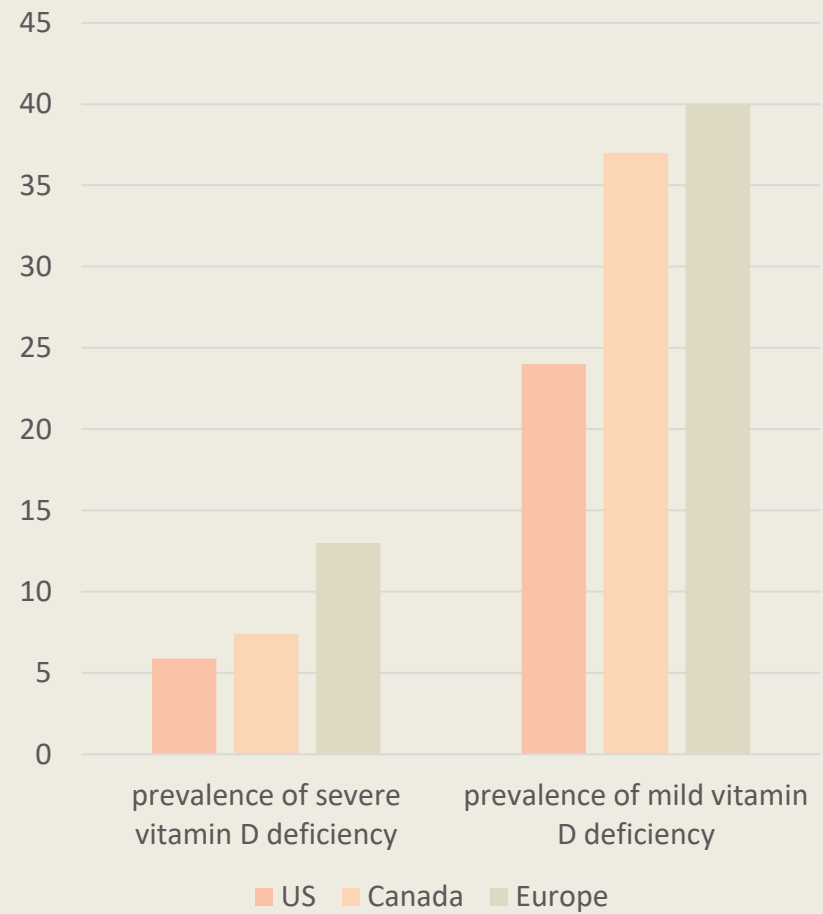
Fertilovit® F 35 plus is suitable for vegans, gluten-free and lactose-free.

20 mcg vegan vitamin D



Deficiency is common

- Prevalence rates of severe vitamin D deficiency, defined as 25(OH)D <30 nmol/L (or 12 ng/ml), of 5.9% (US), 7.4% (Canada) and 13% (Europe) have been reported.
- Estimates of the prevalence of 25(OH)D levels <50 nmol/L (or 20 ng/ml) have been reported as 24% (US), 37% (Canada), and 40% (Europe).
- Vitamin D deficiency has been associated with decreased fertility, adverse pregnancy outcomes and autoimmune disease of offspring in childhood and later in life



Iron, zinc, B-vitamins:

deficiency impairs healthy fertility



Low iron status =
increased risk of
ovulatory infertility

American Nurses' Health Study,
Chavarro et al 2006



5 mg zinc: important
for immune system,
increased need in
pregnancy and
lactation!



Good supply of B
vitamins lowers the risk
of ovulatory infertility

Chavarro et al





Iron status of women *in Europe*

- women of reproductive age: mean serum ferritin concentrations 26–38 $\mu\text{g/L}$
- 40–55% of women have small or depleted body iron reserves

N. Milman, C. L. Taylor, J. Merkel, and P. M. Brannon, "Iron status in pregnant women and women of reproductive age in Europe," *American Journal of Clinical Nutrition*, vol. 106, no. 6, pp. S1655–S1662, 2017.

Supplement facts:

The composition of **Fertilovit® F 35 plus** corresponds to the special requirements of mature women planning for pregnancy.

	Daily dose (1 capsule)	% NRV*
Vitamin C	100 mg	125
Vitamin E	20 mg	166
Vitamin B1	3 mg	272
Vitamin B2	3 mg	214
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Magnesium	100 mg	26
Iodine	150 µg	100
Iron	7.5 mg	54
Coenzyme Q10	35 mg	-

*) Nutrient reference values (according to EU guidelines)

Fertilovit® F 35 plus is suitable for vegans, gluten-free and lactose-free.





Supplement facts:

The composition of **Fertilovit® F 35 plus** corresponds to the special requirements of mature women planning for pregnancy.

	Daily dose (1 capsule)	% NRV *
Vitamin C	100 mg	125
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Vitamin B1	3 mg	272
Vitamin B2	3 mg	214
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Niacin	35 mg	218
Biotin	150 µg	300
Zinc	5 mg	50
Magnesium	100 mg	26
Iodine	150 µg	100
Iron	7.5 mg	54
Coenzyme Q10	35 mg	-

*) Nutrient nutrient reference values (according to EU guidelines)

Fertilovit® F 35 plus is suitable for vegans, gluten-free and lactose-free.

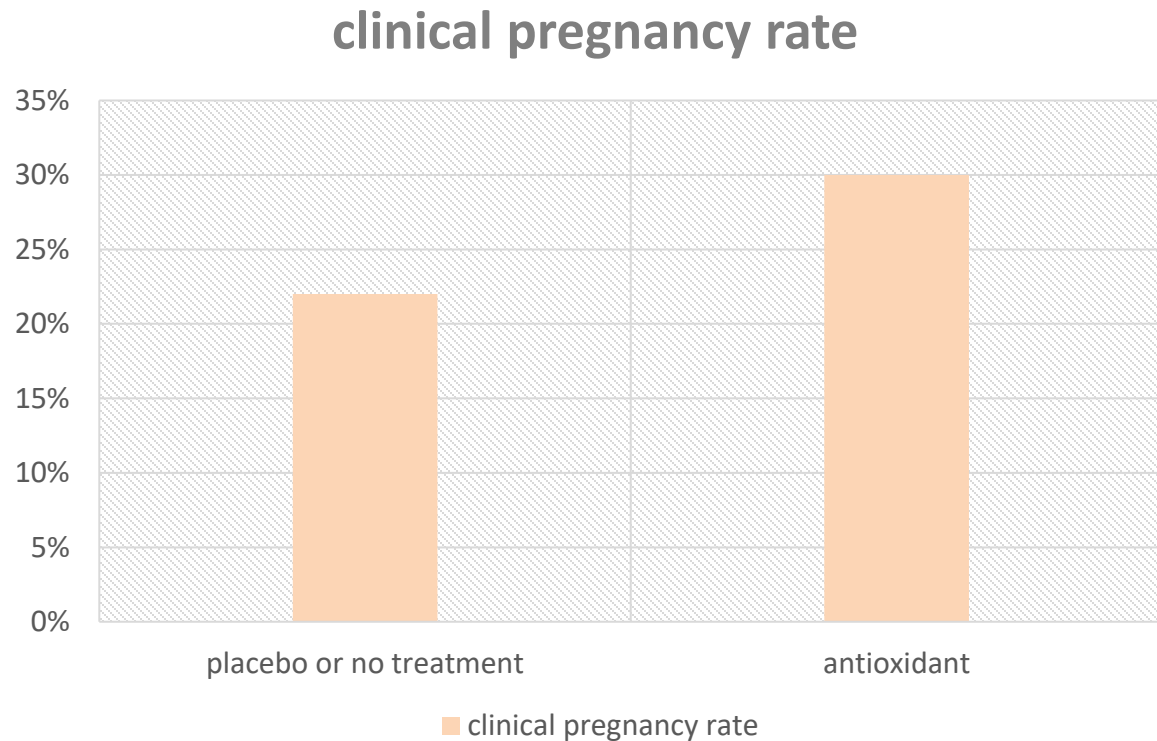
Iodide



Antioxidants *for subfertile women*

"The intake of antioxidants may be beneficial for subfertile women."

Showell et al, Cochrane, 2017



Showell et al, 2017, n=4271, p<0.001

Supplement facts:

The composition of **Fertilovit® F 35 plus** corresponds to the special requirements of mature women planning for pregnancy.

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Vitamin C	100 mg	125
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Coenzyme Q10	35 mg	-

*) Nutrient reference values (according to EU guidelines)

Fertilovit® F 35 plus is suitable for vegans, gluten-free and lactose-free.

Antioxidant support

Unique: superior bioavailability due to vitamin C with sustained release





Supplement facts:

The composition of **Fertilitov® F 35 plus** corresponds to the special requirements of mature women planning for pregnancy.

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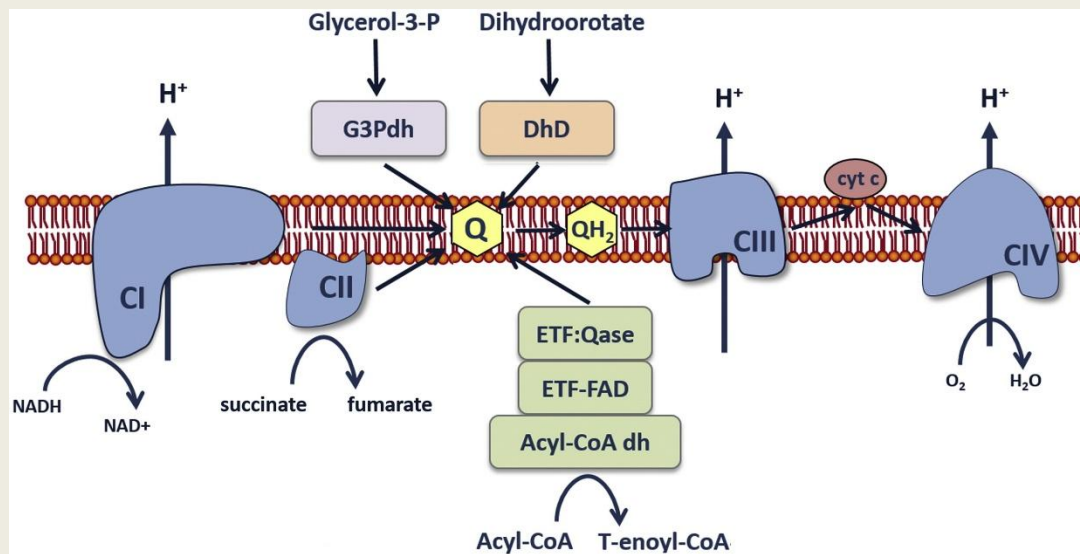
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Coenzyme Q10



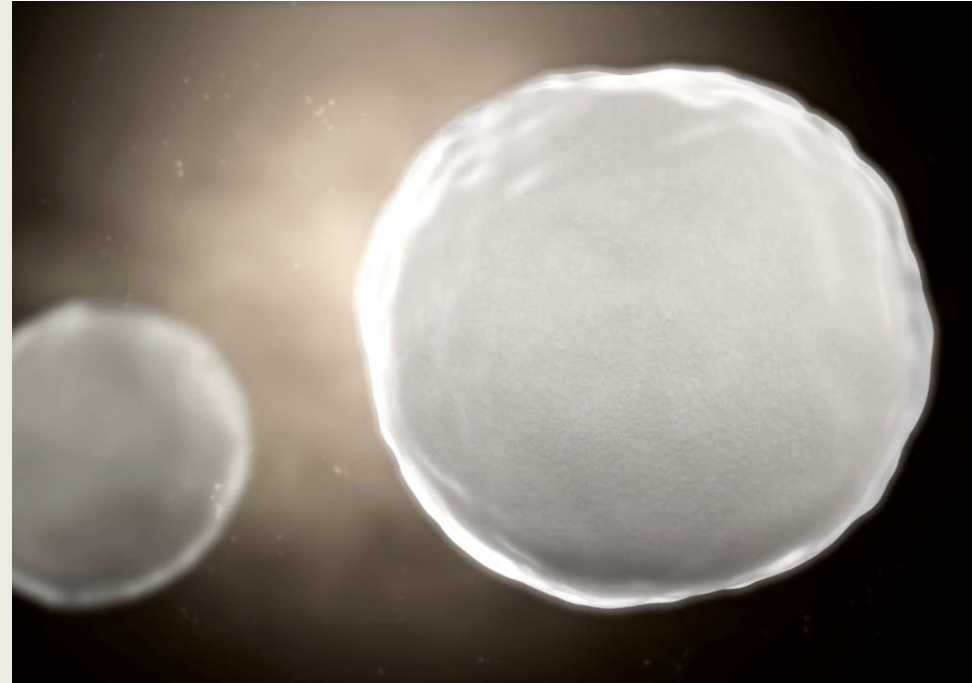
Info box: Coenzyme Q₁₀

carries electrons from complexes I and II to complex III in the mitochondrial respiratory chain



Mitochondria and female fertility

- Ca^{2+} homeostasis
- Intracellular signaling
- Meiotic spindle assembly
- Chromosome segregation
- Energy
- Oocyte maturation
- Fertilization
- Embryo development



Biological age / Ovarian senescence



- shortening of telomeres
- decrease in DNA repair capacity
- alteration of epigenetic chromatin hallmarks
- precocious loss of chromosome cohesion
- **Lower mitochondrial quality and quantity**



Mitochondrial dysfunction



- Decreased ovarian reserve
- Premature ovarian aging
- Low oocyte quality
- Poor pregnancy outcome
- Impaired health of offspring



Info Box: Reasons for mitochondrial dysfunction in fertility patients

INTRINSIC FACTORS:

- Endometriosis (Ngô et al, 2009)
- Polycystic ovarian syndrome (PCOS) (Zhang et al, 2019)
- Premature ovarian insufficiency (Tosano et al, 2019)
- Biological age (Tarín et al, 1996)

EXTRINSIC FACTORS:

- Obesity (Andreas et al, 2019, Murri et al, 2018)
- Exposure to ROS inducers: smoking, environmental pollution, workplace exposure, diet, stress (Rodríguez-Varela et al, 2020)
- ART (Lampiao et al, 2012)

Mitochondria as therapeutic targets

mitochondrial
replacement therapy
(MRT): heterologous or
autologous (e.g., partial
ooplasm transfer,
autologous
mitochondrial transfer)

use of compounds that
enhance mitochondrial
activity (e.g. coenzyme
Q10)

- No cell in the body has as many mitochondria as the oocyte
- Q10 is important for ATP-synthesis in the mitochondria (Mitchell, 1975, Santos-Ocana, 2002)
- and required for oocyte maturation and early stages of embryonic development (Jansen et al, 1998)
- Tissue concentration of coenzyme Q10 declines with age (Pignatti et al, 1980)
- women of 35 and older benefit from Q10 intake (Turi et al. 2011)

REPRODUCTIVE MEDICINE

Coenzyme Q10 content in follicular fluid and its relationship with oocyte fertilization and embryo grading

Angelo Turi · Stefano Raffaele Giannubilo · Francesca Brugè ·
Federica Principi · Silvia Battistoni · Fabrizia Santoni ·
Andrea Luigi Tranquilli · GianPaolo Littarru · Luca Tiano

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Abstract

Background No data are available on the presence and content of Coenzyme Q10 (CoQ10) in human follicular fluid and its role.

Objective To assess the presence and concentration of CoQ10 in human follicular fluid in relation to oocyte fertilization.

Methods CoQ10 content was measured in follicular fluid obtained from 20 infertile women undergoing ovarian stimulation program for in vitro fertilization. CoQ10 levels were assayed by high-performance liquid chromatography system and normalized for follicular cholesterol and protein levels. Oocyte morphology and embryo grading were assessed.

Results CoQ10/Protein levels resulted significantly in mature versus dysmorphic oocytes. Similarly, CoQ10/Cholesterol was significantly higher in grading I–II versus grading III–IV embryos.

tion of CoQ10 in infertile women to evaluate the biological and reproductive outcomes.

Keywords Coenzyme Q10 · Follicular development · Oocyte maturation · Embryo grading · Oxidation

Abbreviations

CoQ10	Coenzyme Q10
IVF–ET	In vitro fertilization and embryo transfer
SOD	Superoxide dismutase
SeGPX	Glutathione peroxidase
QH ₂	Ubiquinol
HPLC	High-performance liquid chromatography system
ECD	Electrochemical detector

Introduction

Supplementation in animal model

- improves mitochondrial function in aged mice (Ben-Meir et al, 2015)
- improves non-aging related mitochondrial dysfunction in mice (Boots et al, 2016)
- prevents mitochondrial ovarian aging in rat (Özkan et al, 2016)
- restores age-induced deterioration of oocyte quality in mice in vitro (Zhang et al, 2019)
- increased mitochondrial respiratory activity and glucose uptake in cumulus cells, as well as number of cumulus cells (Ben-Meir et al, 2019)



Ben-Meir, A.; Burstein, E.; Borrego-Alvarez, A.; Chong, J.; Wong, E.; Yavorska, T.; Naranian, T.; Chi, M.; Wang, Y.; Bentov, Y.; et al. Coenzyme Q10 restores oocyte mitochondrial function and fertility during reproductive aging. *Aging Cell* 2015, 14, 887–895.

Ben-Meir, A.; Kim, K.; McQuaid, R.; Esfandiari, N.; Bentov, Y.; Casper, R.F.; Jurisicova, A. Co-enzyme q10 supplementation rescues cumulus cells dysfunction in a maternal aging model. *Antioxidants* 2019, 8, 58.

Boots, C.E.; Boudoures, A.; Zhang, W.; Drury, A.; Moley, K.H. Obesity-induced oocyte mitochondrial defects are partially prevented and rescued by supplementation with co-enzyme Q10 in a mouse model. *Hum. Reprod.* 2016, 31, 2090–2097.

Özkan, P.; Fiçicioğlu, C.; Kizilkale, O.; Yesiladali, M.; Tok, O.E.; Ozkan, F.; Esrefoglu, M. Can Coenzyme Q10 supplementation protect the ovarian reserve against oxidative damage? *J. Assist. Reprod. Genet.* 2016, 33, 1223–1230.

Zhang, M.; ShiYang, X.; Zhang, Y.; Miao, Y.; Chen, Y.; Cui, Z.; Xiong, B. Coenzyme Q10 ameliorates the quality of postovulatory aged oocytes by suppressing DNA damage and apoptosis. *Free Radic. Biol. Med.* 2019, 143, 84–94.





The use of mitochondrial nutrients to improve the outcome of infertility treatment in older patients

We present a hypothesis emphasizing the role of mitochondrial dysfunction in reproductive senescence and suggesting the use of mitochondrial nutrients as an adjuvant treatment in older patients with infertility. (Fertil Steril® 2010;93:272-5. ©2010 by American Society for Reproductive Medicine.)

During the past few decades, because of cultural and social changes, women in the developed world have significantly delayed childbirth (1). It is well known that pregnancy rates (PR) at age more than 35 years are significantly lower, both naturally and with assisted reproduction. The decline in live birth rate reflects a decline in response to ovarian stimulation, reduced embryo quality and PRs, and an increased incidence of miscarriages and fetal aneuploidy. At present there is no known intervention to improve the pregnancy outcome of older patients.

In this article we expand on the hypothesis that mitochondrial dysfunction has a major role in reproductive senescence and propose that reproductive function in older women may be improved by the use of mitochondrial nutrients.

OOCYTES AND AGING

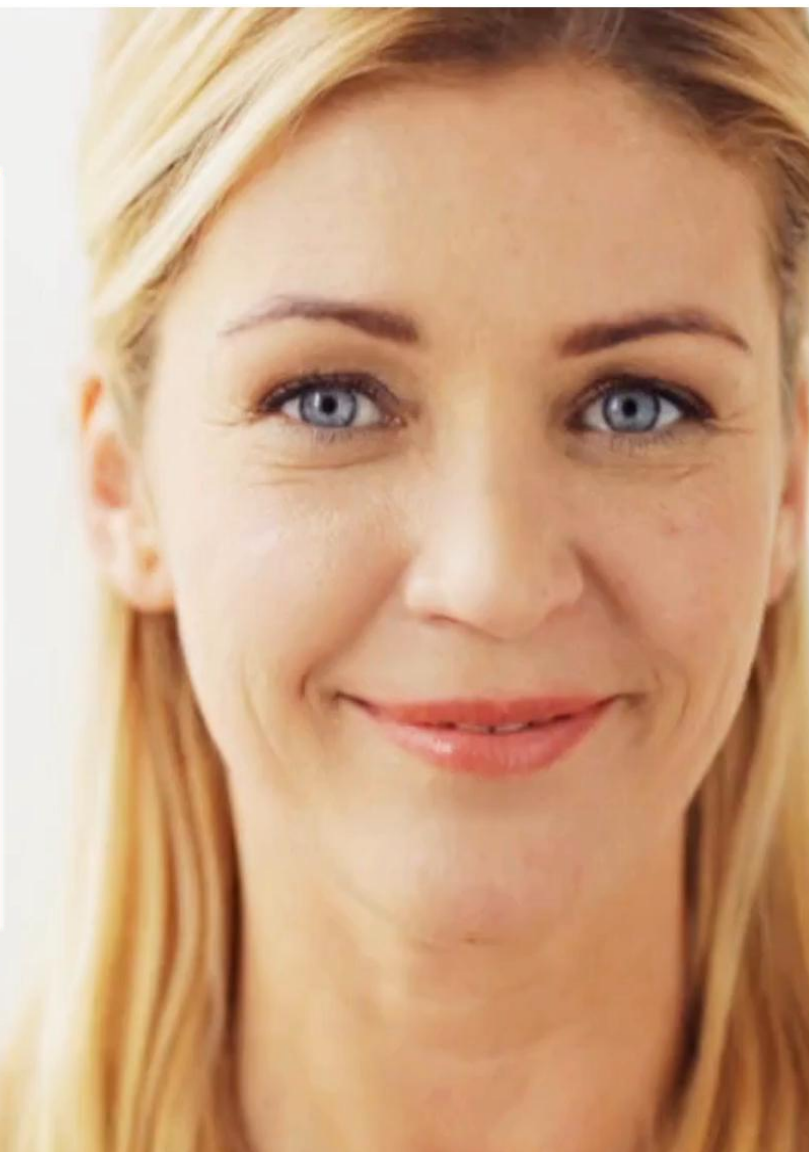
Primordial oocytes are formed during fetal development and may reside within the ovary for as long as 50 years before growth and development into mature oocytes. Ovulation leads to resumption of meiosis in the oocyte. This involves alignment and separation

Mitochondria

The production of energy for the metabolic requirements of the oocyte is provided solely by mitochondria. The oocyte has the largest number of mitochondria and mitochondrial DNA (mtDNA) copies of any cell ($\sim 2 \times 10^5$ copies) (2), even more than cells that have high energy requirements, such as muscle cells and neurons, which contain several thousand copies. During the recruitment of the follicles there is a marked increase in the mitochondrial mass, from 6,000 mtDNA copies to an average of 200,000, representing about half of the total DNA content of the oocyte.

The mitochondrial genome is contained in double-stranded, circular DNA containing 16,569 base pairs that are organized in nucleotides, which unlike nuclear DNA do not contain histones or introns, making the mtDNA more vulnerable to mutations and deletions (Fig. 1). The mtDNA encodes 37 genes including those for 13 proteins, 22 transfer RNA genes, and 2 for ribosomal RNA. All of the encoded proteins are part of the respiratory chain complexes involved in adenosine triphosphate (ATP) production (3). The inheritance of mtDNA is strictly maternal, as paternal mitochondria are thought to be degraded by ubiquitination and eliminated during embryogenesis (4).

Fertilovit®
for a new life





54 % more top quality embryos (72h)

In women in their end-30s undergoing IVF after supplementation with coenzyme Q10

Bentov et al, 2014; n = 39

6.3 % higher pregnancy rate

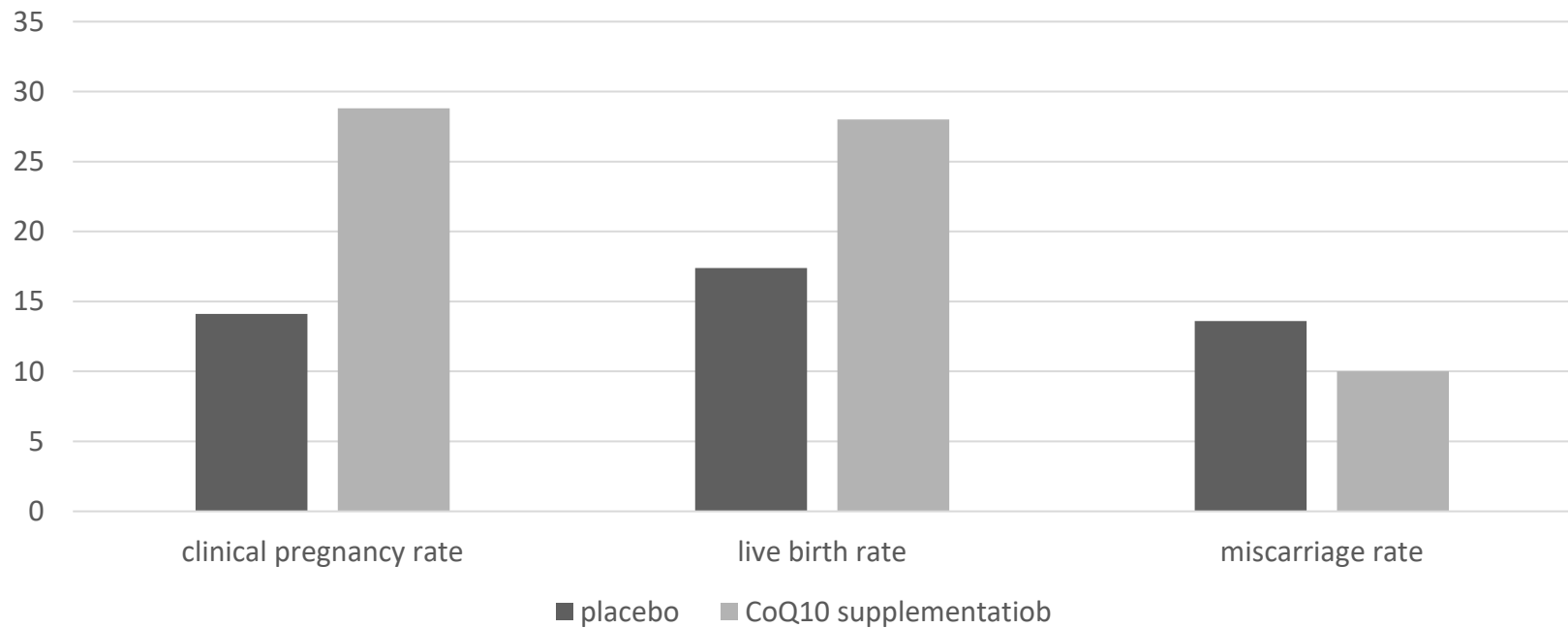
In women in their end-30s undergoing IVF after supplementation with coenzyme Q10

Bentov et al, 2014; n = 39

“our findings demonstrate that CoQ10 supplementation is a feasible and effective way to prevent postovulatory aging and preserve the oocyte quality, potentially contributing to improve the successful rate of IVF (in vitro fertilization) and ICSI (intracytoplasmic sperm injection) during human ART.”



Florou et al, 2020



Florou, P.; Anagnostis, P.; Theocharis, P.; Chourdakis, M.; Goulis, D.G. Does coenzyme Q10 supplementation improve fertility outcomes in women undergoing assisted reproductive technology procedures? A systematic review and meta-analysis of randomized-controlled trials. *J. Assist. Reprod. Genet.* 2020,





“CoQ10 can attenuate the aging-induced abnormalities including mitochondrial dysfunction, ROS accumulation, spindle abnormalities, and apoptosis in postovulatory aged oocytes. Furthermore, SIRT4, which was first found to be up-regulated in postovulatory aged oocytes, decreased following CoQ10 treatment.”

Xhing et al, 2021

Xing X, Zhang J, Zhang J, Wang Y, Wang J, Kang J, Quan F, Su J, Zhang Y. Coenzyme Q10 supplement rescues postovulatory oocyte aging by regulating SIRT4 expression. *Curr Mol Pharmacol*. 2021 Apr 19.



- CoQ10 supplementation is safe and promising in ART.
- High-dose/short-term regimens: Enhance oocyte and embryo quality, but translation into improved pregnancy or live birth remains uncertain.
- Low-dose/longer pretreatment regimens: More closely aligned with folliculogenesis (~85 days) and currently offer stronger evidence for improving clinical pregnancy outcomes.
- Fertilovit® F35plus provides a clinically relevant CoQ10 dose, embedded in a broad-spectrum preconceptional formula, making it a practical evidence-based option for women ≥35 years or with reduced ovarian reserve.
- Future large-scale trials are needed to confirm optimal dosing strategies and their impact on live birth outcomes.

Shang Y, Song N, He R, Wu M. Antioxidants and Fertility in Women with Ovarian Aging: A Systematic Review and Meta-Analysis. *Adv Nutr.* 2024 Aug;15(8):100273. doi: 10.1016/j.advnut.2024.100273. Epub 2024 Jul 15. PMID: 39019217; PMCID: PMC11345374.

Advances in Nutrition 15 (2024) 100273

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Review

Antioxidants and Fertility in Women with Ovarian Aging: A Systematic Review and Meta-Analysis

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ABSTRACT

Ovarian aging is a major factor for female subfertility. Multiple antioxidants have been applied in different clinical scenarios, but their effects on fertility in women with ovarian aging are still unclear. To address this, a meta-analysis was performed to evaluate the effectiveness and safety of antioxidants on fertility in women with ovarian aging. A total of 20 randomized clinical trials with 2617 participants were included. The results showed that use of antioxidants not only significantly increased the number of retrieved oocytes and high-quality embryo rates but also reduced the dose of gonadotropin, contributing to higher clinical pregnancy rates. According to the subgroup analysis of different dose settings, better effects were more pronounced with lower doses; in terms of antioxidant types, coenzyme Q10 (CoQ10) tended to be more effective than melatonin, myo-inositol, and vitamins. When compared with placebo or no treatment, CoQ10 showed more advantages, whereas small improvements were observed with other drugs. In addition, based on subgroup analysis of CoQ10, the optimal treatment regimen of CoQ10 for improving pregnancy rate was 30 mg/d for 3 mo before the controlled ovarian stimulation cycle, and women with diminished ovarian reserve clearly benefited from CoQ10 treatment, especially those aged <35 y. Our study suggests that antioxidant consumption is an effective and safe complementary therapy for women with ovarian aging. Appropriate antioxidant treatment should be offered at a low dose according to the patient's age and ovarian reserve.

This study was registered at PROSPERO as CRD42022359529.

Keywords: antioxidants, ovarian aging, CoQ10, clinical pregnancy, oocyte, high-quality embryo

Benefits of coenzyme Q10 supplementation for mature fertility patients



Oocyte quality

Co Q10 improves
aneuploidy rates

Bentov et al, 2014



Embryo quality

increases number
of top quality
embryos

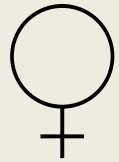
Bentov et al, 2014



Pregnancy rate

raises clinical
pregnancy rate
(33% with CoQ10 vs.
26.7%)

Bentov et al, 2014



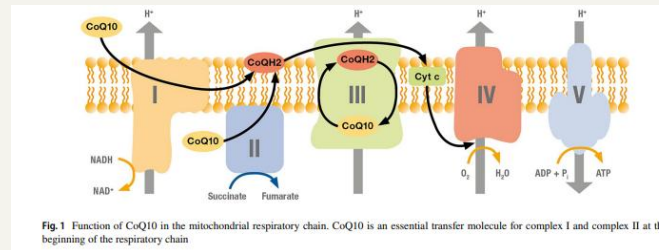
Ovarian ageing

may protect
ovarian reserve,
counteracts
mitochondrial
ovarian ageing
and physiological
programmed
ovarian ageing

Özcan et al, 2016

FAQs: The ubiquinone / ubiquinol debate

Coenzyme Q10 is a redox molecule occurring in the human body in 2 bioactive states, ubiquinone (CoQ10) as oxidised state and ubiquinol (CoQH₂) as reduced state.



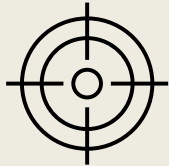
Both redox forms of Coenzyme Q10 are bioactive and important for human health.

A slightly better water solubility and a lack of understanding absorption and transfer of CoQ10 and CoQH₂ have led to misleading interpretations pushing CoQH₂ as more bioactive form.

Therefore, it is important to notice that

- (I) CoQH₂ is very unstable and under normal conditions oxidised to CoQ10
- (II) CoQH₂ has to be oxidised to CoQ10 before it can be absorbed in enterocytes

USPs



Unique

Comprehensive
preconceptional
supply with
advanced
antioxidant support:
vitamin C with
sustained release,
mitochondrial
support with
coenzyme Q10



1 daily

Only 1 capsule per
day



Pure

Very low in food
additives



Vegan

Free from animal
ingredients



What do our clients say?

Fertilovit 35+

“A friend recommended this product to me, and my gynaecologist also gave it a positive review. I'm already on my third pack, and I can definitely see improvements — my hair and nails are stronger, and my blood tests no longer show any deficiencies. Very satisfied!”

Original testimonial from shopapotheke.de

Comprehensive support when trying to conceive

This product is specially designed for women over 35 who are trying to conceive. What makes it stand out is the inclusion of coenzyme Q10, which plays an important role in egg cell quality — something known to decline with age. I was also impressed by the ingredients, which are dosed more generously compared to similar supplements.

Original testimonial from Medpex.de

Great value for money

I bought this product a few weeks ago and I'm really pleased with it. I feel youthful on the inside and my skin looks fresh and glowing too. I can't wait to finish the full course and see the complete results. Excellent value for money — I can truly recommend it.

Original testimonial from shopapotheke.de





Gonadosan

Fertilovit®
for a new life

Thank you for your attention!