

## Supplements: How to Maximize Your Egg Quality: Summary Page

Lifestyle matters: sleep well, quit smoking, and minimize caffeine to one cup of coffee a day.

Dietary supplements: you take them for 2-6 months to be effective. You will find if they are going to work, pregnancy should happen quickly. Six months will be trial enough. Though we remain hopeful that in taking these supplements you will be maximizing egg quality, please be aware that none have been proven in scientific randomized controlled trials to be effective.

Discontinue these supplements if any if side effects are noted. None are expected. No prescriptions are required.

The supplements are:

- CoEnzyme Q10 up to 800mg/d
- Myo inositol 2g twice a day
- Melatonin up to 3mg at bedtime...unless you are taking thyroid medications
- Omega 3 fatty acid 1000mg once a day
- Vitamin C 500mg once a day, in the morning
- Vitamin E 200IU once a day
- Pycnogenol 100mg once a day
- L'arginine 1000mg twice a day

**In our opinion, CoEnzyme Q10 is the most important of the supplements.** If you are only going to take one, take this one.

We did not include the androgen DHEA 75mg/d on the list, as the side effect profile includes acne and male pattern hair loss, and the efficacy is in doubt.

Patients also often consider acupuncture and traditional Chinese medicine. Again, we would suggest a minimum of two months but maximum of six.

A final supplement to maximize egg quality, Saizen, is taken as a series of injections during a stimulation cycle. Ask your nurse if you need to know more.

**Discontinue all supplements with a positive pregnancy test. Always take a daily prenatal vitamin with 1mg folate.**




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## **'Supplements: How to Maximize Your Egg Quality: Details Page**

### ***Lifestyle***

To some degree, maximizing egg quality is predicated on maximizing your overall health, and the quickest and surest route for most of us to improve our health is to improve our sleep hygiene. That might be as simple as going to bed on time. But, for others, it might be more complicated including minimizing screen time before we go to bed and other rituals that will maximize the likelihood of sufficient sleep.

The evidence for cutting out caffeine as it relates to egg quality is poor. That said, most of the literature points to the safety of minor amounts of caffeine, but decreasing fertility with significantly higher doses. Certainly four cups per day of coffee would be too much. We do encourage people to consider limiting themselves to one per day, with decaffeinated drinks to follow.

Of all lifestyle changes, quitting smoking is, by far, the most helpful choice, well beyond any of the supplements that follow.

The relationship of alcohol to egg quality is somewhat controversial. Certainly 4 drinks per day is too much. We are not certain if there is a minimum "safe" amount.<sup>i</sup> Fertility can be stressful; if you find yourself tempted by drink too often, please ask for help.

### ***Coenzyme Q10 up to 800 mg daily***

Coenzyme Q10 (also distributed in the form Ubiquinone) is part of a family of mitochondrial nutrients that protect us from the oxidative damage that occur with time. Mitochondria are the energy-producing organelles that are critical to healthy functioning of your developing eggs. We hope that Coenzyme Q10 will increase both ovarian reserve and egg quality.<sup>ii</sup>

The side effect profile should be negligible, though this increased energy activity can promote gastrointestinal upset. Try taking the vitamin on a full stomach. Others will find that a reduced dose will minimize the side-effect profile. As the suggestion of 800 mg daily has not come from randomized control trials, but rather as extrapolated from animal studies, it is reasonable to expect that different women will do better with different doses. Consider 800 mg daily a maximum; 200mg would be a reasonable minimum.

Coenzyme Q10 can be found at many pharmacies and health food stores throughout the GTA.

### ***Myo-Inositol 2 grams twice a day***

Inositol was first suggested for women with polycystic ovaries – a condition which may be associated with some concerns around egg quality. It is thought that Myo-Inositol increases the action of insulin, and in turn insulin is thought to have substantial effects around ovulation. A single

study suggests that women who take Myo-Inositol 2 grams twice a day had better quality eggs, more mature eggs, and more pregnancies than the control group. (The other version of Inositol, D-Chiro-Inositol, is significantly less effective.)<sup>iii</sup>

Myo-Inositol appears to be difficult to source in the GTA, though some of our patients have had success ordering it through iherb.com.

### ***Melatonin up to 3 mg at night***

Melatonin promotes good sleep hygiene. Sleep may be more difficult to achieve if Coenzyme Q10 is having a significant effect late at night. Please note: melatonin will interfere with thyroid medications and thus should not be taken by women who are taking thyroid supplements.

Most women will not need to take as much as 3mg every evening.

### ***Omega-3 Fatty Acid 1000 mg once daily***

Omega-3 fatty acids are one of the key ingredients in fish oil. It has been suggested in the past, that Omega-3s will help women through pregnancy, with a lower rate of premature births. It may also be associated with a reduced chance for pregnancy-induced hypertension (PIH).

### ***Vitamin C 500 mg, Vitamin E 200 IU, and Pycnogenol 100 mg once daily***

These are all antioxidants, the strongest of which is Pycnogenol – by some accounts, twenty times stronger than Vitamin C and fifty times stronger than Vitamin E.

Antioxidants may well help diminish the toxic effects of oxygen-free radicals that can accumulate in the follicular fluids surrounding eggs.

Pycnogenol can be difficult to source. For most women, Vitamin C and E will be sufficient.

### ***L-Arginine 500 mg – 1000 mg twice daily***

L-Arginine is an amino acid that may help to maximize pelvic blood flow.

Amino acids are found in red meat, and if your diet includes red meat up to two times a week, then this supplement should be unnecessary.

### ***Androgens***

The current literature ([www.pubmed.gov](http://www.pubmed.gov)) is quite supportive of supplemental androgens. Higher androgen levels may help to maximize follicular health and thus the quality of eggs.<sup>iv</sup>

The androgen DHEA up to 75 mg has been suggested by many. However, in our practice, we did not see any great efficacy, though we were well aware of the side effects with acne being the earliest

physical change noted. As none of the above supplements have been proven in sufficiently rigorous randomized control trials to be effective, we are quite intolerant of any material side effect profile and, thus, not willing to suggest DHEA on a regular basis. Nonetheless, if in your own research, it is a supplement you wish to try, we are willing to write the prescription for you.

For our patients who are doing in vitro fertilization, there are some protocols that involve taking testosterone gels in the month leading up to treatment. Again, we are cautious for this approach, wishing to minimize the risk for side effects, but in select circumstances, for select patients, we do suggest “estrogen/testosterone priming”.

### ***Growth Hormone***

The literature in favour of growth hormone is limited, but the few papers that do exist point to a potential benefit associated with supplementation throughout the stimulation in an IVF cycle. If this is of interest to you, let us know, and we can forward you a separate paper describing the efficacy and limitations of the Saizen protocols.

### ***Two More Supplements of Note***

Historically, we have looked to Folate to promote cell development. Folate 1 mg daily is the current minimum recommended by the Society of Obstetrics and Gynaecology of Canada, and some doctors suggest 5 mg daily. Because of the presumed beneficial effect for eggs, we looked seriously at 5 mg of Folate for the majority of our patients. However, extended high-dose Folate may promote other cellular growth that is not desirable, such as early cancer cells. Please be aware, it is a theoretical risk only, not proven; but, nonetheless, we felt we needed to be cautious.

We, therefore, now do a serum Folate level for all of our new patients. The vast majority of our patients, on 1 mg of Folate daily, will have Folate levels well above serum norms. If you deviate from that pattern, we will encourage you to take higher doses of prenatal vitamins.

Historically, women were also encouraged to take ASA 81 mg per day to maximize blood flow and egg quality. The more recent literature suggests that ASA is ineffectual under all circumstances with regards to fertility.<sup>v</sup>

### ***Acupuncture and Traditional Chinese Medicine***

We are not able to differentiate the “best” practitioners of acupuncture. We do not know who has good quality control mechanisms in place, best practices for minimizing cross contamination, or who provides the most efficacious treatments.

However, we have had the opportunity to meet with a number of practitioners in the field, all with a special interest in fertility. The following list includes practitioners and clinics that we have met personally.

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- <sup>i</sup> Rossi BV, et al Obstet Gynecol. 2011 Jan;117(1):136-42  
<sup>ii</sup> Bentov, Y, et al Fertil Steril. 2010 Jan;93(1):272-5. Epub 2009 Sep 3  
<sup>iii</sup> Unfer V., et al, Eur Rev Med Pharmacol Sci 2011; Apr. 15(4):452-7  
<sup>iv</sup> Bosdou, JK et al. Hum Repro Update. 2012 Feb 3. [Epub ahead of print]  
<sup>v</sup> Kaandorp Spn Engl J Med 2010 Apr. 29; 362(17): 1586-96