

Semin Reprod Med. 2013 Jul;31(4):293-300. doi: 10.1055/s-0033-1345277. Epub 2013 Jun 17.

NUTRIENT SUPPLEMENTATION: IMPROVING MALE FERTILITY FOURFOLD.

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Source

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Oxidative stress can contribute to impairment in spermatogenesis leading to male-factor infertility. The effectiveness of various antioxidants (such as carnitine, vitamin C, vitamin E, selenium, carotenoids, zinc, arginine, folic acid, taurine and coenzyme Q10) is variable with respect to improving semen parameters and pregnancy rates. A recent Cochrane review determined that men taking antioxidants had a statistically significant increase in both live birth rates and pregnancy rates. For those undergoing assisted reproduction, the odds ratio that antioxidant use would improve pregnancy rates was 4.18, with a 4.85-fold improvement in live birth rate also noted.

<http://www.ncbi.nlm.nih.gov/pubmed/23775385>

Br J Urol. 1982 Dec;54(6):780-4.

RANDOMISED TRIAL OF CLOMIPHENE CITRATE TREATMENT AND VITAMIN C FOR MALE INFERTILITY.

Abel BJ, Carswell G, Elton R, Hargreave TB, Kyle K, Orr S, Rogers A, Baxby K, Yates A.

Abstract

A prospective randomised trial was carried out to assess the effect of 6 months' treatment with either clomiphene citrate or vitamin C in 179 men complaining of infertile marriage. There was no significant difference in the wife's pregnancy rates between the 2 treatment groups. In order to detect a subgroup that might respond to clomiphene the results were analysed according to pre-treatment FSH and sperm density, with allowance being made for the result of the wife's tests, but still there was no significant difference in treatment response. Vitamin C would seem a preferable and cheaper alternative treatment for male infertility.

Adv Exp Med Biol. 2008;636:65-73. doi: 10.1007/978-0-387-09597-4_4.

SELENIUM, A KEY ELEMENT IN SPERMATOGENESIS AND MALE FERTILITY.

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Source

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Abstract

Selenium is essential for normal spermatogenesis of mammals and its critical role is mainly mediated by two selenoproteins, namely phospholipid hydroperoxide glutathione peroxidase (PHGPx/GPx4) and Selenoprotein P. PHGPx/GPx4 is the major selenoprotein expressed by germ cells in the testis, having multiple functions and representing the pivotal link between selenium, sperm quality and male fertility. Selenoprotein P is a plasma protein that is required for selenium supply to the testis. In the last years, nutritional studies and experimental animal models lacking/overexpressing a specific PHGPx isoform and selenoprotein P have highly expanded our understanding on how the male reproductive system depends on selenium. The focus of this review, is to report and discuss the most relevant and recent findings in this field. Clinical data have pointed to a correlation between abnormal PHGPx content in sperm and disturbance of human male fertility.

Int J Gen Med. 2011 Jan 23;4:99-104. doi: 10.2147/IJGM.S16275.

SELENIUM-VITAMIN E SUPPLEMENTATION IN INFERTILE MEN: EFFECTS ON SEMEN PARAMETERS AND PREGNANCY RATE.

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Source

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Abstract

OBJECTIVES:

Infertility is an important medical and social problem that has an impact on well-being. A significant development in the last 10 years in the study of human infertility has been the discovery that oxidative sperm DNA damage has a critical role in the etiology of poor semen quality and male infertility. Selenium (Se) is an essential element for normal testicular development, spermatogenesis, and spermatozoa motility and function. The predominant biochemical action of Se in both humans and animals is to serve as an antioxidant via the Se-dependent enzyme glutathione peroxidase and thus protect cellular membranes and organelles from peroxidative damage. We explored the efficacy of Se in combination with vitamin E for improving semen parameters and pregnancy rates in infertile men.

MATERIALS AND METHODS:

The study included 690 infertile men with idiopathic asthenoteratospermia who received supplemental daily Se (200 µg) in combination with vitamin E (400 units) for at least 100 days. The mean age of cases was 28.5 years (range 20-45), and the median age was 30 years. These cases had presented with male factor infertility (primary or secondary) for at least 1 year. The longest and shortest duration of infertility was 10 years and 1 year, respectively. The median time of diagnosis of infertility was 1 year with a mean of 2.5 years.

RESULTS:

We observed 52.6% (362 cases) total improvement in sperm motility, morphology, or both, and 10.8% (75 cases) spontaneous pregnancy in comparison with no treatment (95% confidence interval: 3.08 to 5.52). No response to treatment occurred in 253 cases (36.6%) after 14 weeks of combination therapy. Mean difference between semen analyses of cases before and after treatment was 4.3% with a standard deviation of 4.29. On the basis of paired t-test results, combination therapy with oral Se and vitamin E was effective for treatment of asthenospermia or asthenoteratospermia or induction of spontaneous pregnancy ($P \leq 0.001$).

CONCLUSIONS:

Supplemental Se and vitamin E may improve semen quality and have beneficial and protective

effects, especially on sperm motility. We advocate their use for the treatment of idiopathic male infertility diagnosed with asthenoteratospermia or asthenospermia in semen analysis

Andrologia. 2013 Jul 3. doi: 10.1111/and.12130. [Epub ahead of print]

CRYOPROTECTIVE EFFECT OF L-CARNITINE ON MOTILITY, VITALITY AND DNA OXIDATION OF HUMAN SPERMATOZOA.

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Source

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Abstract

Successful cryopreservation for human spermatozoa markedly influences the reproductive outcomes of assisted reproductive technologies. But in spite of its usefulness, cryopreservation significantly decreases sperm quality. L-carnitine has been found to improve the quality of spermatozoa in selected cases with male infertility. Here, we examined the efficacy of L-carnitine in improving sperm motility and vitality and reducing sperm DNA oxidation during cryopreservation. Semen samples from infertile patients (n = 22) were collected and analysed. Cryopreservation medium supplemented with L-carnitine was mixed with the semen at a ratio of 1 : 1 (v/v). The final L-carnitine concentration in each cryovial was 0.5 mg ml⁻¹ per 5 × 10⁶ cell ml⁻¹. Controls were cryopreserved without addition of L-carnitine. After 24 h of cryopreservation, thawed sperm samples were analysed for motility, vitality and DNA oxidation. Sperm vitality was assessed by the eosin-nigrosin test, while sperm DNA oxidation was measured by flow cytometry. Addition of L-carnitine significantly improved sperm motility and vitality (P < 0.05) compared with the control. The flow cytometry experiment showed no statistical difference (P > 0.05) in the levels of DNA oxidation between samples and controls. In conclusion, L-carnitine improves human sperm motility and vitality

J Pak Med Assoc. 2011 Aug;61(8):732-6.

ROLE OF L-CARNITINE IN MALE INFERTILITY.

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Source

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Abstract

OBJECTIVE:

To test the hypothesis that the free L-carnitine helps in maintaining normal fertility.

METHODS:

The present descriptive study was designed to show comparison of seminal free L-carnitine and sperm quality. Case controlled convenient sampling was used to assess infertile male subjects from fertile. A total of 61 adult males were selected by consent, and were categorized as fertile and infertile on the basis of history and semen analysis. Subjects were selected from Infertility Clinic, Reproductive Health Services Centre of Jinnah Postgraduate Medical Centre, Karachi. Subject's with history of pelvic surgery, or suffering from diabetes mellitus, thyroid diseases or using steroids, antihypertensives and antipsychotics drugs were excluded from the study. Groups were compared using student's t-test and $p < 0.05$ was considered as statistically significant.

RESULTS:

The mean values of sperm count, total motility and normal morphology of asthenospermic and oligoasthenoteratospermic were found significantly ($p < 0.05$) lower when compared with fertile (control). When levels of seminal free L-carnitine were compared among groups, the result showed that infertile subjects had significantly lower ($P < 0.001$) when compared to fertile subjects with lowest concentration in azoospermic group.

CONCLUSION:

The results of this study suggested that L-carnitine level in seminal plasma plays an essential role in maintaining male fertility.

Zhonghua Nan Ke Xue. 2005 Feb;11(2):127-9.

A CLINICAL STUDY OF BIOLOGICAL ZINC FOR THE TREATMENT OF MALE INFERTILITY WITH CHRONIC PROSTATITIS.

[Article in Chinese]

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Source

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Abstract

OBJECTIVE:

To evaluate the efficacy of biological zinc in the treatment of male infertility with chronic prostatitis (MICP).

METHODS:

Thirty-eight patients with MICP were treated with biological zinc. The zinc concentration in the semen and the seminal parameters were tested before and after using biological zinc.

RESULTS:

After treatment, the zinc concentration in the semen was increased markedly, and the semen liquefaction and the sperm motility were also improved in the patients who had received biological zinc supplementation as compared with those who had not ($P < 0.05$).

CONCLUSION:

It is suggested that biological zinc has the effect of increasing zinc concentration in semen, and the supplementation of biologicalzinc for one of the effective methods for the treatment of MICP.

L-ARGININE

Often called the `miracle molecule` by researchers, L Arginine has proven and can support potent fertility benefits for both men and women who are trying to conceive. More than 10,000 medical citations have been written by researchers investigating the effects of L Arginine on human fertility.

For men with low sperm counts, L Arginine can be a real help, supporting healthy sperm count and motility.

An essential amino acid, its protein building abilities allows L Arginine to cross the blood-brain barrier to the hypothalamus (something other medications and supplements cannot do), to naturally trigger the pituitary gland to assist the production of growth hormone to aid in fertility.

Nitric Oxide, synthesized by L Arginine, is the chemical messenger that creates erections in men and orgasms in women. Without Nitric Oxide, no erection can occur, making conception difficult, if not altogether impossible.

ZINC

You need the mineral zinc to stay healthy. Zinc helps the immune system and helps the body to grow and develop properly and to heal wounds. It is required for the senses of taste and smell. Zinc helps make proteins and DNA, the genetic material in all cells of the body. As a cofactor required by more than 100 enzymes, zinc helps make DNA and hemoglobin, metabolize fatty acid, release vitamin A from storage, metabolize carbohydrates and synthesize proteins. It also helps dispose of damaging free radicals.

The concentration of zinc in semen is high. Zinc in seminal fluid appears to protect sperm from bacteria and chromosomal damage.

Zinc intake of less than 5 milligrams per day has shown to correlate with decreased semen volume and testosterone levels. Zinc deficiency produces sexual symptoms such as infertility, impotency or poor reproductive system development, and supplementation of zinc may have great benefit, according to Healthy.net. Supplementing with 10 mg of zinc per day may reverse zinc-related infertility in males over time, according to Dr M Garrett – School of BEES – UNSW, Sydney Australia.

SELENIUM

Selenium has shown to reduce oxidative stress in developing sperm, thereby supporting sperm quality. A study published in the February 2009 issue of “Nutrition Research” showed that low selenium levels in semen correlated with lower sperm health and sperm counts. Also, the January 2011 edition of the “International Journal of General Medicine” reported that selenium in a daily dose of 150 – 180 mcg supported sperm morphology and motility and supported spontaneous pregnancy rates among partners of infertile men.

Selenium deficiency alone may cause infertility. It is needed to properly shape sperm and to maintain sperm count. It's believed to have a key role in the functioning of the epididymis – the part of the testicle where sperm is stored and matures. Selenium is also an antioxidant that protects the cells in sperm that have a high fat content.

VITAMIN E

Vitamin E is a powerful antioxidant and has been shown to support fertility. Men going through IVF treatment with their partners are often given vitamin E. It has been suggested that the antioxidant activity of vitamin E might support sperm fertility.

Taking vitamin E or changing your diet to incorporate foods rich in vitamin E, like sunflower seeds, nuts, turnip greens and tomatoes, can help improve the quality of your sperm. Research published in the March-April 2003 issue of “Archives of Andrology” indicates support for sperm motility in study participants who took 400 mg of vitamin E .

MayoClinic.com reports that how well your sperm are able to move directly impacts your fertility as sperm need to be able to make their way over distances to fertilize an egg, and motility helps them to do this.

VITAMIN C (ASCORBIC ACID)

Vitamin C is also an antioxidant, and studies show that vitamin C is thought to support sperm quality, protecting sperm and the DNA within it from oxidative damage.

Lack of this antioxidant can cause sperm to clump together, obviously not ideal behavior for sperm when you're trying to conceive. Men who smoke can really benefit from increased amounts of vitamin C. Since the chemicals found in cigarettes eventually make their way into semen (which is why it is best to quit when you want to get your partner pregnant), the antioxidant properties in vitamin C help to neutralize these chemicals. A study done on male smokers found that an intake of at least 300mg or more of vitamin C supported the men's sperm count, motility and viability.

L- CARNITINE

For a sperm to fertilise an egg, the sperm must be mobile and swim to the woman's egg so it follows that slow, lazy or disorientated sperm aren't as likely to succeed and their chances of reaching the egg to start a pregnancy are significantly diminished. L-Carnitine will help spur those sperm into motion.

Researchers have shown that L-Carnitine is found in much greater amounts in sperm tissue than other cells. The role of L-Carnitine on sperm maturation and sperm quality is well documented. Now some preliminary studies suggest that L-Carnitine may be able to support healthy sperm motility as well.

Also L-carnitine, has been scientifically proven to support semen quality and production. It is an amino acid that can be found naturally in almonds, dairy products and meat. L-carnitine is an

important source of nitrous oxide for the body, which is a chemical compound that relaxes muscles and supports healthy blood flow to the reproductive organs.

L-carnitine has a particular benefit to patients with azoospermia. A scientific trial published in *Fertility and Sterility* in 2003 showed “a statistically significant improvement in semen quality, greater than after the placebo cycle, was seen after the L-carnitine therapy for sperm concentration and total and forward sperm motility.”

TAURINE

L-Taurine (or Taurine) is a non-essential amino acid that can be found in meat, fish and dairy products. Taurine has a role in dozens of your bodily functions including supporting male fertility (healthy sperm count & motility) as well as normal blood pressure, circulation and mood.

L-Taurine has antioxidant properties, which means that it can find and destroy harmful free radicals in the body. Also the benefits of taking L- taurine supplements if your levels are low are numerous. It helps boost the immune system, supports healthy blood sugar balance and aids in digestion. Other more well known uses for taurine supplements include treatment and support for low sperm count and eye health.

FOLIC ACID

It`s now considered essential even vital for women wanting to conceive to begin taking folic acid supplements many months ahead of the planned conception date to lessen the risk of having a child born with neural tube defects – one of the more common defects is Spina Bifida. What`s not so widely known is that folic acid plays an important part in maintaining male fertility.

A recent study done at the University of California at Berkley highlighted the role of folic acid in maintaining healthy sperm. The study examined folic acid levels in both the blood and semen of 48 men. They found that low levels of folic acid were associated with poor sperm health. Folic acid supports Male Sperm Health.



Ingredients Citations

KIWIFRUIT EXTRACT

Vitamenz Kiwifruit Extract is antioxidant rich and from kiwifruit grown only in New Zealand.

Kiwifruit is packed full of healthy nutrients, particularly the skin, which contains high levels of antioxidants. Vitamenz Kiwifruit Extract is pulled from the skins of kiwifruit using a 100% water extraction only process.

Vitamenz Kiwifruit Extract has a very high antioxidant activity and is scientifically proven to defend cells from oxidative stress and aids in the production of healthy sperm.

The antioxidant activity is measured using the ORAC assay and Vitamenz Kiwifruit Extract has an ORAC activity of > 3000 units/gram. Vitamenz Kiwifruit Extract is able to protect cultured human cells from hydrogen peroxide-dependent oxidative stress.