Evidence in the literature supported the use of combined antioxidants for the management of free radicals and OS prevention. The effectiveness of combined non-enzymatic antioxidants was investigated in male patients with male factor infertility prior to their third IUI treatment cycle (Dashti et al. 2013). Prior to the treatment, the males were advised to take a combination of tamoxifen 10 mg twice a day, vitamin E 400 IU daily, zinc 15 mg twice a day and selenium 200 mg daily for 3 months. The results of the study detected significant differences in overall values for the four semen parameters (sperm concentration, motility, forward progression and the percentage normal forms) in comparison to the earlier two IUI cycles in the same group. The grouping of the female patients according to their Body Mass Index (BMI) showed crucial differences in pregnancy outcome. The influence of oral antioxidant supplementation on semen quality of IVF patients undergoing IVF/ICSI was analysed in an experiment in which the male patients were supplemented with an oral antioxidant called FertilovitRMplus twice daily for 2 months (Wirleitner et al. 2012). The components of FertilovitRMplus included: Vitamin C 100 mg, Vitamin E 100 mg, Folic acid 500 μg, Zinc 25 mg, Selenium 100 μg, N-acetyl-L-Cysteine 50 mg, L-Carnitine 300 mg, Citrulline 300 mg, Glutathione red 50 mg, Lycopene 4 mg and Coenzyme Q10 15 mg. The results of this study revealed significant reduction in the percentage of immotile sperms in the patients. Additionally, the percentage of class I spermatozoa was significantly higher with drastic improvement in sperm motility as well as in total sperm count.

A study by Tunc’s group added to the already growing body of evidence supporting the use of antioxidant combinational therapy to improve sperm DNA integrity, especially for men undergoing IVF-ICSI treatment (Tunc et al. 2009). In their study, a total of 50 infertile men identified with OS were administered with an oral antioxidant therapy called Menevit for a period of 3 months. The components included Lycopene 6 mg, Vitamin E 400 IU, Vitamin C 100 mg, Zinc 25 mg, Selenium 26 g, Folate 500 g, and Garlic oil 333 g (equivalent 1 g garlic). The results of the study
suggested that treatment of men with a high degree of oxidative DNA damage with antioxidants before their partner commences IVF-ICSI therapy, may be capable of improving pregnancy outcomes.

In a previous study, the role of Menevit antioxidant therapy was examined on embryo quality and pregnancy outcome during IVF/ICSI treatment (Tremellen et al. 2007). Male participants were randomly assigned to take either one capsule per day of the Menevit antioxidant or an identical-in-appearance placebo for 3 months prior to their partner’s IVF cycle. The results of the study demonstrated a statistically significant improvement in viable pregnancy rate compared to the control group. In another study, zinc therapy in combination with vitamin E or with vitamins E+C were associated with comparably improved sperm parameters with less OS, sperm apoptosis and sperm DNA fragmentation index (DFI) (Omu et al. 2008). Men with asthenozoospermia were orally provided with Zinc 5 mg, Vitamin E+Zinc 10 mg and Zinc+Vitamins E+C 200 mg for 3 months. The results of the study demonstrated that zinc therapy alone, in combination with Vitamin E or with Vitamins E+C were associated with comparably improved sperm parameters. Overall, it was concluded that this combined therapy reduced asthenozoospermia through several mechanisms, such as prevention of OS, apoptosis and sperm DNA fragmentation.

Rizzo’s group evaluated the efficacy of a treatment with myo-inositol plus folic acid plus melatonin compared with myo-inositol plus folic acid alone on oocyte quality in women who underwent IVF (Rizzo et al. 2010). Patients were assigned to obtain either 2 g myo-inositol twice a day combined with 200 mg folic acid and 3 mg melatonin. The data showed that although the number of oocytes retrieved did not differ between the two treatment groups, but women co-treated with melatonin had an improvement in oocyte quality and a higher mean number of morphologically mature oocytes at ovum pick up. Women co-treated with melatonin were also found to have a greater number of top-quality embryos compared to those treated only with myo-inositol plus folic acid.