

## MALE INFERTILITY STUDIES

Male infertility is due to low sperm production, abnormal sperm shape or size, reduced motility or immobile sperm, or blockages that prevent the delivery of sperm. Lifestyle, genetics, and physiological changes can also raise or lower male fertility levels, and can significantly affect a man's ability to produce offspring. Illnesses, injuries, chronic health problems, lifestyle choices and other factors can play a role in causing male infertility. However, evidence suggests that acupuncture can have an effect on sperm production and quality, without causing any changes in behavior or sexual desire. A recent trial published in *Fertility and Sterility* has shown just how effective acupuncture can be in the treatment of male infertility.

In the study, 28 men who were diagnosed with idiopathic infertility received acupuncture twice a week over a period of 5 weeks. The following acupuncture points were used as main points: Guan yuan (Ren 4), shen shu (UB 23, bilateral), ci liao (UB 32, bilateral), tai cong (Liv 3, bilateral), and tai xi (KI 3, bilateral). Secondary points included zhu san li (ST 36, bilateral), xue hai (SP 10, bilateral), san yin jiao (SP 6, bilateral), gui lai (ST 29, bilateral), and bai hui (Du 20). Needles were inserted to a depth of between 15 and 25 millimeters, depending on the region of the body being treated. Needles were manipulated for 10 minutes to achieve de qi, then left in place for another 25 minutes before being removed.

Semen samples were collected from each of the men after a 3-day period of sexual abstinence. Two samples were collected from each patient: one obtained the day before treatment began, the other after the last acupuncture treatment. Samples from the treatment group were then randomized with semen samples from 12 untreated control patients and analyzed. Compared to the control group, motility levels increased significantly in semen samples in the men receiving acupuncture. While median motility levels increased from 32% to 37% in the control group, they increased from 44.5% to 50% in the acupuncture group.

The number and percentage of healthy sperm also increased dramatically in the acupuncture patients. At baseline, only 0.06% the sperm among men in the acupuncture group was considered "healthy," while the median number of healthy sperm calculated in ejaculate was  $0.04 \times 10^6$  (40,000). After 10 sessions of treatments, the median percentage of healthy sperm had increased more than four-fold, to 0.26%, while the median number of healthy sperm per sample had reached  $0.2 \times 10^6$  (200,000).

In addition, significant changes in sperm structure and quality were seen in the samples from the acupuncture group. Before treatment, only 22.5% of the sperm samples in the acupuncture patients contained normal-shaped acrosomes, a cap-like structure that develops over the anterior portion of a sperm cell's nucleus. After treatment, the median percentage of normal acrosome shapes showed a "statistically significant improvement" to 38.5%. Similarly, the percentage of sperm with a normal axoneme pattern increased significantly among men receiving acupuncture. (The axoneme is a microscopic structure that contains a series of tubules arranged in a distinct pattern, and is believed to aid in sperm motility.) Prior to the start of the study, the correct axoneme pattern was present in 52% of sperm in the control

group, but only 46.1% in the acupuncture group. After 5 weeks of therapy, the median percentage increased to 52.2% in acupuncture patients, but actually decreased to 38.2% in the control group.

While acupuncture appeared able to improve the overall quality and structural integrity of sperm, it was ineffective against some common sperm pathologies. Apoptosis levels (programmed cell death) in sperm samples were reduced slightly, but not to a statistically significant degree. Median percentages of necrosis (unprogrammed cell death) and sperm immaturity also decreased slightly in the acupuncture group, but not to a level considered statistically significant.

The authors concluded that despite the inability of acupuncture to significantly reduce some sperm abnormalities, the treatment could be used to improve overall sperm quality, leading to the possibility of increased fertility.

#### REFERENCES FOR MALE INFERTILITY

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