

# Abstract

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## Clinical relevance of oxidative stress in male factor infertility: an update.

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**BACKGROUND:** Male factor has been considered a major contributory factor to infertility. Along with the conventional causes for male infertility such as varicocele, cryptorchidism, infections, obstructive lesions, cystic fibrosis, trauma, and tumors, a new, yet important cause has been identified: oxidative stress.

**DISCUSSION:** Oxidative stress (OS) is a result of the imbalance between reactive oxygen species (ROS) and antioxidants in the body, which can lead to sperm damage, deformity and eventually male infertility. This involves peroxidative damage to sperm membrane and DNA fragmentation at both nuclear and mitochondrial levels. OS has been implicated as the major etiological factor leading to sperm DNA damage. OS-induced DNA damage can lead to abnormalities in the offspring including childhood cancer and achondroplasia.

**SUMMARY:** In this article, we discuss the need of ROS in normal sperm physiology, the mechanism of production of ROS and its pathophysiology in relation to male reproductive system. The benefits of incorporating antioxidants in clinical and experimental settings have been enumerated. We also highlight the emerging concept of utilizing OS as a method of contraception and the potential problems associated with it.

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