

## Sperm Mitochondria-Associated Male Infertility: *Sperm Quality Defects* and Mitochondria (mtDNA) Anomalies: Review

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The main functions of mitochondria in both somatic and germ cells are related with the cellular energy production (by ATP). However, these cellular organelles also have many other functions, depending of the cell life cycle and biological activities, by participation in cellular and molecular events, as cell signalling, proliferation, differentiation and epigenetic control. The injuries in the mitochondrial structure/ultrastructure, mitochondrial genome (mtDNA), transcriptome, proteome, as well as disturbances in mitochondrial membrane potential (MMP) or altered oxygen consumption, have been correlated with loss of sperm functions, which could lead to reproductive problems. Mutations in the mtDNA have been established to be often caused of oxidative stress as a result of free radicals accumulation, but also of other patho-physiological factors, connected with respiration defects in mitochondria and to mutations in the male germ cells.

*Key words:* mitochondria, mtDNA mutation, spermatozoa, sperm motility, male fertility/infertility