

The Mitochondrion in the Germline and Early Development

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Mitochondrial DNA is normally inherited from the offspring's mother. However, mutations to this extranuclear can be severely debilitating and even lethal.

The mitochondrion in the germline and early development investigates the transmission, transcription and replication of mitochondrial DNA as it is passed through the oocyte into the embryo, fetus and finally live offspring. It discusses the importance of mitochondria to oocyte and embryo development. It analyses the effects of the transmission of mutant mitochondrial DNA, how it might be segregated and how this would impact on offspring viability.

This book also analyses the patterns of transmission, inheritance and replication of mitochondrial DNA following some of the more invasive assisted reproductive techniques such as cloning and again discusses potential impact on offspring viability. It also addresses whether preimplantation genetic diagnosis could be used to predict whether the mutant load in an early embryo would be predictive of the resultant offspring inheriting a mitochondrial disease.



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