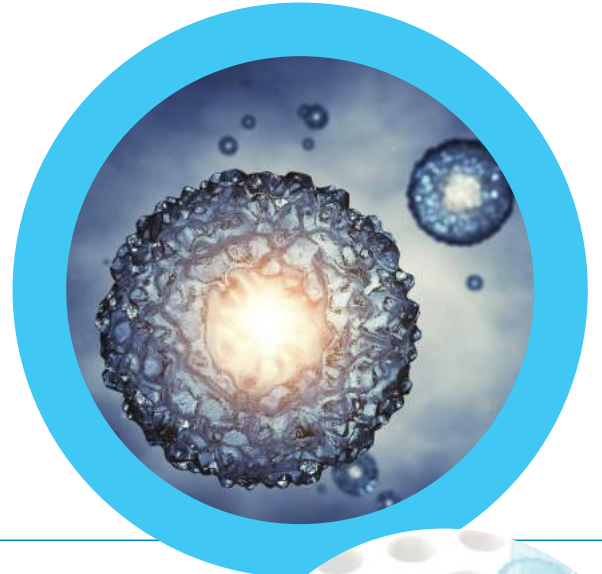


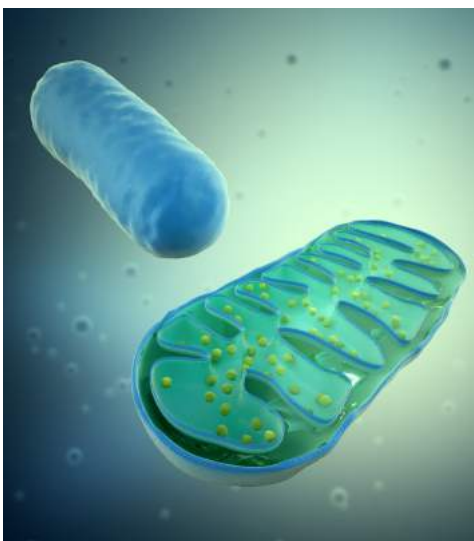
Mitochondrial DNA content as a viability indicator **in human euploid embryos**

- ❖ An increased amount of mtDNA in euploid embryos is related to poor implantation potential.
- ❖ MitoScore will help IVF clinics to select the euploid embryos with higher implantation potential.



What is MitoScore?

- ❖ MitoScore is a mitochondrial biomarker developed by Igenomix which gives us an indicator of the energy status of an embryo. MitoScore allows us to select those embryos with the greatest probabilities for implantation, therefore more likely to result in a viable pregnancy through IVF/ PGS.
(Diez-Juan *et al.* 2015)
- ❖ The clinical translation of this work is the integration of the mtDNA copy number (MitoScore) to the routine genetic analysis performed in our PGS analysis.



Mitochondria and mtDNA

- ❖ Mitochondria are structures within cells that play an essential role in energy production.
- ❖ Although most DNA is located in chromosomes within the nucleus, mitochondria have their own DNA. This genetic material is known as mitochondrial DNA or mtDNA.
- ❖ Mitochondrial DNA content in an embryo is an index of energetic stress, which can be used to predict its implantation potential. Our studies indicate that an increase in the mitochondrial DNA in the embryo is indicative of an insufficient level of energy and a low implantation potential.

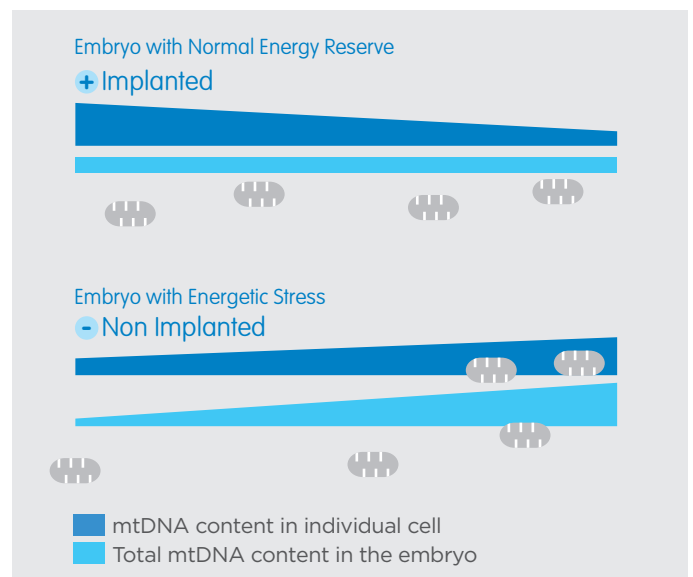
What is MitoScore useful for?

MitoScore will help IVF clinics to select the euploid embryos with higher potential for implantation and therefore increase pregnancy rates for PGS.

- It provides a mitochondrial score of embryo implantation ability in euploid embryos, to be considered in addition to the routine morphological classification.
- MitoScore provides this information very soon, since the mitochondrial DNA measurement can be obtained both at day 3 or day 5 of embryonic development.

Advantages

- 1 Increased implantation and pregnancy rates in IVF.
- 2 Reduction of the number of multiple gestations.
- 3 Measurement obtained at an early stage: at day 3 or day 5 of embryonic development.
- 4 Additional information on embryo health by complementing morphological observations.



MITOSCORE PROCESS



Main Outcome Measures:
Normalized mtDNA content versus nDNA.