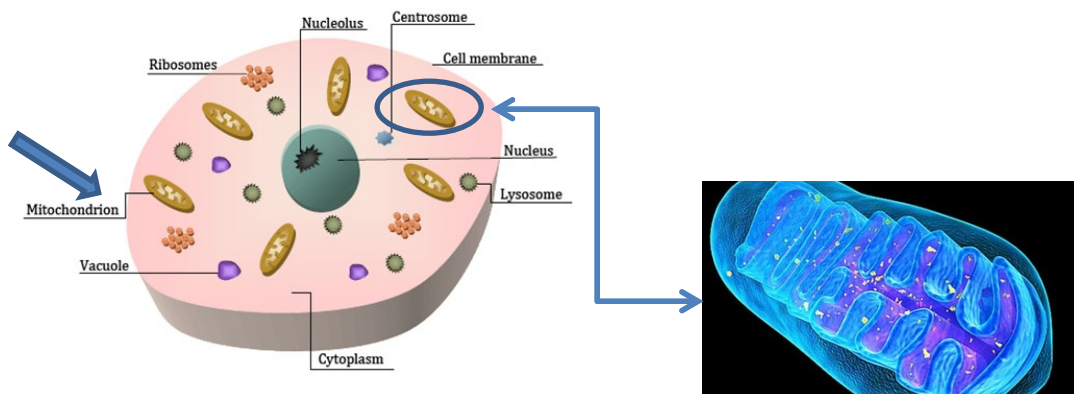


**Patient Information**  
**R0200-1-a: The Study of Mitochondria in Human Embryos**

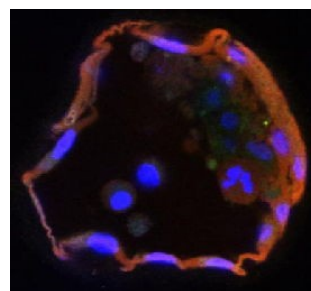
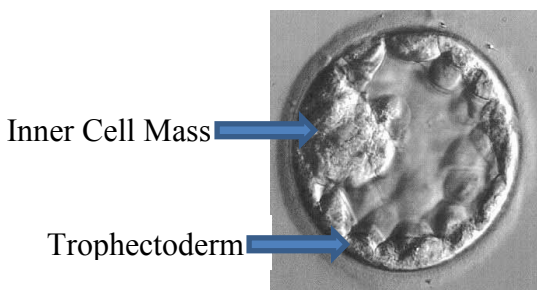
**What are Mitochondria**

The cells in our body are made up of two main compartments – the nucleus in which resides our DNA; and the cytoplasm, the main body of the cell that contains many 'organelles' that orchestrate the cell's function. One such organelle is the energy producing mitochondria.



The mitochondria are therefore often referred to as the batteries of the cells, continually producing energy for the cell to operate.

Each egg cell will contain around 100,000 mitochondria before fertilization. Once the egg is fertilized and it starts to divide the mitochondria are distributed to the subsequent cells of the embryo. By day 5 post fertilization the embryo has cells that surround the embryo, which we call the trophoctoderm cells, and much fewer cells that form an inner ball known as the 'inner cell mass', which in a normal development goes on to form the foetus.



looking for mitochondria in different cells of the blastocyst

**Aims of the Study?**

The primary aim is to establish if the information obtained on mitochondria in the cells from a trophoctoderm biopsy can be used to establish a scoring system of embryo viability. The trophoctoderm biopsy is used routinely to obtain a few trophoctoderm cells when assessing

the chromosome status of the embryo. To achieve this we aim to remove a few cells and establish if the mitochondria are a) consistent across all the trophectoderm cells b) in concordance with the inner cell mass cells, and c) if the number of cells extracted can be of relevance to provide a scoring system on the presence of the mitochondria.

### **How can the assessing of the mitochondria help me?**

CARE will be able to use the information obtained from this study to understand if mitochondria assessment is a useful tool in predicting embryo viability. As this is a research study at this stage it will not be able to help you directly, and as the data will be initially be pooled no information will be recovered for you directly. However, it is hoped by undertaking this study we shall be able to benefit patients in the future.

### **Where will this work be performed?**

This work will be conducted in collaboration with world authority experts on mitochondria in Australia. The cells from the embryo will be removed in CARE premises by CARE staff and sent in a special tube to the Australian research team at Monash University who will do the mitochondrial analysis. The scientists at Monash University will not have any identifiable information from the tubes sent to them as all information will be coded and anonymised.

### **Important Regulatory Aspects**

The work we undertake is under license from our regulator, the Human Fertilization and Embryology Authority. If you have consented to the use of your embryos in the research project you can still withdraw your consent to research at any time up to when the embryos are used in the research project. If you choose to do this, it will have no effect on you or your treatment if that is still on-going. If you wish to withdraw your consent please email [simon.fishel@carefertility.com](mailto:simon.fishel@carefertility.com).

Your decision on whether or not to donate to the research project will have no influence on your on-going fertility treatment, as only embryos considered unsuitable for use in treatment, or excess to treatment requirements, will be used in the research project. As explained in the Consent Form, this does mean you will not be able to gain any information relating to your particular embryo.

At the end of the research all embryos will be allowed to perish.

Please note that we encourage you to ask any questions that are on your mind at the time of signing the Consent Form or anytime thereafter. If you have any later questions you should contact the Laboratory Manager at the CARE clinic at which you had your treatment.