**////Title: Access to Human Tissue for Collaborative Research**

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Human organs from deceased transplant organ donors are essential in life-saving transplantation procedures but can also serve a wide range of research areas, including regenerative medicine, cancer, immunology and diabetes. The Collaborative Biorepository for Translational Medicine (CBTM) aims to provide reliable access to fresh tissue for collaborative research to ensure that the tissue generously donated by donors and their families can help future patients. CBTM is based at the University of Cambridge and Addenbrooke’s Hospital in the Cambridge Biomedical Research Centre, part of the National Institute of Health Research.

As the Director of CBTM, Professor Kourosh Saeb-Parsy oversees the collection of tissues from deceased transplant organ donors, ensuring optimal tissue processing and promoting an environment of collaboration between researchers to maximise scientific output.

CBTM has obtained ethical approval for the use of tissue in research and works with specialist nurses in organ donation from NHS Blood and Transplant to coordinate the identification of potential donors and obtaining informed consent from the donor family for the use of donated tissue for research. All deceased donors undergo thorough screening for infectious diseases and the tissues can be traced back, thanks to an anonymised database, to detailed donor demographics and medical, family and social history.

CBTM obtains a wide range of organs, including abdominal organs, such as the liver and gallbladder; thoracic organs such as the heart and lungs, and also nervous tissue, such as peripheral nerves and spinal cord. Tissues are only obtained for research that is already planned in a prospective manner.

Organ donors are patients whose condition unfortunately has no treatable solution. They are categorised into two groups: those who are deceased after brainstem death and those who undergo circulatory death and are certified as dead after withdrawal of artificial life support and circulatory arrest.

Organs from both groups of donors need to be kept in ideal preservation conditions. For circulatory death donors, there is a delay of several minutes between the certification of death and the organ removal procedures, which can unfortunately affect the physiology of the tissues.

As soon as the organs from the thorax and the abdomen are removed, the research samples are collected. Importantly, CBTM avoids delaying the end of the operation, which limits the type of tissue that can be obtained at any given time. The tissues are then shared with collaborators to be used for the specific purposes for which they were obtained. All human tissue is used according to the Human Tissue Authority and other relevant regulations.

The organs donated to CBTM are kept in as near to a physiological state as possible, to avoid deterioration. This is achieved by perfusion of the organs with cold preservation solution as soon as blood circulation stops and before removal, to keep them fully functional.

CBTM typically supports more than 50 projects at any one time, overseen by more than 30 Principal Investigators from across more than 15 institutions. In a single case study related to a single donor, the researchers from CBTM were able to collect several tissues, including peripheral blood, spleen, bone marrow, various lymph nodes, skeletal muscle, skin, intestine, lung, pancreas, fallopian tubes and ovaries.

CBTM is very grateful to the donors and their families for the valuable gift of tissue and is committed to ensuring that all tissues have the best chance to make a positive impact and lead to important future discoveries. CBTM is also very grateful to the funders who make this work possible.