

Theramex awards 5 BIRTH grants for funding research in Assisted Reproductive Medicine

At the beginning of 2019 Theramex launched the **BIRTH** (Better Innovation and Research with THERamex) initiative, which represents the commitment of the company towards funding research projects in the field of reproductive medicine.

In 2019, over 35 applications were received from 16 countries across Europe, and the **BIRTH** Grant review Committee are pleased to announce that **5 research projects have been awarded the 2020 BIRTH grant**. The academic standard of all applications was very high and the winning projects were chosen based on their innovation, feasibility, merit, and aligned with the overall goal of improving fertility treatments.

The projects that will receive a **BIRTH** grant are:

1) **AI-MAR (artificial intelligence in medically assisted reproduction)**

Principal investigator: Professor Nathalie Massin

Institution: Intercommunal hospital, University Paris-Est Creteil, Creteil, France



This project primarily aims to improve standard-of-care in medically assisted reproduction (MAR). The individual objectives include: developing a predictive model of live birth that will inform couples with fertility problems about their chances of success and duration of treatment; creating an algorithm to personalise and optimise the choice of MAR techniques. The predictive model and algorithm will integrate the time to live-birth and cost-effectiveness, as well as the risk of drop out. Cost-effectiveness outcomes could be valuable in supporting national recommendations in fertility care.

2) **Exploring the role of DNA damage in oocyte meiotic arrest and its impact on genome integrity**

Principal investigator: Doctor Giovanni Coticchio,

Institution: 9.baby - Family and Fertility Centre, Bologna, Italy

This project will focus on the importance of DNA damage for oocyte meiosis and genome integrity, testing four hypotheses: **1)** fully grown human oocytes are susceptible to DNA damage and are consequently prone to meiotic arrest; **2)** systems that co-operate to assure the fidelity of chromosome segregation



(namely the spindle assembly checkpoint) also prevent the development of mature human oocytes that could lead to abnormal embryos; **3)** factors causing DNA damage in human oocytes can be counteracted by in vitro treatments; **4)** endometriosis has relevance for human oocyte DNA damage and downstream implications.

3) Study of the embryo-exported extracellular vesicles as a 'natural cell biopsy'

Principal investigator: Doctor Paola Viganò

Institution: San Raffaele Scientific Institute, Milan, Italy

This project firstly aims to characterise the transcriptomic cargo of embryo-exported extracellular vesicles (EVs) in relation to embryo ploidy status. Secondly, the project will study the effect of embryo-derived EV uptake by endometrial cells on endometrial receptivity, again in relation to embryo ploidy status. Finally, this project aims to gain mechanistic insight into the embryo-endometrial dialog facilitated by embryo-derived EVs. Potentially harmful invasive embryo biopsies for Preimplantation Genetic Testing may be negated by instead utilising EVs - a 'natural cell biopsy'.



4) Improving safety of Assisted Reproductive Techniques - the possible role of embryo transfer on a natural cycle to prevent preeclampsia

Principal investigator: Professor Edgardo Somigliana

Institutions: University of Milan and Fondazione Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy



This study will evaluate the possible role of the corpus luteum in modulating the risk of preeclampsia, and explore the possible effects of the presence of a corpus luteum on the foetal cardiovascular system. Secondary analyses could indirectly reveal whether the detrimental effects are on placentation, maternal adaptation to pregnancy, or foetal cardiovascular modifications.

5) The rate of embryo euploidy in women treated with progestin-primed ovarian stimulation vs conventional ovarian stimulation: a randomized controlled trial

Principal investigator: Professor Ermanno Greco

Institution: Centre for Reproductive Medicine, European Hospital, Rome, Italy

This trial aims to assess the rate of blastocyst euploidy and the number of euploid blastocysts in women undergoing in vitro fertilisation or intracytoplasmic sperm injection treated with progestin-primed ovarian



stimulation vs conventional ovarian stimulation (based on the use of GnRH antagonists). Secondary outcomes include: measures of premature LH surge, FSH consumption and stimulation, and progesterone elevation; rate of poor response and hyperresponse; number of retrieved and mature oocytes; number and morphological quality of available blastocysts.

After a successful year of applications in 2019, Theramex will re-open the **BIRTH** grants initiative for application in February 2020. Applications can be submitted up until September 2020.

For more info, please visit: www.birthgrant.com