

DESCRIPTION FOR THE GENERAL PUBLIC (IN ENGLISH)

(State the objective of the project, describe the research to be carried out, and present reasons for choosing the research topic)

In many developed countries have observed a dramatic increase in the number of married couples who need fertility treatment. This is influenced by many factors, such as the increased incidence of sexually transmitted diseases, the impact of lifestyle factors, a later decision about procreation, and potentially the impact of environmental factors, especially endocrine disrupting chemicals. The economic development of society and the professional ambitions of women are important factors in procreation. Some women may have felt the need to engage in professional development and placement decisions to have children until later in life, when they have achieved greater employment stabilization. Additionally, while endocrine-disrupting chemicals have rarely lead to irreversible infertility, they may significantly extend the waiting time to pregnancy. Time becomes more valuable when decisions about procreation are taken later in life. In contrast, socio-economic conditions, the impact of environmental factors on female fertility are poorly studied.

The aim of the proposed project is to determine whether the environmental exposure to endocrine disrupting chemicals (parabens, bisphenol A, triclosan, organochlorine pesticides (OC), polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDE)) affect female ovarian reserve.

In order to achieve our objectives planned within the current project we will recruit 500 females 25-37 years of age. The study population will consist of females attending the infertility clinic for diagnostic purposes, because of couples' infertility (the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse). Only menstruating women who have confirmed ovulatory cycles without clinical co-existing chronic diseases that may reduce ovarian reserve (eg, adrenocortical insufficiency, abnormal karyotype, fragile X syndrome) will be eligible for the study. All women who willing to participate in the study and signed the informed consent will complete a questionnaire that includes questions about demographics, socio-economic status, stress, medical history, lifestyle factors and others exposures. The women will receive a physical examination along with height and weight measurements with the BMI calculation. All women will provide blood, urine and follicular fluid. The female ovarian reserve will be assessed by: antral follicle count (AFC) and concentration of hormones: AMH (Anti-Müllerian Hormone), FSH (follicle stimulating hormone), LH (luteinizing hormone), estradiol and inhibin B. The concentrations of nonpersistent organic chemicals (parabens, bisphenol A and triclosan) will be analyzed in urine (twice within 3 months) and in follicular fluid and the concentrations of persistent organic compounds (organochlorine pesticides (OC), polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDE)) will be analyzed in serum using a validated gas chromatography – mass spectrometry method (GC-MS). This is original research which aims to gather new knowledge about the environmental factors exposure and female ovarian reserve-the predictor of female fertility. Identification of environmental factors will allow us to know more about the level of exposure and the impact of these exposures on female ovarian reserve. The proposed study will also provide data that will allow a comprehensive assessment of women's exposure.