



Ultra-Low Fertility: is reproductive sustainability possible in the 21st century?

Sustainability Symposium
Auditorium 1, [Rigshospitalet](#), 2100 Copenhagen
25 March 2020, 10:00-16:00

[Register here](#)

For the first time ever, over half of the world's population now lives in low-fertility countries where fertility rates are below replacement level. In many countries, ultra-low fertility rates are approaching on average one child per woman with South Korea even having fallen below to 0.98. The causes are complex, a combination of biological, social and psychological factors. Rising childcare and education costs, economic precarity, stress of work life and concerns about climate changes all factor into people's reproductive decision-making. Some couples end up waiting until their 30s and 40s when chances of being able to reproduce have fallen considerably. An important question is how big a role conscious family planning versus involuntarily low fecundity play in the observed low fertility rates. Many countries have observed declining sperm quality in the general population over recent generations. Moreover, exposure to industrial chemicals surrounding us in our daily lives has been shown to impact on reproductive health and fertility in the lab as well as in many wildlife species.

But is this a problem? Aren't there too many people on the planet anyway, each with a growing carbon footprint? What consequences will falling fertility rates in Europe, America and Asia have on employment, welfare, ageing populations, national economies, migration and more? What about Africa and Latin America? And how much should we be concerned about the impact of industrial chemicals on human fertility and bio-diversity?

Join the University of Copenhagen's [Sustainability Science Centre](#) for a day of insights and discussion on falling fertility rates as we ask: is reproductive sustainability possible in the 21st century?

Programme

Chairpersons: Professor Katherine Richardson & Professor Anders Juul

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| 10:00-10:30 | Dr. Ayo Wahlberg, Anthropology, University of Copenhagen, Denmark
World-wide declining trends in human fertility - possible causes and growing unease |
| 10:30-11:00 | Dr. Hagai Levine, Hebrew University-Hadassah Medical Center, Israel
World-wide decline in human sperm count: findings and implications |
| 11:00-11:30 | Coffee |
| 11:30-12:00 | Dr. Remy Slama, Inserm - CNRS - University Grenoble-Alpes, France
Endocrine disruptors and human health: from science to regulation |

12:00-12:30	Dr. Niels E. Skakkebaek, University of Copenhagen, Denmark The fetal testis at risk: testicular dysgenesis syndrome
12:30- 13:00	Comments & Questions
13:00- 13:45	Lunch
13:45- 14:05	Dr. Rune Jacobsen, University of Southern Denmark How to distinguish biological from behavioral factors leading to low human fertility rates?
14:05-14:25	Dr. Anna-Maria Andersson, Rigshospitalet, Denmark Chemical exposures of populations in industrialized countries
14:25-15:00	Presentation of the ideas behind A Transdisciplinary Research Platform for Ultra-Low Fertility and Reproductive Sustainability followed by panel discussion. All speakers and all participants in the meeting are invited to comment.
15:00- 16:00	Drinks and snacks

Short biographies of speakers



Ayo Wahlberg is Professor MSO at the Department of Anthropology, University of Copenhagen. He is author of *Good Quality – the Routinization of Sperm Banking in China* (University of California Press), co-editor of *Selective Reproduction in the 21st Century* (Palgrave MacMillan) and Editor at the interdisciplinary journal *BioSocieties*. His current work is focused on chronic living together with a team of researchers working on the European Research Council funded project “The Vitality of Disease – Quality of Life in the Making”.



Hagai Levine, MD, MPH, Professor of Epidemiology at the School of Public Health, Hebrew University-Hadassah Medical Center and Chairman of the Israeli Association of Public Health Physicians. His research has focused on the impact of the environment on human health, with special focus on male reproduction. His seminal meta-analysis on global trends in human sperm counts drew attention to declining male fertility as a public health problem. He is currently studying the impact various environmental factors such as air pollution, smoking, chemicals and pesticides exposure on fetal development and fertility.



Rémy Slama, M.Sc. PhD, is Senior Investigator at Inserm (the French Institute of Health and Medical Research) where he leads the Inserm-Grenoble-Alpes University joint research team in Environmental Epidemiology applied to Reproduction and Respiratory Health. His research aims at characterizing the influence of environmental contaminants on human reproduction and childhood health. A specific focus is the influence of early life (intra-uterine) environmental exposures on the health of the foetus and the child (Developmental Origins of Health and Diseases, or DOHaD, concept). In that

context, his team is particularly interested in the effects of *atmospheric pollutants, short half-lived endocrine disruptors* (phenols, phthalates) and, more recently, the *exposome* as a whole. He is president of the scientific council of the French research program on endocrine disruptors (PNRPE); he belongs to several experts groups and scientific councils related to environmental health, such as the scientific council of Santé Publique France (the French CDC), the Scientific Committee on Health and Environmental Risks (SCHEER) of the European Commission.



Niels E. Skakkebaek, DMSc, Professor at Department of Growth and Reproduction, received medical training in andrology and pediatric endocrinology. His main contribution to science was his discovery in 1970s of germ cell neoplasia in situ (GCNIS) followed by studies in the 1980s and 1990s revealing the embryonic characteristics these precursor cells, which will progress to testicular cancer in young men, unless treated. During the past 20 years he and coworkers have provided evidence that a testicular dysgenesis syndrome (including germ cell cancer, decreased semen quality, undescended testis, hypospadias and disorders of sex development (DSD)) may result from environmental as well as genetic factors.



Rune Lindahl-Jacobsen, M.Sc. PhD, is professor MSO in epidemiology and demography at the Department of Epidemiology, Biostatistics and Biodemography, University of Southern Denmark where he leads the Biodemography research group. He is currently the chair of the board of the four faculty Interdisciplinary Center on Population Dynamics (Cpop). His research has focused on male and female reproduction and fecundity, their patterns and their link to health and mortality. Central for his current research is factors acting in early life or around conception and their later consequences expressed as malformations, hospitalizations or death.



Anna-Maria Andersson, M.Sci. Ph.D, is senior researcher at Dept. of Growth of Reproduction, Rigshospitalet where she leads the Hormone and Endocrine Disruptor Laboratory group. Her research has for more than 25 years been on male reproduction with emphasis on the physiology and patho-physiology of male reproductive hormones as well as the impact of environmental chemicals on the regulation and function of endogenous hormones and health consequences hereof. Since 2008 she is the director of Centre on Endocrine Disruptors and since 2014 she is part of the EDMaRC management.