Time for action: policies to prevent male reproductive health problems.

The drastic worldwide decline in fertility rates and a parallel increase in male reproductive health problems calls for quick action.

Facilitate Research

- ✓ **Induce research strategies to delineate the role of voluntary and involuntary childlessness with a focus on environmental, genetic and social factors linked to infertility, including male genital abnormalities, semen quality, and testicular cancer.**
- ✓ **Increase funding for multidisciplinary research that involves andrological, gynaecological, social and environmental researchers working with fertility changes. Such research teams should focus on all aspects of childlessness, including the role of environmental chemical exposures and other biological factors in the dramatic shifts in reproductive trends.**

Promote Awareness

- ✓ **Educate the public about the potential risks posed by environmental contaminants.**

Support Prevention

- ✓ **Introduce policies, based on emerging knowledge, to limit exposures to the many substances that have already been identified in humans as potential EDCs. Many of these are of concern as potentially harmful for reproduction, although solid evidence is lacking for most chemicals.**

References[1]

1. Buckley JP, et al., *Exposure to Contemporary and Emerging Chemicals in Commerce among Pregnant Women in the United States: The Environmental influences on Child Health Outcome (ECHO) Program.* Environ Sci Technol, 2022. **56**(10): p. 6560-6573.
2. Govarts E, et al., *Harmonized human biomonitoring in European children, teenagers and adults: EU-wide exposure data of 11 chemical substance groups from the HBM4EU Aligned Studies (2014-2021).* Int J Hyg Environ Health, 2023. **249**: p. 114119.
3. Maekawa R, et al., *Evidence of exposure to chemicals and heavy metals during pregnancy in Japanese women.* Reprod Med Biol, 2017. **16**(4): p. 337-348.
4. Skakkebæk NE, et al., *Environmental factors in declining human fertility.* Nat Rev Endocrinol, 2022. **18**(3): p. 139-157.
5. Béranger R, et al., *Occupational and environmental exposures associated with testicular germ cell tumours: systematic review of prenatal and life-long exposures.* PLoS One, 2013. **8**(10): p. e77130.
6. Giulioni C, et al., *Do environmental and occupational exposure to pyrethroids and organophosphates affect human semen parameters? Results of a systematic review and meta-analysis.* Andrologia, 2021. **53**(11): p. e14215.
7. Thonneau P, et al., *Occupational heat exposure and male fertility: a review.* Hum Reprod, 1998. **13**(8): p. 2122-5.
8. Ianos O, et al., *Meta-Analysis Reveals the Association Between Male Occupational Exposure to Solvents and Impairment of Semen Parameters.* J Occup Environ Med, 2018. **60**(10): p. e533-e542.

[1] Only key papers were included. Further detailed references on individual studies can be requested from ESHRE by contacting guidelines@eshre.eu

Developed by the ESHRE expert panel for environmental factors and fertility, consisting of Willem Ombelet, Maribel Acién, Pauliina Damdimopoulou, Linda Giudice, Niels E. Skakkebæk, Miguel Angel Checa, Rémi Béranger, Nicolas Garrido, Karin Sørig Hougaard, Rune Lindahl-Jacobsen, Olwenn Martin, Jeanne Perrin, Cristina Richie, and Nathalie Vermeulen.