

The Endocrine Society periodically assesses the state of EDC science (as well as publishing peer-reviewed journals that carry original EDC research). In the most recent assessment, published in 2015, they state that the evidence is strongest for: “1) obesity and diabetes; 2) female reproduction; 3) male reproduction; 4) hormone-sensitive cancers in females; 5) prostate; 6) thyroid; and 7) neurodevelopment and neuroendocrine systems.”³

The published evidence since then has only become stronger. For example:

Relevant to human reproduction:

- In November 2022, Levine, Swan et al. published strong evidence showing that sperm counts world-wide continue to decline... by over 50% over the period 1973-2018, and that the decline is speeding up⁴.
- This decline is linked by strong evidence from other research to exposure to chemicals common in plastics, including phthalates, bisphenols and perfluorinated compounds. The crucial exposure is when the baby is in the womb. The impacts manifest later in life.⁵
- If current trends continue, average sperm counts around the world will approach zero by 2045. Most of today’s infant boys when they mature will be unable to have babies the old-fashioned way. Artificial reproductive technologies will be necessary for most couples.
- Research on PFAS in Italy “found increased levels of PFCs and seminal fluid positively correlate with circulating testosterone and with a reduction of semen quality, testicular volume, penile length and ano-genital distance (a marker of maleness). Experimental evidence supports our observational results and points toward antagonistic action of PFOA on the binding of testosterone to its natural androgen receptor.”
- Moreover, exposure to bisphenols can decrease the success of artificial reproductive technologies⁶.

Plastic chemicals rewire the developing brain:

- Epidemiological studies link brains exposed during development to plastic chemicals to neurological disorders such as ADHD and autism.^{2,7,8,9}
- One expert on how chemicals alter thyroid signaling, which plays a powerful role in guiding brain development, has predicted that if the increases in autism in the US continue to grow

³ EDC-2: The Endocrine Society's Second Scientific Statement on Endocrine-Disrupting Chemicals doi: 10.1210/er.2015-1010. Epub 2015 Nov 6.

⁴ Temporal trends in sperm count: a systematic review and meta-regression analysis of samples collected globally in the 20th and 21st centuries. doi: 10.1093/humupd/dmac035.

⁵ Count Down: How our modern world is threatening sperm counts, altering male and female reproductive development, and imperiling the future of the human race. Swan and Colino. Scribner, NY.

⁶ Urinary bisphenol A concentrations and early reproductive health outcomes among women undergoing IVF <https://doi.org/10.1093/humrep/des328>

⁷ Prenatal phthalates, maternal thyroid function, and risk of Attention Deficit Hyperactivity Disorder in the Norwegian Mother and Child Cohort. <https://doi.org/10.1289/EHP2358>

⁸ Gestational exposures to phthalates and folic acid, and autistic traits in Canadian Children. <https://doi.org/10.1289/EHP5621>

⁹ Bisphenol A exposure in children with autism spectrum disorders. DOI: 10.1002/aur.1444