

Researchers list products expectant mothers should avoid during first trimester

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Pregnancy test. Credit: public domain

Expectant mothers in their first trimester should avoid certain cosmetics, cleaning agents and medicines, to protect the developing fetal brain from chemicals that can trigger autism, York U health researchers have found.

"The products that we use on a daily basis, such as creams and cosmetics, contain chemicals that could potentially affect a developing baby during pregnancy," says Professor Dorota Crawford in the School of Kinesiology and Health Science, Faculty of Health.

The list is long: cleaning solvents, pesticides, [nonsteroidal anti-](#)

[inflammatory drugs](#) such as acetylsalicylic acid; misoprostol (a drug used for inducing labor); polychlorinated bisphenyls used as industrial lubricants; polybrominated diphenyl ethers found in wood and textiles; phthalates in PVC flooring, children's toys, and cosmetics and lotions.

The researchers, Crawford and co-authors Christine Wong and Joshua Wais, report that aside from the type of chemical a pregnant woman is exposed to, the duration, the frequency and the concentration level also impact a developing brain at the prenatal stage.

"We recommend that women learn about health effects from exposure to chemical substances in the environment," says PhD candidate Wong, adding that assessment information is found in the Integrated Risk Information System (IRIS) [database](#) maintained by the US Environmental Protection Agency.

According to the researchers, prenatal brain development undergoes constant changes and its normal functioning depends greatly on the presence of specific genes at any given time. Since environmental factors influence the expression levels of these critical genes, it is important for an expectant mother to be aware and cautious of exposure to these factors.

This review article by Crawford and coauthors Christine Wong and Joshua Wais, titled "[Prenatal exposure to common environmental factors affects brain lipids and increases risk of developing Autism Spectrum Disorders](#)," was recently published in the [European Journal of Neuroscience](#). The authors summarize existing research on environmental agents that can affect the level of important lipid mediators including prostaglandin E2 or PGE2. This major lipid molecule naturally found in the brain is important in regulating the expression of essential genes required for [early brain development](#) and its proper function.

Crawford says only a few clinical studies have delved into the dosage level and exposure time that affects the developing brain. "Specific concentration ranges for chemicals and the duration of exposure in humans still need to be established through research."

Investigation into molecular mechanisms that lead to how these chemicals disrupt the growing brain and also how the chemicals enter the fetal brain will be crucial to understand how they may contribute to [brain](#) pathologies, according to Crawford.

Provided by York University

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