

Grandparents' Environment Affects Epigenome, Which May Also Affect You

Early exposure to certain environmental factors can have health consequences in adult life. These environmental factors include man-made chemicals, such as pesticides, herbicides, plastics, and industrial side products, and natural chemicals, such as plant estrogens. Collectively, these are called environmental endocrine-disrupting compounds (EDCs).

Previous research by Dr. Mehmet Uzumcu, professor of animal sciences, has shown that the fertility of male rats is adversely affected by EDCs. These results can be extrapolated to humans, raising serious concerns for human health. Even more alarming is the finding that the genetic messages that create infertility are passed to subsequent generations through the epigenome, which is made up of chemical structures that attach to genes to tell them what to do. So even though humans inherit a predictable set of genes, which can be viewed as the "hardware," they also inherit "software," which acts as an instruction manual that was influenced by their grandparents' environment.

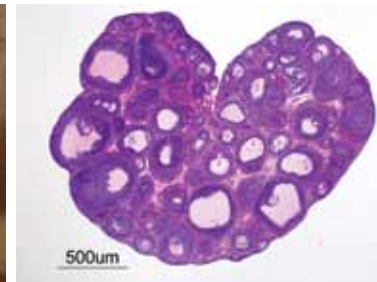
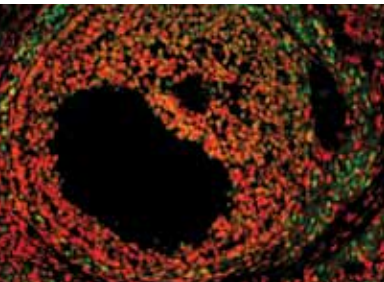
Considering the seriousness of the consequences and widespread existence of many types of EDCs in the environment, the Rutgers researchers are now studying the effects of the pesticide methoxychlor (MXC) on ovarian development and female reproductive function. They want to see if there is a problem similar to that experienced by males. So far, their research has shown that exposure of females to EDCs during late gestation and early post-natal life leads to effects on the ovary when they reach adulthood.

By supporting the work of Dr. Uzumcu, you can help scientists gain a better understanding of the health problems that EDCs may create for human and animal populations. This understanding can be useful in prevention and therapy for the health problems created by environmental factors.

To find out more about how you can help, please contact The Office of Development at 732-932-9000, ext. 576 or development@sebs.rutgers.edu.

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