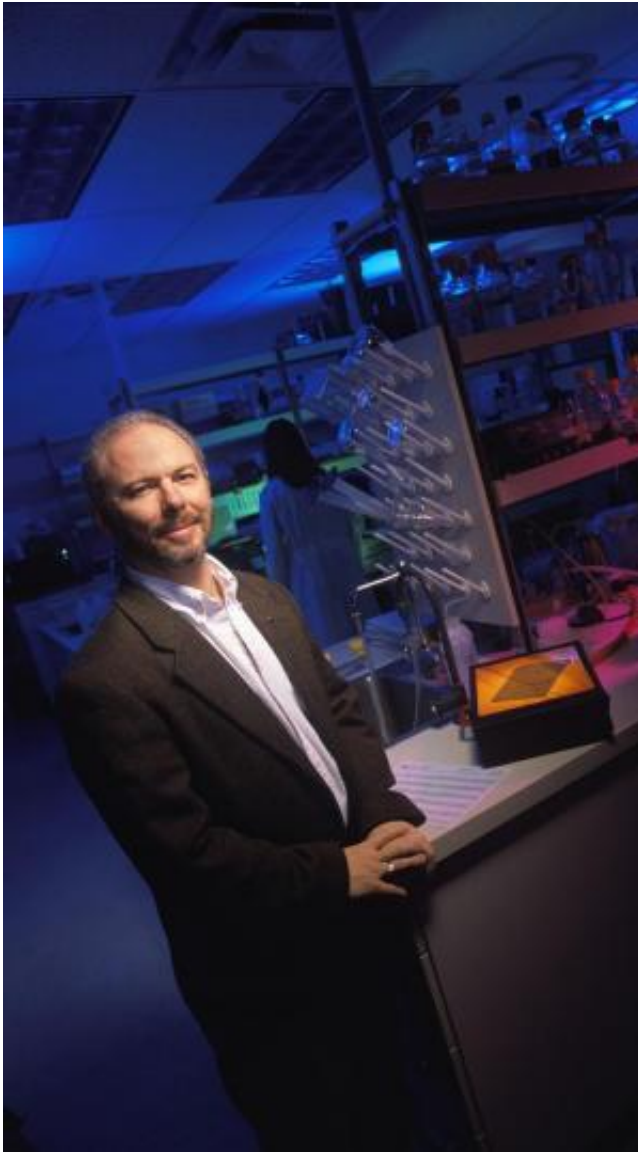


DDT and obesity linked in new study

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Michael Skinner, WSU professor and founder of its Center for Reproductive Biology, says ancestral exposures to environmental compounds like the insecticide DDT may be a factor in high rates of obesity. Credit: Washington State University

Washington State University researchers say ancestral exposures to environmental compounds like the insecticide DDT may be a factor in high rates of obesity. The finding comes as DDT is getting a second look as a tool against malaria.

"What your great-grandmother was exposed to during pregnancy, like DDT, may promote a dramatic increase in your susceptibility to obesity, and you will pass this on to your grandchildren in the absence of any continued exposures," says Michael Skinner, WSU professor and founder of its Center for Reproductive Biology. He and his colleagues document their finding in the current issue of the journal *BMC Medicine*.

When Skinner and his colleagues exposed gestating rats to DDT, they saw no altered rates of obesity in the parent or first generation of offspring. But the disease developed in more than half the third-generation males and females. The researchers say the insecticide may be affecting how genes are turned on and off in the offspring of an exposed animal, even though its DNA sequences remain unchanged.

This is called transgenerational epigenetic inheritance. In recent years, the Skinner lab has documented epigenetic effects from a host of environmental toxicants, including plastics, pesticides, fungicides, dioxins, hydrocarbons and the plasticizer bisphenol-A or BPA.

However, says Skinner, the frequency of DDT effects on obesity are far greater than other toxicants his lab has reviewed.

He notes that more than 50 years have passed since Rachel Carson's book "Silent Spring" documented many of DDT's effects on the environment. Its use has since been banned in the U.S. However, says Skinner, "the third generation of people exposed in the 1950s is now of

adult age and has a dramatic increase in diseases such as [obesity](#)."

Meanwhile, he says, groups like the U.S. Agency for International Development and the World Health Organization are backing the use of DDT to control malaria in developing countries.

"The potential transgenerational actions of DDT need to be considered in the risk-benefit analysis of its use," says Skinner.

Provided by Washington State University

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