Big on obesogens: Biologist believes industrial pollutants contributing to America's obesity epidemic

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UCI biologist Bruce Blumberg is studying the link between industrial pollutants and obesity. Because metabolism-altering chemicals called obesogens are used in plastics, he says, foods and liquids should be stored in glass and stainless steel containers. Image: Steve Zylius

(PhysOrg.com) -- With obesity emerging as a leading health threat to Americans, it's easy to blame a couch-potato culture addicted to calorie-rich foods. But UC Irvine biologist Bruce Blumberg doesn't believe lifestyle alone explains this growing obesity epidemic. He thinks industrial pollutants play a part too.

Blumberg is among a growing number of researchers exploring how chemicals used in plastics, food packaging, pesticides and cosmetics can trigger dramatic increases in body fat. He has even coined a word for

these compounds that corrupt the normal function of metabolic hormones: obesogens.

“It makes a lot of sense that chemicals able to reprogram metabolism and favor the development of fat cells could be important contributing factors to obesity,” says Blumberg, professor of developmental & cell biology and pharmaceutical sciences. “The role of obesogens in fat accumulation raises questions about the effectiveness of just diet and exercise in helping people lose pounds and maintain a proper weight.”

Obesogen research is in its early stages but gaining widespread attention, including recent in-depth coverage in Newsweek. While it’s unclear to what degree these chemicals contribute to the obesity epidemic, what Blumberg and other researchers around the world are finding is troubling.

In ongoing studies, Blumberg has identified how obesogens target signaling proteins to tell a developing fetus to make more fat cells. This can have lifelong consequences, increasing the likelihood of body fat accumulation as a person ages and making it more difficult to lose excess weight.

Blumberg points out that it’s not known whether obesogens have the same effects on adults, but he suspects that they may have already left their mark on Americans born after World War II — when exposure to industrial chemicals became widespread.

“The causes of obesity are very complex, but if you travel to other places in the world, you’ll notice that this epidemic is predominantly American,” Blumberg says. “Elsewhere, the consumption of prepackaged foods is much lower, food is grown and eaten locally, and people are far less exposed to food additives and chemicals. These are all contributing factors.”

Until medical science can identify a way to repair obesogen-affected metabolism, he and others in this field recommend a “better safe than sorry” approach. “Use glass and stainless steel instead of plastics to store fluids and foods,” Blumberg says. “And try to get locally grown produce, organic if possible.”

He also suggests an attitudinal adjustment: “Obesity isn’t exclusively caused by personal behavior. It’s increasing despite our best efforts. If obesogen exposure causes someone to have more fat cells, or an altered metabolism, others should be more sympathetic that he or she will have to work harder to lose weight.”

Despite the difficulty of changing public — and scientific — perception, Blumberg is hopeful. “The tide is turning,” he says. “Over the past few years, acceptance of obesogens has grown, and it’s now possible to get funding for research. It’s an idea whose time has come.”

Provided by UC Irvine