



## Why Your Household Dust Could Fuel The Growth Of Fat Cells

In recent years, researchers and international policymakers have expressed concerns about the effects of [endocrine-disrupting chemicals](#), a class of substances that can interfere with the functioning of the endocrine — or hormone — system.

Such substances are sometimes present in household cleaning products, and even in objects that we use on a daily basis.

Many plastics, for instance, contain [phthalates](#), which are endocrine-disrupting chemicals.

Researchers have warned that these chemicals are a [threat to public health](#), as studies have tied them to [fertility problems](#), [liver disease](#), [cancer](#), and [childhood obesity](#).

Now, a study led by Christopher Kassotis, Ph.D., from Duke University's Nicholas School of the Environment, in Durham, NC, has found evidence suggesting that household dust may promote the development of fat cells. Why? Because this dust can contain endocrine-disrupting chemicals.

Kassotis presented these [findings](#) yesterday at [ENDO 2019](#), the annual meeting of the Endocrine Society, which was held in New Orleans, LA.

“This is some of the first research investigating links between exposure to chemical mixtures present in the indoor environment and metabolic health of children living in those homes,” emphasizes Kassotis.

## **Do certain chemicals contribute to obesity?**

Kassotis and the team took their cue from [existing research](#) that indicates a connection between exposure to endocrine-disrupting chemicals and impaired lipid (fat) regulation in animal models.

This evidence ties in with that of other studies, which have suggested that the mechanism may contribute to the development of [obesity](#) in humans.

For the current research, Kassotis and the team collected samples of household dust from 194 houses in central North Carolina, with the aim of studying the effect of the dust’s chemical components on the inhabitants’ metabolic health.

To do this, the investigators first extracted the chemical substances from the dust samples. Then, they tested the substances’ effects in vitro, specifically trying to find out whether the chemical mixtures would prompt the development of fat cells.[su\_spacer]

**The researchers report that even very low concentrations of the chemicals present in the dust samples did, indeed, promote the growth of precursor fat cells (from which adult fat cells develop) and, consequently, fat cell growth.**

This discovery is particularly concerning because, according to estimates from the Environmental Protection Agency (EPA), children most likely ingest between [60 and 100 milligrams](#) of dust and soil per day.

“We found that two-thirds of dust extracts were able to promote fat cell development and half [could] promote precursor fat cell proliferation at 100 micrograms, or approximately 1,000 times lower levels than what children consume on a daily basis,” notes Kassotis.

In total, the researchers identified the presence of over 100 different chemicals in samples of household dust, and about 70 of these substances demonstrated a role in the growth of fat cells. Around 40 of the chemicals played a role in the development of precursor fat cells.

“This suggests that mixtures of chemicals occurring in the indoor environment might be driving these effects.” – Christopher Kassotis, Ph.D.

Moreover, the researchers say that several of the chemicals that induced the growth of fat cells were present at elevated levels in the dust samples collected from homes inhabited by children who were either overweight or obese.

At present, Kassotis and the team are trying to take this initial research further and find more specific information about the potential relationship between the ingredients of common household products and the development of metabolic conditions.

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