

New analysis sheds light on the links between chemicals in our body and income

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A new study published this week has found that the build-up of harmful chemicals in the body is affecting people of all social standings—not just those from economically deprived backgrounds as previously thought.

The research has been led by Dr Jessica Tyrrell from the University of Exeter Medical School's European Centre for Environment & Human Health, in Truro, Cornwall.

Using data from the U.S. National Health and Nutrition Examination Survey, the team analysed possible links between a person's socioeconomic status and the prevalence of chemicals in their body.

They found that people across the poverty spectrum were accumulating chemicals in their bodies but, importantly, that it was the type of toxicant that was dependent upon economic status.

Dr Tyrrell and the team were not expecting their findings to contradict the conventional thinking that lower socioeconomic status will lead to a greater prevalence of harmful elements in the body:

"We've found that as people become better off, changes in their lifestyle alter the types of chemicals in their bodies, rather than reducing the overall amount. This realisation has a profound impact on the way we treat chemical build ups, suggesting we should move to dealing with groups based on lifestyle, rather than earnings."

By comparing the results from 6 separate populations, the researchers have been able to show strong associations between 18 different chemicals and poverty ratings.

Individuals with higher incomes had larger amounts of several toxicants, including urinary mercury, arsenic, caesium and thallium, with diet likely to play a key role in their accumulation.

"The age old adage of 'you are what you eat' seems to be true when explaining some of the trends we're seeing in the data. It's certainly very likely that fish and shellfish consumption is partially responsible for build-ups in mercury, arsenic and thallium" says Dr Tyrrell.

The use of sunscreen was also found to be an important factor in the accumulation of benzophenone-3, with people from higher socioeconomic groups more likely to use products containing the [chemical](#).

Those with lower incomes were more likely to have build-ups of urinary lead, cadmium, antimony and bisphenol A. Cigarette smoking and a poor diet were amongst the factors likely to lead to the build-up of both lead and cadmium in these groups.

"Long term exposure to chemicals, even in very small quantities, can lead to a number of adverse health effects such as diabetes and cardiovascular disease. This study has produced a robust analysis of how the accumulation of these chemicals relates to [socioeconomic status](#), giving us an important understanding that will help to inform strategies aimed at improving health" Dr Tyrrell concludes.

More information: www.ecehh.org/publication/soci...hemical-body-burdens

Provided by University of Exeter

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