

Pollutants may contribute to illness and overweight

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(Medical Xpress) -- Lack of physical activity and poor diet alone cannot explain the dramatic rise in obesity and diabetes occurring in many countries, believe some researchers. It is time to face the possibility that

hazardous chemicals may also share part of the blame.

The population of the Western world is increasingly falling prey to [metabolic syndrome](#), which is the name for a group of risk factors – such as overweight and insulin resistance – that occur together and increase the risk for coronary artery disease, stroke, and type-2 [diabetes](#).

What can explain this sharp upsurge in the incidence of metabolic syndrome? Both genetics and environmental factors such as diet and physical exercise play a part, but researchers are still missing some key pieces to the puzzle.

“Many studies now indicate that persistent organic pollutants play a major role,” says Jerome Ruzzin, a post-doctoral researcher at the University of Bergen.

From fatty foods

For several years, Dr. Ruzzin has been receiving funding from the Research Council of Norway’s Program on Environmental Exposures and Health Outcomes (MILPAAHEL) to study the effects of persistent organic pollutants (POPs). He believes these substances have much more of a health impact than most people realize.

“Today’s adults are the first generation to experience serious health problems from these substances. If we do not take this challenge seriously,” he cautions, “there is every reason to be concerned about the coming generations as well.”

POPs enter our bodies when we consume fatty foods such as dairy products, meat, and particularly fatty fish. One of Dr. Ruzzin’s research findings on mice is that eating salmon that contains high levels of POPs can lead to insulin resistance, one of the main causes of metabolic

syndrome.

Popping up everywhere

In two recent scientific articles, Dr. Ruzzin has sounded the alarm about the harmful health effects of POPs.

“A great number of studies are now showing that people with high concentrations of POPs in their body are developing metabolic syndrome. We are talking about ordinary people who live in normal environments,” stress Dr. Ruzzin, “so this means that we are being exposed to far too high levels of POPs that may have a major impact on our health.”

Typically, dietary changes are prescribed to treat metabolic syndrome. But according to Dr. Ruzzin, too little is known about the effects of pollutants in specific foods to make any detailed health recommendations. This is why he believes we should waste no time in launching more studies that examine the combination of pollutants and nutrients in humans.

Dangerous cocktail effect

Studies have shown that POPs, even at concentrations below their danger level individually, can interact with other POPs or hazardous substances to cause serious consequences. This combined “cocktail effect” worries Dr Ruzzin.

“Current threshold values for pollutants are probably too high,” says Dr. Ruzzin, “which means that the regulatory framework needs changing. Food producers need to eliminate hazardous substances to a far greater extent than they do at present, and we consumers need more information

about the kinds of chemicals we could be ingesting with their food products.”

Deformed genitalia

Danish studies have shown that even small amounts of different chemicals found in everyday products can have a cocktail effect. Malformations of the sex organs are one possible consequence. Researcher Sofie Christiansen of the Technical University of Denmark is concerned.

“There is no doubt that the importance of interactions between different hormone-disrupting chemicals has been underestimated,” she asserted in connection with a conference on environmentally [hazardous substances](#) co-hosted by the Research Council and the Norwegian Climate and Pollution Agency this January.

Seeking deeper understanding

The Research Council sees that there is a need for much more knowledge about pollutants.

“More knowledge is critical for achieving Norway’s ‘generation target’ of phasing out substances that are hazardous to human health and the environment by 2020,” said Arvid Hallén, Director General of the Research Council, in connection with the January conference.

Jerome Ruzzin is currently studying what makes POPs so harmful to our health. His objective is to establish more knowledge about how pollutants affect the human body; knowledge which in turn will facilitate prevention and treatment of metabolic disorders, and provide a basis for developing new medicines.

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