Chemicals commonly found in our environment that are not considered carcinogenic to humans on their own may trigger cancer when combined in the body, according to new research.

Scientists from 28 different countries published their findings Tuesday, on the links between common chemicals and cancer risk.

The researchers studied 85 different chemicals that are not considered carcinogenic on their own. They found that, when combined, 50 of the chemicals supported key cancer-related mechanisms at exposure levels currently found in the environment.

Paola Marignani, a professor at Dalhousie University, participated in the research project. She said the chemicals of concern are commonly found in our environment, as well as in products we use on a daily basis.
"(They include) some of the fuels, some of the plastics, and some of the cosmetics we use," she told CTV's Canada AM. "They're in our food, our products, our preservatives, our pesticides."

The global taskforce behind the study was initially established in 2013, after meeting in Halifax to discuss concerns about the combined and additive effects of common chemicals.

Current research estimates that up to one in five cancer diagnoses could be caused by chemical exposures in the environment.

William Goodson III, the study's lead author and senior scientist at the California Pacific Medical Center, said that the research should prompt the development of new testing methods.

"Since so many chemicals that are unavoidable in the environment can produce low dose effects that are directly related to carcinogenesis, the way we've been testing chemicals (one at a time) is really quite out of date," he said in a statement.

"Every day we are exposed to an environmental 'chemical soup,' so we need testing that evaluates the effects of our ongoing exposure to these chemical mixtures."

'Conceptual breakthrough'

Leroy Lowe, president of Getting to Know Cancer, the group that helped form the research taskforce, said the findings represent a "conceptual breakthrough" in the field of cancer research.

"There isn't anything anybody can do tomorrow," he said. "But this is a bit of a conceptual breakthrough.

"This is the first time scientists have figured out how widespread this is, and how many different layers of machinery within the cells themselves are being impacted by these chemicals."

He said future research should look at specific mixtures of chemicals at low doses, to try and identify how pervasive the problem is.