

While air pollution is on the rise throughout the world, a University of Delaware (UD) professor has discovered an achievable solution that may mitigate the effect of air pollutants in our bodies by increasing daily intake of apiaceous vegetables, such as celery, carrots, parsnips, and parsley.

According to [a report by UDaily](#), Jae Kyeom Kim, who is UD assistant professor for the Department of Behavioral Health and Nutrition, published a research article in the Journal of Nutritional Biochemistry.

The study he carried out investigated how these vegetables protect the body from accumulation of acrolein, an irritant to the lungs and skin with a strong unpleasant odor, abundantly found in cigarette smoke and automobile exhaust.

Through a series of tests, Kim and his team analyzed how apiaceous vegetables, which are high in phytonutrients, mitigated acrolein-induced toxicities.

The results portrayed how oxidative stress, triggered by acrolein, can be reduced and its impacts mitigated.

“Kim’s research discovered that apiaceous vegetables supported detoxification through an increase in antioxidant enzyme activity,” said Jillian Trabulsi, Chair & Associate Professor at the University of Delaware.

“The results suggest that apiaceous vegetables may provide protection against acrolein-induced damages and inflammation because in the liver, the vegetables enhance conversion of acrolein into a water-soluble acid for bodily excretion”, she added.

The next step was to determine a reasonable dosage amount for humans. Looking forward, Kim plans to integrate human intervention trials.

“When we calculated this, we determined the actual daily calorie amount of apiaceous vegetables for humans is roughly 1 and 1/3 cups per day,” Kim explained.

Furthermore, Kim and his team stress the importance of implementing behavioral changes in diet as a solution to combat the buildup of toxicants derived from air pollution, as “it doesn’t require a high intake to see a difference, and this is an achievable amount in daily life.”

Trabulsi added that “research has identified that it is the totality of nutrients in fruits and vegetables that support beneficial health outcomes, rather than a single nutrient.”

“Focusing on a healthy whole food diet is more impactful than relying on individual supplements”, she concluded.