(PhysOrg.com) -- Adding a variety of vegetables to one's diet may help decrease the chance of getting lung cancer, and adding a variety of fruits and vegetables may decrease the risk of squamous cell lung cancer, especially among smokers.

Study results are published in Cancer Epidemiology, Biomarkers & Prevention, a journal of the American Association for Cancer Research.

“Although quitting smoking is the most important preventive action in reducing lung cancer risk, consuming a mix of different types of fruit and vegetables may also reduce risk, independent of the amount, especially among smokers,” said H. Bas Bueno-de-Mesquita, M.D., M.P.H., Ph.D., senior scientist and project director of cancer epidemiology at The National Institute for Public Health and the Environment, The Netherlands.

Using information from the ongoing, multi-centered European Prospective Investigation into Cancer and Nutrition (EPIC) study, Bueno-de-Mesquita and colleagues evaluated 452,187 participants with complete information, 1,613 of whom were diagnosed with lung cancer.

Information was obtained on 14 commonly eaten fruits and 26 commonly eaten vegetables. The fruits and vegetables evaluated in the EPIC study consisted of a wide variety of fresh, canned or dried products.

Previous results from the EPIC study showed that the quantity of vegetables and fruits may decrease risk of lung cancer; in particular the risk of one specific type of lung cancer, squamous cell carcinoma, decreased in current smokers.

Regardless of the amount, the researchers on the current study found that risk of lung cancer also decreased when a variety of vegetables were consumed. In addition, the risk of squamous cell carcinoma decreased substantially when a variety of fruits and vegetables were eaten. However, Bueno-de-Mesquita said that they “cannot exclude that these results can still be explained by smoking.”

“Fruits and vegetables contain many different bioactive compounds, and it makes sense to assume that it is important that you not only eat the recommended amounts, but also consume a rich mix of these bioactive compounds by consuming a large variety,” he said.

While previous research has shown the influence of the quantity of fruits and vegetables on cancer development, Stephen Hecht, Ph.D., editorial board member for Cancer Epidemiology, Biomarkers & Prevention, believes this study is one of the first to evaluate diversity of fruit and vegetable consumption, rather than quantity.

“The results are very interesting and demonstrate a protective effect in smokers. There are still over a billion smokers in the world, and many are addicted to nicotine and cannot stop in spite of their best efforts,” added Hecht, who is the Wallin Land Grant Professor of Cancer Prevention at the Masonic Cancer Center, University of Minnesota.

Tobacco smoke contains a complex mixture of cancer-causing agents. Therefore, a mixture of protective agents is needed to have any beneficial effect in reducing one’s chance of lung cancer, Hecht said.

“Nevertheless, the public should be made aware and be reminded that the only proven way to reduce your risk for lung cancer is to avoid tobacco in all its forms,” he said.

More information: http://cebp.aacrjournals.org/

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