

## NUTRITION HORIZON

# Strawberries May Slow Precancerous Growth in Esophagus

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Summary:Based on these results, the researchers embarked on a phase Ib clinical trial in China to investigate the effects of freeze-dried strawberries on patients with esophageal precancerous lesions.

4/7/2011 --- Eating strawberries may be a way to help people at risk of esophageal cancer protect themselves from the disease, according to a new study by researchers at The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute (OSUCCC – James) and researchers in China.

Dr. Tong Chen will present the findings at the American Association for Cancer Research (AACR) 102nd meeting 2011 in Orlando, Fla. The study is the first-ever collaborative Ohio State cancer clinical trial to be conducted in China.

“We concluded from this study that six months of strawberry treatment is safe and easy to consume. In addition, our preliminary data suggests that strawberries decreased histological grade of precancerous lesions and reduced cancer-related molecular events,” said Chen, lead author, and assistant professor in the division of medical oncology, department of internal medicine at Ohio State. She is also a member of the Molecular Carcinogenesis and Chemoprevention program in Ohio State’s Comprehensive Cancer Center.

Previously published research by Chen and colleagues found that freeze-dried strawberries significantly inhibited tumor development in the esophagus of rats. Based on these results, the researchers embarked on a phase Ib clinical trial in China to investigate the effects of freeze-dried strawberries on patients with esophageal precancerous lesions.

“We found that daily consumption of strawberries suppressed various biomarkers involved in esophageal carcinogenesis, including cell proliferation, inflammation and gene transcription,” Chen said.

Each of the 36 study participants ate 60 grams (about two ounces) of freeze-dried strawberries daily for six months. The researchers obtained biopsy specimens before and after the strawberry consumption. The results showed that 29 out of 36 participants experienced a decrease in histological grade of the precancerous lesions during the study.

“We predict that the majority of patients with precancerous lesions in their esophagus will develop esophageal cancer over subsequent decades,” said Chen. “Our study is important because it shows that strawberries may slow the progression of precancerous lesion in the esophagus. Strawberries may be an alternative, or may work together with other chemopreventive drugs, for the prevention of esophageal cancer. But, we will need to test this

in randomized placebo-controlled trials in the future.”

Esophageal cancer is the third most common gastrointestinal cancer and the sixth most frequent cause of cancer death in the world, said Chen, who also holds a doctorate in public health.

Chen and her team are studying esophageal squamous cell carcinoma which makes up 95 percent of cases of esophageal cancer worldwide. The survival rate of this type of esophageal cancer is very low, with only 10 percent of patients living 5 years after diagnosis. Esophageal squamous cell carcinoma is quite common in China, Japan, the Transkei region of South Africa, Iran, France and Puerto Rico.

“Since this clinical trial is being conducted in China, considerably more effort is required to establish and complete the trial than is typically necessary at our own institution. Nevertheless, we have established a team of highly collaborative investigators who are working well together,” said Chen.

China has the largest population in the world, and the number of potential participants for clinical trials is higher than in any other country in the world.

“We believe that establishing collaborative research teams will enhance clinical research, and that our project will ‘open doors’ for multiple other trials in China,” Chen said.

In the United States, Canada and Europe, the risk factors for developing esophageal cancer include tobacco and alcohol use, along with poor diet lacking fruits and vegetables. In Asia, additional risk factors include dietary intake of salty food and of food contaminated with various mycotoxins, deficiencies in dietary vitamins and minerals and thermal injuries due to the consumption of hot beverages.