

## The 8th Conference on Health Care of the Chinese in North America



### Chinese Diet and Cancer Prevention

*Chung S. Yang, Laboratory for Cancer Research, College of Pharmacy, Rutgers, The State University of New Jersey, U.S.A.*

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#### Abstract

The profound effects of diet on cancer are shown by the distinctive differences in the cancer patterns between China and North America. Whereas cancers of the colon, breast, and prostate are major concerns here, the most prevalent cancers in China are those of the stomach, esophagus, and liver (which account, respectively, for 23.0, 22.3, and 15.1 % of the total cancer death). Nasopharyngeal cancer, which is rare among Caucasians, is common among Cantonese residing in Canton and Hong Kong. Knowledge about the dietary factors which contribute to the high or low incidence of these cancers is important for their prevention.

Dietary factors and viral or bacterial infection may act synergistically in causing human cancers. The consumption of salted fish (especial during weaning) and other preserved foods, in combination with EB virus infection, has been shown to be a major risk factor for nasopharyngeal cancer. Similarly, consumption of aflatoxin-contaminated foods and HBV infection are the major risk factors for the liver cancer in Qidong and many other areas. Avoidance of these foods and prevention of viral infection are key measures for the prevention of these cancers. The etiologies of the top two cancers in China, i.e., stomach and esophageal cancers, are not clear, although nitrosamines and nitrosamides have been strongly suspected. Consumption of salty food and infection with *Helicobacter pylori* are believed to be risk factors for stomach cancer, and consumption of moldy food has been suspected to increase the risk for esophageal cancer. A common feature for the Chinese population at high risk to stomach, esophageal and other cancers is the low consumption of fruits and vegetables, which contain micronutrients and other phytochemicals. A large scale nutritional intervention study on esophageal/gastric cardia cancer in Linxian, Henan, demonstrated that supplementation with  $\alpha$ -tocopherol/retinol/vitamin A-carotene/selenium for 5 years decreased the mortality rate of gastric cardia cancer. An ongoing intervention study on stomach cancer with dietary supplements as well as *H. pylori* eradication is being conducted in Linqing, Shandong. The rather low rates of colon, mammary, and prostate cancer in China are probably due to the low intake of fat and meat. The roles of possible cancer preventive agents, such as the polyphenols present in tea and soybeans, remain to be further investigated.

With the improvement of economic conditions and changes in dietary patterns, residents in Beijing and Shanghai are facing an increased risk for Western cancers, such as colon and mammary cancers. This is the same problem experienced by Chinese in North America. In order to reduce the cancer risk for Chinese inside and outside of China, the following recommendations are made:

1. Chinese should keep the traditional high grain, low fat/meat, and low sugar diet.
2. The Chinese diet, especial the breakfast, is generally low in fresh vegetables and fruits. The consumption of these foods should be increased.
3. The boiling/steaming cooking practice is healthier that grilling and baking. High temperature cooking is known to produce arylamines which are carcinogens.
4. Fungal-contaminated and some preserved foods should be avoided. These measures, together with cessation of smoking, should effectively increase the health of the Chinese all over the world (support by NIH grants CA56673 and CA68871).