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FISH, FRUIT AND FIBER INTAKE LINKED TO LOWER RISK OF NON-HODGKIN LYMPHOMA, STUDY SHOWS

Omega-3 fats and antioxidants associated with lower risk of overall NHL disease

FREMONT, CA – *January 10, 2007* – A study conducted by researchers at the Northern California Cancer Center, the Karolinska Institute in Sweden, and the Statens Serum Institute in Denmark demonstrates that a diet including omega-3 fatty acids (found in fish), antioxidants (found in fruits and vegetables), and fiber may reduce the risk of overall non-Hodgkin lymphoma.

Non-Hodgkin lymphoma (NHL) comprises about 30 different forms of lymphoma that, taken together, are the fifth most common cancer in the United States, with over 50,000 new cases diagnosed every year. NHL starts in the lymphatic tissue, which includes the lymph nodes and other organs that are part of the body's immune system.

Internationally, NHL diagnoses increased dramatically in the second half of the 20th century, paralleling global changes in dietary patterns. These broad changes in NHL occurrence and dietary intake, as well as the fact that diet can affect the immune system, which is known to influence NHL risk, prompted researchers to look more closely at the relationship between diet and risk of NHL.

The study assessed the diets of 591 people with NHL and 460 people without the disease from throughout Sweden between 2000 and 2002. All participants reported their typical dietary habits in detail, and the researchers then compared nutrient intake between NHL patients and non-patients to find important differences. The study shows that people who consumed the highest amounts of omega-3 or marine fatty acids (found in fish such as salmon, mackerel and herring) had a 20 to 40 percent lower risk of NHL than those who consumed the least.

People who consumed the most fiber had a 50 percent lower risk of NHL, and those who consumed the most antioxidant vitamins had a 30 to 60 percent lower risk, compared to those who consumed the least. Results of the study are consistent with findings from other studies conducted in the U.S. and Europe.

“Overall, eating fish and marine fats is associated with lower risk of NHL, as is consuming some antioxidant vitamins, such as vitamins C, E, and beta-carotene, commonly found in many fruits and vegetables,” says Ellen Chang, Sc.D., the Northern California Cancer Center scientist who led the study.

The researchers believe that the association between these nutrients and lower NHL risk may be that omega-3 fats and fiber can dampen inflammation in the lymphatic system, and as a result may help prevent lymphoma development. Antioxidants may decrease lymphoma risk by preventing DNA damage and enhancing the immune system.

“Taking the results of our study together with others, our findings show that part of the international increase in the occurrence of NHL in recent decades can be explained by the spread of the Western diet, which is high in red meat and dairy products and low in fruits and vegetables. If this is the case, then dietary change could be one way to decrease NHL risk,” notes Chang.

Results from the study were published in the December 15, 2006 issue of the *American Journal of Epidemiology*.

About Northern California Cancer Center

The Northern California Cancer Center (www.nccc.org) is an established, nationally recognized leader dedicated to understanding the causes and prevention of cancer and to improve the quality of life for individuals living with cancer. NCCC has been working with scientists, educators, patients, clinicians, and community leaders successfully since 1974, and is an active partner with Stanford University's Comprehensive Cancer Center. NCCC is a 501(c)3 nonprofit with over 170 employees and a \$15 million operating budget.

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