

August 29 PM (Thu)

Room A1

Plenary Lecture II

Chair: Jong-Sang Kim, *Kyungpook National University, Korea*

PL -2 14:00-14:50

Food Choices and Health: Opportunities for Prevention

Walter C. Willett, *Harvard School of Public Health, USA*

The large differences in rates of most non-communicable diseases between countries, and over time within many countries, indicates that these diseases are potentially preventable. Smoking, inactivity, and unhealthy diets have been shown to be key factors, but defining a healthy diet has been the most challenging. The international comparisons suggested that dietary fat was a major risk factor for cancer and cardiovascular disease. However, the percentage of energy from fat has consistently not been associated with any of these outcomes. In contrast, the type of dietary fat has a strong influence on risks of coronary heart disease (CHD) and type 2 diabetes: *trans* fat being most strongly related to risk, followed by saturated fat, monounsaturated fat, and polyunsaturated fat. Similarly, carbohydrate quality is related importantly to risk of these outcomes, with simple sugars and refined grains (including white rice) being related to higher risk, and intact whole grains being related to lower risk. Among the major protein sources, red meat is most strongly related to risks of cardiovascular disease, diabetes, and colorectal cancer. Although fruits and vegetables were believed to have powerful anti-cancer effects, this has not been supported in prospective studies, but benefits are seen for cardiovascular disease and diabetes. More detailed studies are now examining specific types of fruits and vegetables and much heterogeneity is being found; particularly strong benefits have been seen for berries. Interestingly, the combination of healthy fats, whole grains, legumes, nuts, fish, fruits, and vegetables that have emerged as being particularly healthy also defines the Mediterranean diet, which has long been associated with longevity. Apart from smoking and overweight, less progress has been made in identifying modifiable causes of cancer; studies that examine the full life cycle will probably be needed. Nevertheless, with current knowledge, the large majority of cardiovascular disease, diabetes, and some cancers can be prevented by optimal diets combined with avoidance of tobacco and regular physical activity.