

Lung cancer: the influence of dietary fats

Richard Béliveau

Translated from Le Journal de Montréal, September 25, 2017

A very large-scale population study has shown that the replacement of saturated fats by polyunsaturated fats significantly diminished the risk of lung cancer, particularly amongst smokers.

SATURATED VS UNSATURATED

The **different fats** in our diet have different effects, positive or negative, on the functions of our bodies. These fatty substances can be divided into three large categories:

- The saturated fats, principally found in sources of animal proteins (meats, dairy products, eggs) as well as in certain tropical oils (palm, palm kernel and cocoa).
- The unsaturated fats, principally from plant sources. These lipids can be mono-unsaturated (olive oil, avocado, certain nuts), polyunsaturated omega-6 type (vegetable oils) or polyunsaturated omega-3 type (flax or chia oils). Some oily fish (salmon, sardine, mackerel and herring) also contain long-chain omega-3 unsaturated fats.
- The *trans* fats, prepared synthetically, which are used to improve the texture and conservation of some industrially processed products, particularly junk foods. These fats have catastrophic effects on health and their use will soon be forbidden in the United States and, hopefully, in Canada.

CARDIOVASCULAR EFFECTS

Historically, the effects of these different fats has principally been studied with regard to cardiovascular diseases. The saturated fats are associated with an increase in LDL cholesterol, a risk factor for cardiovascular events, whereas the unsaturated fats lead instead to reduced levels of this cholesterol in the blood and are associated with a significant decrease in the mortality linked to these events. Work from the group of Drs. Walter Willet and Frank Hu of Harvard University has shown that the simple act of replacing 5% of calories provided by saturated fats with calories from sources of unsaturated fats reduced the risk of myocardial attacks by 10 to 25%, along with cardiovascular mortality¹. Consequently, the American Heart Association (AHA) recommends decreasing the intake of saturated fats and replacing it with unsaturated fats to decrease the incidence of cardiovascular diseases in the population². So it is not simply a question of eating less fat, but rather to wisely choose the type of fat consumed. This signifies, most certainly, that we must favour the use of sources of



unsaturated fatty acids, such as vegetable oils including those from olive, nuts, certain grains (linseed and chia) and fish, all while limiting the consumption of foods principally containing saturated fats such as red meats and cured meats. According to the AHA, tropical oils such as coconut oil, which is currently very popular, are not a valuable option because of their high content of saturated fats.

LUNG CANCER

The results of an enormous study suggest that this substitution of saturated fats by unsaturated fats could also have a very positive effect on the risk of lung cancer³. By combining the results obtained by ten prospective studies performed in North America, Europe and Asia on a total of 1,445,850 participants, the researchers were able to observe that a diet containing elevated levels of saturated fats was associated with an increase of 14% in the risk of lung cancer in the overall population and a 23% increase for smokers. This increased risk even reached 61% for squamous cell carcinoma (a form of lung cancer different from the small cell type frequent in smokers) and 40% for small cell pulmonary cancer. Inversely, an elevated intake of polyunsaturated fats was itself associated with an 8% reduction in the risk of cancer. According to the researchers' analysis, the replacement of 5% of the calories derived from saturated fats by unsaturated fats could diminish the risk of lung cancer by 17%.

The best way to significantly reduce the risk of lung cancer is certainly to stop smoking. Ex-smokers remain, however, at a higher risk of cancer than the general population but the substitution of saturated fats by unsaturated fats could thus represent a simple means of diminishing this residual risk, all while taking advantage of the well-documented benefits of unsaturated fats on cardiovascular health.

- (1) Wang DD et al. Association of specific dietary fats with total and cause-specific mortality. *JAMA Intern. Med.* 2016;176:1134-1145.
- (2) Sacks FM et al. Dietary fats and cardiovascular disease: a presidential advisory from the American Heart Association. *Circulation* 2017;136:e1-e23.
- (3) Yang JJ et al. Dietary fat intake and lung cancer risk: a pooled analysis. *J. Clin. Oncol.* 2017;35(26):3055-3064.