Nutritional Implication of Smoking

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There are several nutritional implications from smoking tobacco. One main effect of smoking is a change in appetite. Smoking will usually result in a decreased appetite. Thus many individuals will attempt to use smoking as a means of losing or maintaining their weight. However, many of those same individuals fail to fully recognize the severe overall health risks that smoking poses, such as chronic lung disease, heart disease and emphysema. Nicotine acutely increases energy expenditure by increasing metabolic rate, decreasing metabolic efficiency, or decreasing caloric absorption (1).

A study showed that mice had a decrease in appetite very quickly after being exposed to smoke. They experienced weight loss and increased use of adipose tissue for energy. Usually, when the body is in a negative energy balance, it will try to compensate by stimulating appetite signals. Smoking disrupts the body's internal equilibrium leading to an abnormal increase in the use of fat and overall energy expenditure. This decrease in energy consumption and increase in energy expenditure result in a wasting effect on the body, indicative of nutrient inadequacies (2).

Contrary to the animal model, cross-sectional studies with human subjects indicate that heavy smoking is associated with a greater risk of obesity. Smoking affects body fat distribution and is associated with visceral adiposity, an established marker of hyperglycemia and dyslipidemia. Smoking increases inflammation and oxidative stress. It is known to damage beta-cell function and impair endothelial function (3). The association between smoking and visceral fat accumulation may be partly explained by low physical activity and unhealthful diet frequently encountered among smokers (1).

Another factor that leads to insufficient nutrition is smoking's ability to hinder nutrient absorption in the body. It does so through affecting several areas of the digestive system. Consistent smoke inhalation, whether it be second hand smoke or direct smoke inhalation can lead to peptic ulcers, liver disease, Crohn's disease and heart burn. Smoking impairs the liver's ability to process toxins, alcohol and other drugs, eventually leading to a damaged liver. Crohn's disease has been shown to be more damaging to smokers, resulting in inflammation in the digestion tract causing pain, diarrhea and impaired nutrient absorption (4).

Smoking's negative effects do not end there. Studies show it also impacts cofactors and antioxidants in the body. Why is this important? Smoke contains oxidants and prooxidants which damage cell membranes from production of free radicals. Smoking inhibits antioxidant defenses of vitamins E, C, Beta-carotene and

selenium. Smokers show an overall reduction of B-complex vitamin status. Couple this with an already increased risk of an inadequate diet; the nutritional status of smokers can severely decline (5).

Smoking is a leading cause of morbidity and mortality (6). No matter how long one has smoked, health will improve after quitting. So kicking the habit is hard - but worthwhile. Post-cessation weight gain could be prevented with dietary intervention and programs aimed at increasing physical activity in combination with nicotine replacement therapy (1).

References

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