



CANCER – DIET AND SALT

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High salt intake and adverse effects on health

- **CVD**
- **Gastric cancer**
- **Obesity (risk factor for many ca)**
- **Meniere's disease**
- **Worsening of renal disease**
- **Triggering an asthma attack**
- **Osteoporosis**
- **Exacerbation of fluid retention**
- **Kidney stones**

High salt intake and adverse effects on health

- CVD
- **Gastric and some other cancers**
- **Obesity (risk factor for many ca) (increased intake of salt, through its effects on thirst has lead to increased intake of high-energy beverages)**
- **Meniere's disease** (attacks of vertigo become less frequent and severe with very low salt diet)
- **Migraine headaches, gastritis and ulcers** caused by *H.pylori* infection may benefit from a low-salt diet

High salt intake and adverse effects on health

- Worsening of **renal disease** (reducing salt intake reduce proteinuria, more marked in combination with ACE inhibitor)
- Triggering an **asthma attack** (reducing salt intake may help to reduce the severity of an asthma attack and other breathing problems)

High salt intake and adverse effects on health

- **Osteoporosis** (loss of calcium in the urine and bone demineralisation)
- **Exacerbation of fluid retention** (patients with heart failure, nephrotic syndrome and cirrhosis benefit in acut in salt intake; many women with idiopathic and cyclical oedema by reducing salt intake improving their symtoms; reducing salt in the diet can alleviate fluid retention in legs and ankles on long journeys)
- **Kidney stones** (increased excretion rate of calcium is a risk factor)

SALT AND CANCER

- Large amounts of food preserved by salting and pickling increasing risk cancer of the stomach, colorectal and head and neck cancers
- Incidence of gastric cancer has fallen in Western countries over the last 50 years due to improved food hygiene standards and the use of refrigeration and despite population-trending increases in dietary food salt sales
- Gastric cancer is still the most common cancer in some countries (especially in Japan)*
- Salting, pickling and smoking are traditionally popular ways of preparing food in Japan

* Tsugane S. Salt, salted food intake, and gastric cancer: Epidemiologic evidence. *Cancer Sci* 2005

SALT AND CANCER

- Association of **high dietary salt intake** and gastric cancer is strong in presence of ***H. pylori*** infection with atrophic gastritis.
- In addition to salt, smoking and low consumption of fruit and vegetables increases risk of gastric cancer
- In Croatia gastric cancer is 5th most common cancer in men, incidence is higher in northern part (Krapinsko-zagorska and Varazdinska county than in costal counties). Salt , *H.pylori* ?

GASTRIC CANCER

- Does the salt in food or combination of salt and other chemicals cause cancer ? *

Research has identified a **mutagen** in nitrite-treated japanese salted fish, and chemical structure of this mutagene suggests that it is derived from methionine, and salt and nitrite are precursors for its formation

- Workers exposed to **heat stress** consume daily from 13 to 38 g of salt. Salt strong enhances and promotes chemical gastric carcinogenesis and H. pylori infection**

*WHO. Diet, Nutrition and the Prevention of Chronic Diseases. 2003.

**Ngoan LT, Yoshimura T. Medical Hypothesis 2003;60(4):552-6.

SALT AND CANCER

- Reducing salt intake during pregnancy reduces risk of developing **breast cancer**
- Reducing salt intake reduces **obesity**
- **Lose weight** reduce risk of many cancers

SALT AND CANCER

- **Road salt** put down to highways over the winter may be associated with elevated mortality from cancer of the breast, lung, esophagus, throat, larynx, large intestine, rectum and bladder.
- **Sodium chloride** is most popular de-icers but reduces water quality, killing roadside vegetation and wildlife and damaging soils, road surfaces, bridges, parking and automobiles.

SALT AND CANCER

- **Correlation between USA mortality from 66 cancers and 219 environmental variables were suggestive of potential protective effects by soil selenium and calcium and demonstrated elevated cancer mortality in states where soil contained high levels of mercury or where road salt was widely used (“Reducing Cancer Mortality: A Geographical Perspective”)**

SALT AND CANCER

- **Mercury is a selenium antagonist. Selenium is protective against cancer, mercury promote it.**
- **But no available literature on the health impacts of road salt**
- **Cause and effect relationships cannot be established without further study**



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