Cerebrovascular Diseases

~

Diet and Salt

Vida Demarin, Sandra Morović

University department of neurology
University Hospital Sestre milosrdnice, Zagreb
Salt is...

- one of our basic tastes
- popular food seasoning
- used as food preservative in China 6000 yrs. ago
- ions which are necessary for survival of all living creatures
- role in maintaining fluid balance of the body
- essential for animal life, it is toxic to most land plants
- over consumption of salt increases the risk of health problems, especially hypertension
- excess salt consumption is linked with health problems: exercise-induced asthma, heartburn, osteoporosis, gastric ulcers, and cancer, left ventricular hypertrophy
Stroke is...

- one of leading causes of death and disability in Croatia
- Salt mainly effects levels of blood pressure - an important modifiable risk factor for stroke
- WHO addressed two meta-analyses of controlled trials that examined long-term effects of salt reduction in people with and without hypertension
- Both studies showed that moderate reductions in salt intake (2-2.6g/d) can reduce absolute systolic blood pressure by small but important amount.
World Health Organization, 2005

- global goal: to reduce rates of death from chronic disease by additional 2% every year.
- how many deaths could be averted over 10 years by implementing population based interventions?

- Most deaths averted would be from cardiovascular diseases (75.6%), followed by deaths from respiratory diseases (15.4%), and cancer (8.7%).
• Prospective cohort study on 43,685 men from Health Professionals Follow-up study

• 71,243 women from Nurses’ Health Study
5 Low-risk lifestyle factors:

- Smoking - not currently smoking (former smokers)
- Exercise ≥30min/d
- Diet score - 40%
- BMI <25kg/m²
- Alcohol consumption at least 5g/d
  - Not more than 15g/d for W
  - Not more than 30g/d for M
Low-risk lifestyle…

• Associated with lower risk of stroke, especially ischemic stroke

• RR of 0.19 in W and 0.21 in M, comparing the healthiest to the least healthy individuals

• Beneficial impact on primary prevention of chronic diseases and long-term well-being
Low-risk lifestyle…

- An overall healthy lifestyle may be more effective in lowering risk of cardiovascular disease, diabetes, and cancer than any 1 single factor.

- Lifestyle likely influences the risk of stroke in part through clinical risk factors, including hypertension and diabetes.
Women’s Health Study…
randomized trial of Aspirin in primary prevention of CV events in women

• Prospective cohort study of 37,636 women, followed for 10 yrs.
• Healthiest lifestyle score defined as
  – Never smoking
  – BMI <22 kg/m²
  – Exercising ≥4 x per week
  – ½ to 1 ½ drinks a day
  – Following a healthy diet
Healthiest lifestyle followers…

• RR of 0.29 for ischemic stroke compared to women with the least healthy lifestyle
Dietary Sodium Intake and Subsequent Risk of Cardiovascular Disease in Overweight Adults

Jiang He, MD, PhD; Lorraine G. Ogden, MS; Suma Vuppupudi, MPH; Lydia A. Bazzano, BS; Catherine Loria, PhD, MS; Paul K. Whelton, MD, MSc


Partial protection from salt-induced stroke and mortality by high oral calcium in hypertensive rats

JD Peuler and RL Schelper

Stroke 1992;23:532-538

Circulation. 2008;118:947-954

Primary Prevention of Stroke by Healthy Lifestyle

Stephanie E. Chiueh, ScD; Kathryn M. Rexrode, MD, MPH; Donna Spiegelman, ScD; Giancarlo Logroscino, MD, PhD; JoAnn E. Manson, MD, DrPH; Eric B. Rimm, ScD

Stroke 2004;35:1540

© 2004 American Heart Association, Inc.

Original Contributions

Sodium Intake and Risk of Death From Stroke in Japanese Men and Women

Chitato Nagata, MD; Natsuyoshi Takatsuka, MD; Natsumi Shimizu, MD; Hiroyuki Shimizu, MD

Circulation. 2008;118:904-906

Primary Prevention of Stroke

Impact of Healthy Lifestyle

Philip B. Gorelick, MD, MPH
• Dietary sodium is positively associated with high BP

• Studies suggest high sodium intake increases stroke mortality

• CONCLUSION: high sodium intake is strongly and independently associated with an increased risk of CV disease and all-cause mortality in overweight persons
• To examine the relation between sodium intake and death from stroke

• 13,355 men & 15,724 women

• CONCLUSION:
  • MEN: sodium intake was significantly positively associated with death from ICH and ischemic stroke
  • WOMEN: no association between sodium intake and ICH
Increase in fruit and decrease in wine consumption during 1964-1980 may have contributed to the decline of CVD mortality in Spain during 1975-1993.
10% to 20% of atherosclerotic ischemic strokes ...... Low fruit & vegetable intake
Salt trials…

- Size of BP decrease is correlated with that of the reduction of salt intake
- Reductions in salt intake can cause even greater BP decreases in people with higher baseline BPs
- BP increases rapidly with age in populations with high average salt intake
- Communities with low salt intake do not have age-related BP increase
Anti-salt campaigns

• 2004. “Salt – Watch it”
  – Public health campaign by Britain’s Food Standards Agency

• 2007. “Salt. Is your food full of it?”
  – Public health campaign by Britain’s Food Standards Agency

• [link:www.saltmatters.org]
  – Educating people about potential problems of a salt-laden diet

• 1996. Consensus Action on Salt and Health
  – Raising awareness of the harmful health effects of salt

• 2008. Consensus Action on Salt and Health
  – Raising awareness of high levels of salt hidden in sweet foods and marketed toward children
EU Salt Reduction Initiative

In the 2007 White Paper on a Strategy for Europe on Nutrition, Physical Activity and Health, the European Commission proposed to set up High Level Group focused on nutrition and physical activity related health issues. The High Level Group is composed of national representatives, experts in the field of nutrition and physical activity. For your information, I have attached the list of people on this High Level Group, so that you can see who the representative of your country is. The High Level Group was set up in autumn 2007 and has met several times since its instigation.

Countries that have already indicated they want to cooperate in this initiative are: Italy; The Netherlands; Belgium; Bulgaria; Ireland; Germany; Spain; Luxembourg; Austria; France; The UK; Finland; Sweden; Hungary; Slovenia; Norway; Denmark; Cyprus; Greece and Bulgaria.
How do we reduce salt intake?

• voluntary reduction within households

• reduction in the salt content of processed foods by manufacturers

• …in 2007, WHO published a manual: Prevention of Cardiovascular Diseases, Guidelines for Assessment and Management of Cardiovascular Risk

• all individuals should be strongly encouraged to reduce daily salt intake by at least one third

• Daily salt intake- less than 5g or less than 90mmol per day.
Conclusion:

• Recommendations!? Salt intake represents an important modifiable risk factor for stroke!

• If we don’t “THINK SALT” our current/future patients certainly will not!
HEALTHY LIFESTYLE AND PREVENTION OF STROKE
SUMMER STROKE SCHOOL
INTER-UNIVERSITY CENTER DUBROVNIK
Dubrovnik 8-13.06.2009.