

# NACIONALNI PROGRAM SMANJENJA KONZUMIRANJA SOLI U HRVATSKOJ

Željko Reiner, Ivan Pećin, Berislav Skupnjak

k *Klinički bolnički centar Zagreb i Med-Econ*



# Definicija

- Unos soli može se izraziti kao unos natrija i to kao masa ili mmol natrija, ili pak masa natrijevog klorida (kuhinjske soli). (1g natrijeva klorida = 17,1 mmol natrija ili 393,4 mg natrija) – 1 mmol = 23 mg natrija
- U nastavku će se riječ sol rabiti za natrijev klorid
- Izraz “unos soli” će se rabiti za unos bilo kojom namirnicom uključujući i aditive kao što su primjerice natrijev glutamat i ostala sredstva za konzerviranje hrane

100 mmol/l Na



oko 5g NaCl



2,3g Na



1 žličica



# Potrebe za solju

- U uobičajenim uvjetima fiziološka potreba je 8-10 mmol (184-230 mg) natrija dnevno
- Većina unesenog natrija izluči se bubrezima – mala količina drugim putovima (znoj, stolica, izdisanje...)
- 90-99% unesenog natrija izluči se mokraćom

# Preporučeni dnevni unos soli ovisno o životnoj dobi

DOB (g)	SOL (g)	Na (g)
• 1-3 god.	2	0,8
• 4-6 god.	3	1,2
• 7-10 god.	5	2,0
• > 11 god.	6	2,5

# Sol u hrani

Podrijetlo	Postotak	Procijenjena količina <sup>†</sup>
Polugotova, gotova i restoranska hrana	77%	~131
U neprerađenim namirnicama	12%	~20
Dodana		
<i>dosoljavanje tijekom jela</i>	6%	~10
<i>pri kuhanju kod kuće</i>	5%	~9

<sup>†</sup> izračunato na prosječni unos od 170 mmol Na dnevno (~10 g soli dnevno) i izraženo kao mmol/day

- neprerađena  
“prirodna” hrana sadrži  
2,3 – 69 mg natrija na  
100 g, odnosno  
10- 15% Na

- tvornički prerađena  
hrana sadrži 70-75%  
Na !!!

- voće 2,3mg/100g
- povrće 6,9mg/100g
- meso 69 mg/100g
- ribe 69 mg/100g
- jaja 69 mg/100g
- kruh 460 mg/100g
- sir 690 mg/100g
- slanina 1840 mg/100g

# SADRŽAJ Na(mg) u 100g NAMIRNICA

voće			povrće			pića	
grožđice	27		masline	2400		kakao	717
nektarine	6		kiselo zelje	747		Donat Mg	150
suhe šljive	4		gljive k.	400		JAMNICA MINERALNA	90
avokado	4		kukuruz k.	236		kava inst.	72
grejp	3		mrkva k.	236		sirup	68
papaja	3		cikla s.	236		čokolada	52
trešnje	2		grah k.	236		mlijeko	50
višnje	2		šparoga k.	236		STUDENAC MINERALNA	12
kruška	2		celer	100		pivo	7

# Sol se najčešće rabi kao:

- **začin:** u svrhu poboljšanja okusa hrani
- **konzervans:** za sprečavanje kvarenja mesa, ribe i mliječnih proizvoda
- **tvar za održavanje boje:**  
za procesuiranje mesa kako bi mu se uspjela održati boja
- **za reguliranje fermentacije:**  
kod pekarskih proizvoda jer zaustavlja rast kvasca i pljesni

For immediate release Tuesday 10 April 2007

## World Health Organisation report

**Traže se zakonske mjere ako prehrambena industrija ne smanji sadržaj soli**

Izvješće Svjetske zdravstvene organizacije (SZO) traži od multinacionalnih tvrtki da smanje sadržaj soli u svojim prehrambenim proizvodima **na najmanju moguću mjeru** u svim zemljama gdje ih prodaju i ako to ne učine u razumno vrijeme traži da se **poduzmu zakonske mjere da ih se na to prisili.**

**U Velikoj Britaniji se provodi javnozdravstvena akcija**

za smanjenje unosa soli u čitavom pučanstvu  
uz potporu **i vlade i prehrambene industrije.**

Posljednji podaci govore da je akcija uspjela i da se  
**unos soli počeo smanjivati.**

**U Finskoj** program smanjenja unosa soli traje od 1970tih i  
rezultati pokazuju da se **smanjio unos soli hranom,**

što je dovelo do **značajnog smanjenja**  
**prosječnog arterijskog tlaka**

**i istodobnog smanjenja smrtnosti od**

**moždanog udara i kardiovaskularnih bolesti.**

**Danas je u Velikoj Britaniji u gotovoj hrani prosječno 45% manje soli nego prije 4 godine**

**Javnost je pozvana da bojkotira malen broj preostalih tvrtki koje ne žele smanjiti sadržaj soli**

**84% gotove hrane je već dostiglo ciljni sadržaj soli kojeg je do 2010. godine postavila Agencija za standarde hrane.**

# I u USA se svijest o potrebi smanjenja unosa soli povećava

Traži se od FDA i vlade da poduzmu akcije kako bi se smanjio unos soli hranom

Sol je danas na tzv. GRAS listi FDA – načelno neškodljiva tvar

**Center for Science in the Public Interest**  
i **American Medical Association**  
traže od FDA da promijeni taj GRAS status.

# WORLD ACTION ON SALT AND HEALTH WASH

## World Action on Salt and Health

World Action on Salt and Health (WASH) **was established in 2005** and is a global group with the mission to improve the health of populations throughout the world by achieving a gradual reduction in salt intake. WASH will encourage multi-national food companies to reduce salt in their products and will work with Governments in different countries highlighting the need for a population salt reduction strategy. The overall aim is to bring about a reduction in salt intake throughout the world by reducing the amount of salt in processed foods as well as salt added to cooking, and at the table. So far WASH has over **194 members** from **48 countries** and also the support of the WHO. Members are mainly experts in hypertension, but some have other roles as well - but all have an interest in reducing salt intake in their individual countries.

### Our Mission

World Action on Salt and Health's mission is to achieve a reduction in dietary salt intake around the world from the current intake of 10-15g/day to the World Health Organisation (WHO) target of 5g/day. This fall in salt intake and the resulting fall in blood pressure would lead to major reductions in both incidents of, and deaths from Cardiovascular Disease (CVD) i.e. stroke, heart failure and heart attacks, with a major reduction in the disability that results from CVD.

### Our Aims

#### Food Industry:

- To reach a consensus with the food manufacturers that there is strong evidence that salt is a major cause of high blood pressure and has other adverse health effects such as osteoporosis and stomach cancer;
  - Act as a global monitor highlighting internationally marketed products that are high in salt;
  - Persuade international food companies to employ a global salt reduction plan, so that not only will the salt content of their processed food products be reduced but it will be uniform in each country they market in;
- To ensure a standard clear and comprehensive front of pack nutritional labelling system, for the salt content of all processed foods, that will be applied universally i.e. the Multiple Traffic Light labelling system developed by the Food Standards Agency in the UK .

#### Government

- To ensure the body of evidence from the scientific community about the dangers of excessive salt consumption, is translated into policy by each individual Government around the world;
  - Sharing best practice for salt reduction strategies with Governments and health organisations worldwide.

#### Home Cooking

- Reduce salt added during cooking and at the table by media publicity and a public health campaign e.g. the Food Standards Agency campaign in the UK – Salt - eat no more than 6g a day ( <http://www.salt.gov.uk/index.shtml> ).

An average reduction of 6 grams a day over the next decade could easily be achieved if the food industry acts. Through the fall in blood pressure that would ensue, this reduction in salt intake will have a large impact on reducing strokes by approximately 22% and heart attacks by 16%, as well as having other health benefits for the global population. A 6 gram reduction in salt intake would prevent 7.5 million incidents of CVD a year half of which are fatal.

# WASH

- World Action on Salt and Health
- apelira na multinacionalne kompanije da smanje količinu soli u proizvodima na najmanju moguću mjeru sukladno preporukama WHO čime bi se mogli spasiti milijuni života širom svijeta (akcija iz studenog 2007.)
- KVB i dalje su vodeći uzrok smrtnosti razvijenih zemalja i zemalja u razvoju, svake godine od njih umre oko 12,7 milijuna ljudi

**IT'S NEVER TOO LATE...**



**Cutting your salt intake  
could seriously improve  
your health - immediately!**

**FACT:** Older people who cut their salt intake to under 6g per day reduce their risk of stroke by up to 31% and heart disease by up to 24%.

**NATIONAL SALT AWARENESS DAY**  
**26 JANUARY 2005**

**CONSENSUS ACTION ON SALT AND HEALTH**

EMAIL: [cash@sghms.ac.uk](mailto:cash@sghms.ac.uk) WEBSITE: [www.actiononsalt.org.uk](http://www.actiononsalt.org.uk)

Charity Registration No: 1098818

# CASH

- Ističe problem konzumiranja “skrivenih soli u prehrani” koju čine 70% dnevnog unosa soli putem živežnih namirnica gotove ili polugotove hrane, na koju pojedinac nema utjecaja osim da je prestane uzimati



# CASH

- ističu proizvode sa najvećim dodatkom soli i pozivaju potrošače na bojkot tih proizvoda
- istražuju alternativne proizvode sa manjom količinom soli koji su prisutni na tržištu i promoviraju iste proizvode





Blood Pressure Unit,  
St George's University of London,  
Cranmer Terrace, London, SW17 0RE  
Telephone: 020 8725 2409  
Fax: 020 8725 2959  
E-mail: [cash@sgul.ac.uk](mailto:cash@sgul.ac.uk)  
[www.actiononsalt.org.uk](http://www.actiononsalt.org.uk)

## **Media Release**

Embargoed: Not for publication before 00.01 Wednesday 5<sup>th</sup> December 2007

# **CASH comment on The Lancet Chronic Diseases Series:**

**“Salt reduction and tobacco control are cheap interventions that would avert millions of chronic disease related deaths” – Dr Perviz Asaria and colleagues**

**"This important new research shows that a relatively small reduction in salt intake, in the order of 15%, could save approximately one million lives each year around the world,**

but bigger reductions in salt intake would save even more lives.

**The onus is now on the global food industry to save these lives** by slowly removing the salt

that they currently add to manufactured foods and to reduce salt intake worldwide to less than 5 g/day.

Furthermore, the paper clearly shows that compared to other public health interventions, salt reduction is cheap and, importantly, can be achieved in many countries by the food industry

without having to require individuals to change their behaviour.

**The UK food industry is now acting. The rest of the world needs to follow."**

# Salt intake and the health of your children



A meal like this contains 7 grams of salt.  
Recommended daily intake should not  
exceed 6 grams.



Do you know how much salt  
the average child consumes  
each year?

Take a guess...



**nearly 4 kilos!**

is this unhealthy?

**Yes**

Children are now believed to be eating as much salt as adults  
(9 to 12gms a day), although a healthy intake for children  
should be less than half of this. Most of this salt  
comes hidden in processed foods.



For more information visit:

CASM - Consensus Action on Salt and Health  
Blood Pressure Unit, St George's Hospital Medical School, Cranmer Terrace, London SW17 0JG.  
Tel: 020 8728 2424 - email: [casm@sghtn.ac.uk](mailto:casm@sghtn.ac.uk) - website: [www.bps.ac.uk/casm](http://www.bps.ac.uk/casm)

# Are your children overdosing on salt?



American  
blueberry  
muffin

= **1.1g salt**



sausage,  
baked beans  
and chips

= **2.8g salt**

This is a total of 3.9g of salt in one meal, more than a six year old should eat in a whole day.

A high salt intake in childhood leads to higher blood pressure and an increased risk of stroke and heart disease in later life. Give your children a good start and reduce their salt intake today!

Visit our website to download our leaflet **Salt and the health of your children**

**CONSENSUS ACTION ON SALT AND HEALTH**

EMAIL: [cash@sgul.ac.uk](mailto:cash@sgul.ac.uk) WEBSITE: [www.octlononsalt.org.uk](http://www.octlononsalt.org.uk)



## National Salt Awareness Week

January 28th - February 3rd 2008

# ZEMLJE KOJE PROVODE NACIONALNU KAMPANJU ZA SMANJE SOLI

## U EUROPI

- Engleska, Francuska
- Švedska, Njemačka
- Finska, Nizozemska
- **HRVATSKA**
- Srbija, Italija, Turska

## U OSTATKU SVIJETA

- SAD, Japan, Kina
- Australija, Kanada
- Iran, Nepal, Guam
- Kamerun
- Bangladeš

**PRVI HRVATSKI KONGRES O HIPERTENZIJU  
s međunarodnim sudjelovanjem**



**HRVATSKO DRUŠTVO ZA HIPERTENZIJU  
HRVATSKOG LIJEČNIČKOG ZBORA**

**DEKLARACIJA  
O VAŽNOSTI ZAPOČIMANJA  
NACIONALNE KAMPANJE  
ZA SMANJENJE KONZUMACIJE  
KUHINJSKE SOLI**

**Listopad 2006.**

**DEKLARACIJA**  
O VAŽNOSTI ZAPOČIMANJA NACIONALNE KAMPANJE  
ZA SMANJENJE KONZUMACIJE KUHINJSKE SOLI

Aktivno stajalište o potrebi pristupanja širokoj nacionalnoj strategiji za smanjenje konzumacija kuhinjske soli:

1. Učesnici Kongresa su svjesni **važnosti prehrane, a napose kuhinjske soli u arterijskoj hipertenziji.**
2. Zbog te uloge **sudionici Kongresa smatraju korisnim prihvatiti inicijativu nacionalne kampanje za ograničenje prekomjerne konzumacije soli.**
3. Za ostvarenje tog cilja **potrebna je združena akcija svih sudionika, ne samo u zdravstvu, bazirana na preporukama SZO, i temeljena na iskustvu drugih zemalja koje su je već usvojile.**
4. Akcijom će se obuhvatiti svi potencijalni izvori unosa soli putem hrane, što znači **animiranje brojnih drugih subjekata** od organa vlasti, gospodarskih komora, prehrambene industrije, ugostitelja, obrazovnih i znanstvenih institucija.
5. Zbog navedenog **Prvi hrvatski kongres o hipertenziji, Hrvatskog društva za hipertenziju daje punu podršku ovoj inicijativi za pokretanjem nacionalne kampanje i traži da se ona temeljito razradi, te da se s njom upoznaju sva relevantna društva HLZ, predstavnici države i osiguravajućih društava.**

## 6. Hrvatski kongres o aterosklerozi

- Predstavljen nacionalni program smanjenja prekomjernog unosa kuhinjske soli

Svibanj 2007.



# **AKADEMIJA MEDICINSKIH ZNANOSTI HRVATSKE**

akademik **Željko Reiner**

**MED-EKON**, d.o.o. za organizaciju i ekonomiku zdravstva

prim.dr. **Berislav Skupnjak**

**HRVATSKO DRUŠTVO ZA HIPERTENZIJU**

prof.dr. **Duško Kuzmanć**, doc.dr. **Bojan Jelaković**

**HRVATSKO DRUŠTVO ZA ATEROSKLEROZU**

akademik **Željko Reiner**

**HRVATSKO KARDIOLOŠKO DRUŠTVO**

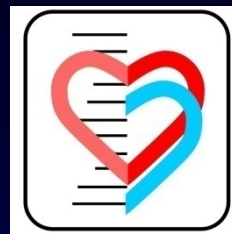
prof.dr. **Davor Miličić**

**MEDICINSKI FAKULTET SVEUČILIŠTA U ZAGREBU**

dekan prof.dr. **Nada Čikeš**

**AMBULANTA PRIM.DR.ALEKSANDAR JOVANOVIĆ**

**HRVATSKA  
NACIONALNA KAMPANJA  
ZA  
SMANJENJE KONZUMIRANJA  
KUHINJSKE SOLI**



**MANJE SOLI - VIŠE ZDRAVLJA**



# Ciljevi:

- Doći do točnih podataka o konzumiranju soli u Hrvatskoj mjerenjem količine natrija u mokraći.
- Budući se većina soli unosi gotovom i polugotovom hranom te restoranskim obrocima, neophodno je postići smanjenje sadržaja soli upravo u tim jelima.
- 2009. organizirati Tjedan svjesnosti o pogibelji soli

# Ciljevi:

- Načiniti će se plan smanjenja sadržaja soli u različitim vrstama namirnica.
- Prehrambena industrija svojim proizvodima bitno doprinosi količini soli koja se unosi hranom - ostvariti će se kontakti s najvećim prehrambenim tvrtkama i nastojati će se potaknuti proizvodnja namirnica s manjim sadržajem soli, a stručna će društva promicati konzumiranje tih namirnica.

# Ciljevi:

- U kontaktima s vladom će se nastojati postići veća dostupnost pučanstvu namirnica s manjim sadržajem soli što se može ostvariti primjerice nižom stopom poreza za te namirnice.
- Za sada u Hrvatskoj ne postoji zakonska obveza navođenja sadržaja soli ili natrija na deklaraciji uz namirnice. Radi toga će se nastojati postići uvođenje takve obveze.

## Spinach & ricotta pizza

Nutrition information				Guideline daily amounts		
Typical values (cooked as per instructions)	Per 100g	Per ½ pizza	% RSD in 60k for women	Women	Men	Children (5-10 years)
Energy	1001 kJ 238 kcal	1977 kJ <b>470 kcal</b>	<b>23.5%</b>	2000 kcal	2500 kcal	1800 kcal
Protein	9.3g	18.4g	40.9%	45g	55g	24g
Carbohydrate	28.7g	56.7g	24.7%	230g	300g	220g
of which sugars	2.7g	<b>5.3g</b>	<b>5.9%</b>	90g	120g	85g
of which starch	25.9g	51.2g	-	-	-	-
Fat	9.6g	<b>19.0g</b>	<b>27.1%</b>	70g	95g	70g
of which saturates	3.7g	<b>7.3g</b>	<b>35.5%</b>	20g	30g	20g
mono-unsaturates	4.0g	7.9g	-	-	-	-
polyunsaturates	1.6g	3.2g	-	-	-	-
Fibre	2.3g	4.5g	18.8%	24g	24g	15g
Salt	1.0g	<b>2.0g</b>	<b>39.3%</b>	6g	6g	4g
of which sodium	0.40g	0.79g	32.9%	2.4g	2.4g	1.4g

You may want to keep an eye on your **salt** intake as too much may increase your blood pressure.

It's important to watch your **calorie** intake, as without regular exercise too many may lead to weight gain.

A diet low in **fat**, particularly **saturated fat**, could help to maintain a healthy weight and a healthy heart.

To maintain a healthy lifestyle, we recommend aiming for at least 30 minutes of moderate exercise each day, such as brisk walking.

# Ciljevi:

- Kampanjama i promičbenim akcijama nastojati će se uvjeriti pučanstvo u korist konzumiranja hrane koja sadrži manje soli, poput svježeg voća i povrća, te važnost izbjegavanja hrane s mnogo soli.
- Preporučivati će se izbjegavanje dosoljavanja hrane prigodom konzumiranja hrane (što je u nas, na žalost, česta pojava) i uporaba što je moguće manje soli prigodom pripremanja hrane kod kuće.



# TOHP

kardiovaskularni rizik smanjen za 25%

ukupna smrtnost smanjena za 20%

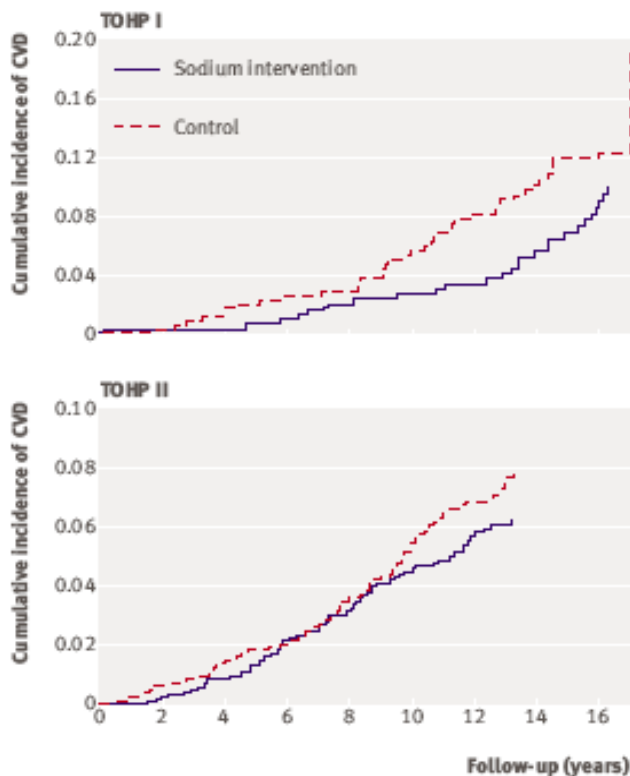


Fig 2 | Cumulative incidence of cardiovascular disease (CVD) by sodium intervention group in TOHP I and II, adjusted for age, sex, and clinic

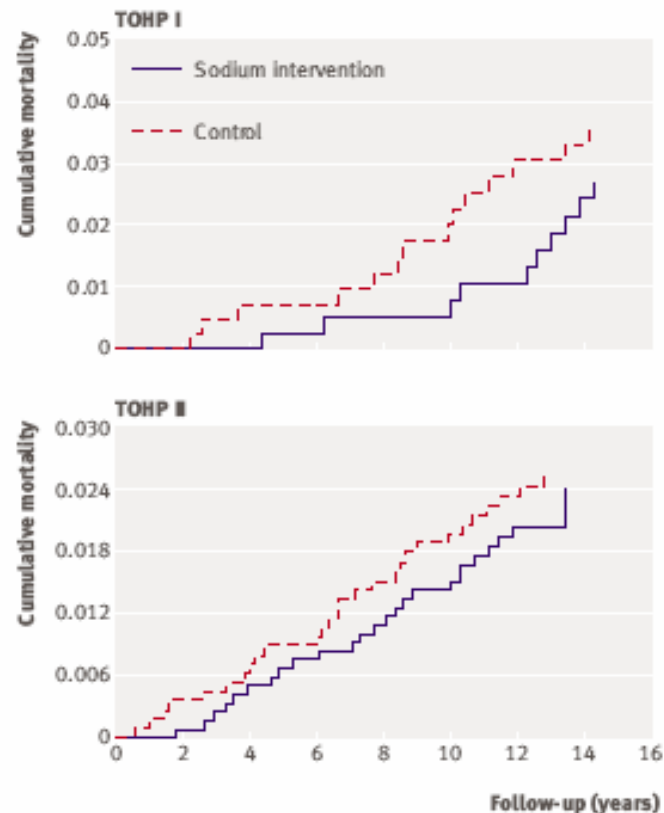


Fig 3 | Total mortality by sodium intervention group in TOHP I and II, adjusted for age, sex, and clinic

Učinci smanjenja unosa kuhinjske soli za ~ 3 g nakon 10 -15 godina



**Hvala na pozornosti !**