Novine u vezi povezanosti ishrane i kardiovaskularnih bolesti

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Masovne nezarazne bolesti povezane sa ishranom

- Kardiovaskularne bolesti
- Diabetes mellitus
- Gojaznost
- Maligne bolesti
- Osteoporoza
- Karijes

Faktori rizika za kardiovaskularne bolesti

- Promenljivi
  - **Pušenje**
  - **Dislipidemija**
    - **Visok LDL-holesterol**
    - **Nizak HDL-holesterol**
    - **Visoki trigliceridi**
  - **Visok krvni pritisak**
  - **Diabetes mellitus**
  - **Gojaznost**
  - **Ishrana**
  - **Thrombogeni faktori**
  - **Fizicka neaktivnost**
  - **Povećan unos alkohola**

- Nepromenljivi
  - **Lična anamneza**
  - **Porodična anamneza**
  - **Uzrast**
  - **Pol**

Adapted from: Pyörälä K *et al. Eur Heart J* 1994;**15**:1300–1331

Ishrana i koronarna bolest

Dokazi	Smanjuju rizik	Ne utiču na rizik	Povećavaju rizik
Sigurni	Linoleinska Riba i riblje ulje Voće i povrće Kalijum Nizak do umeren unos alkohola	Vitamin E	Miristinska, palmitinska MK Visok unos Na Hiperenergetska ishrana Preteran unos alkohola
Verovatni	Mononezasićene MK Integralne žitarice Koštunjavo voće Biljni steroli folati	Stearinska MK	Holesterol Nefiltrovana kafa
Izvesni	Flavonoidi soja		Beta karotenoidi Poremećaj ishrane u fetalnom periodu
Nepotpuni	Ca, Mg, vitamin C		Ugljeni hidrati Fe

AHA Guide for Improving Cardiovascular Health at the Community Level, 2013 Update: A Statement for Public Health Practitioners, Healthcare Providers, and Health Policy Makers

Pearson TA, Palaniappan LP, Artinian NT, Carnethon MR, Criqui MH, Daniels SR, Fonarow GC, Fortmann SP, Franklin BA, Galloway JM, Goff DC Jr, Heath GW, Holland Frank AT, Kris-Etherton PM, Labarthe DR, Murabito JM, Sacco RL, Sasson C, Turner MB;

American Heart Association | American Stroke Association

Preporuke za smanjenje rizika

Voće& povrće

Integralne žitarice

Ribe bogate omega3 i omega6 mk

Mršavo meso

Obezmašćeno mleko i mlečni proizvodi 1% najviše

Smanjenje dodavanja šećera

Malo ili nimalo soli

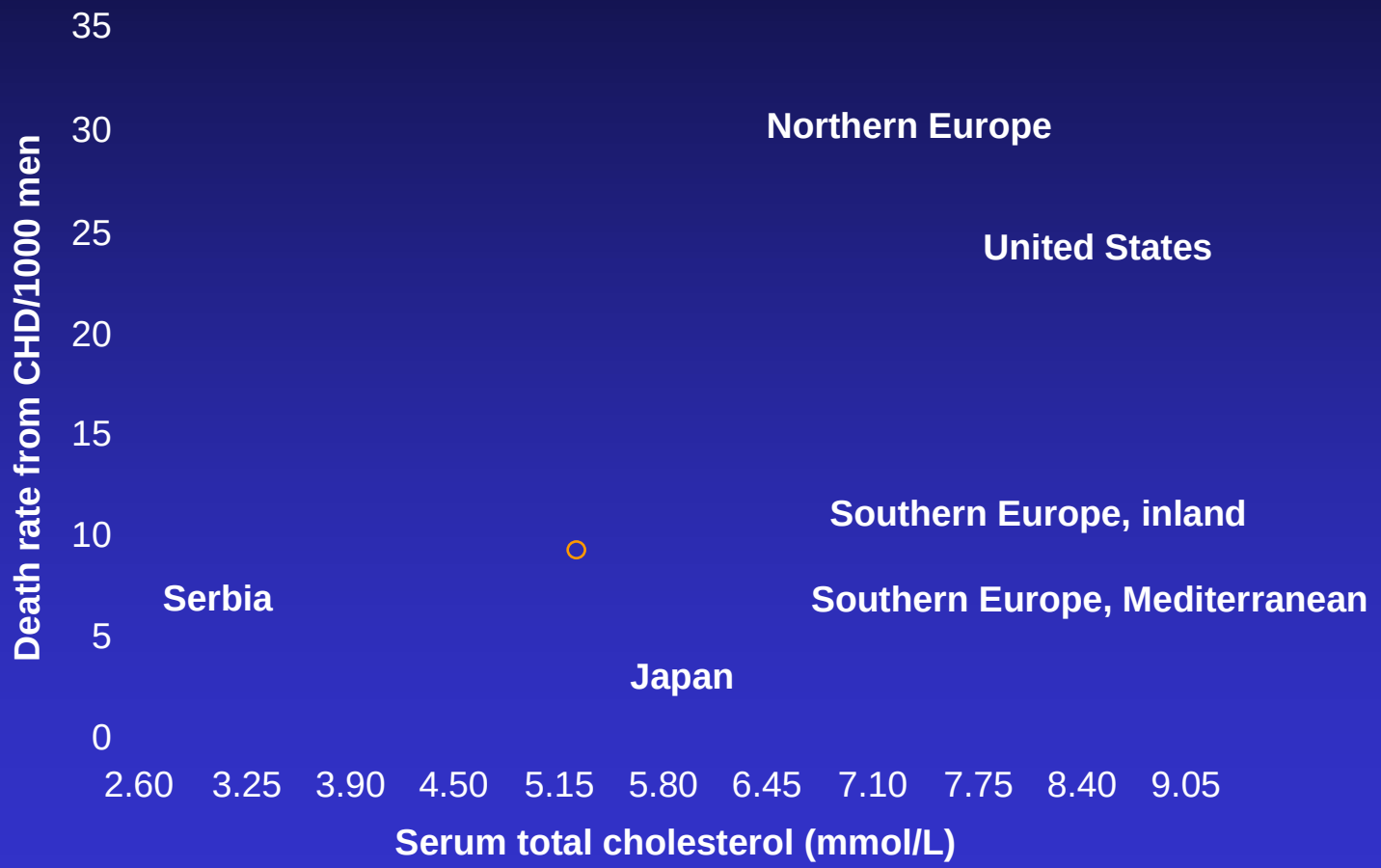
Umerena upotreba alkohola

Makronutrijenti

- proteini
- ugljenihidrati
- lipidi

Relationship of serum cholesterol to mortality

(Seven Countries Study)



Izbor masti je važan!

Zasićene

1/4

- Punomasno mleko i mlečni proizvodi
- Pite
- Biskviti
- Svinjska mast
- Mlečni margarini

Mono-nezasićene

2/4

- Maslinovo ulje
- Ulje repice

Poli-nezasićene

1/4

- Suncokretovo ulje
- Riblje ulje

Zamena zasićenih masti u ishrani – izbori

- **Povećati ugljene hidrate**
- **Povećati mononezasićene masti**
- **Povećati polinezasićene masti – ω-3 ili ω-6**
- **Kompatibilno sa mediteranskom ishranom**

Masnokiselinski sastav ulja*

Ulje	SFA	MUFA	PUFA	Holesterol
Canola †	6	62	31	0
Kukuruzno	13	25	62	0
Maslinovo	14	77	9	0
Palmino	51	39	10	0
Repicino	9	12	78	0
Sojino †	15	24	61	0
Suncokretovo	11	20	69	0

*Values for SFA, MUFA, and PUFA represent percentage of total fat calories, whereas those for cholesterol are expressed as mg per tablespoon. SFA is the sum of lauric, myristic, palmitic, and stearic acids.
†Contain a considerable amount (>5%) of alpha-linolenic acid.
‡Some are high in *trans* fatty acids: vegetable shortening>margarine fat>animal fat shortening>butter fat.
SFA, saturated fatty acids; MUFA, monounsaturated fatty acids; PUFA, polyunsaturated fatty acids.

Problem trans masnih kiselina

- Nastaju hidrogenizacijom ulja
- Upotrebljavaju se u prehrambenoj industriji za duže održavanje svežine i ukusa u proizvodima kao što je brza hrana, krofne (2g/100g), pekarski proizvodi, tvrdi margarin, pomfrit (6 g/100g)
- Podižu nivoe ukupnog i LDL holesterola, smanjuju nivo HDL

Masne kiseline - efekat na lipoproteine plazme

	LDL-C	HDL-C	TG
SAFA	⇧	⇧	⇔
MUFA			
Cis-oleinska	⇩	⇔	⇔
Trans-oleinska	⇧	⇩	⇔
PUFA			
Linolna	⇩	⇔	⇔
α-linoleinska	⇩	⇔	⇔
Epa/dha	⇔ ⇧	⇔	⇩

Način pripreme obroka je veoma bitan!

- pečenje
- kuvanje
- mikrotalasna rerna
- suvo prženje

Nutrition Facts

Amount Per Serving

Pork chop (5 ounces) with 1/2 inch of fat

Calories 450	Calories from Fat 315
	% Daily Value
Total Fat 35g	**54%**
Saturated Fat 13g	**65%**

Potato (5 ounces) with 1 tablespoon butter and 1 tablespoon sour cream

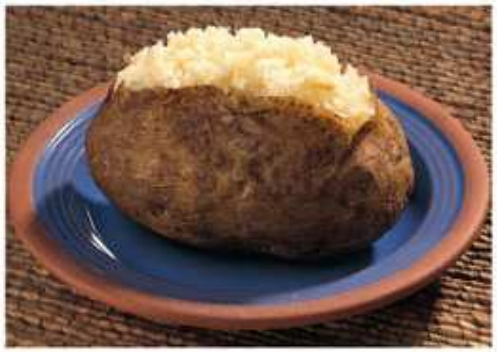
Calories 400	Calories from Fat 250
	% Daily Value
Total Fat 28g	**43%**
Saturated Fat 18g	**90%**

Whole milk (1 cup)

Calories 150	Calories from Fat 70
	% Daily Value
Total Fat 8g	**12%**
Saturated Fat 5g	**25%**

Pork chop (4 ounces) with fat trimmed off

Calories 230	Calories from Fat 100
	% Daily Value
Total Fat 11g	**17%**
Saturated Fat 4g	**20%**



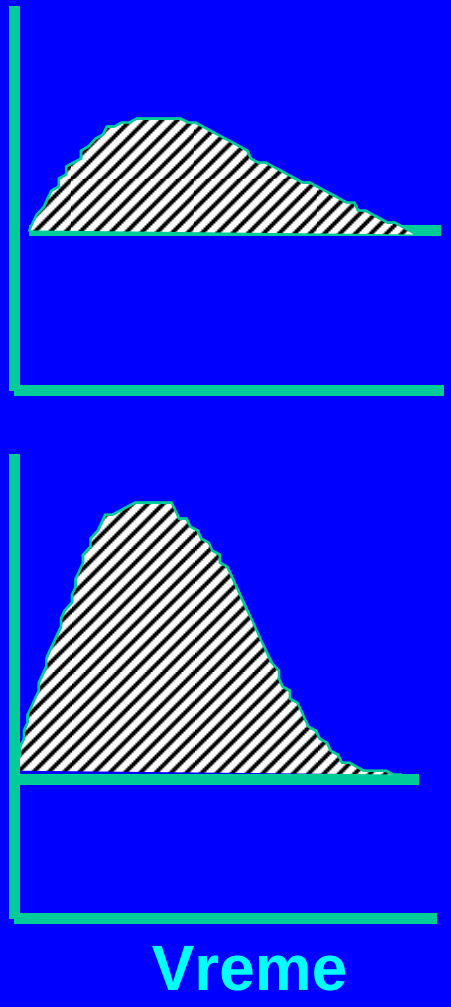
Plain potato (5 ounces)

Calories 150	Calories from Fat 0
	% Daily Value
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**

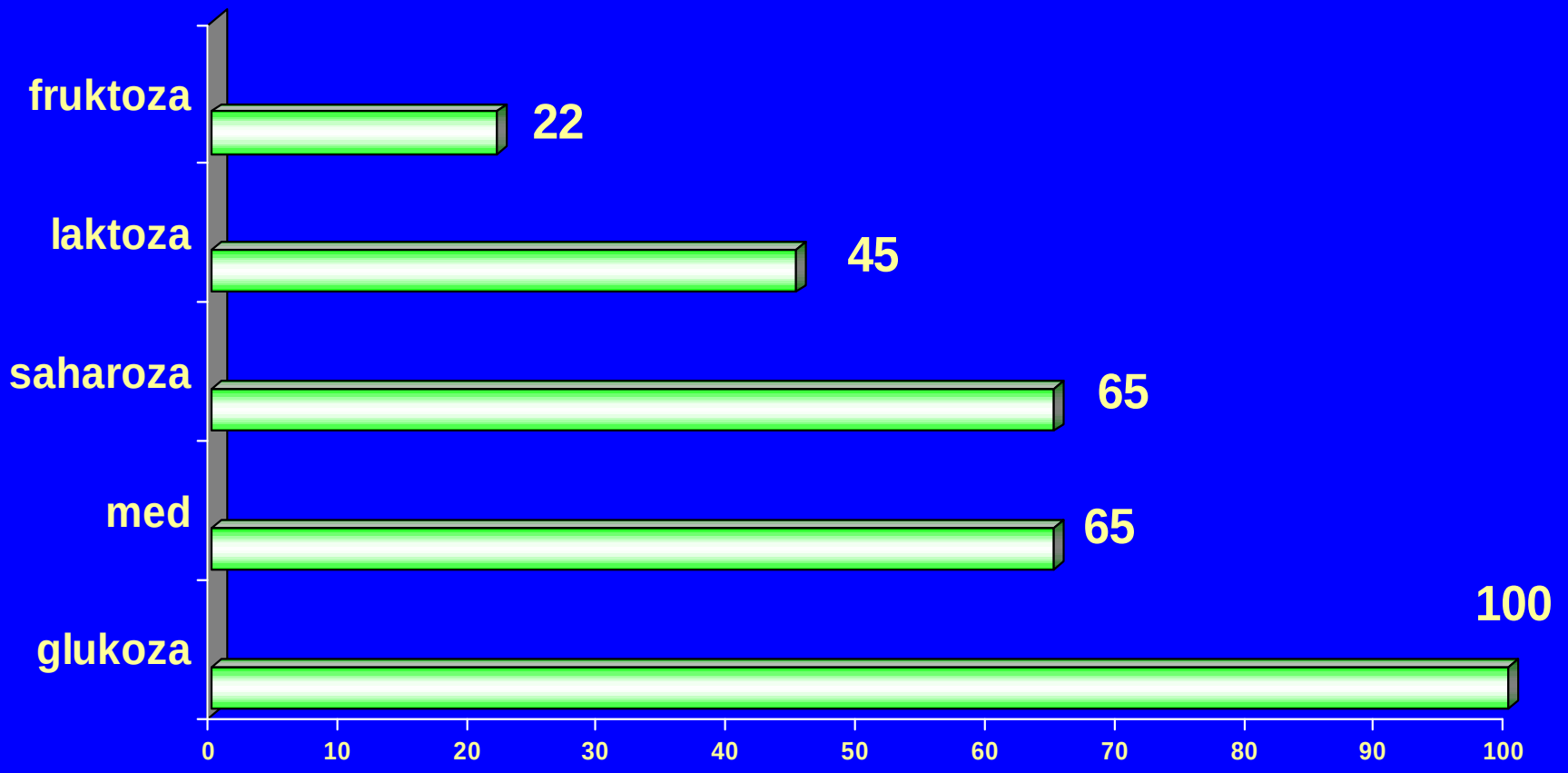
Fat-free milk (1 cup)

Calories 90	Calories from Fat 0
	% Daily Value
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**

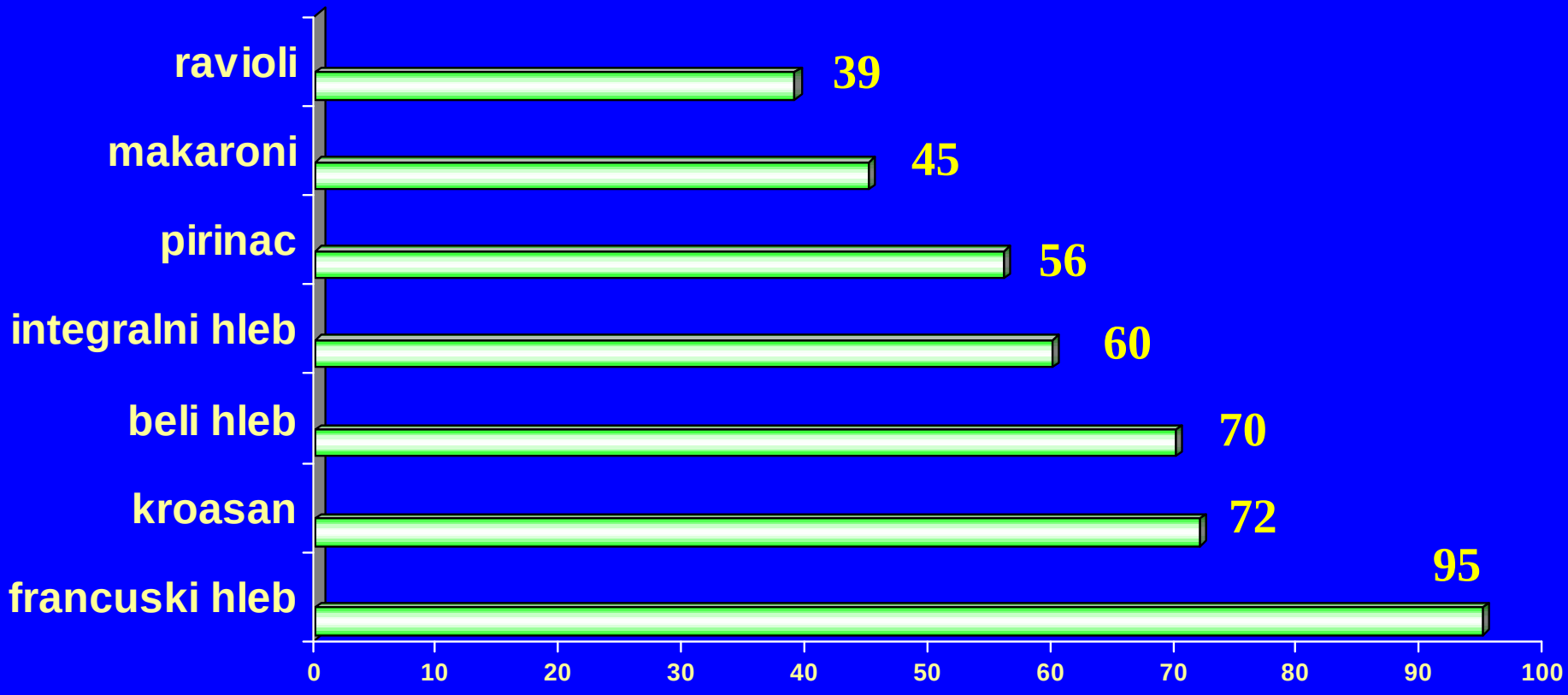
- **Namirnica sa niskim glikemijskim indeksom**
- **Namirnica sa visokim glikemijskim indeksom**



Glikemijski indeks



Glikemijski indeks namirnica iz grupe žitarica



Mediteranska piramida ishrane

Programi za snižavanje holesterola (AHA, NCEP)

Nutrijent	Step I*	Step II*	TLC ishrana*
Ukupne masti **Zasićene** **Polinezasićene** **Mononezasićene** **Mononezasićene**	30% ili manje 7-10% Do 10% Do 15%	30% ili manje ≤ 7% Do 10% Do 15%	25-35% ≤ 7% Do 10% Do 20% Unos *trans* MK nizak
Ugljeni hidrati	55% i više	55% i više	50% -60%
Proteini	oko 15%	oko 15%	oko 15%
Holesterol	Manje od 300mg/dan	Manje od 200mg/dan	Manje od 200mg/dan
Ukupne kalorije	Za dostizanje i održavanje poželjne TM	Za dostizanje i održavanje poželjne TM	Uravnotežen energetski unos i potrošnja radi održavanja poželjne TM i sprečavanja gojenja

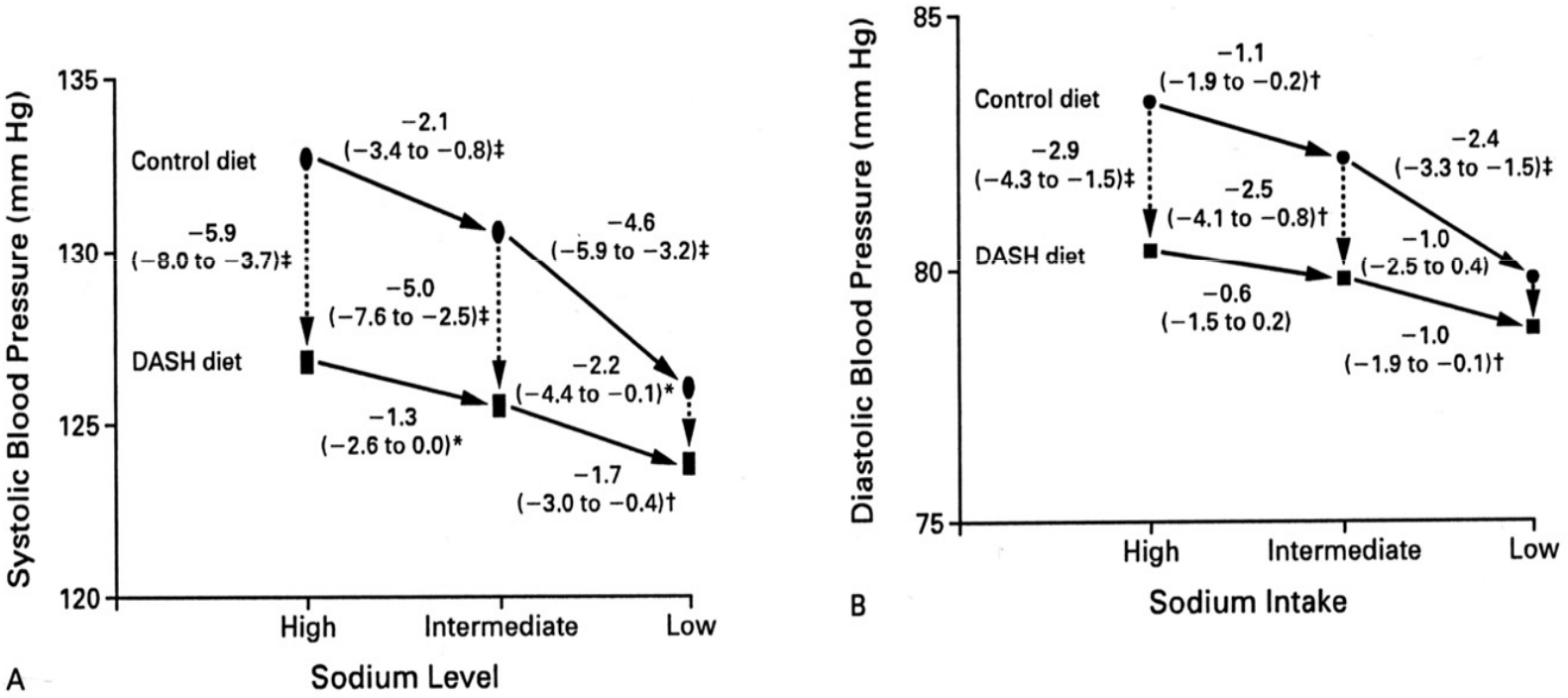
*preporučeni unos prikazan kao % ukupnih kalorija (Circulation 2002, 102:2284)

Dietary Approach to Stop Hypertension (DASH)

• Integralne žitarice – biljni proteini, vlakna, Ca,Mg,K, folati	• 35 % energije ~ 240 - 300 g
• Povrće – vlakna, vitamin A,C, Mg,K,Ca	
• Voće uključujući jagodičasto – vlakna, vitamin A,C, K,Mg	• 500 g
• Obrano mleko i mlečni proizvodi	• 500 g
• Meso, piletina, riba	• 500 – 750 g
• 4-5 puta nedeljno leguminoze, semenke ili koštunice	• < od 150 g
• Vidljive masnoće PUFA/MUFA	• 20 - 30 g
	• Ostatak do 2000 kcal

Lin PH et al, J Am Diet Assoc. 2003, 103 : 488-496

Efekat sniženog unosa Na i DASH dijete na arterijski pritisak



Sacks FM et al. N Engl J Med 2001: 344: 3-10

Dual Declaration

Nutrition Facts

Serving Size 2/3 cup (27g)
Servings Per Container 1

Amount Per Serving	Cereal with Reading Skim Milk	Cereal with Reading 2% Reduced Fat Milk
Calories	110	80
Calories from Fat	10	0
		% Daily Value*
Total Fat 1g	2%	0%
Saturated Fat 0.5g	3%	1%
Trans Fat 0g		
Cholesterol 0mg	0%	0%
Sodium 240mg	10%	4%
Potassium 210mg	6%	4%
Dietary Fiber 3g	12%	0%
Sugars 6g		
Protein 2g		
Vitamin A	0%	10%
Vitamin C	0%	0%
Calcium	0%	10%
Iron	45%	0%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

http://www.doctoryum.com

http://www.diabeticlivingonline.com