

Lowering your blood pressure with
natural medicine

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Saskatoon Community Clinic

Chronic Disease Management Series April 21, 2009



*Saskatoon
Community
Clinic*

Modalities

- ◆ Diet
- ◆ Supplements
- ◆ Lifestyle
- ◆ Exercise
- ◆ Mind body medicine





DASH Diet daily servings:

- ◆ 8-10 fruit and vegetables
- ◆ 7-8 grain products
- ◆ 2-3 low fat dairy
- ◆ 2-3 lean meat & fish
- ◆ Nuts, seeds and dried beans 4-5/week
- ◆ Fats and oils 27% (2-3 tsp/day)



DASH results

- ◆ For people with high blood pressure:
 - systolic pressure ↓ by 8.9 mm Hg
 - diastolic pressure ↓ by 4.5 mm Hg
- ◆ Best results were for people on the DASH diet plus the lowest level of sodium intake (≤ 1500 mg salt or 2/3 teaspoon)



Servings of Fruits and vegetables

- ◆ One medium sized fruit or vegetable
- ◆ 1 cup of salad
- ◆ ½ cup of cooked vegetables
- ◆ 1 4oz glass of fruit juice



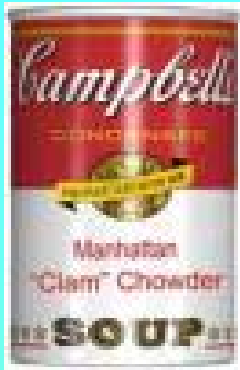
Aim for a wide variety of colors and kinds

- ◆ Dark green leafy: romaine lettuce, spinach, Swiss chard
- ◆ Dark orange: carrots, squash, sweet potato
- ◆ Cabbage family: broccoli, Brussels sprouts, cabbage, kale
- ◆ Onion family: onions, garlic, shallots, leeks
- ◆ Red: tomatoes, red peppers, beets
- ◆ Berries: blueberries, raspberries, strawberries



How to get enough fruits and vegetables

- ◆ Have at least 2 servings with breakfast & lunch
 - Mixed berries or a glass of fruit juice and an apple with breakfast
 - A salad or raw vegies with dip with lunch
- ◆ Have at least 3 servings with supper
 - Baked squash, green beans and beets
 - Swiss chard, carrots and broccoli
- ◆ Have at least 1 snack (preferably 2) per day
 - A pear, some plums, banana, carrot sticks, etc



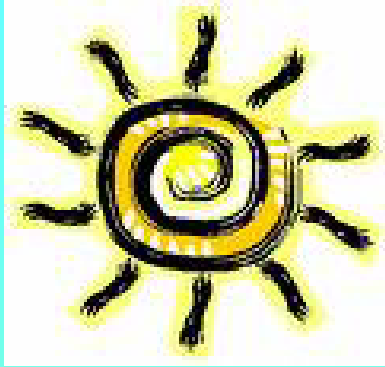
Sodium

- ◆ Minimum daily requirement = 500mg
- ◆ Low sodium diet = 1500mg/day
- ◆ 1 teaspoon of salt = 2358mg
- ◆ Average NA diet = > 3900mg/day
- ◆ 75% of sodium in our diet comes directly from foods: tinned soups, snacks, processed meats, restaurant meals



Magnesium

- ❖ Sources: whole grains, nuts, beans, green leafy vegetables, fish
- ❖ Magnesium helps to regulate blood sugar levels, maintain normal muscle & nerve function, maintain normal heart rhythm, decrease platelet aggregation and lower blood pressure
- ❖ Adults 320mg/d(♀) 420mg/d(♂)
- ❖ Most standard North American diets do not contain adequate magnesium



Vitamin D

◆ Sources:

- Sun exposure April-September
- Fatty ocean fish
- Some dairy products
- Supplements

◆ Deficiency is common in all age groups

◆ 25-OHD should be ~ 100 nmol/l



Vitamin D

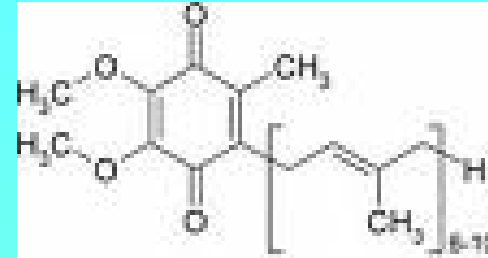
- ◆ Sufficient vitamin D can lower blood pressure and help to prevent heart attack and stroke
- ◆ Vitamin D is also protective against over 20 types of cancer, multiple sclerosis, diabetes, rheumatoid arthritis, lupus, osteoporosis, progression of osteoarthritis
- ◆ Most adults need at least 1000 IU/day of vitamin D3 (take with meals)



Vitamin C

- ❖ Taking additional vitamin C (500mg) along with anti-hypertensive medication can further reduce systolic blood pressure
- ❖ Eating a diet rich in natural sources of vitamin C can help to prevent high blood pressure

Coenzyme Q10



- ◆ Primary functions: antioxidant, ATP production, membrane stabilizer, and as a cofactor in many metabolic pathways
- ◆ Increases plasma levels of HDL, and decreases LDL and total cholesterol
- ◆ HMG CoA reductase inhibitors (statins) reduce serum COQ10 levels
- ◆ Am J Cardiol 2007: Patients on statins with myopathic symptoms: CoQ10 100mg/d ↓ muscle pain by 40%



CoQ10: blood pressure and glycemic control

- ❖ A recent “meta-analysis” showed CoQ10
↓ systolic BP by up to 17 mmHg and
diastolic by up to 10 mm Hg ($p < 0.001$)
- ❖ Another study of people with type 2
diabetes given CoQ10 100 mg bid x 12
weeks ↓ HbA1c 0.37 ↓ SBP -6.1 mmHg
↓ DBP -2.9 mmHg
- ❖ Usual recommended dose is 60-120 mg

Garlic

- ❖ Garlic appears to modestly lower both systolic and diastolic blood pressure
- ❖ Garlic may also improve blood lipids and slow the progression of atherosclerosis (“hardening of the arteries”)





Fatty ocean fish & omega 3 fatty acids

- ❖ Fish oil lowers both systolic and diastolic blood pressure
- ❖ Alpha linolenic acid (LNA) is also associated with significantly lower risk of high blood pressure
- ❖ Sources of LNA (plant source of omega 3 fatty acids): flax, walnuts, hemp, canola



Purchasing fish oils

- ❖ Check consumer lab or IFOS (International Fish Oil Standards) program (☆☆☆☆☆)
- ❖ IFOS: Labeling, contaminants (mercury, PCB's, dioxins, furans), heavy metals (arsenic, lead, cadmium) & oxidative tests
- ❖ EPA + DHA 600-1200mg/day with meals
- ❖ Look for a high potency product that is molecularly distilled
- ❖ Avoid pharmacologic doses if you are on warfarin & before surgery

Soluble fiber

- ◆ Additional 12 g of soluble fiber can significantly lower blood pressure
- ◆ SBP ↓ 8mm Hg and DBP ↓ by 2 mm Hg
- ◆ Soluble fiber can also lower post meal blood glucose levels and lower cholesterol



Sources of soluble fiber

- ◆ Flax
- ◆ Apples
- ◆ Beans
- ◆ Barley, oats
- ◆ Okra
- ◆ Psyllium
- ◆ PGX



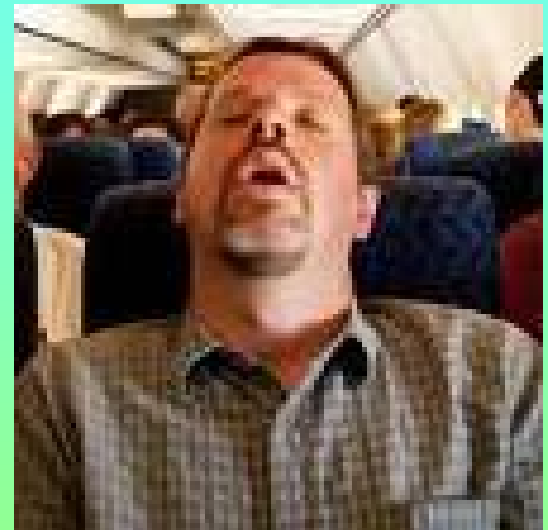
Chocolate

- ❖ 200-500 mg cocoa polyphenols (from 50-100 g chocolate) modestly lowers SBP by 5 mm hg and DBP by 3mm Hg
- ❖ Dark chocolate is also rich in anti-oxidants
- ❖ Choose good quality chocolate and enjoy in modest amounts!



Obstructive sleep apnea (OSA)

- ◆ People with obstructive sleep apnea have been found to have increased diastolic BP (\uparrow 5mm Hg) and increased systolic BP (\uparrow 9 mm Hg)
- ◆ The normal night time drop in BP is also smaller in OSA





Sleep

- ❖ Sleep deprivation can also contribute to higher blood pressure, especially in women
- ❖ Aim for at least 6 hours of sleep/night
- ❖ Sleep in a completely darkened room to increase natural production of melatonin

Weight Loss

- ◆ Weight loss of as little as 10 lbs can lower blood pressure
- ◆ Maintaining a normal weight can help to prevent high blood pressure
- ◆ Systolic BP may be lowered by 5-20 mm Hg

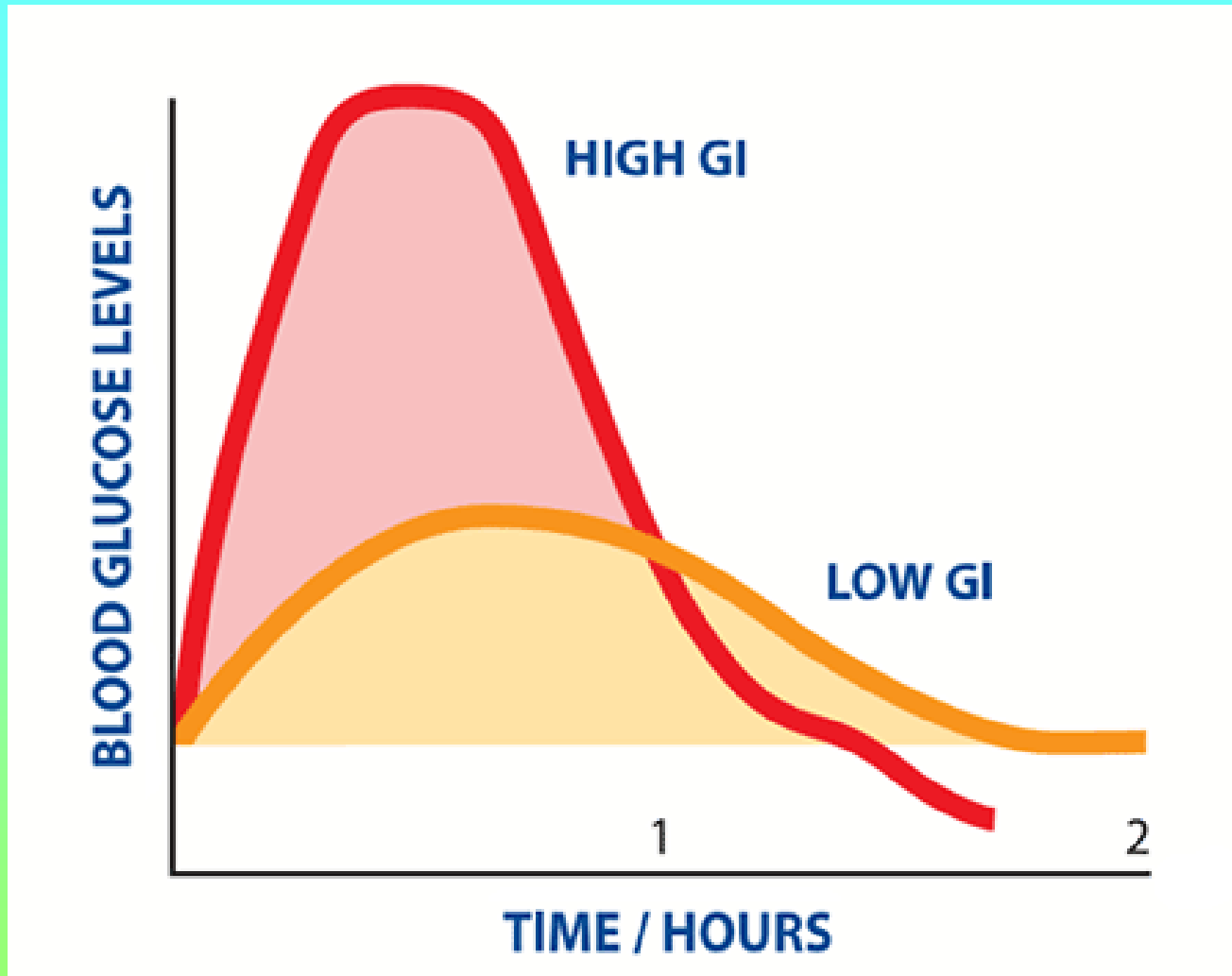




Losing weight

- ❖ Eat regular meals and always eat breakfast
- ❖ Each meal should contain:
 - A low glycemic index carbohydrate (starchy food)
 - Some lean protein
 - Some healthy fat (extra virgin olive oil)
 - At least 2 servings of fruits and vegetables
- ❖ Get regular exercise: aerobic exercise and weight training are both useful

The glycemic index (GI)



low ≤ 55 medium 56-69 high ≥ 70



Low GI carbohydrates

- ◆ Breads: 100% whole grain breads, pita bread, sourdough breads
- ◆ Rice: Basmati rice, Uncle Ben's™ converted rice
- ◆ Pasta: al dente
- ◆ Cooked grains: quinoa, bulgur, steel cut oats, large flake oats
- ◆ Cereals: All Bran
- ◆ Beans

Higher GI carbohydrates

- ◆ Most breads, bagels and other flour products
- ◆ Puffed grains
- ◆ Most cold breakfast cereals
- ◆ Potatoes
- ◆ Gooney starches



Exercise

- ◆ Regular physical activity for at least 30 minutes, most days of the week can lower BP by 4-9 mm Hg





Alcohol

- ❖ Alcohol consumption should be ≤ 2 drinks per day for men under the age of 65 and ≤ 1 drink per day for women & men over 65
- ❖ Reducing alcohol consumption can contribute to a BP drop of 2-4 mm Hg

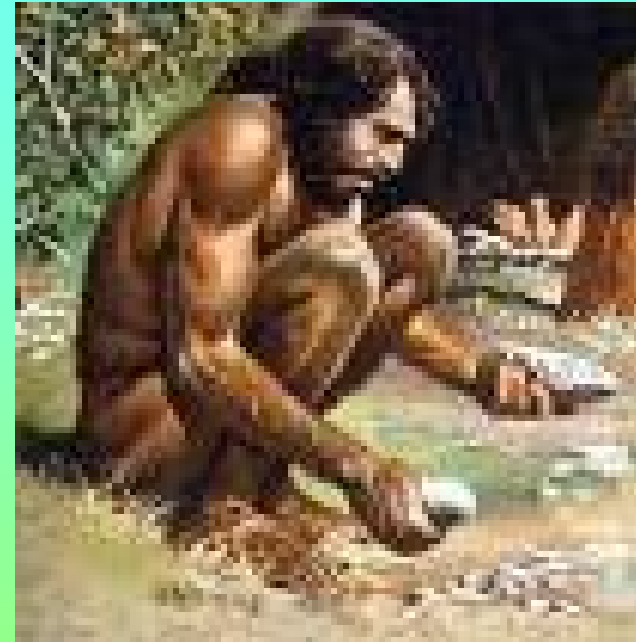
Mind body medicine

- ◆ Meditation
- ◆ Guided Imagery
- ◆ Self Hypnosis
- ◆ Breath work
- ◆ Yoga
- ◆ Biofeedback



Stress Response

- ◆ Generated by the sympathetic nervous system
- ◆ Vital for our survival
- ◆ Designed for acute situations
- ◆ Hard wired from our cave man days to help us fight or flee danger
- ◆ It is always the same no matter what the stress is



Stress Response: the big picture

- ◆ “The core of the stress response is built around the idea that your muscles are going to have to work like crazy.”



Why Zebras Don't Get Ulcers by Robert Sapolsky

Sympathetic Nervous System

- ◆ ↑ Heart rate ↑ RR
- ◆ ↑ Blood pressure
- ◆ ↑ Blood glucose
- ◆ ↑ LDL cholesterol
- ◆ Senses are sharpened
- ◆ Blood flow is directed to exercising muscles



SNS: What's turned off?

Getting rid of any unnecessary energy expenditure

- ◆ Digestive tract: enzymes, blood flow, peristalsis
- ◆ Tissue growth and repair
- ◆ Immune function
- ◆ Sex drive
- ◆ Pain sensation
- ◆ Testosterone and estrogen production



If you only had 10 seconds what would you grab from your burning home?

Chronic stress initiates a destructive physiological cascade

- ◆ Raised FBG, insulin and lipids
- ◆ Hypertension
- ◆ Proinflammatory & procoagulation changes
- ◆ Increased oxidative stress
- ◆ Impaired endothelial function
- ◆ Atherosclerosis
- ◆ Acute coronary events
- ◆ Depression, anxiety and anger



Dealing with stress

We need to be able to turn **ON** the stress response and turn **OFF** the stress response!



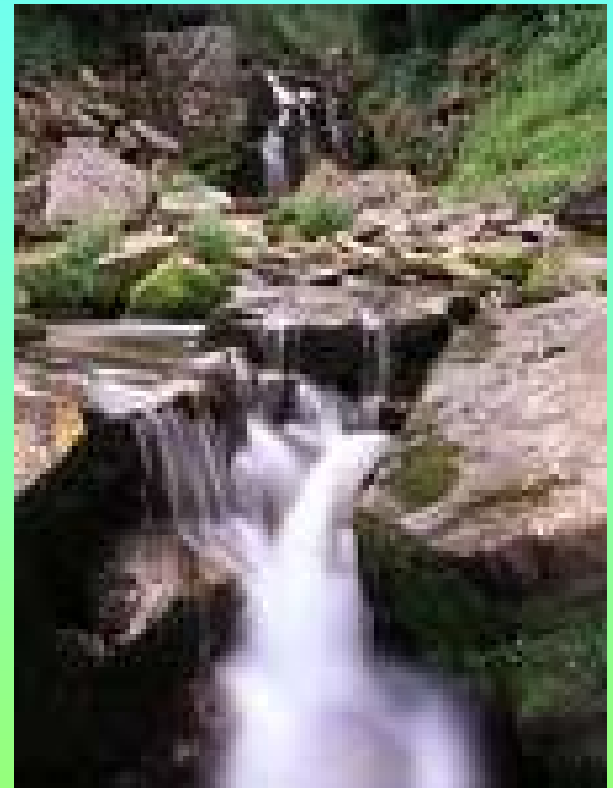
Relaxation response

- ❖ Generated by the parasympathetic nervous system
- ❖ Designed as our default setting



Parasympathetic nervous system

- ◆ ↓ HR, RR, BP
- ◆ Digestion is enhanced
- ◆ Tissue repair
- ◆ Growth and reproduction
- ◆ Immune function
- ◆ Sex drive
- ◆ Blood flow is directed to internal organs, GI tract, kidneys, skin, brain



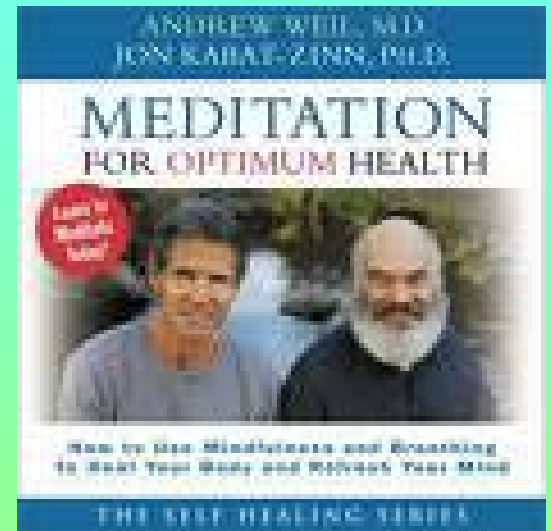
Mind body medicine or “how to go to parasympathetic nervous system land”

- ◆ Meditation
- ◆ Guided Imagery
- ◆ Self Hypnosis
- ◆ Breath work
- ◆ Yoga
- ◆ Biofeedback



Meditation

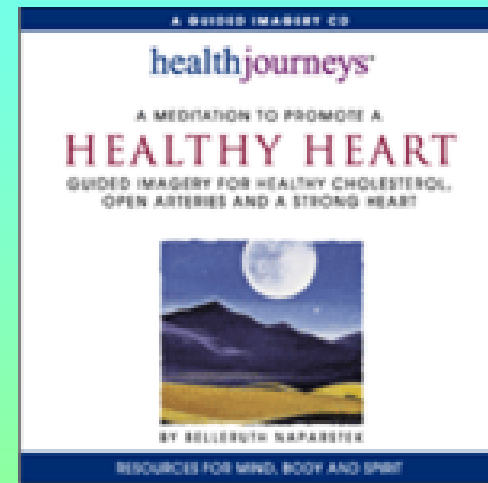
- ◆ “Meditation for Optimum Health” by Andrew Weil and Jon Kabat-Zinn
- ◆ This CD can be ordered from www.soundstrue.com



Guided Imagery

◆ Belleruth Naparstek

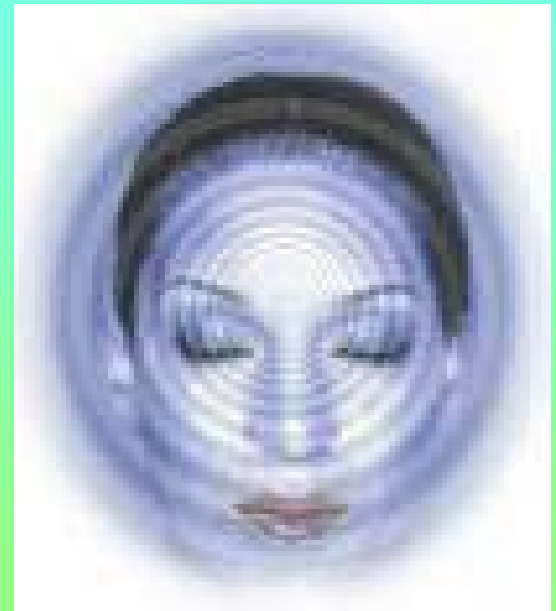
◆ www.healthjourneys.com





Self Hypnosis

- ◆ Steve Gurgevich
www.tranceformation.com
- ◆ Self hypnosis can be done while listening to a tape or CD
- ◆ It is effective even when done while you sleep



Yoga/breath work

- ❖ The practice of yoga and certain types of breathing exercises can engage the parasympathetic nervous system and help to lower blood pressure



Biofeedback

- ◆ RESPeRATE
- ◆ www.heartmath.com
- ◆ www.wilddivine.com



Summary

- ◆ DASH diet & low sodium ≤ 2400 mg/d
- ◆ Magnesium, vitamin D, vitamin C
- ◆ Coenzyme Q10 60-120 mg/d
- ◆ Garlic, dark chocolate
- ◆ Omega 3 fatty acids
- ◆ Soluble fiber
- ◆ Weight loss & regular exercise
- ◆ Daily mind body practice



