

Heart Healthy Lifestyle

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August 22, 2022



What you will learn today

Importance of Cardiovascular disease

The impact lifestyle can have

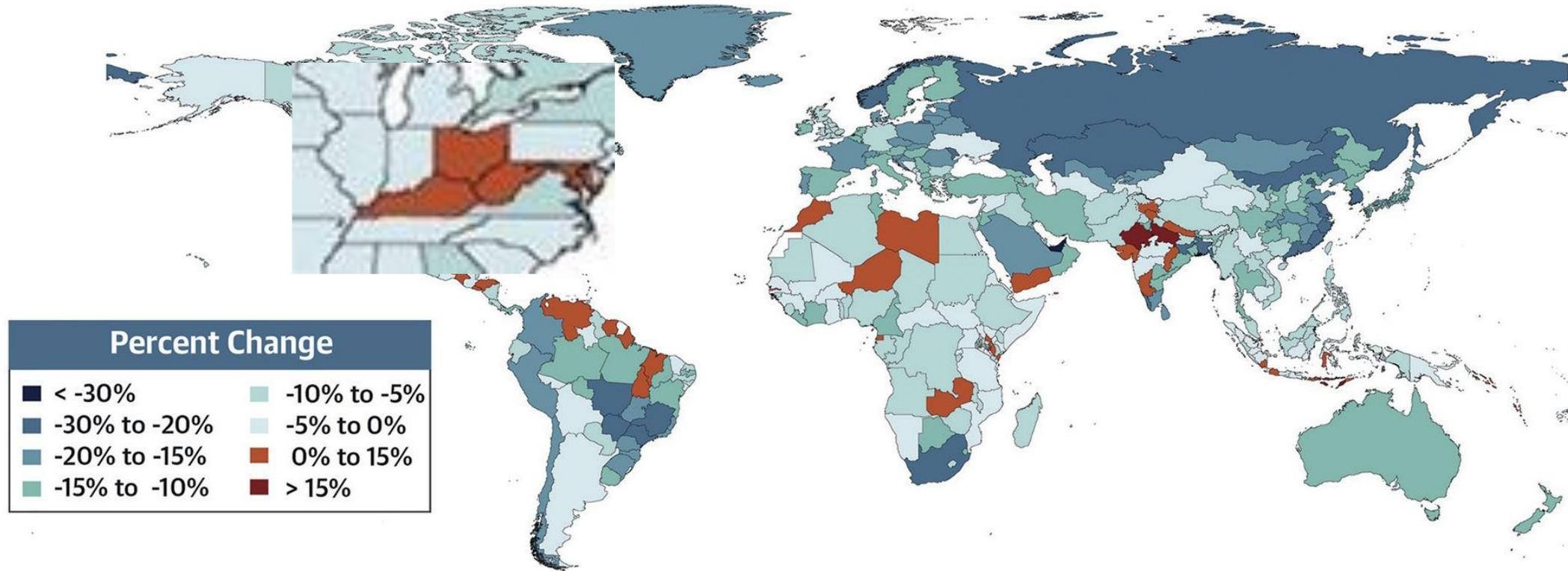
- Diet
- Exercise
- Smoking
- Aspirin?

2020

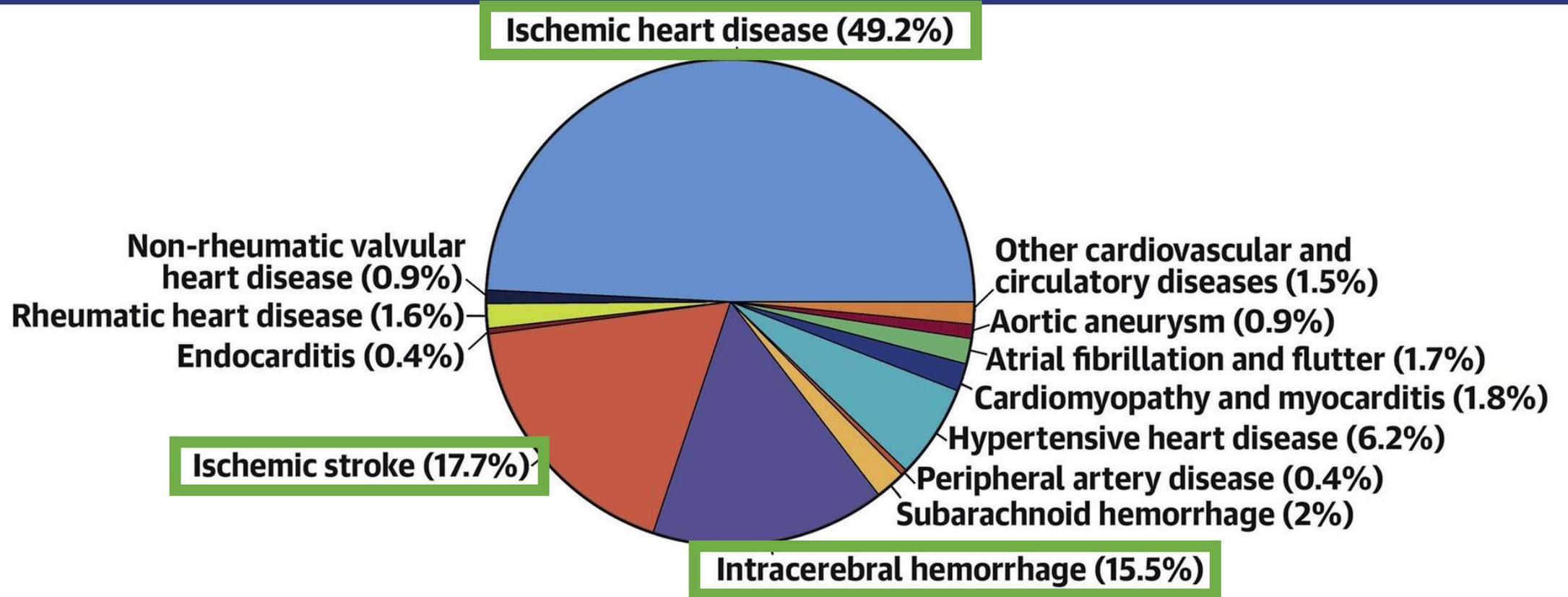
Why do we care
about Heart
disease?

- Total Number of deaths: 3,383,729
- Top Causes of Death in the US
 - Heart disease: 696,962
 - Cancer: 602,350
 - COVID-19: 350,831
 - Accidents (unintentional injuries): 200,955
 - Stroke (cerebrovascular diseases): 160,264

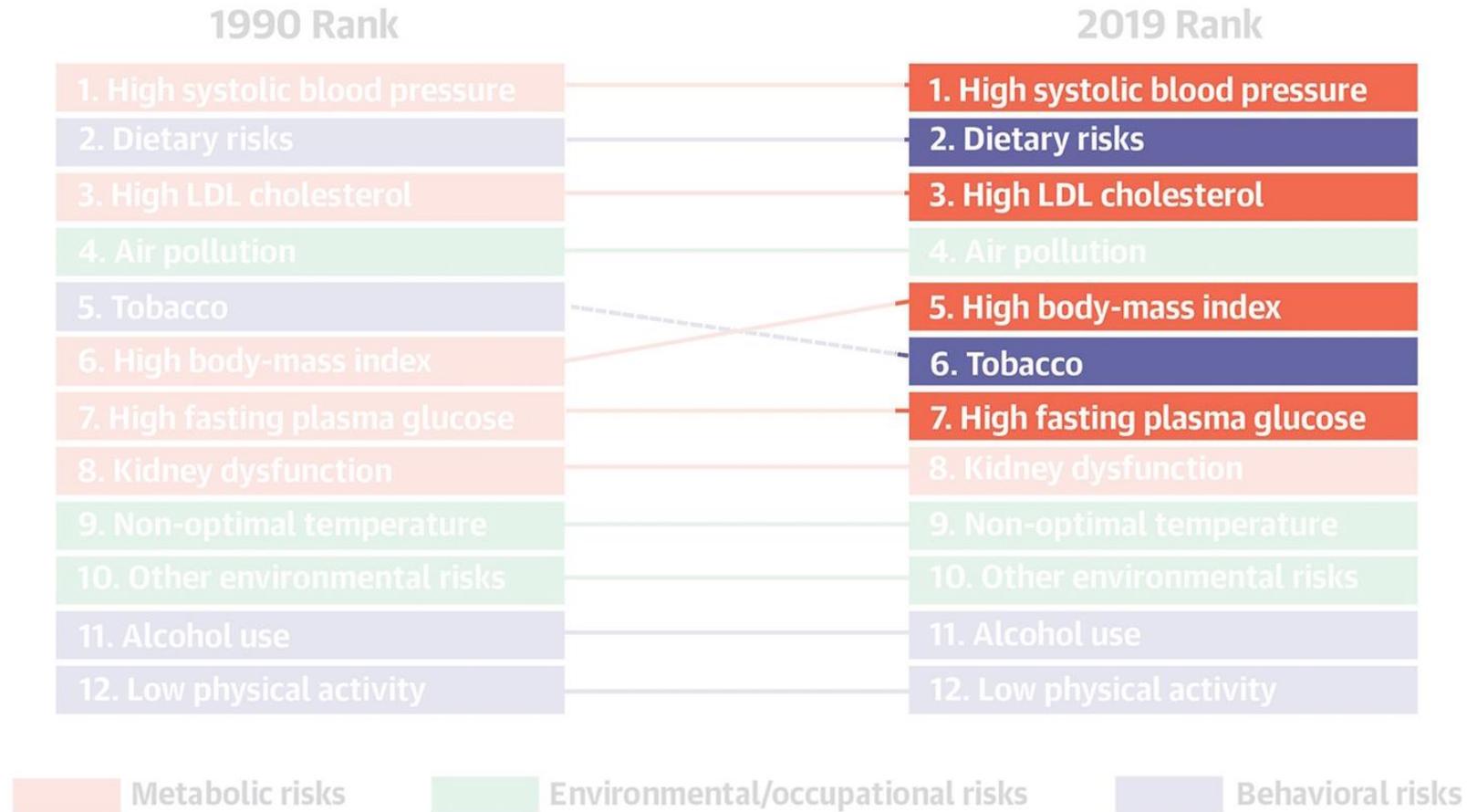
Percent Change in Age-Standardized CVD Death Rate from 2010-2019

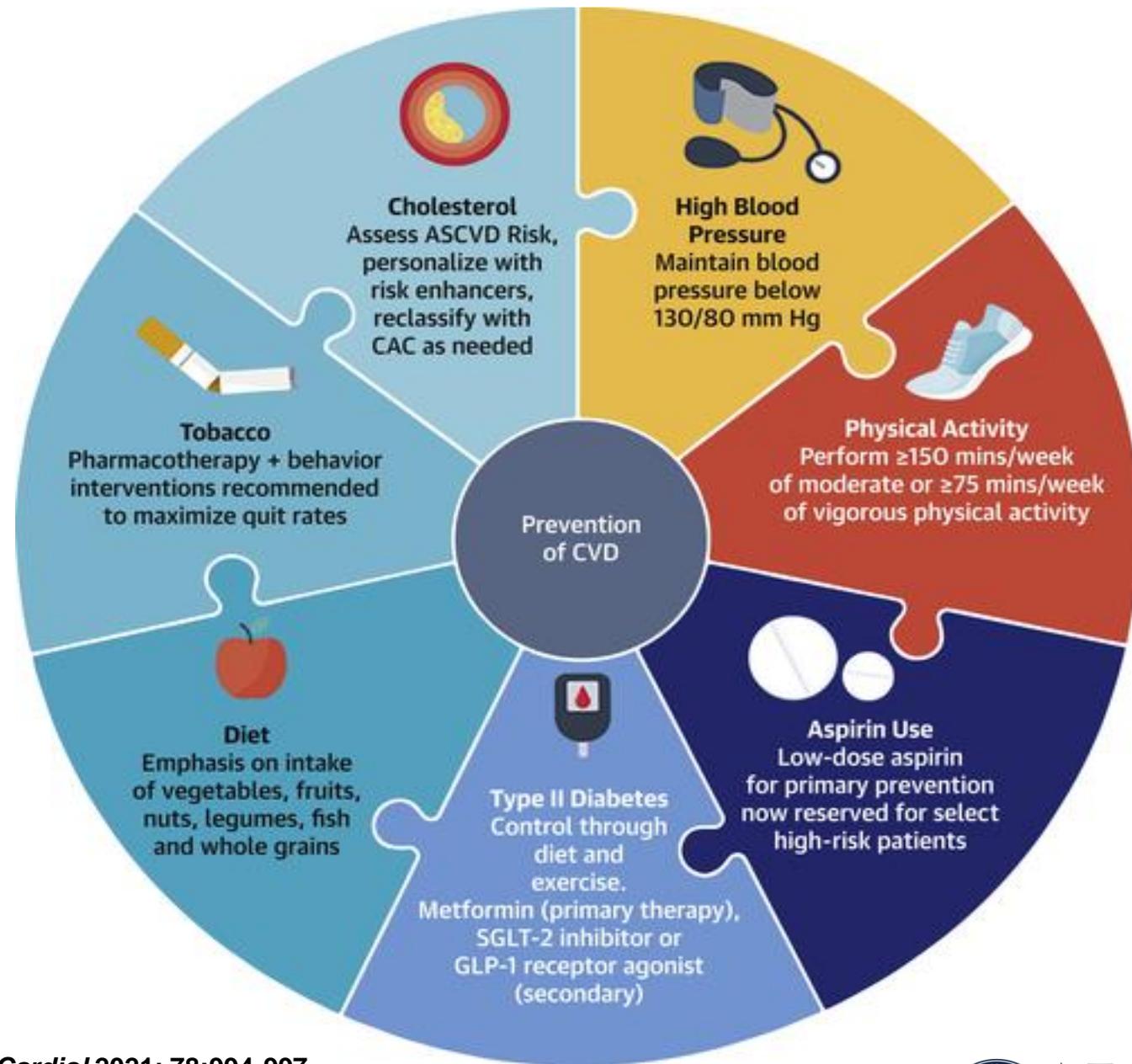


Proportion of CVD Deaths by Cause (2019)



CVD Burden Attributable to Modifiable Risk Factors





Dipti Itchhaporia et al. *J Am Coll Cardiol* 2021; 78:994-997.



Caloric intake

Gender	Age (years)	Sedentary ^b	Moderately Active ^c	Active ^d
Child	2-3	1,000	1,000-1,400	1,000-1,400
Female	4-8	1,200	1,400-1,600	1,400-1,800
	9-13	1,600	1,600-2,000	1,800-2,200
	14-18	1,800	2,000	2,400
	19-30	2,000	2,000-2,200	2,400
	31-50	1,800	2,000	2,200
	51+	1,600	1,800	2,000-2,200
Male	4-8	1,400	1,400-1,600	1,600-2,000
	9-13	1,800	1,800-2,200	2,000-2,600
	14-18	2,200	2,400-2,800	2,800-3,200
	19-30	2,400	2,600-2,800	3,000
	31-50	2,200	2,400-2,600	2,800-3,000
	51+	2,000	2,200-2,400	2,400-2,800

What is the best diet?

Diet Name	Theory/ Concept/Premise	Caffeine?	Alcohol?	Length of Diet?	Cost?	Health Pros	Health Cons	Doctor's Final Say
Vegan Diet	<p>A vegan diet eliminates all animal products including meat, fish, poultry, dairy and eggs.</p> <p>Foods allowed include grains, beans, legumes, vegetables and fruits. It should include a higher intake of vegetables that are rich in iron and calcium.</p>	In moderation	Avoid alcoholic drinks that are clarified using animal-derived substances.	Life-long	Average	<ol style="list-style-type: none"> 1) May decrease heart disease 2) Generally lower in saturated fat 3) High in fiber if eating lots of fruits and vegetables 	<ol style="list-style-type: none"> 1) Need to be diligent in meeting nutritional requirements, particularly iron, B-12, zinc, D vitamins and omega-3s 	Studies have shown that a plant-based diet is the best for health and longevity. Requires diligence in keeping up with enough fruits, veggies to meet nutritional needs, especially protein. Vitamin and nutritional supplement are needed. Okay, for long-term use if tolerable.
Paleo Diet	<p>The Paleo diet replaces dairy and grain products with free range meat, fresh fruits and vegetables – usually 65% animal based and 35% plant based foods.</p> <p>Foods allowed include meat, fish, shellfish, eggs, tree nuts, vegetables, roots, fruits, berries and mushrooms. Oils allowed include olive, avocado, palm and walnut. Foods NOT allowed include grains, dairy products, beans, legumes, potatoes, sugar and processed foods.</p>	In moderation	In moderation (avoid grain based alcohol)	Life-long	High *	<ol style="list-style-type: none"> 1) More fruits and vegetables 2) Cuts out added sugar and sodium 3) The combination of plant-based foods and a diet rich in protein can help control and regulate blood sugar, maintain weight loss and prevent Type 2 diabetes. 	<ol style="list-style-type: none"> 1) Exclusion of whole grains, legumes and dairy can be risky. These foods are nutrient-rich and contain important vitamins and minerals such as calcium and vitamin D. 	Paleo eliminates a significant amount of healthy vitamins and minerals. Could be helpful for a patient who is trying to “detox” off of a high carbohydrate or sugar diet. Okay, perhaps for a short-term use, but no more than 12 weeks.
Veg- etarian Die	<p>A vegetarian diet consists of no animal meat, but includes dairy, eggs and other products from animals.</p> <p>Foods allowed include fruits, vegetables, beans, dairy, eggs, nuts, legumes, grains, tofu and soy-based meat substitutes.</p>	In moderation	In moderation	Life-long	Average	<ol style="list-style-type: none"> 1) May decrease heart disease 2) Generally lower in saturated fat 3) Emphasizes fruits, veggies and non-meat protein sources 4) High in fiber if eating lots of fruits and vegetables 	<ol style="list-style-type: none"> 1) Need to be diligent in meeting nutritional requirements, particularly iron, B-12, zinc, D vitamins and omega-3s 	This is a healthy diet strategy, as plant-based diets are the healthiest.

* High – The foods encouraged can be more expensive than foods allowed on other diets, including grass-fed/free-range protein.

Diet Name	Theory/ Concept/Premise	Caffeine?	Alcohol?	Length of Diet?	Cost?	Health Pros	Health Cons	Doctor's Final Say
Atkins Diet	<p>The Atkins Diet cuts carbohydrates.</p> <p>Foods allowed include red meat, eggs, cheese, butter and bacon.</p> <p>Foods NOT allowed include bread, pasta, potatoes, cereal, foods containing sugar, high sugar fruits and vegetables, and fruit juices.</p>	None initially. In moderation after 2 weeks.	None initially. In moderation after 2 weeks.	Phase one *	High **	<ol style="list-style-type: none"> 1) Less refined sugar, white rice / flour = less calories from refined foods 2) Fruits, vegetables, and whole-grain foods are encouraged after the two-week induction period 3) May improve lipid profile 4) Modified versions promote a healthier variety of foods like lean protein, produce, nuts, legumes and, in some cases, whole grains and healthy fats. 	<ol style="list-style-type: none"> 1) May be too restricted in carbohydrates 2) Too much protein can harm people prone to kidney issues 	A high protein diet that has been effective for weight loss. Modified Atkins diet is more practical and can be done long-term. Otherwise, a strict Atkins diet is hard to maintain.
Zone Diet	<p>The Zone Diet promotes the following:</p> <p>A small amount of protein (app the size of your palm) at every meal and snack.</p> <p>"Favorable" carbs twice the size of the protein portion (including most fruits and vegetables, lentils, beans and whole grains).</p> <p>A smaller portion of carbs if you have chosen "unfavorable" ones (including brown rice, pasta, papaya, mango, banana, dry breakfast cereal, breads, tortilla, carrots, and fruit juices).</p>	No	In moderation	Life-long	Average cost if cooking for yourself. Meal-delivery services can be expensive.	<ol style="list-style-type: none"> 1) Portion-controlled serving of protein with lots of fruits and vegetables can lead to balanced diet with plenty of nutrients 2) Emphasizes heart-healthy monounsaturated fats 	<ol style="list-style-type: none"> 1) May be too restricted in carbohydrates 2) Too much protein can harm people prone to kidney issues 	Healthy diet, high protein intake. Can be used as a long-term diet plan.
Raw Food Diet	<p>A raw food diet is based on eating whole, live, uncooked and un-processed foods such as fruits, vegetables, seaweed, sprouts, sprouted seeds, whole grains, beans, and nuts.</p>	No	No	Life-long	Varies – dependent on season	<ol style="list-style-type: none"> 1) Similar to benefits of vegan/vegetarian 2) Eliminates processed foods high in sugar, trans-fats, and saturated fats 3) Encourages healthy fats, high fiber and nutrients 	<ol style="list-style-type: none"> 1) Must be well-educated about preparation techniques to include nutritionally balanced diet 2) Takes a lot of preparation/time to maintain this long-term lifestyle in a nutritionally balanced way. 	A very specialized diet designed for the diligent dieter. It takes a lot of time, money, and patience. Not practical for long-term.
Med' - terranean Diet	<p>A Mediterranean diet is primarily plant-based, including fruits, vegetables, whole grains, legumes and nuts.</p> <p>Limits red meat to a couple times a month, but allows fish and poultry at least twice a week. Replaces butter with olive oil and canola oil. Uses herbs and spices to flavor foods instead of salt.</p>	In moderation	In moderation (red wine only)	Life-long	Average – Estimated to cost less than a traditional western diet	<ol style="list-style-type: none"> 1) Emphasizes healthy types of fats known to reduce cholesterol and risk of heart disease 2) Rich in cancer-fighting antioxidants 	<ol style="list-style-type: none"> 1) Moderate amounts of recommended alcohol may be misinterpreted to go over daily recommendations of 5oz for women and 10oz of wine per day for men. 2) Use of moderate oil may easily go over daily allowances or portion control 	<p>This is one of my favorites. It is heart healthy, and is practical to sustain lifelong.</p> <p>It provides most of the essential vitamins, minerals and nutrients that the body needs for good health. It is can be effective as a weight loss tool when consumed as a lower caloric diet without being too restrictive on food choices.</p>

* Phase one (the most restrictive) lasts two weeks. The rest of the diet lasts as long as it takes to lose weight. Eventually, Atkins converts to a lifelong plan that limits carbs.

** High – protein and low carb food cost more than vegetables and fruits.

Diet Name	Theory/ Concept/Premise	Caffeine?	Alcohol?	Length of Diet?	Cost?	Health Pros	Health Cons	Doctor's Final Say
Com- mercial Diet	<p>Popular commercial diets include programs/plans that expect you to purchase specific foods provided by the company.</p> <p>These diets offer weekly or daily group meetings or one-on-one sessions with a counselor.</p>	In moderation	In moderation	As long as it takes	High *	<ol style="list-style-type: none"> 1) Tools for portion controlled meals 2) Makes diet easy to follow 	<ol style="list-style-type: none"> 1) May not be sustainable for those who can't afford or wish to stop using specific tools. 	Good tools for weight loss and monitoring caloric intake and portion sizes. Works well as long as it is used consistently.
Grapefruit Solution Diet	<p>The Grapefruit Diet is based on an alleged ingredient in grapefruit that, when eaten with protein, burns fat.</p> <p>The newer version of this diet allows dieters to follow a weight loss plan of their choice but adds grapefruit (either natural or via a capsule) to their diet.</p>	In moderation	In moderation	As long as it takes	High, if you use the grapefruit capsules	<ol style="list-style-type: none"> 1) Can follow a nutritionally well-balanced diet in addition to the grapefruit 	<ol style="list-style-type: none"> 1) May have adverse interaction with certain medications (not advised) 2) Not FDA approved 3) No accompanying dietary guidance, so it may or may not be part of a balanced nutrition plan. 	Not recommended. Not sustainable. No health benefits.
Ornish Diet	<p>The Ornish Diet is a vegetarian diet that only allows 10% of your calories from fat, 20% from protein and 70% from carbohydrates.</p>	No	No	Life-long	Low	<ol style="list-style-type: none"> 1) May reduce the risk for cardiovascular disease, hypertension and diabetes 2) May even reverse heart disease, according to studies 	<ol style="list-style-type: none"> 1) May be too restrictive for most 2) Completely restricts beneficial foods high in omega-3s and monounsaturated fats such as fish, nuts, and avocado. 	Healthy diet but not practical. Requires diligence with calculating percentages of food groups.
South Beach Diet	<p>The South Beach Diet focuses on low carbohydrates, high protein and healthy fats. However, it is not a strict low-carb diet, and you don't have to count carbs.</p> <p>The focus is on selecting the right carbs, including whole grains, specific fruits and vegetables, lean protein and appropriate fats (canola oil and olive oil).</p>	Yes (1-2 cups)	No for Phase I. Red wine ok in Phase II. Any drink in moderation Phase III.	The first and most restrictive phase lasts two weeks.	Average, due to subscription fee	<ol style="list-style-type: none"> 1) Emphasizes lean proteins, low saturated fat and a drastic decline in processed foods 2) Phase 2 and 3 are particularly heart healthy diets 3) Substitutes healthier fats and carbohydrate sources overall by 3rd phase 	<ol style="list-style-type: none"> 1) Biggest concern is Phase 1 – limits and restricts food group 2) High protein can lead to issues with liver, kidneys, and ketoacidosis if susceptible 3) May lack fiber and essential nutrients 	The later phases of this diet are okay, yet it limits some essential nutrients and fibers.
Gluten Free Diet	<p>A gluten free diet excludes foods that contain gluten like bread, pasta, baked goods and other dishes unless they are specifically prepared to be gluten-free.</p> <p>Gluten is a type of protein found in grains like wheat, kamut, spelt, barley, rye, malts and tritcale.</p>	Yes	Yes to wine, Gluten free beer.	Life-long	Moderate to high as prepared gluten-free food is expensive and nut or bean flours are more expensive than wheat flours for baking and cooking.	<ol style="list-style-type: none"> 1) Eating gluten free can help reverse damage and inflammation to the intestinal track if you have a gluten intolerance or sensitivity 2) Alleviates symptoms related to Celiac Disease 3) May lead to a healthier diet filled with less processed foods, introducing higher quality grains, like quinoa. overall by 3rd phase 	<ol style="list-style-type: none"> 1) May lead to unwanted weight gain from eating "gluten-free" products, which often contain higher levels of fat and sugar 2) Potential nutrient deficiencies from eliminating too many foods, in particular carbohydrates, for fear of a negative reaction essential nutrients 	<p>Gluten is contained in many food items, especially many processed foods.</p> <p>This diet is ideal for people who are sensitive or intolerant to gluten. It is required for patients with celiac disease.</p> <p>It is a healthy diet that can be consumed long-term and can help support a healthy weight loss plan.</p>

* High – Fees for individual programs may include dues, purchased food, counselors and online support.

What is

Low carbohydrate

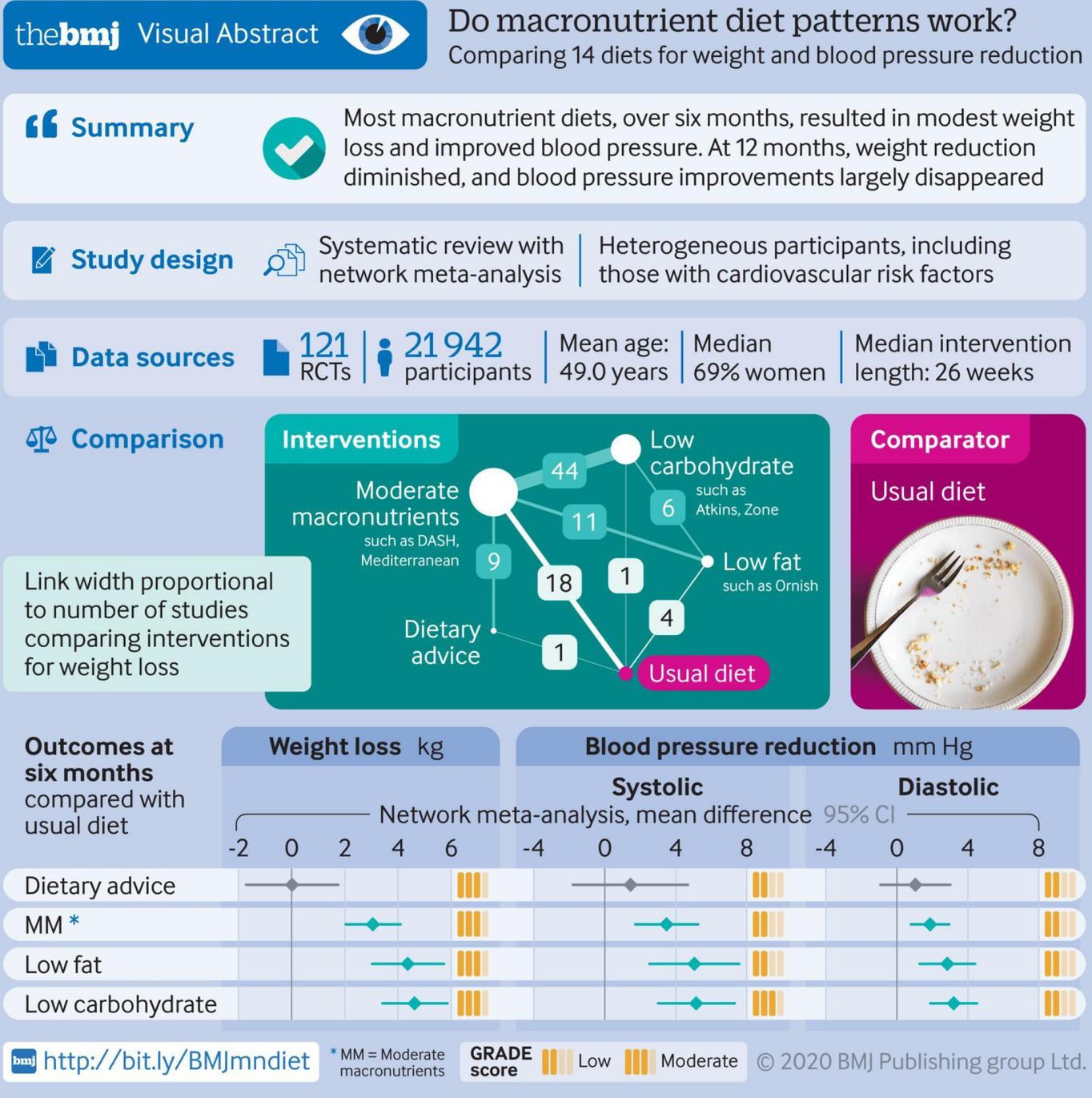
- Atkins
- South Beach
- Zone

Moderate macronutrient

- Biggest Loser
- DASH,
- Jenny Craig
- Mediterranean
- Portfolio,
- Slimming World
- Volumetrics
- Weight Watchers

Low fat

- Ornish
- Rosemary Conley

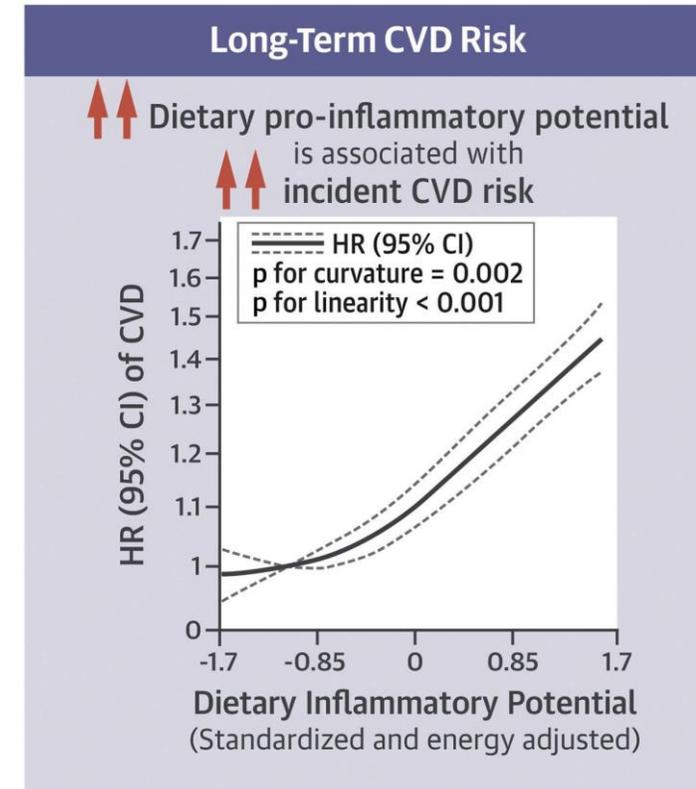
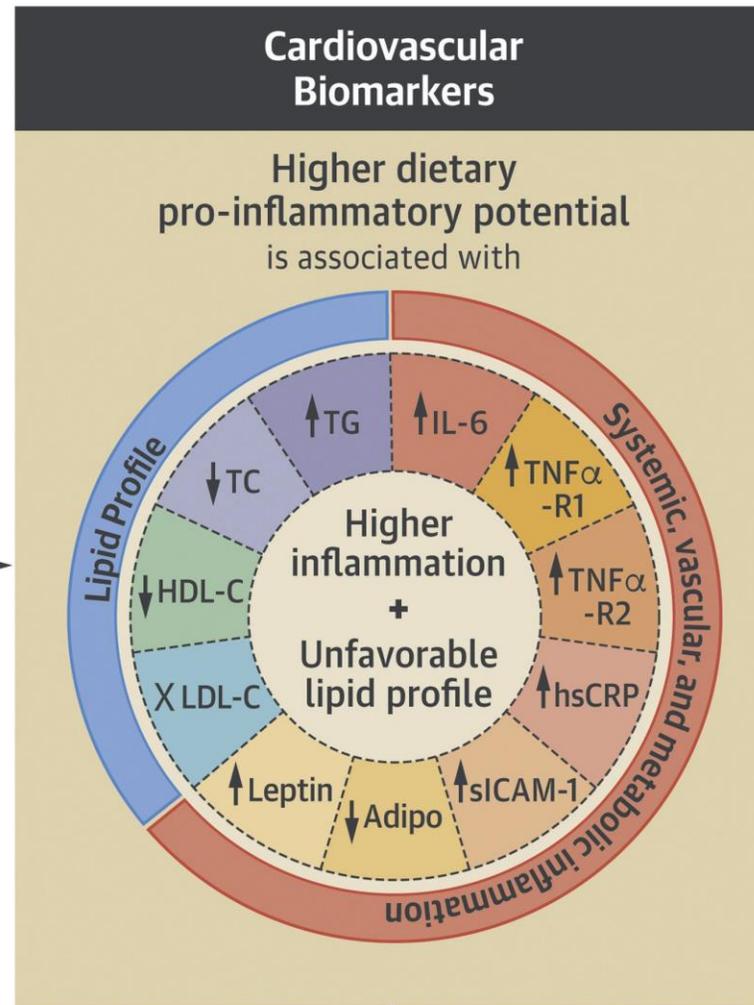
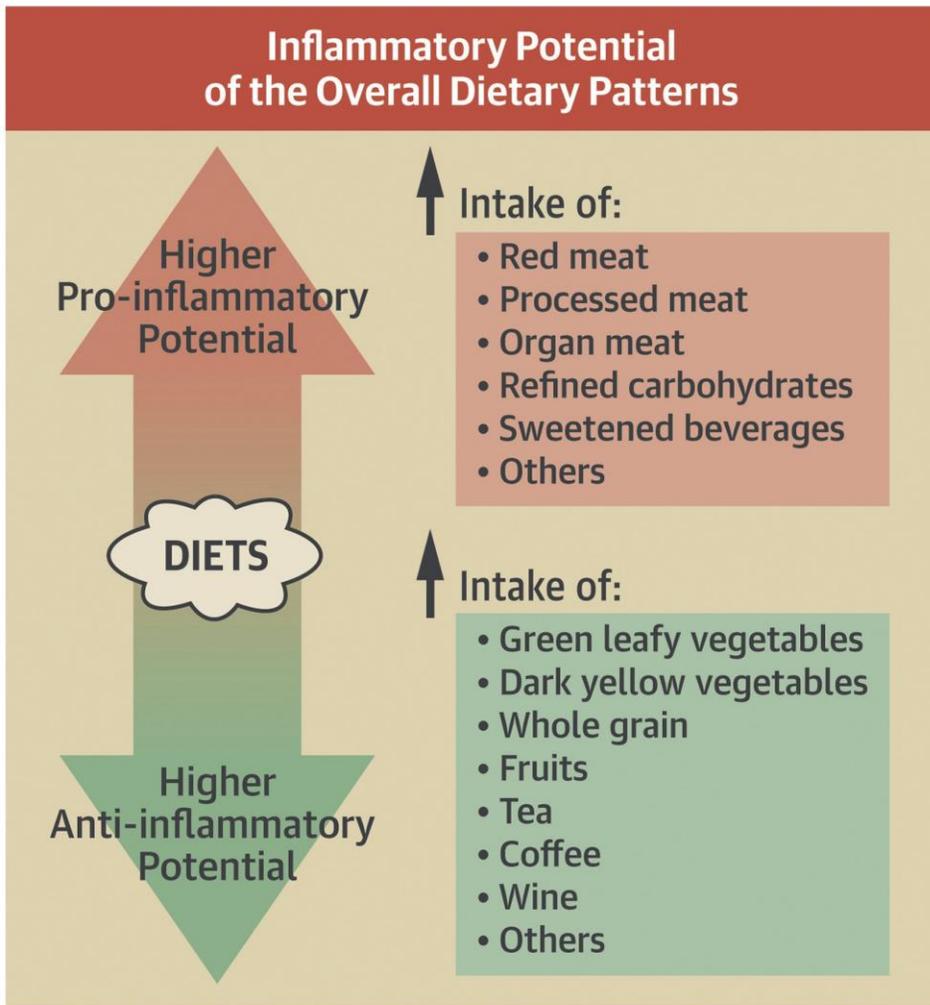


Systolic blood pressure reduction (mm Hg)	Low density lipoprotein reduction (mg/dL)	High density lipoprotein reduction (mg/dL)	C-reactive protein reduction (mg/dL)
30	-2.75	3.41	0.64
33	-2.89	-0.33	0.27
84	3.93	-1.90	NA
03	4.59	-0.61	0.25
85	7.27	-2.52	0.52
22	1.92	-2.13	0.33
81	0.21	-2.85	0.19
95	7.13	-0.13	NA
03	7.13	-0.88	0.87
44	7.15	-2.04	NA
20	4.71	-4.87	1.11
98	21.29	-3.26	-0.37
20	3.90	-0.01	NA
NA	NA	NA	NA
NA	-0.64	0.36	NA
40	-2.01	-1.71	-1.15

... certainty
 ... effective" with moderate to high certainty
 ... certainty
 ... low certainty
 ... effective" with very low to low certainty
 ... low certainty

Ge et. al. Comparison of dietary macronutrient programmes for weight and cardiovascular risk reduction: a systematic review and network meta-analysis of randomised controlled trials
<http://dx.doi.org/10.1136/bmj.m696>

Inflammation is Bad for the Cardiovascular System!



DASH Diet + low sodium = Better Cardiovascular Biomarkers

CENTRAL ILLUSTRATION: DASH Diet, Sodium Reduction, and Cardiac Biomarkers: Results From DASH-Sodium

Patient population: adults without cardiovascular disease with SBP 120 to 159 mm Hg and DBP 80 to 95 mm Hg

N = 412

DASH: diet rich in fruits, vegetables, and low-fat dairy foods with reduced saturated and total fat

vs. a typical American diet

Low sodium (0.5 mg/kcal)

Medium sodium (1.1 mg/kcal)

High sodium (1.6 mg/kcal)

	Cardiac injury (hs-cTnl)	Cardiac strain (NT-proBNP)	Inflammation (hs-CRP)
DASH	↓↓ -14%	↔	↓↓ -13%
Reduced sodium (low vs. high)	↔	↓↓↓ -19%	↑ 9%
DASH + reduced sodium	↓↓↓ -20%	↓↓↓ -23%	↔

• DASH lowered subclinical cardiac injury and inflammation

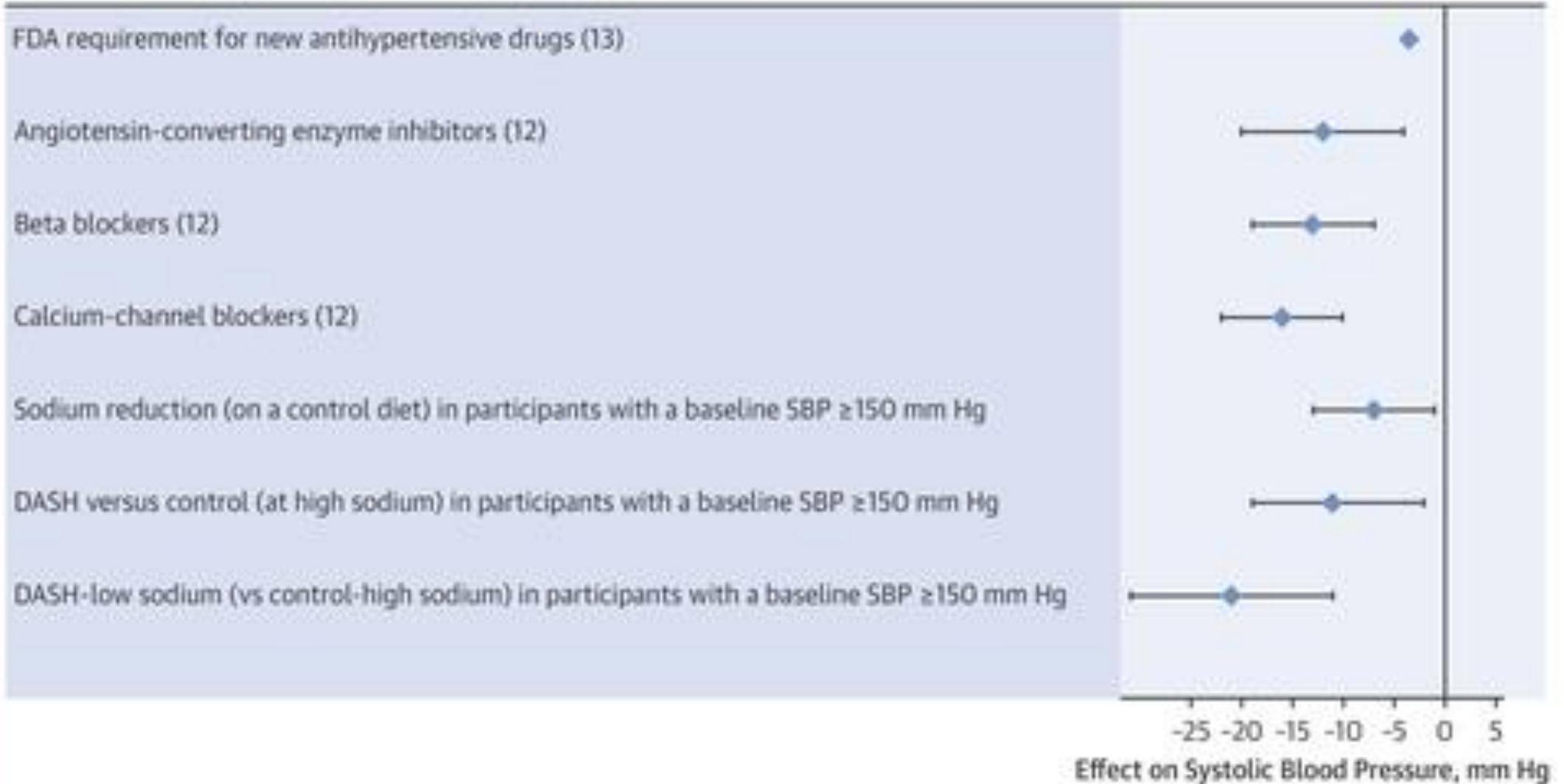
• Reduced sodium lowered subclinical cardiac strain but increased inflammation

• Combined DASH and reduced sodium lowered subclinical cardiac injury and strain

More pervasive public policies are needed to promote reduction in dietary sodium intake and broadly encourage the DASH eating pattern

Juraschek, S.P. et al. *J Am Coll Cardiol*. 2021;77(21):2625-34.

CENTRAL ILLUSTRATION: The BP Effects of the DASH Diet



Juraschek, S.P. et al. J Am Coll Cardiol. 2017;70(23):2841-8.



JACC
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

DASH Diet

The DASH eating plan is rich in fruits, vegetables, fat-free or low-fat milk and milk products, whole grains, fish, poultry, beans, seeds, and nuts.

It also contains less sodium; sweets, added sugars, and beverages containing sugar; fats; and red meats than the typical American diet.

This heart-healthy way of eating is also lower in saturated fat, trans fat, and cholesterol and rich in

Nutrients that are associated with lowering blood pressure

- Potassium
- Magnesium
- Calcium
- Protein
- Fiber.

https://www.nhlbi.nih.gov/files/docs/public/heart/dash_brief.pdf
<https://blog.ohiohealth.com/dash-diet-lower-blood-pressure/>

The DASH Diet for Healthy Blood Pressure

Follow these DASH (Dietary Approaches to Stop Hypertension) guidelines for a healthier, more balanced diet



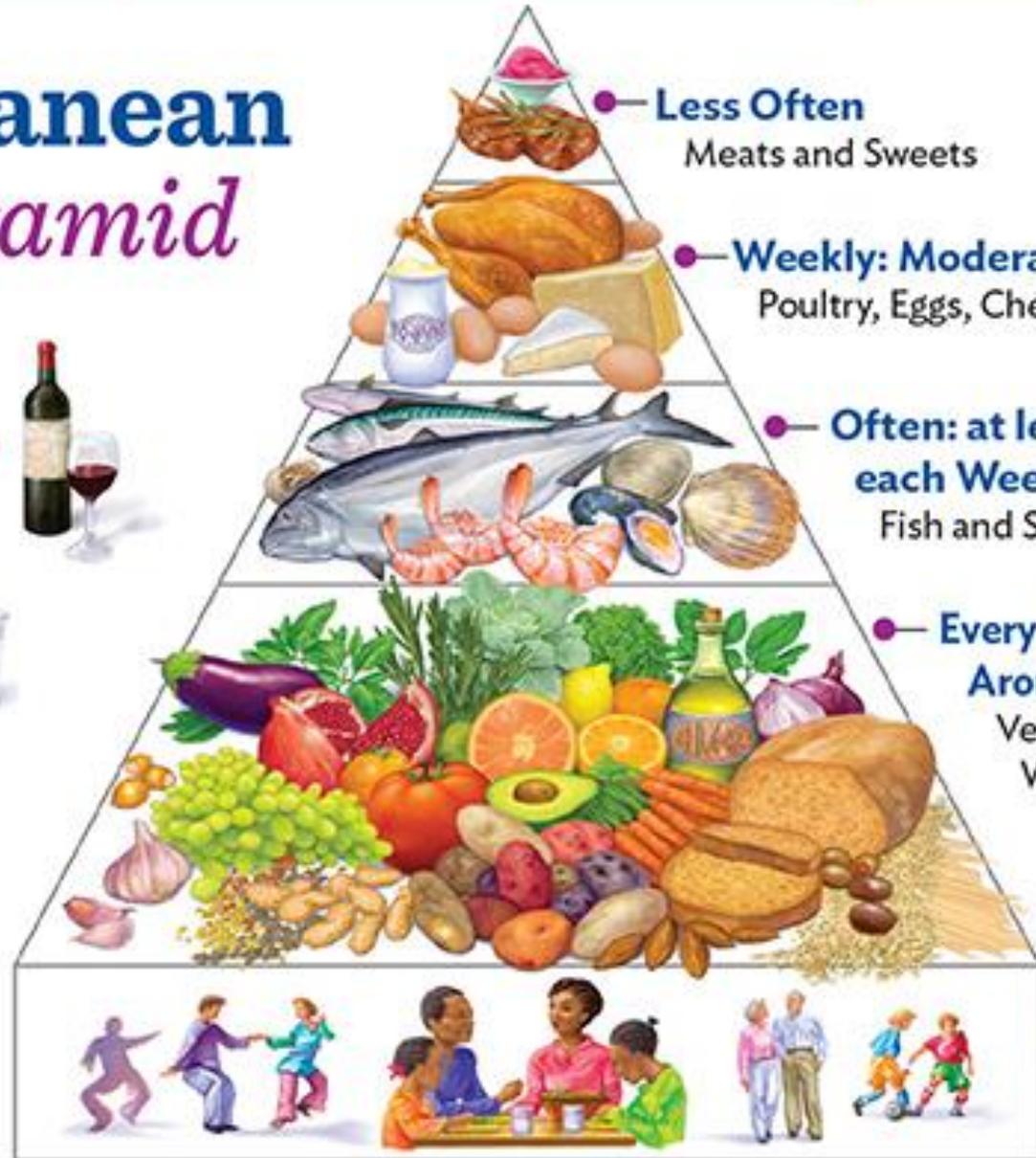
OhioHealth
Discover how the DASH Diet can help you manage your blood pressure at blog.ohiohealth.com

Mediterranean Diet Pyramid

In Moderation
Wine



Every Day
Water



Less Often
Meats and Sweets

Weekly: Moderate Portions
Poultry, Eggs, Cheese and Yogurt

Often: at least Twice
each Week
Fish and Seafood

Every Day: Base Each Meal
Around these Foods
Vegetables, Fruits, Whole
Wheat Grains, Olive Oil,
Beans, Nuts, Legumes
and Seeds, Herbs
and Spices

Every Day
Be Physically Active;
Enjoy Meals with
Others

Illustration by George McMillan

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Dietary recommendations related to CVD, atherosclerosis



- Less consumption of salt and animal-based foods and more consumption of plant-based foods were associated with reduced risk for atherosclerosis
- Elevated consumption of fruits, vegetables and nuts were linked with reduced risk for atherosclerosis and CVD
- Moderate consumption of alcohol and chocolate may reduce CVD risk

Healio 

Riccardi G, et al. *Cardiovasc Res*. 2021;doi:10.1093/cvr/cvab173

<https://www.healio.com/news/cardiology/20210707/higher-plantbased-food-consumption-linked-to-lower-atherosclerosis-risk>

THE FACTS ON FAT

The American Heart Association recommends replacing bad (saturated) fats with good (unsaturated) fats as part of a healthy eating pattern.

LOVE IT

UNSATURATED
(POLY & MONO)



- Lowers rates of cardiovascular and all-cause mortality
- Lowers bad cholesterol & triglyceride levels
- Provides essential fats your body needs but can't produce itself

LIMIT IT

SATURATED



- Increases risk of cardiovascular disease
- Raises bad cholesterol levels

LOSE IT

ARTIFICIAL TRANS FAT,
HYDROGENATED OILS
& TROPICAL OILS



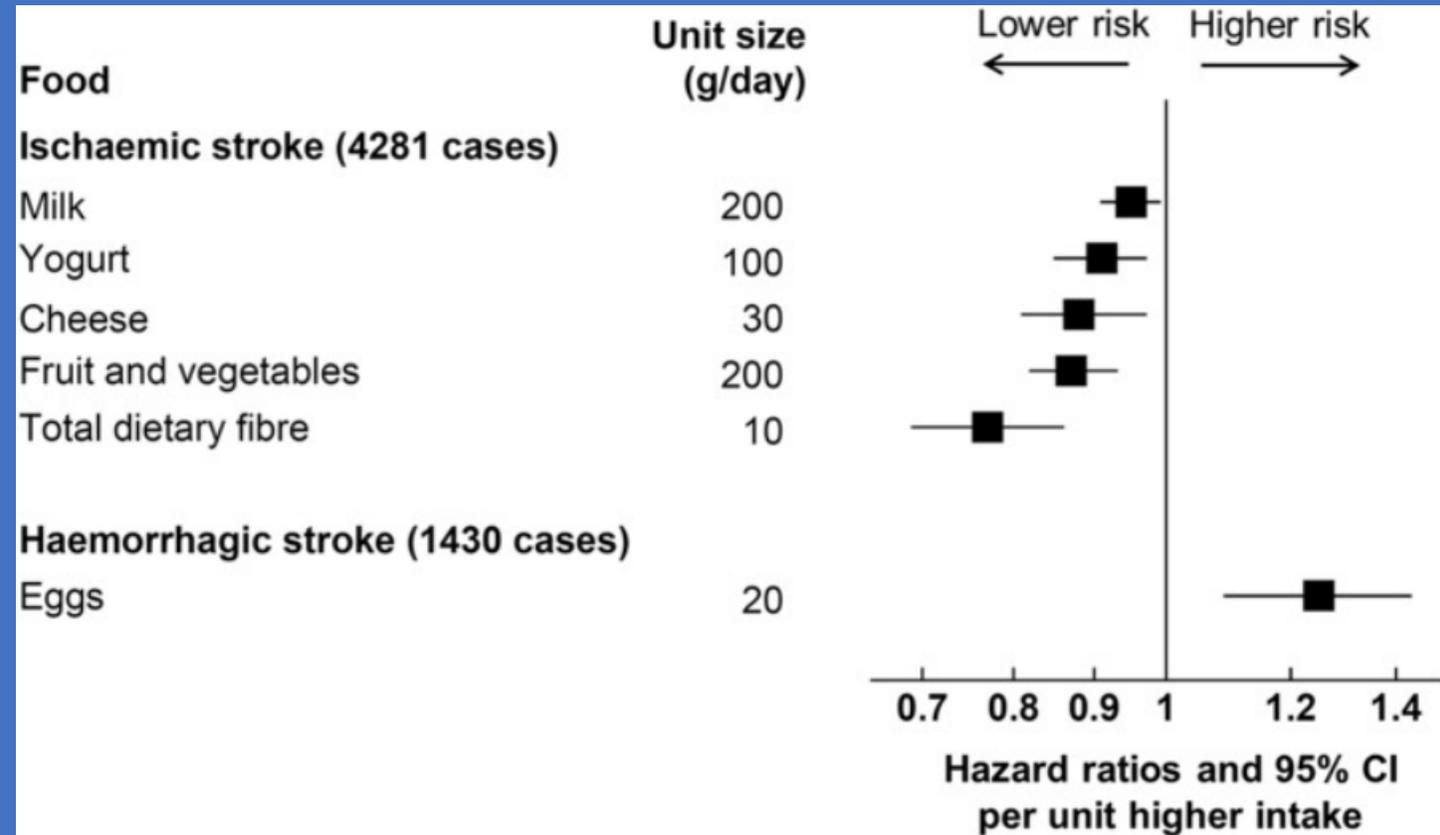
- Increases risk of heart disease
- Raises bad cholesterol levels

Reduce stroke risk by shifting away from animal fats

- Study of more than 117,000 health care professionals over 27 years
- Adults who consumed the highest amount of vegetable fat and polyunsaturated fat reduced their risk of stroke by 12% compared with those who consumed the lowest amount
- “Based on our findings, we would recommend the general public reduce consumption of red and processed meat, minimize fatty parts of unprocessed meat if consumed, and replace lard or tallow (beef fat) with nontropical vegetable oils such as olive oil, corn or soybean oils in cooking to lower their stroke risk”

Reduce stroke risk by increasing fiber, fruits, and vegetables

- “The most important finding is that higher consumption of both dietary fiber and fruit and vegetables was strongly associated with lower risks of ischemic stroke”
- “The general public should be recommended to increase their fiber and fruit and vegetable consumption if they are not already meeting these guidelines.”



<https://www.healio.com/news/cardiology/20200320/dietary-choices-impact-stroke-risk>

Tong TYN et. al. The associations of major foods and fibre with risks of ischaemic and haemorrhagic stroke: a prospective study of 418 329 participants in the EPIC cohort across nine European countries. *Eur Heart J.* 2020 Jul 21;41(28):2632-2640. doi: 10.1093/eurheartj/ehaa007. PMID: 32090257; PMCID: PMC7377582.

AHA – How to eat healthy without dieting

AVOID

- Trans fat and partially hydrogenated oils - found in some commercially baked and fried foods

INCLUDE

- Fruits and vegetables
- Whole grains
- Beans and legumes
- Nuts and seeds
- Fish (preferably oily fish with omega-3 fatty acids)
- Skinless poultry and lean animal proteins
- Plant-based proteins

LIMIT

- Sweetened drinks
- Sodium and salty foods
- Saturated fats and dietary cholesterol
- Fatty or processed red meats – if you choose to eat meat, select leaner cuts
- Refined carbohydrates like added sugars and processed grain foods
- Full-fat dairy products
- Tropical oils such as coconut and palm oil

Salt Substitutes work!

- Patients 60 years or older with high blood pressure
- Switched from regular salt to low-sodium salt substitute
- Over 5 years:
 - 14% reduction in stroke
 - 13% reduction in cardiac events
 - 12% reduction in death

Neal B, et.al. Effect of Salt Substitution on Cardiovascular Events and Death. *N Engl J Med*. 2021 Sep 16;385(12):1067-1077. doi: 10.1056/NEJMoa2105675. Epub 2021 Aug 29. PMID: 34459569.

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Effect of Salt Substitution on Cardiovascular Events and Death

B. Neal, Y. Wu, X. Feng, R. Zhang, Y. Zhang, J. Shi,* J. Zhang, M. Tian, L. Huang, Z. Li, Y. Yu, Y. Zhao, B. Zhou, J. Sun, Y. Liu, X. Yin, Z. Hao, J. Yu, K.-C. Li, X. Zhang, P. Duan, F. Wang, B. Ma, W. Shi, G.L. Di Tanna, S. Stepien, S. Shan, S.-A. Pearson, N. Li, L.L. Yan, D. Labarthe, and P. Elliott

ABSTRACT

BACKGROUND

Salt substitutes with reduced sodium levels and increased potassium levels have been shown to lower blood pressure, but their effects on cardiovascular and safety outcomes are uncertain.

METHODS

We conducted an open-label, cluster-randomized trial involving persons from 600 villages in rural China. The participants had a history of stroke or were 60 years of age or older and had high blood pressure. The villages were randomly assigned in a 1:1 ratio to the intervention group, in which the participants used a salt substitute (75% sodium chloride and 25% potassium chloride by mass), or to the control group, in which the participants continued to use regular salt (100% sodium chloride). The primary outcome was stroke, the secondary outcomes were major adverse cardiovascular events and death from any cause, and the safety outcome was clinical hyperkalemia.

RESULTS

A total of 20,995 persons were enrolled in the trial. The mean age of the participants was 65.4 years, and 49.5% were female, 72.6% had a history of stroke, and 88.4% a history of hypertension. The mean duration of follow-up was 4.74 years. The rate of stroke was lower with the salt substitute than with regular salt (29.14 events vs. 33.65 events per 1000 person-years; rate ratio, 0.86; 95% confidence interval [CI], 0.77 to 0.96; $P=0.006$), as were the rates of major cardiovascular events (49.09 events vs. 56.29 events per 1000 person-years; rate ratio, 0.87; 95% CI, 0.80 to 0.94; $P<0.001$) and death (39.28 events vs. 44.61 events per 1000 person-years; rate ratio, 0.88; 95% CI, 0.82 to 0.95; $P<0.001$). The rate of serious adverse events attributed to hyperkalemia was not significantly higher with the salt substitute than with regular salt (3.35 events vs. 3.30 events per 1000 person-years; rate ratio, 1.04; 95% CI, 0.80 to 1.37; $P=0.76$).

CONCLUSIONS

Among persons who had a history of stroke or were 60 years of age or older and had high blood pressure, the rates of stroke, major cardiovascular events, and death from any cause were lower with the salt substitute than with regular salt. (Funded by the National Health and Medical Research Council of Australia; SSaSS ClinicalTrials.gov number, NCT02092090.)

The authors' full names, academic degrees, and affiliations are listed in the Appendix. Address reprint requests to Dr. Wu at Peking University Clinical Research Center, Peking University, 38 Xueyuan Rd., Haidian District, Beijing, China, or at wuyf@bjmu.edu.cn, or to Dr. Tian at the George Institute for Global Health at Peking University Health Science Center, Rm. 052A, Unit 1, Tayuan Diplomatic Office Bldg., No. 14 Liangmahe Nan Lu, Chaoyang District, Beijing, China, or at mtian@georgeinstitute.org.cn.

*Deceased.

Drs. Neal and Wu contributed equally to this article.

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What dietary themes are (reasonably) consistent?

- Total consumption (calories) makes a difference
- Many diets achieve similar short-term benefits
 - Is it sustainable?
- More plant-based diet has favorable effects on Cardiovascular risk
- Less sodium (salt) intake improves blood pressure
- Meats (especially red meat) and processed foods worsen cardiovascular risk
- More fiber, fruits, vegetables
- Alcohol and chocolate only in moderation



Exercise



AHA Exercise Recommendations for Adults

- Get at least **150 minutes per week** of moderate-intensity aerobic activity or 75 minutes per week of vigorous aerobic activity, or a combination of both, preferably spread throughout the week.
- Add moderate- to high-intensity muscle-strengthening activity (such as resistance or weights) on at least 2 days per week.
- Spend less time sitting. Even light-intensity activity can offset some of the risks of being sedentary.
- Gain even more benefits by being active at least 300 minutes (5 hours) per week.
- Increase amount and intensity gradually over time.



Moderate Intensity Activities

Walking

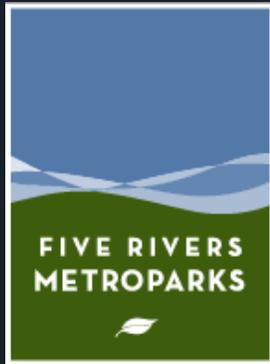


Oak Grove Fishing Pond at Sunrise



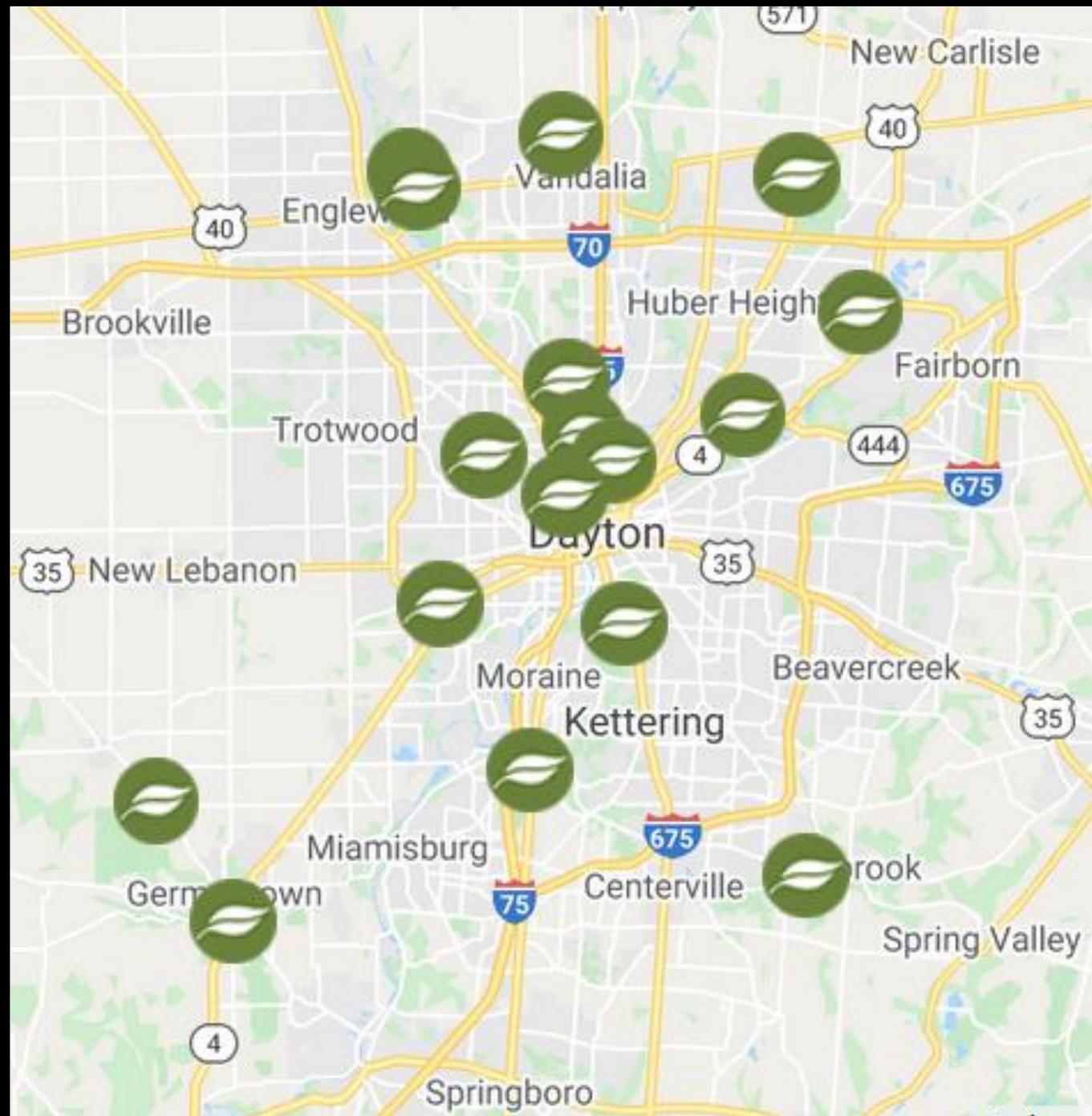


E Milo Beck



18 Parks throughout the Dayton Region

<https://www.metroparks.org/interactive-parks-map/>





Cox Arboretum



Moderate
Intensity Activities

Water Aerobics



**WASHINGTON
TOWNSHIP**



Moderate Intensity Activities

Dancing



Moderate Intensity Activities

Gardening

FIVE RIVERS
METROPARKS

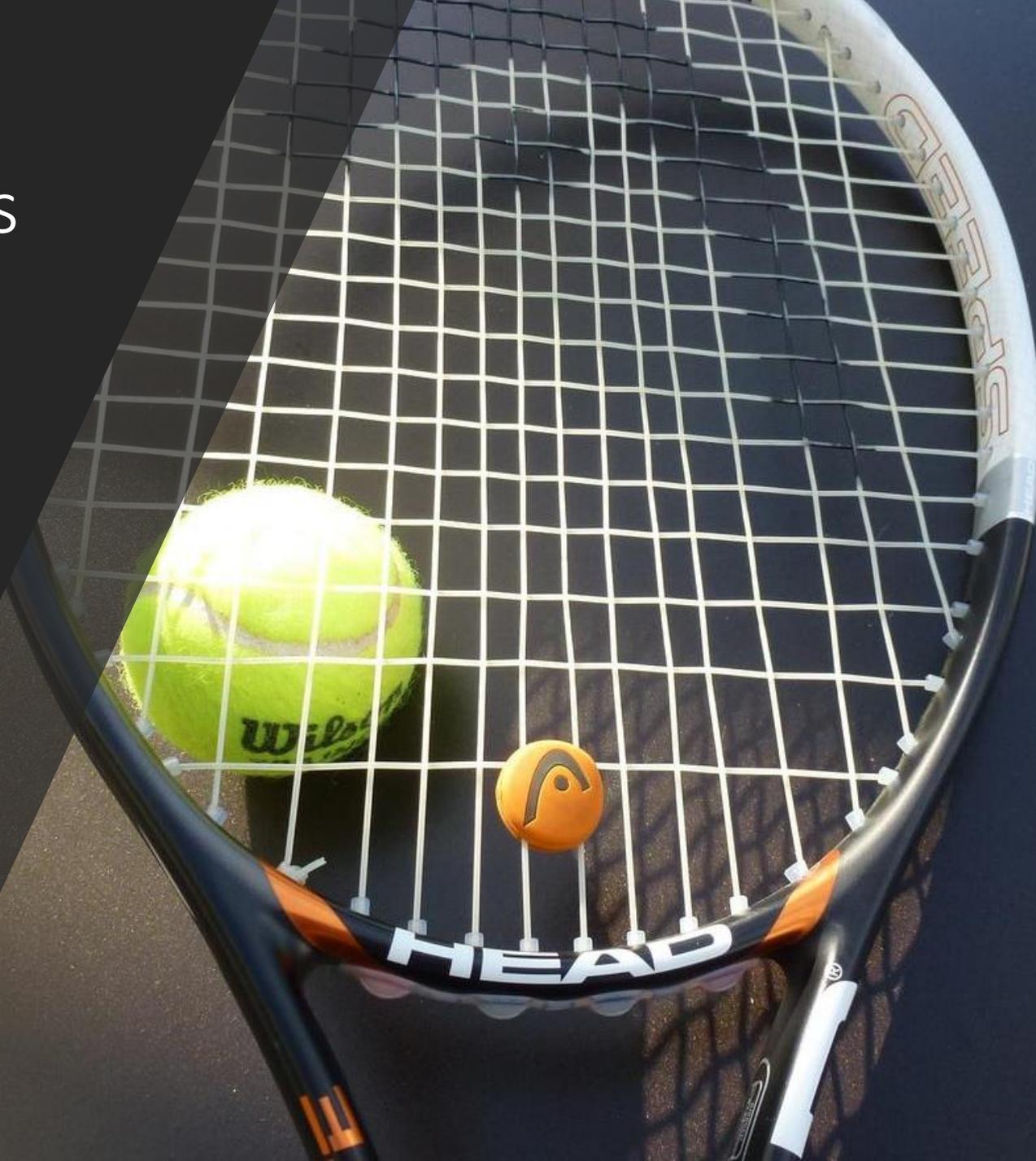


Stubbs Park



Moderate
Intensity Activities

Doubles Tennis



Moderate
Intensity Activities

Pickleball



Moderate
Intensity Activities

Casual Biking

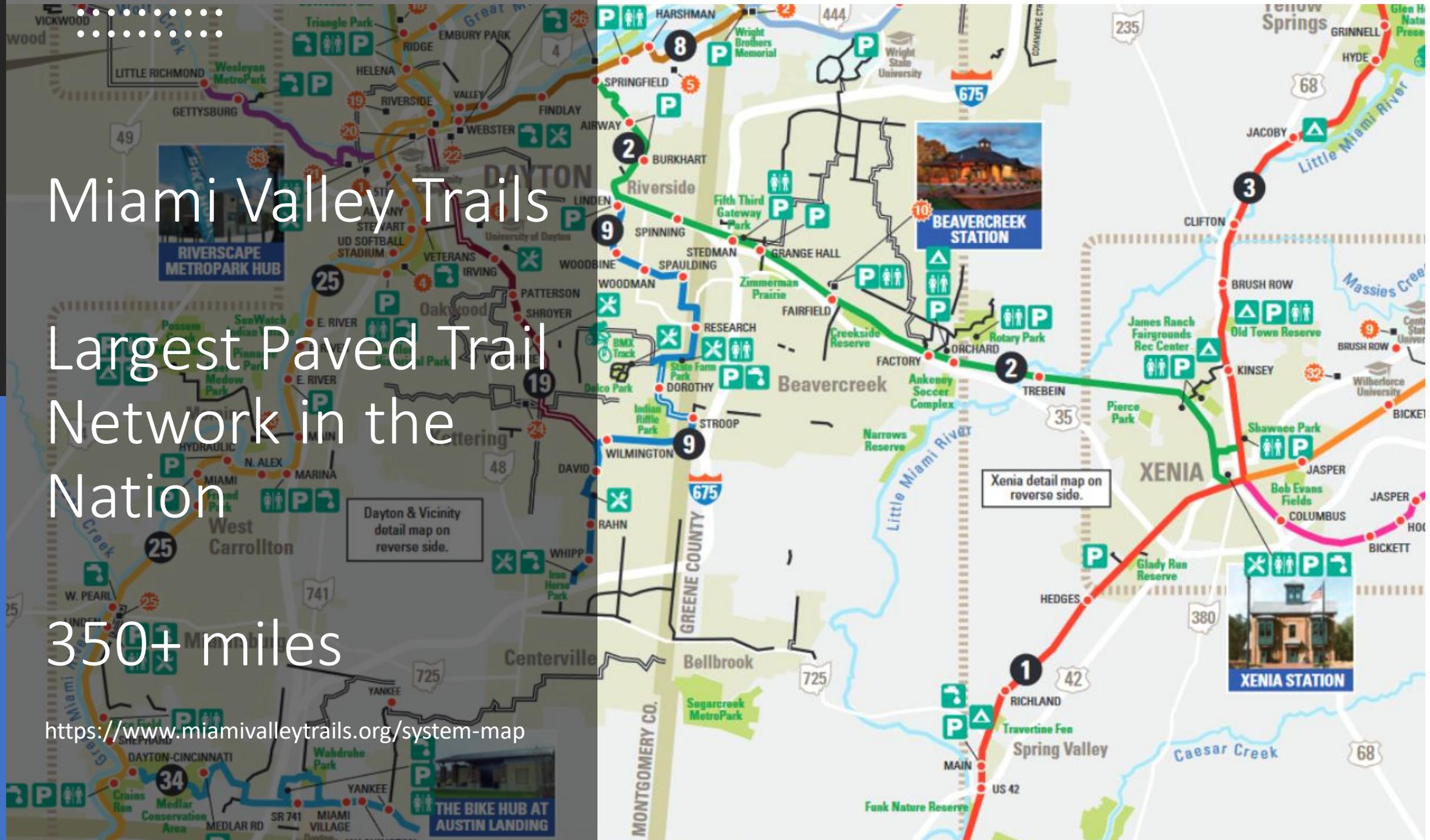


Miami Valley Trails

Largest Paved Trail Network in the Nation

350+ miles

<https://www.miamivalleytrails.org/system-map>

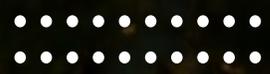




Vigorous Intensity Activities

Hiking Uphill





Vigorous Intensity Activities

Running



.....
Vigorous Intensity
Activities

Swimming Laps





Vigorous Intensity Activities

Aerobics





Vigorous Intensity
Activities

Heavy Yardwork





Vigorous Intensity Activities

Singles Tennis





Vigorous Intensity Activities

Cycling (10mph or
more)



Is it too late to start exercising?

- Men aged 70 years exercising 20 minutes a day had reduced risk of cardiovascular disease included coronary disease and heart failure
- Still beneficial, but less impact in outcomes at ages 75, 80, 85

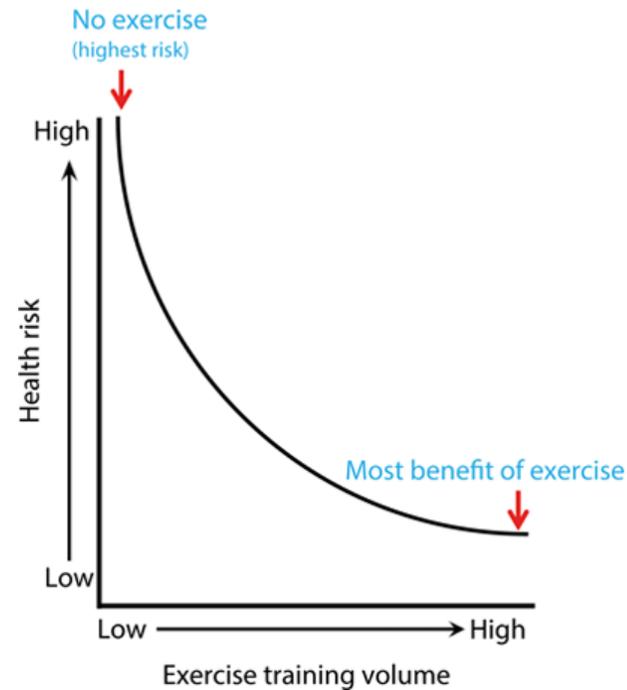
<https://www.healio.com/news/cardiology/20220215/daily-exercise-at-age-70-may-help-prevent-heart-disease-later>

Association of physical activity trajectories with major cardiovascular diseases in elderly people; CB Amidei et. al; Heart 2022; 108 360-366
Published Online First: 14 Feb 2022. doi: 10.1136/heartjnl-2021-320013

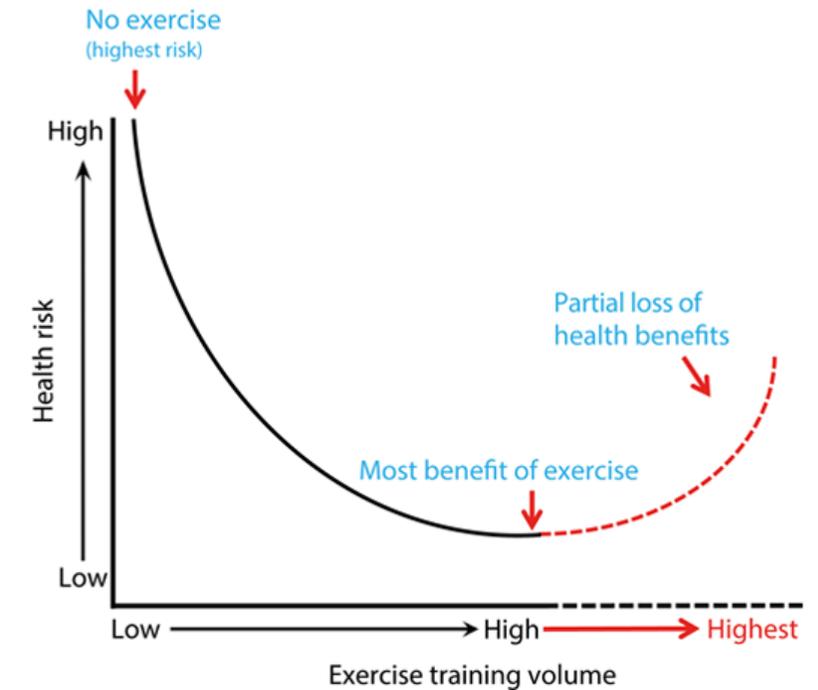
Other Cardiovascular Benefits of Exercise

- Improves walking distance in peripheral arterial disease
- Improves heart failure symptoms
- Reduces atrial fibrillation

A CURRENT DOGMA (curvilinear)



B ALTERNATIVE HYPOTHESIS (reversed J-shape)



Exercise Benefits More than Just Heart Health

- Lower risk of heart disease, stroke, type 2 diabetes, high blood pressure, dementia and Alzheimer's, several types of cancer, and some complications of pregnancy
- Better sleep, including improvements in insomnia and obstructive sleep apnea
- Improved cognition, including memory, attention and processing speed
- Less weight gain, obesity and related chronic health conditions
- Better bone health and balance, with less risk of injury from falls
- Fewer symptoms of depression and anxiety
- Better quality of life and sense of overall well-being

AHA Exercise Recommendations for Adults

Getting Started

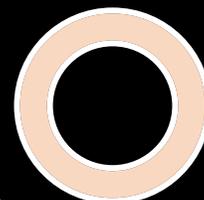
- Warm up before exercise by doing the planned activity at a slower pace, to gradually increase heart rate.
- Walk on a level surface for 6 to 8 weeks, progressing to walking up hills, jogging and/or more vigorous activities, so long as no symptoms occur.
- Increase time spent on exercise incrementally from 5 to 10 minutes in the beginning, building up slowly to the desired duration.
- Lower exercise intensity when environmental conditions such as high humidity or altitude put a greater strain on the heart.
- Cool down after exercise by walking at a slower pace, allowing heart rate return to normal.
- Stop and seek medical evaluation if experiencing lightheadedness, shortness of breath, chest pain or pressure.



<https://www.healio.com/news/cardiology/20200228/aha-cv-benefits-of-exercise-outweigh-risks-for-most-people>

<https://www.ahajournals.org/doi/10.1161/CIR.0000000000000749>

<https://www.greatseniorliving.com/health-wellness/senior-exercise>



How do I start an exercise program?

- Decide to start exercising!
- Be aware of any health issues that may affect your choices
- Start with low intensity, low duration activity
- Gradually increase intensity and duration towards your goal



Smoking is Bad!



When you quit smoking



When you quit smoking



How to Quit Smoking?

HOW TO QUIT TOBACCO



1 EDUCATE YOURSELF

The first step to quitting smoking, vaping and using tobacco is to understand the risks and health effects for you and your family.

- ➔ Smoking is the most preventable cause of death in the U.S. It's linked to about one third of all deaths from heart disease and 90% of lung cancers.
- ➔ Cigarettes, e-cigarettes and tobacco products contain many toxic chemicals, as do their smoke, vapor and liquids.
- ➔ About half of U.S. children ages 3-11 are exposed to secondhand smoke and vapor.
- ➔ Tobacco use and nicotine addiction is a growing crisis for teens and young adults.
- ➔ You can be one of the millions of people who successfully quit every year.
- ➔ Within 1 year after quitting, your risk of heart disease goes down by half.



2 MAKE A PLAN TO QUIT

You're more likely to quit tobacco for good if you prepare by creating a plan that fits your lifestyle.

- SET** a quit date within the next 7 days.
- CHOOSE** a method: cold turkey or gradually.
- DECIDE** if you need help from a health care provider, nicotine replacement or medicine.
- PREPARE** for your quit day by planning how to deal with cravings and urges.
- QUIT** on your quit day.

LEARN MORE AT [HEART.ORG/MYLIFECHECK](https://www.heart.org/mylifecheck) AND [HEART.ORG/TOBACCO](https://www.heart.org/tobacco)

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3 TIPS FOR SUCCESS



DEAL WITH URGES

Whether physical or mental, learn your triggers and make a plan to address them. Avoid situations that make you want to smoke or use tobacco until you're confident that you can handle them.



GET ACTIVE

Physical activity can help you manage the stress and cravings when quitting. You'll feel better, too. [heart.org/MoveMore](https://www.heart.org/MoveMore)



HANDLE STRESS

Learn other healthy ways to manage the stress of quitting. [heart.org/BeWell](https://www.heart.org/BeWell)



GET SUPPORT

A buddy system or support program can help you with some of the common struggles of quitting. [1-800-QuitNow](https://www.heart.org/QuitNow)



STICK WITH IT

Quitting tobacco takes a lot of willpower. Reward yourself when you reach milestones and forgive yourself if you take a step backward. Get back on course as soon as possible to stay on track and kick the habit for good.

Aspirin for Prevention(?)

(Applies to people who have **never** had a stent, heart attack, vascular disease, blood clot, stroke/TIA)

- United States Preventative Task Force (USPTF) no longer recommending aspirin for PREVENTION in patients 60+ years old
 - Reviewed 13 trials including 161,680 patients
 - Aspirin decreased risk of heart attack and stroke
 - But NOT fatal heart attack, fatal stroke, or overall cardiovascular death
 - Aspirin increased risk of Gastrointestinal bleed and intracranial bleed
 - Simulations revealed
 - Small overall benefit for patients age 40-59 with estimated >10% CVD risk
 - Minimal overall benefit or harm for patients 60+

How to start making changes

- Start small
- Gradually introduce a healthy habit.
- Make a healthy food swap for at least one meal each day for a week.
 - Instead of red meat or processed meat
 - Plant proteins like nuts and legumes
 - Fish or seafood
 - Lean cuts of meat
 - Low fat or nonfat dairy
- Take 5-minute walks instead of more sedentary activities.
- Balance calorie intake with physical activity to maintain a healthy weight by taking a walk or other physical activity after a meal.
- Incorporate stress relief activities into daily routines, such as meditation, physical activity or spending time with a pet.
- Write out a list of meal ideas and grocery needs to minimize impulse purchases.



Wrapping it all up

- Much of our lifestyle can shape the course of cardiovascular disease
- Many diets will produce similar short-term results.
 - What diet is sustainable for you?
- The dietary advice I give to patients?
 - More fresh fruits and vegetables
 - Less meat in general
 - More chicken and fish; less red meat
 - Less salt
 - Less sugar
- Exercise! Find something fun and sustainable for you!
- Quit smoking
- If you are confused about aspirin, ask your physician