How to Lead a Heart Healthy Life

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Overview

What is Heart disease?
What are Heart Disease Risk factors?
Heart disease and Cancer
Healthy Eating
Fitness
Sleep
Blood Pressure
The Heart

- The heart is a muscle that pumps blood to all parts of the body via blood vessels
- Blood pumped by the heart provides the body with oxygen and nutrients needed to function
- It is about the size of a clenched fist and lies in the middle of the chest slightly to the left of the breastbone

Cardiovascular Disease (CVD)

- Disease/dysfunction of the heart and blood vessels
- Includes a number of conditions many of which are mediated by atherosclerosis (plaque build-up in the vessels):
  - Heart attacks
  - Stroke
  - Heart Failure
  - Valvular Disease
  - Arrhythmias
- Risk Factors: Hypertension, Hyperlipidemia, Diabetes, Obesity
CVD prevalence in the United States

Age-adjusted death rates for heart disease, by race and Hispanic origin: 1999-2017

Heart Disease is a Global Issue

Heart Health and Cancer

• **Cardio-Oncology:**
  • A field within cardiology that focuses on the detection, monitoring and treatment of heart disease occurring as a consequence of chemotherapy and radiotherapy

• **Cardiotoxicity:**
  • Heart damage that arises from certain cancer treatments
  • Cardiac ultrasound is often used to detect cardiotoxicity
Heart Health and Cancer

- Risk factors for cardiotoxicity:
  - Hypertension
  - Diabetes
  - Obesity
  - High cholesterol

Improving Heart Health: American Heart Association’s (AHA) Life’s Essential 8
Health & Stress: “Stress kills”
Heart Healthy Eating: General Tips

- Wide variety of fruits and vegetables
- Whole grains
- Healthy proteins: legumes, nuts, fish, seafood, lean poultry that is unprocessed
- Liquid non-tropical vegetable oils
- Minimally processed foods minimal added sugar
- Little or no salt
- Limited or no alcohol intake
AHA Sugar Recommendation

To keep all of this in perspective, it’s helpful to remember the American Heart Association’s recommendations for sugar intake.

- **Men** should consume no more than 9 teaspoons (36 grams or 150 calories) of added sugar per day.
- **For women,** the number is lower: 6 teaspoons (25 grams or 100 calories) per day.

Consider that one 12-ounce can of soda contains 8 teaspoons (32 grams) of added sugar! There goes your whole day’s allotment in one slurp.

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Healthy Eating: Salt

On average, American adults eat more than 3,400 milligrams (mg) of sodium daily - more than double the American Heart Association’s recommended limit of 1,500 mg for most adults.

The top 10 highest sources of sodium in food and your diet are:

- Processed meats
- Soda
- Processed dinner rolls
- Canned soups
- Processed sandwiches
- Canned vegetables
- Processed dips
- Processed cheeses
- Processed luncheon meats
- Processed breakfast cereals

The average amount of sodium in a few foods include:

- One slice of bread = 100 mg of sodium
- One slice of cooked ham = 200 mg of sodium
- One slice of cooked bacon = 400 mg of sodium
- One slice of processed cheese = 200 mg of sodium
DASH Diet

BP Control Via Lifestyle Modifications

- **Maintain a healthy weight.** Strive for a body mass index (BMI) between 18.5 and 24.9.
- **Eat healthier.** Eat lots of fruit, veggies and low-fat dairy, and less saturated and total fat
  - DASH Diet
- **Reduce sodium.** Ideally, stay under 1,500 mg a day, but aim for at least a 1,000 mg per day reduction.
- **Get active.** Aim for at least 90 to 150 minutes of aerobic and/or dynamic resistance exercise per week and/or three sessions of isometric resistance exercises per week.
- **Limit alcohol.** Drink no more than 1-2 drinks a day. (One for most women, two for most men.)
Physical Activity

Table 1. Key Guidelines for Adults

| Adults should move more and sit less throughout the day. Some physical activity is better than none. Adults who sit less and do any amount of moderate-to-vigorous physical activity gain some health benefits. |
| For substantial health benefits, adults should do at least 150 min (2 h and 30 min) to 300 min (5 h) a week of moderate-intensity, or 75 min (1 h and 15 min) to 150 min (2 h and 30 min) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week. |
| Additional health benefits are gained by engaging in physical activity beyond the equivalent of 300 min (5 h) of moderate-intensity physical activity a week. |
| Adults should also do muscle-strengthening activities of moderate or greater intensity, and that involve all major muscle groups on 2 days a week, as these activities provide additional health benefits. |

Activity

- Moderate exercise intensity is defined as exercise that that leads to 50-70% of your maximum heart rate
- Vigorous exercise intensity 70%-85% of your maximum heart rate

<table>
<thead>
<tr>
<th>Moderate-Intensity Aerobic Activities &gt;150 min/week</th>
<th>Vigorous-intensity Aerobic Activities &gt; 75 min/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brisk walking (&gt;3 miles/h)</td>
<td>Uphill walking or race walking</td>
</tr>
<tr>
<td>Bicycling (&lt;10 miles/h)</td>
<td>Bicycling (&gt;10 miles/h)</td>
</tr>
<tr>
<td>Water aerobics</td>
<td>Running or jogging</td>
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<tr>
<td>Tennis (doubles)</td>
<td>Tennis (singles)</td>
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<tr>
<td>Ballroom dancing</td>
<td>Aerobic dancing</td>
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<tr>
<td>General gardening</td>
<td>Heavy gardening (digging/hoeing)</td>
</tr>
</tbody>
</table>

From the Centers for Disease Control and Prevention guidelines.
Sleep

- According to the AHA, most people need 6-8 hours of sleep daily
- Sleep deprivation can slow down metabolism and also decreases heart healthy behaviors such as physical activity
- Adequate sleep has a positive effect on heart health, stress hormones, immune system and mental status, also boosts metabolism


Blood Pressure

https://www.cdc.gov/bloodpressure/about.htm

https://www.everywellhealth.com/systolic-and-diastolic-blood-pressure-1746075
To diagnose a person with hypertension, it is important to use an average based on ≥2 readings obtained on ≥2 occasions to estimate the individual's level of BP.

### Blood Pressure Categories

<table>
<thead>
<tr>
<th>BLOOD PRESSURE CATEGORY</th>
<th>SYSTOLIC mm Hg (upper number)</th>
<th>DIASTOLIC mm Hg (lower number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>LESS THAN 120 and LESS THAN 80</td>
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<tr>
<td>ELEVATED</td>
<td>120 – 129 and LESS THAN 80</td>
<td></td>
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<tr>
<td>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1</td>
<td>130 – 139 or 80 – 89</td>
<td></td>
</tr>
<tr>
<td>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2</td>
<td>140 OR HIGHER or 90 OR HIGHER</td>
<td></td>
</tr>
<tr>
<td>HYPERTENSIVE CRISIS (consult your doctor immediately)</td>
<td>HIGHER THAN 180 and/or HIGHER THAN 120</td>
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</tbody>
</table>

### Consequences of High BP

- Stroke
- Blindness
- Atherosclerosis (blood vessel damage)
- Heart attack
- Heart failure
- Kidney failure
BP Measurement

- Patient should be seated comfortably with back supported, legs uncrossed and upper arm bared
- Arm should be supported at heart level
- Ensure cuff is sized appropriately
- AHA recommends at least 2 BP measurements, with one-minute interval between them
Community Engaged Research: Barbershop Trial

- Barber led health promotion
- Pharmacist-directed intervention
- Primary outcome: Systolic blood pressure
- Methods: 2 full-time doctoral-level pharmacists received specialized certification as HTN clinicians
- PharmDs regularly reviewed participant’s treatment w/ MDs
- Pharmacists in collaboration w/ shop owners, met regularly with participants in barbershops & prescribed anti-HTN drug meds, measured BP, encouraged TLC and monitored plasma electrolyte levels

Barbershop Trial Results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intervention Group (N=132)</th>
<th>Control Group (N=171)</th>
<th>Intervention Effect</th>
<th>P Value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pressure</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Systolic blood pressure — mm Hg</td>
<td>152.8±10.3</td>
<td>154.6±12.0</td>
<td></td>
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</tr>
<tr>
<td>At baseline</td>
<td>125.8±11.0</td>
<td>145.4±15.2</td>
<td>-27.0±13.7</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>At 6 mo</td>
<td>92.2±11.5</td>
<td>89.8±11.2</td>
<td>-21.6 (-28.4 to -14.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Change</td>
<td>74.7±8.3</td>
<td>85.5±12.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diastolic blood pressure — mm Hg</td>
<td>92.2±11.5</td>
<td>89.8±11.2</td>
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<td>At baseline</td>
<td>74.7±8.3</td>
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</tr>
<tr>
<td>At 6 mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td>-17.5±11.0</td>
<td>-4.3±11.8</td>
<td>-14.9 (-19.6 to -10.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hypertension control at 6 mo — no. (%)</td>
<td>118 (89.4)</td>
<td>55 (32.2)</td>
<td>3.4 (2.5 to 4.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Blood pressure &lt;140/90 mm Hg</td>
<td>109 (82.6)</td>
<td>32 (18.7)</td>
<td>5.5 (2.6 to 11.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Blood pressure &lt;135/85 mm Hg</td>
<td>84 (63.6)</td>
<td>20 (11.7)</td>
<td>5.7 (2.5 to 12.8)</td>
<td>&lt;0.001</td>
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†P values based on a mixed-effects model adjusted for multiple visits and clustered within barbershops.
The Faith Trial

- Key points:
  - Health education (HE) vs. MINT (motivational interviewing)-TLC (Therapeutic Lifestyle Change)
  - 32 churches in NYC enrolled, 373 parishioners
  - MINT-TLC:
    - 11 90-min weekly group sessions (healthy lifestyle: low-fat, low-sodium diet, exercise, weight loss, food journals) + Motivational Interviewing (problem-solving + maintaining lifestyle changes)
  - HE:
    - 11 educational sessions per week. 1 was about HTN, others about different topics
  - Primary Outcome: change in BP at 6 & 9 months

Faith Trial Results

<table>
<thead>
<tr>
<th>Table 3. Intent-to-Treat and Complete Case Mean SBP and DBP and MAP in the HE and MINT-TLC Groups</th>
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<tbody>
<tr>
<td>Mean BP, mmHg</td>
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<tr>
<td>---------------</td>
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<tr>
<td>Baseline</td>
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<tr>
<td>3 mo</td>
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<td>6 mo</td>
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<td>6 mo</td>
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<td>6 mo</td>
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<td>Effect Size, mmHg</td>
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<td>Baseline to</td>
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<tr>
<td>Baseline to</td>
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<tr>
<td>6 mo</td>
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Global Medical Education Network Inc. is a non-profit organization that seeks to address & study disparities in medical education and patient care delivery by leveraging technology and innovation to provide high quality virtual learning and hands-on skill development.

Our mission is to address global disparities in health outcomes by empowering local clinicians and patients by providing equal access to innovative and high-quality medical education.

Our vision is to revolutionize medical education globally to create positive and sustainable local change in medical care by elevating the lived experiences of the communities we serve.
Snapshot of our Global Work
Thank You!

In memory of Dr. Paul Farmer