Presenters

• Andrea Baer, MS, BCPA – Director of Patient Advocacy and Program Management, Mended Hearts and Mended Little Hearts. Andrea is also a mom to a 10 year old son with Congenital Heart Disease.

• Albert Lopez D.O. FASPC - Chief Medical Officer of Real Life Health, a personalized cardiovascular- metabolic prevention program. CEO of Lopez internal Medicine Associates, a private practice in Jacksonville, Florida for over 20 years, that focuses on the treatment of lipids, cardiovascular disease, and diabetes. Dr. Lopez is also faculty at Lake Erie College of Osteopathic Medicine - Bradenton Florida campus.

• Tiffany Hackett-Stuart, RN, MHA – Tiffany Hackett-Stuart RN, BS, MHA was born with coarctation of the aorta and bicuspid aortic valve. She became active in advocating for patients after becoming a nurse in 2006. Tiffany works as a nurse case manager at Phoenix Children’s Hospital in Phoenix, Arizona and is passionate about her ability to advocate for her patients.
• Mended Hearts is the largest peer-to-peer support network in the world.

• Mended Hearts mission is:
  “To inspire hope and improve the quality of life of heart patients and their families through on-going peer-to-peer support, education, and advocacy”.

• 285 Chapters across the country serving over 460 hospitals.
About the ASPC

• The American Society for Preventive Cardiology mission statement is:
  “To promote the prevention of cardiovascular disease, advocate for the preservation of cardiovascular health, and disseminate high-quality, evidence-based information through the education of healthcare clinicians and their patients”.
Exercise as Primary and Secondary Prevention of Cardiovascular Disease

Al Lopez D.O. FASPC

• CMO at Real Life Health – a personalized cardiovascular metabolic prevention program
• CEO of Lopez Internal Medicine Associates
• Lake Erie College of Osteopathic Medicine, Bradenton Campus, - Faculty
Divorce your chair

• Sedentary lifestyle is one of the major risk factors for cardiovascular disease.
• Over 25% of the general population’s attributable risk for MI is due to inactivity.
• Sedentary lifestyle is an important risk factor for chronic disease.
• Cardiovascular disease is pandemic worldwide.

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Modifiable Risk Factors

• World Health Organization (WHO) estimates that over 75% of premature CVD is preventable, and improvement of risk factors can prevent disease.

• These modifications include:
  • Exercise
  • Diet – 7-10 servings of fruits and vegetables per day, high fiber, low sugar and salt
  • Smoking cessation
  • Weight reduction to ideal body weight (BMI 18.5-24.9)
  • Alcohol limitation- 1-2 daily for men, 1 per day for women
  • Lipid lowering therapy
  • Anti-platelet therapy
  • Blood glucose control/ normalization - fasting below 95
  • Blood pressure control
  • Controlling inflammation
Move it, shake it and groove it!

- Regular exercise and physical activity are important in reversing, reducing symptoms, events or death in a number of chronic illnesses.

- Diabetes, elevated blood sugars, obesity, lipid disorders, high blood pressure, aging, cancer, osteoporosis, depression all improve with regular exercise.

- Cardiovascular disease – heart attack, stroke, arrhythmias, peripheral arterial disease, in multiple studies in multiple disciplines, consistently document lower incidence of coronary events in those who are physically active and fit.
Old or New Ideas?

• Sushruta 6\textsuperscript{th} century BC a physician in India, is credited as the first to write a prescription for exercise.

• Herodicus in 5\textsuperscript{th} century BC, a Greek teacher of Hippocrates, prescribed exercise for recovery for illnesses.

• Plato criticized Herodicus on how his training practices were unnecessarily prolonging his lifespan and those of others.
An Exercise Glossary

• **Physical activity**—bodily movement produced by skeletal muscles that results in energy expenditure beyond the resting level

• **Exercise**—activity that is planned, structured, repetitive, and purposeful in the sense that improvement or maintenance of physical fitness is the objective

• **Physical fitness**—includes cardiorespiratory fitness, muscle strength, body composition, and flexibility

• **Dose**—the energy expended in physical activity

• **Intensity**—the rate of energy expenditure during such activity

• **Absolute intensity**—the rate of energy expenditure during exercise, usually expressed in metabolic equivalents (METs)

• **MET**—metabolic equivalent = 3.5ml of O2 per kg/min; about the energy expended when sitting quietly (8 METs is 8x your resting rate)

• **Relative intensity**—the percent of aerobic power utilized during exercise expressed as a percent of the maximal heart rate or percent of maximum oxygen consumption (VO2max)

Another Exercise Glossary

• Primary prevention – prevention of disease in a patient without known disease
• Secondary prevention – prevention of recurrence of disease
• CVD – cardiovascular disease
• CAD – coronary artery disease
• PVD – peripheral vascular disease
• VO2max – maximum rate of oxygen measured during incremental exercise.
• Relative intensity - percent of aerobic power used during exercise expressed as a percent of maximal heart rate or maximum oxygen consumption.
Main benefits of regular exercise on blood vessels, autonomic balance, and cardiac preconditioning.

- Improved vascular endothelial function
  - Increased NO
  - Increased eNOS
  - Anti-inflammatory myokines
  - Shear stress

- Autonomic balance
  - Decreased sympathetic tone to the heart
  - Increased vagal tone to the heart
  - Decreased $\beta_2$-adrenergic receptor sensitivity

- Cardiac preconditioning
  - Increased NO
  - Increased RISK
  - Increased calcium

Exercise benefits in cardiovascular disease: beyond attenuation of traditional risk factors
Regular physical activity reduces your chance of having a heart attack, stroke, kidney problems and problems with your blood vessels. For heart disease the risk can be reduced by over 40% (Woodcock et al., 2011)
FIGURE 1. Relationship between dose of physical activity and reduction in all-cause mortality. The mortality benefits of exercise appear with even small amounts of daily exercise and peak at 50 to 60 minutes of vigorous exercise per day. From Lancet, with permission.
5721 asymptomatic women followed for 8 years; Average age of 52

Highest risks patients were smokers, diabetics and those with lack of exercise.

**Exercise was the strongest independent predictor of all cause death**

For each unit or MET increase in exercise capacity there was a 12% reduction in mortality

The data confirmed the protective role of higher exercise capacity even in presence of established coronary risk factors

Compared to the highest exercise capacity (>8MET), 5-8 METS doubled risk of death, lowest capacity- <5MET death rate tripled

**better treadmill time / greater exercise capacity = less cardiovascular death, overall death, CV disease, or symptoms**
Combined resistance training and aerobic exercise benefits

Resistance training along with aerobic training conferred a better effect on lipoprotein profiles in healthy individuals than aerobic activity alone.

1-3 times or < 60 min weekly of resistance exercise, independent of meeting aerobic exercise total goals, reduced risk of total CVD events.

Resistance training had no significant risk reduction for CVD if done for more than 60 min or 4 times weekly.

Patients with peripheral arterial disease showed improvement with high intensity resistance training (3 sets of 8 repetitions of exercise for 7 different muscle groups).
Interplay between muscle strength, muscle mass, and CVD
INTERHEART STUDY

• A case-control study of acute myocardial infarction in 52 countries, representing every inhabited continent. 15,152 cases and 14,820 controls were enrolled.

• The relation of the following to myocardial infarction was reported:
  • smoking
  • hypertension
  • diabetes
  • waist/hip ratio
  • dietary patterns
  • physical activity
  • consumption of alcohol
  • blood apolipoproteins (Apo)
  • psychosocial factors

## INTERHEART

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Sex</th>
<th>Control (%)</th>
<th>Case (%)</th>
<th>Odds ratio (99% CI)</th>
<th>PAR (99% CI)</th>
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<tbody>
<tr>
<td>Current smoking</td>
<td>F</td>
<td>9.3</td>
<td>20.1</td>
<td>2.86 (2.36–3.48)</td>
<td>15.8% (12.9–19.3)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>33.0</td>
<td>53.1</td>
<td>3.05 (2.78–3.33)</td>
<td>44.0% (40.9–47.2)</td>
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<tr>
<td>Diabetes</td>
<td>F</td>
<td>7.9</td>
<td>25.5</td>
<td>4.26 (3.51–5.18)</td>
<td>19.1% (16.8–21.7)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>7.4</td>
<td>16.2</td>
<td>2.67 (2.36–3.02)</td>
<td>10.1% (8.9–11.4)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>F</td>
<td>28.3</td>
<td>53.0</td>
<td>2.95 (2.57–3.39)</td>
<td>35.8% (32.1–39.6)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>19.7</td>
<td>34.6</td>
<td>2.32 (2.12–2.53)</td>
<td>19.5% (17.7–21.5)</td>
</tr>
<tr>
<td>Abdominal obesity</td>
<td>F</td>
<td>33.3</td>
<td>45.6</td>
<td>2.26 (1.90–2.68)</td>
<td>35.9% (28.9–43.6)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>33.3</td>
<td>46.5</td>
<td>2.24 (2.03–2.47)</td>
<td>32.1% (28.0–36.5)</td>
</tr>
<tr>
<td>Psychosocial index</td>
<td>F</td>
<td>–</td>
<td>–</td>
<td>3.49 (2.41–5.04)</td>
<td>40.0% (28.6–52.6)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>–</td>
<td>–</td>
<td>2.58 (2.11–3.14)</td>
<td>25.3% (18.2–34.0)</td>
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<tr>
<td>Fruits/veg</td>
<td>F</td>
<td>50.3</td>
<td>39.4</td>
<td>0.58 (0.48–0.71)</td>
<td>17.8% (12.9–24.1)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>39.6</td>
<td>34.7</td>
<td>0.74 (0.66–0.83)</td>
<td>10.3% (6.9–15.2)</td>
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<tr>
<td>Exercise</td>
<td>F</td>
<td>16.5</td>
<td>9.3</td>
<td>0.48 (0.39–0.59)</td>
<td>37.3% (26.1–50.0)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>20.3</td>
<td>15.8</td>
<td>0.77 (0.69–0.85)</td>
<td>22.9% (16.9–30.2)</td>
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<tr>
<td>Alcohol</td>
<td>F</td>
<td>11.2</td>
<td>6.3</td>
<td>0.41 (0.32–0.53)</td>
<td>46.9% (34.3–60.0)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>29.1</td>
<td>29.6</td>
<td>0.88 (0.81–0.96)</td>
<td>10.5% (6.1–17.5)</td>
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<tr>
<td>ApoB/ApoA1 ratio</td>
<td>F</td>
<td>14.1</td>
<td>27.0</td>
<td>4.42 (3.43–5.70)</td>
<td>52.1% (44.0–60.2)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>21.9</td>
<td>35.5</td>
<td>3.76 (3.23–4.38)</td>
<td>53.8% (48.3–59.2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Year Published</th>
<th>Population</th>
<th>Intervention</th>
<th>Results</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee, et al/2014¹</td>
<td>55,137 adults followed by the Cooper Clinic in Dallas, Texas, for a mean of 15 years</td>
<td>Running: Participants were grouped into 6 groups: non-runners and 5 quintiles of varying amounts of running.</td>
<td>When compared with non-runners, runners had lower all-cause and CVD mortality (30% and 45% lower risk) with a 3-year life expectancy benefit.</td>
<td>Running at slower speeds, defined as &lt; 51 minutes, &lt; 6 miles, 1 to 2 times/week, &lt; 6 miles/hour, was associated with significant and similar benefit. Persistent runners over an average of 6 years had the most significant mortality benefit with 29% and 50% lower risk of all-cause and CVD mortality.</td>
</tr>
<tr>
<td>Schnohr, et al/2015²</td>
<td>5,048 participants in fourth examination of the Copenhagen City Heart Study (from 2001 to 2003) followed until 2013, divided into 1,098 joggers and 3,950 non-joggers</td>
<td>Jogging: Physical activity was graded with joggers divided into light, moderate and strenuous categories. There were almost 3x as many sedentary non-joggers as joggers.</td>
<td>Jogging from 1 to 2.4 hours per week was associated with the lowest mortality (multivariable HR 0.29; 95% CI 0.11 to 0.80). Lower mortality rates were associated with slow jogging pace (HR 0.51; 95% CI 0.24 to 1.10) and moderate jogging pace (HR 0.38; 95% CI 0.22 to 0.66). The group of fast paced joggers had almost the same risk for mortality as the sedentary non-joggers (HR 0.94; 95% CI 0.4 to 2.18).</td>
<td>U-shaped association suggests an upper limit for exercise dosing that is optimal for health benefits. The dose of running that was most favorable was jogging from 1 to 2.4 hours per week, with no more than 3 running days per week, at a slow or average pace, which was suggested to be 6 to 7 miles per hour. Only two deaths occurred in the 40-person “strenuous” group and was not statistically significant.</td>
</tr>
<tr>
<td>Chomistek, et al/2015³</td>
<td>88,940 women ages 27 to 44 years at baseline in the Nurse’s Health Study, followed from 1991 to 2011</td>
<td>Engagement in 6 healthy lifestyle choices (defined as not smoking, a normal body mass index, physical activity ≥ 2.5 h/week, television viewing ≤ 7 h/week, diet in the top 40% of the Alternative Healthy Eating Index-2010, and 0.1 to 14.9 g/day of alcohol)</td>
<td>Those with all 6 factors had a 92% lower risk for CHD.</td>
<td>Nonsmoking, a healthy body mass index, exercise, and a healthy diet were independently and significantly associated with lower CHD risk. Approximately 73% (95% CI: 39% to 89%) of CHD cases were attributable to poor adherence to a healthy lifestyle. 46% (95% CI: 43% to 49%) of clinical CVD risk factor cases were attributable to a poor lifestyle.</td>
</tr>
<tr>
<td>Study</td>
<td>Participant Characteristics</td>
<td>Intervention/Health Lifestyle</td>
<td>Main Findings</td>
<td>Additional Information</td>
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<tr>
<td>------------------------</td>
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<td>Akesson, et al. 2014⁴</td>
<td>20,721 men from Sweden</td>
<td>Engagement in 5 low risk factors (healthy diet, moderate alcohol consumption, no smoking, being physically active, no abdominal obesity)</td>
<td>Men having all 5 low risk factors compared with those with 0 low risk factors had a relative risk of 0.14 (95% CI: 0.04 to 0.43).</td>
<td>These researchers suggested that approximately 80% of MIIs in men may be preventable.</td>
</tr>
<tr>
<td>Agha, et al. 2014⁵</td>
<td>84,537 post-menopausal women from the Women’s Health Initiative</td>
<td>Healthy lifestyles: A healthy lifestyle score (HL score) was created wherein women received 1 point for each healthy criterion met: high-scoring Alternative Healthy Eating Index, physically active, healthy body mass index, and currently not smoking.</td>
<td>Decreased heart failure risk, even in the absence of antecedent CVD, hypertension and diabetes</td>
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<td>Armstrong 2015⁸</td>
<td>1.1 million women in the United Kingdom</td>
<td>Physical activity: details obtained by questionnaire</td>
<td>Compared to inactive women, those reporting moderate activity had significantly lower risks of first coronary heart disease event, a first cerebrovascular event, or a first venous thromboembolic event (VTE) (p&lt;0.001 for each).</td>
<td>Women reporting strenuous physical activity daily had higher risks of CHD (p=0.002), cerebrovascular disease (p&lt;0.001) and VTE (p&lt;0.001) than those reporting doing such activity 2-3 times per week. Among active women it was not seen that progressive reductions in risk of vascular diseases occurred with increasing frequency of activity.</td>
</tr>
<tr>
<td>Fitzgerald, et al. 2015⁵</td>
<td>1,635 older adults in the Lifetime Interventions and Independence for Elders (LIFE) study</td>
<td>Physical activity: sedentary behavior and physical activity were objectively measured by using a hip-worn, solid-state triaxial accelerometer.</td>
<td>Daily time spent being sedentary was positively associated with predicted 10-year hard coronary heart disease (HCHD) risk among mobility-limited older adults.</td>
<td>Duration, but not intensity (i.e., mean counts/min), of daily physical activity was inversely associated with HCHD risk score in women in this population among people without CVD.</td>
</tr>
<tr>
<td>Study</td>
<td>Population</td>
<td>Methodology</td>
<td>Findings</td>
<td>Comments</td>
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<tr>
<td>Yusuf, et al. 2004</td>
<td>INTERHEART</td>
<td>Case-control study of acute MI in 52 countries, representing every inhabited continent; 15,152 cases and 14,820 controls were enrolled.</td>
<td>Risk factors assessed: Smoking, raised Apo B/Apo A1 ratio, history of hypertension, diabetes, abdominal obesity, psychosocial factors, lack daily consumption of fruits and vegetables, regular alcohol consumption, lack of regular physical activity assessed.</td>
<td>All risk factors were significantly related to acute MI (p&lt;0.0001 for all risk factors and p=0.03 for alcohol). Collectively, these nine risk factors accounted for 90% of the population attributable risk in men and 94% in women. Abnormal lipids, smoking, hypertension, diabetes, abdominal obesity, psychosocial factors, consumption of fruits, vegetables and alcohol and regular physical activity account for most of the risk of MI in both sexes and in all ages.</td>
</tr>
<tr>
<td>Gulati, et al. 2003</td>
<td>5,721 women who underwent baseline exercise stress tests in 1992.</td>
<td>Exercise capacity: Assessed in metabolic equivalents (MET).</td>
<td>Exercise capacity was shown to be a strong, independent predictor of all-cause mortality in asymptomatic women, even after controlling for traditional cardiac risk factors.</td>
<td>For each unit (1 MET) increase in exercise capacity, there was a 17% reduction in mortality rate. Framingham Risk Score-adjusted hazard ratios (with 95% CI) of death associated with MET levels of &lt;5, 5 to 8, and ≥8 were 3.1 (2.0 to 4.7), 1.9 (1.3 to 2.9) and 1.00, respectively.</td>
</tr>
</tbody>
</table>

Table 1. Recent Trials Relating Exercise and Cardiovascular Outcomes

- Citing: National Lipid Association, Kavita S. Sharma M.D.
Improvements in cardiovascular risk factors include reductions in blood pressure, cholesterol, body mass index, waist-to-hip ratio, body fat percentage, insulin resistance, and homocysteine levels.

Exercise preconditioning leads to reduced ischemic injury.

Structural physiological adaptations include changes to coronary artery vascular structure, collateralization, and cardiac remodelling.

Functional physiological adaptations include improved coronary artery vascular function and sympathetic nervous system function.

<table>
<thead>
<tr>
<th></th>
<th>1 Episode</th>
<th>Days</th>
<th>Weeks</th>
<th>Months</th>
<th>Year(s)</th>
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<tr>
<td>Exercise preconditioning</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Functional adaptation</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Structural adaptation</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Cardiovascular risk factors</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-/+</td>
<td>++</td>
</tr>
</tbody>
</table>
Primary Prevention of Cardiovascular Disease

• 30 minutes of moderate intensity exercise 5 days a week or vigorous intensity 20 minutes 3 times a week, or preferably a combination (moderate 5 days vigorous 2 days per week)
• 10,000 – 15,000 steps daily minimum
• The above is in addition to light activity performed during daily life
• This can be performed in multiple 10 minute bouts throughout the day
• Twice a week doing activities that include major muscle groups that maintain or increase muscular strength and endurance (resistance training)
Primary Prevention of Cardiovascular Disease

• Exceeding the minimum recommended amount of physical activity provides additional benefit.
• European Society of Cardiology recommends increasing to 300 minutes weekly of moderate intensity or 150 minutes weekly of vigorous aerobic activity.
• Doses above 100 minutes per day of moderate intensity physical activity does not appear to be associated with additional reduction in cardiovascular death, and may in-fact be detrimental.
Primary Prevention of Cardiovascular Disease

• Starting with a low intensity activity in sedentary individuals or those with cardiovascular risk factors

• Consider obtaining an exercise prescription with your Doctor or exercise physiologist.

• Reduce excessive sitting to less than 3 hours per day and excessive television to less than 3 hours a day (move 3 minutes per 30-60 minutes)

There is an inverse dose – response between physical activity and all cause mortality, CVD mortality and risk of CAD.
LIMIT
Limit physical inactivity and sedentary habits

2-3 TIMES A WEEK
Participate in activities that increase flexibility, strength and endurance of the muscle as many as 2-3 times a week
- Stretching
- Push up
- Partial sit up
- Leg press
- Sit and reach exercise
- Weight lifting (dumb bell)

5-6 TIMES A WEEK
Accumulate at least 30 minutes per day of moderate intensity physical activity on at least 5-6 days a week, preferably daily
- Brisk walking
- Cycling
- Aerobic exercise
- Swimming
- Dancing
- Skipping rope
- Football
- Badminton
- Basket ball
- Hiking
- Sepak takraw
- Tennis

EVERYDAY
Be active everyday in as many ways as you can
- Walk up the stairs
- Walk to the shop
- Housework
- Gardening
- Walk to the office
- Park your car a distance away
- Increase walking each day
- Increase walking up and down stairs

www.nkkhoo.com
The Importance of Exercise in Heart Disease

Heart Disease Includes Conditions such as Coronary Artery Disease, Heart Attack, Heart Failure and Valvular Disease

If you suffer from any of these conditions there are numerous benefits to be gained from a regular exercise program

- Increased Life Expectancy, Exercise tolerance & Quality of Life
- Improvement in Cholesterol profile, Insulin sensitivity and Glucose levels
- Reduced Resting Heart rate and improved tolerance of Ischaemia
- Slowed Progression of Coronary Artery Disease & improved Endothelial function

Myheart.net
Secondary Prevention of CVD with Exercise

- Assessment of risk should be done as part of a cardiac rehab program and or a stress test
- Individualized exercise recommendations are recommended
- Studies noted on middle aged men and women a 30% reduction of death with aerobic exercise of at least a 3 month duration
- Aerobic exercise in low risk individuals has been shown to be effective as stenting in improving daily functionality, cardiovascular blood flow, is associated with fewer events and death
Secondary Prevention of CVD with Exercise

- 30-60 minute of moderate intensity aerobic activity, such as brisk walking daily, supplemented by an increase in daily lifestyle activities. (e.g. walking during breaks, gardening, and household work)
- Resistance training twice weekly
What counts as moderate physical activity

Any physical activity is better than none. It is never too late to get more active to improve health. Activities could include:

- walking
- gardening
- hiking
- dancing
- cycling
- active recreation
- swimming
The ideal exercise program?

• Exercise should consist of a warm up period, endurance training, flexibility exercise, strength or resistance training and a cool down.

• If time constraints only allow 30 minutes a day do resistance training 2-3 days and the rest aerobic exercise.

• Warm up is low intensity for 5-10 minutes reducing injury or cardiac event risk. Cool down should last a few minutes.
Endurance Training

• This includes brisk walking, running, swimming, cycling, stair stepping elliptical, rowing, cross country skiing.

• These activities involve dynamic exercise – contracting and relaxing of large muscle groups

• Ideally 3-6 times per week for a minimum of 30 minutes per session at a minimum intensity of 40-60% of VO2max or 4-6 METS – this is moderate intensity, up to 85 -90% VO2max or over 8 METS on those who have progressed to this level

• Intensity should be determined by age or physical ability.

• Perceived exertion scale of 12-16 is suggested for healthy adults (Borg scale – goes from 10-20)

Adapted from Drs Fletcher and Trejo at Mayo clinic Jacksonville Florida
Flexibility

• Focus on improving your range of motion
• Stretching improves blood flow and reduced injuries

Lower back and posterior thigh stretches are important to reduce lower back pain
Resistance training

• Repeated movements against low to moderate resistance is an important part of a comprehensive exercise regimen for healthy adults and for those with cardiovascular disease that have been properly screened.

• Improvement has been noted with 8-10 different exercises that utilize major muscle groups 2-3 days per week.

• A balance of strength and endurance is achieved with 8-12 repetitions in healthy adults and 10-15 for cardiac patients, or those 60 or older.

• Give me 40! Men who can do 40 push-ups have 96% reduced risk of heart attack, stroke and heart disease vs. men who did less than 10. (a marker of general fitness?)

Adapted from Drs Fletcher and Trejo at Mayo clinic Jacksonville Florida
Last Thoughts

• “Just like medication, the right form of physical activity has to be specialized for each patient.” - Gerald Fletcher MD

• Inactivity has an elevated cardiovascular risk; along with smoking, bad diet, high lipids, inflammation, high blood pressure, obesity, or high blood sugars

• Cardiovascular disease prevention with exercise, along with other forms of risk reduction, reduce premature disability, and death while prolonging survival and quality of life

• Exercise’ positive effect is seen immediately, but its effects are transient. Individuals need to exercise regularly

• Risk, symptom and mortality reduction is noted with even small doses of exercise and peak at about 50-60 minutes of vigorous exercise daily
Where are you on the scale?
A Patient Perspective on Exercise

Tiffany Hackett-Stuart, RN, MHA
Patient with Congenital Heart Disease
Exercise is beneficial to help with preventing heart disease and after diagnosis or event
Exercise is not only beneficial to physical health but can also help with anxiety and depression, common conditions for those with heart disease.
Even low levels of activity can help reduce the risk of additional heart events.
Build it into your day!

Exercise doesn’t have to be a complicated thing, gardening, cleaning the house or walking the dog count as exercise.
Be consistent with exercise

What you do every day matters more than what you do once in a while.
Always consult your Physician
Next Webinar in the Series:

June 6, 2019
12:00 PM ET

Controlling Risk Factors for Women

Reducing Your Risk of Heart Disease: An Educational Webinar Series

Save the dates and join Mended Hearts and the American Society for Preventive Cardiology for a six-part webinar series to help you reduce your risk of heart disease.

- Tuesday, April 2, 2019 12:00 — 1:00 PM ET: Cholesterol Control and Diet Modifications
- Thursday, April 18, 2019 12:00 — 1:00 PM ET: Following your Treatment Plan to Reduce Your Risk of a Second Event
- Thursday, May 2, 2019 12:00 — 1:00 PM ET: Blood Pressure Control
- Thursday, May 16, 2019 12:00 — 1:00 PM ET: Preventative Exercise and Physical Activity
- Thursday, June 6, 2019 12:00—1:00 PM ET: Controlling Risk Factors for Women
- Thursday, June 20, 2019 12:00—1:00 PM ET: Controlling Risk Factors for Diverse Populations

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