A bear, however hard he tries, grows tubby without exercise.

— Pooh’s Little Instruction Book
Chapter 9: What Exercise Will Do For You

Physical Activity, U.S. Adults

Vigorous + Moderate 8%
Moderate 16%
Vigorous 4%
Inactive 28%
Not Regularly Active 44%

Who Exercises?

> Over the past 20 years, only 20% of Americans get enough physical activity to enjoy the benefits.
> This trend hasn't changed much.

Trends In Physical Activity

©2006 Wellness Council of America
Bad News:
➢ Despite our efforts to encourage increased physical activity, industrialized nations are no more physically active than they were 20 years ago.

Terms:
➢ Physical Activity: Any bodily movement produced by skeletal muscles that results in energy expenditure.
➢ Exercise: Planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness.

Terms Continued...
Cardiovascular Fitness
Health Related Components
Body Composition
Cardiovascular Endurance
Muscle Strength
Flexibility

Skill Related Components
Agility
Balance
Coordination
Power
Reaction Time
Speed
Health Related Components

- Body Composition
- Cardiovascular Endurance
- Muscle Strength
- Flexibility

Cardiovascular Endurance

- Cardio (heart)
- Vascular (vessels)
- Endurance (the ability of the heart, lungs, and vessels to provide fuel and oxygen to the body)

The Benefits...

- Physical activity is any activity that requires you to move your body around by contracting and relaxing your muscles. You have to be physically active to get fit.
- Just moving around has health benefits, but being fit has even more.
The Benefits...
➢ Fitness gives you the ability to do more physical work and play for longer periods of time.

Body Composition
➢ Includes body fat (fat mass) and everything else (lean body mass).
➢ Good health is achieved when fat mass is kept in a health range.
➢ This can be determined with Body Mass Index (BMI).

Flexibility & Muscle Strength
➢ Flexibility is freedom of movement.
➢ Muscle strength is the muscle’s ability to exert maximal force.
➢ There are benefits to both.
What’s In It For Me?

What evidence exists to support the health benefits of flexibility and weight training and how do these benefits compare to benefits from cardiovascular endurance?

Literature Summary Of Strength Training
(by strength of the available evidence)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Blood pressure</td>
<td>♢♢♢♢</td>
<td>♢♢♢♢</td>
</tr>
<tr>
<td>HDL cholesterol</td>
<td>♢♢♢</td>
<td>♢♢♢</td>
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<tr>
<td>Insulin sensitivity</td>
<td>♢♢</td>
<td>♢♢♢</td>
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<tr>
<td>Percent body fat</td>
<td>♢♢♢♢♢♢</td>
<td>♢♢♢</td>
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<tr>
<td>Bone density</td>
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<td>♢♢♢♢♢♢♢♢♢♣</td>
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<tr>
<td>Muscle strength</td>
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<tr>
<td>Physical function</td>
<td>♢♢♢♢♢♢♢♢♢♢♢♣</td>
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<td>VO2 max</td>
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What are the Benefits of Being Physically Active?

- Reduces the risk of dying prematurely.
- Reduces the risk of dying prematurely from heart disease.
- Reduces the risk of developing diabetes.
- Reduces the risk of developing high blood pressure.

What are the Benefits of Being Physically Active?

- Helps reduce blood pressure in people who already have high blood pressure.
- Reduces the risk of developing colon cancer.
- Reduces feelings of depression and anxiety.
- Helps control weight.
- Helps build and maintain healthy bones, muscles, and joints.

What are the Benefits of Being Physically Active?

- Helps older adults become stronger and better able to move about without falling.
- Improves the quality of sleep.
- Helps reduce stress and provides some protection against stress.
- Helps improve self-concept.
- Improves quality-of-life.
Studies on Cardiovascular Disease & Physical Activity:

- 24 prospective cohort studies
- Sedentary living is linked to CVD
- Inactive have a 2-fold increase in risk compared to active men and women
- Increased physical activity lowers risk, decreased physical activity increases risk

Fitness and CVD Deaths

<table>
<thead>
<tr>
<th>Level</th>
<th>Male</th>
<th>Female</th>
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</thead>
<tbody>
<tr>
<td>Low</td>
<td>24.4</td>
<td>16.3</td>
</tr>
<tr>
<td>Moderate</td>
<td>7.2</td>
<td>9.7</td>
</tr>
<tr>
<td>High</td>
<td>3.1</td>
<td>1</td>
</tr>
</tbody>
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Physical Activity and Cancer

- Colon cancer is significantly lower for those who exercise.
- Sedentary men have twice the risk of colon cancer.
- Physical activity may decrease prostate cancer risk.
Why Does Physical Activity Reduce Colon Cancer Risk?

- Increased transit time by stimulating colon peristalsis.
- Shortens time cancer causing chemicals in fecal matter contact the cells of the colon.
- People who exercise have less constipation.

- Many who exercise regularly also consume more dietary fiber, but even with control for fiber, physical activity reduces colon cancer risk.
- The more calories a person eats the higher the risk. People who exercise eat less than non-exercising obese individuals.
Other Cancers

- 3 of 4 studies on lung cancer found that exercisers had lower risk.
- Half the studies on breast cancer showed that exercisers had lower risk.
- Exercise was not associated with reductions in cancers of cervix, stomach, or bladder.

Fitness and Cancer Deaths

Fitness and Death
Exercise and Diabetes

- 9 Studies — most found that exercise was related to a reduction in the risk of developing type II diabetes.

What About Stroke?

- 9 studies completed so far and it is not possible to determine if exercise can prevent strokes.

The “U” Shaped Stroke/Physical Activity Curve

<table>
<thead>
<tr>
<th>Physical Activity</th>
<th>Stroke Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td></td>
</tr>
<tr>
<td>moderate</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td></td>
</tr>
<tr>
<td>very high</td>
<td></td>
</tr>
</tbody>
</table>
The Benefits...
- A small improvement in fitness provides a lot of benefits.
- A large improvement in fitness also provides benefits, but there is not a equal amount of increase. This is the dose response.

The Dose Response of Fitness

Exercise Changes The Body
- When you exercise your heart, vessels, muscles, lungs, blood, brain, and joints all undergo small but healthy changes. There are also changes that occur in cells that we don’t see or feel. All of these changes improve our health.
So, How Much Physical Activity Should We Get?

- Every American adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week.
- Even those who currently meet this standard may derive additional health and fitness benefits by becoming more physically active or including more vigorous activity.

Are You Getting the Benefits?

- Take the fitness assessment found on page 152 to find out.

The Culprit & The Cure

- This book gives you the skills, ideas, and practical know-how to adopt healthy lifestyles and maintain them for life.
- www.welcoa.org
Points to Remember:

- Get more physical activity; your endurance will increase and your body will change.
- With physical activity comes protection against heart disease, strokes, diabetes, and certain cancers.
- By getting regular, moderate intensity physical activity you can reduce your risk of premature, chronic disease death.
- Any increases in physical activity provide benefits, especially for those who are sedentary.

Points to Remember:

- Get physically active and you will help keep your bones strong, help prevent depression, and experience an improved quality of life.
- Accumulate 30 minutes or more of moderate physical activity on most, preferably all, days of the week.