***Chapter 1***

*The Benefits of Walking and Jogging as Exercise*

**Exercise: Not a Passing Fad**

The benefits of physical activity and exercise are universally recognized—and have been for far longer than one might think. Our Paleolithic ancestors regularly engaged in physical activity to survive. However, rather than chasing after a soccer ball to win a game or taking a leisurely stroll down a tree-lined path, they “worked out” by chasing after their next meal. For them, no exercise meant no food. How’s that for a health benefit?

With the advent of sedentary agriculture some 10,000 years ago, that same level of peak performance was no longer necessary. As our ancestors continued to devise more advanced means of acquiring food, physical activity declined. It wasn’t until the fourth century BCE, that the Greek physician Herodicus, recognized the importance of being physically active outside of a hunter-gatherer society. He practiced gymnastic medicine, a branch of Greek medicine that relied on vigorous exercise as a treatment. During that same time period, Hippocrates, who is often referred to as the Father of Modern Medicine, asserted, “If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health.” In the 12 century CE, the Jewish philosopher Rabbi Moses ben Maimon, a physician to the Sultan of Egypt, stated,” Anyone who lives a sedentary life and does not exercise, even if he eats good foods and takes care of himself according to proper medical principles, all his days will be painful ones and his strength will wane.”The 15th century theologian and scholar Robert Burton went so far as to declare that *not* exercising, or “idleness” as he referred to it in his widely read tome, *The Anatomy of Melancholy*, was the “bane of body and mind.” Burton also warned that the lack of exercise was the sole cause of melancholy (the name given depression at that time) and “many other maladies.” Burton claimed that idleness was one of the seven deadly, as well as “the nurse of naughtiness,” and the “chief author of mischief.” For Burton, exercise was not only essential for good health, but a means of avoiding eternal damnation.

By the 16th century, the benefits of exercise were widely accepted, at least among the wealthy and the educated, who had access to leisure. During this time period, H. Mercuralis defined exercise as “the deliberate and planned movement of the human frame, accompanied by breathlessness, and undertaken for the sake of health or fitness.” This definition is still widely used today.

Beyond the physical health benefits, there are affective benefits associated with group games and activities. Ancient Mayans organized the first team game called the Ball Game. It consisted of two teams trying to get a ball through a hoop mounted approximately 23 feet on a wall. The rules were to get the ball through the hoop using certain parts of the body. In some cases, the captain of the losing team gave himself as a human sacrifice to the winning team, an act that was believed by the Mayans to be a vital part of prosperity.

American Indians are thought to have founded the modern game of lacrosse, as well as other stick games. Lacrosse, which received its name from French settlers, was more than a form of recreation. It was a cultural event used to settle disputes between tribes.



*Figure 1. Ball Players. George Catlin. Date unknown.*

The outcome of the game, as well as the choosing of teams, was thought to be controlled supernaturally. As such, game venues and equipment were prepared ritualistically.

**From Ancient History to Modern Times**

In retrospect, the perceived benefits of exercise have changed very little since Herodicus or the American Indians. Mounting research supports historical assertions that exercise is vital to sustaining health and quality of life. Culturally, sports play a huge role in growth and development of youth and adults. Physically, there is indisputable evidence that regular exercise promotes healthy functioning of the brain, heart, and the skeletal and muscular systems. Exercise also reduces risk for chronic diseases, such as cancer, diabetes, and obesity. Regular exercise can even improve emotional health and overall wellbeing.

## **What are Physical Activity and Exercise?**

**Physical activity** is defined as any movement carried out by skeletal muscle that requires energy and is focused on building health. Health benefits include improved blood pressure, blood-lipid profile, and heart health. Acceptable physical activity includes yard work, house cleaning, walking the dog, or taking the stairs instead of the elevator. Physical activity does not have to be done all it once. It can be accumulated through various activities throughout the day. Although typing on a phone or laptop or playing video games does involve skeletal muscle and requires a minimal amount of energy, the amount required is not sufficient to improve health.

Despite the common knowledge that physical activity is tremendously beneficial to one’s health, rates of activity among Americans continue to be below what is needed. According to the Center for Disease Control (CDC), only 1 in 5 (21%) of American adults meet the recommended physical activity guidelines from the Surgeon General. Less than 3 in 10 high school students get 60 minutes or more of physical activity per day. Non-Hispanic whites (26%) are more active than their Hispanic (16%) and Black counterparts (18%) as is the case for males (54%) and females (46%). Those with more education and those whose household income is higher than poverty level are more likely to be physically active.1

The word *exercise*, although often used interchangeably with the phrase *physical activity*, denotes a sub-category of physical activity. **Exercise** is a planned, structured, and repetitive movement pattern intended to improve fitness. As a positive side-effect, it significantly improves health as well. Fitness improvements include the heart’s ability to pump blood, increased muscle size, and improved flexibility. For the most part, walking and jogging in this text is viewed in the context of exercise.

**The Role of Walking and Jogging**

Walking and jogging can play a major role in increasing these activity rates. Why? One of the beauties of walking or jogging comes from their simplicity. For example, the basic requirements to begin a walking program include: shoes, clothing, and a place to walk. For most, these items are readily available. In other words, the excuse of cost and/or accessibility is simply not a good one.

If you’re wanting to be competitive and not a just-for-fun kind of runner, there’s no problem with the availability of races. One of the fastest growing race distances, the half-marathon, continues to grow with 1.8 million finishers in 2012 for the 13.1-mile event. The most popular events, 5k’s, included 6.2 million finishers. Marathoners dropped slightly from 2011-2012 to 478 thousand finishers of the 26.2 mile events. The number of resources available to runners has also increased with more and more online training programs, many of which are free. 2



By /\ \/\/ /\ from Jackson Mississippi, USA (Blues Race thru Belhaven) [CC BY-SA 2.0 (http://creativecommons.org/licenses/by-sa/2.0)], via Wikimedia Commons)

In addition to the growth of half marathons and marathons, 5K’s and 10K’s have become easy ways for many organizations to raise funds for a particular cause. As a result, these local weekend events can be found by the dozens in many areas of the country. For example, Rungeorgia.com advertises a race calendar for the entire state of Georgia. On any given weekend, anywhere from 5 to 30 events are posted. Many of which carry low registration costs, short travel, and raise funds for good causes. In addition to the old fashioned 5k and 10k, many “new-age” events have emerged with similar distances but that also include challenging obstacles and other elements of fun such as color-runs or glow-in-the-dark runs. In other words, accessibility to events is rarely an excuse.

Walking generally attracts a less competitive group although many clubs and organizations exist to support competitive race walking, a sport included in the summer Olympic games. Not all finishers of marathons are actually runners. Many are full-distance walkers. Regardless, most walkers are walking for fitness or social enjoyment and not for competition so recommendations in this text primarily adhere to that non-competitive approach.

**Health Benefits**

Walking and jogging are considered **aerobic exercise -** a type of exercise that requires oxygen - more frequently referred to as simply “cardio.” Both walking and jogging have the potential to not only improve health but also increase fitness levels. The health benefits of aerobic exercise have been well documented since Dr. Kenneth Cooper wrote the book *Aerobics* in the early 60’s*.*

People, in general, exercise for many reasons. Ironically, most reasons lack a specific focus on the health benefits. While that’s not a problem, per se, it’s still important to remember health as the main objective. Nonetheless, the exact reasons vary between genders and ages but include:

|  |  |  |
| --- | --- | --- |
|  | **Females** | **Males** |
| **1.** | Weight Control | Muscle tone |
| **2.** | Feel good after | Increased energy |
| **3.** | Increased energy | Cardiovascular benefits |
| **4.** | Muscle tone | Weight control |
| **5.** | Cardiovascular benefits | Feel good after |
| **6.** | Keep flexibility | Reduce stress |
| **7.** | Reduce stress | Build strength |
| **8.** | Time for self | Enjoy exercise |
| **9.** | Enjoy exercise | Keep flexibility |
| **10.** | Improve self esteem | Time for self |

Source: Fitness Products Council/IHRSA/American Sports Data, Inc., Reprinted in SGMA’s "Tracking the Fitness Movement" reports.

**Cardiovascular Health Benefits**

While the exact details vary for how much exercise is required and at what intensity is most beneficial, little doubt exists as to whether or not exercise will significantly reduce risks of **cardiovascular disease** (CVD). Fit individuals, male or female, are much less likely to die from coronary artery disease as well as **cerebrovascular disease** (stroke). Current research suggests “more is better,” in terms of cumulative energy expenditure, with the most pronounced change in risk seen with moderate levels of activity. Specific adaptations to the cardiovascular system that occur as a result of exercise will be discussed in a later chapter.

**Obesity**

**Obesity** has become an epidemic in the modern world with nearly 71% of all Americans being considered overweight based on body mass index measurements. Unfortunately, only about 21% of adults 18 and older engaged in regular physical activity according to the Center for Disease Control. 3

Clearly, the more calories you burn during exercise the easier it will be to prevent becoming overweight or obese. Walking and jogging, especially at high intensities require significant energy demands and have been shown to reduce body weight if performed consistently over several weeks. Not only do you burn extra calories during the exercise, but metabolic rate remains elevated for up to 24 hours after exercise burning additional calories.

**Other Diseases**

Exercise has not only been used as prevention for CVD and weight management but may also help prevent:

* Diabetes (Type 2, gestational)
* High cholesterol
* Cancer of the breasts, prostate, colon, and rectum
* Arthritis
* Delay the onset of Alzheimer’s and Parkinson’s disease
* Osteoporosis
* Kidney Disease
* Improves immune system function

In addition to the preventive benefits, it can be used to help treat other diseases after diagnosis such as:

* + Heart disease
  + Asthma
  + COPD
  + Cystic fibrosis
  + Hyperlipidemia
  + Multiple sclerosis
  + Arthritis
  + Depression
  + Anxiety disorder

Finally, regular aerobic exercise has shown the ability to improve:

* + Academic performance
  + Immune system function
  + Bone & muscle health
  + Cognitive function
  + Mood/emotions

Clearly, Hippocrates was correct in his statement that regular exercise is “the safest way to health.”

**Key Terms**

**Physical Activity**-any activity that requires the use of skeletal muscle and burns calories. Its aim is to improve health.

**Exercise**-a planned, structured, and repetitive movement pattern designed to improve fitness.

**Aerobic Exercise**-a specific type of exercise that is prolonged, dynamic, requires large muscle movement, and is performed at moderate to high intensity levels. It primarily uses the aerobic energy pathway to provide the cells and muscles with energy.

**Cardiovascular Disease (CVD)**-any disease that affects the heart or blood vessels. Specific types of CVD include hypertension, coronary arterial disease, congestive heart failure, and many more.

**Cerebrovascular Disease**-any disease that affects the vascular system of the brain such as stroke.

**Test Your Knowledge**

1. Improved blood pressure, blood-lipid profile, and heart health are all benefits of physical activity.

True or False

2. According to the Center for Disease Control (CDC), how many of American adults meet the recommended physical activity guidelines from the Surgeon General?

a. One out of three

b. Two out of four

c. One out of five

d. Two out of five

3. Planned, structured, and repetitive movement patterns that are intended to improve fitness is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. Walking and jogging are considered:

a. Aerobic exercises

b. Anaerobic exercises

c. Plyometric exercises

d. Resistance training exercises

5. An example of a cerebrovascular disease is:

a. Heart attack

b. Stroke

c. Arthritis

d. Asthma

Answer Key:

1. True
2. c.
3. Exercise
4. a.
5. b.

**References**

1. Center for Disease Control and Prevention, Retrieved April 2017, CDC: Physical Activity, Data and Statistics, <https://www.cdc.gov/physicalactivity/data/facts.htm>
2. Running USA, 2016 State of the Sport-Road Running Trends, retrieved May 2017, <http://www.runningusa.org/state-of-sport-us-trends-2015>
3. Center for Disease Control and Prevention, CDC Stats, retrieved April 2017 <https://www.cdc.gov/physicalactivity/data/facts.htm>