

Chapter 02

Let's Celebrate Exercise

E is for exercise, the energizer of life.

BY KATHLEEN KUNTARAF

At age 91 Grace was still active playing tennis, lifting weights, and walking. Fifty-one years before, however, at the age of 40, her condition had been very different. Grace's spine was badly injured during a ski accident that occurred at the time, and as the years passed her back pain intensified. Her physician told her that he couldn't do much to help her because she was "too old." Grace later was diagnosed with emphysema and had difficulty breathing. She tired easily and at one point feared that she would never be able to climb stairs again. The doctor offered her no hope of improvement.

Grace, however, had a strong will to recover and decided to try an exercise program offered at a local medical center. For six weeks she worked out three times a week, two to three hours a day. She lifted weights, walked on the treadmill, rode the stationary bicycle, and did breathing exercises. Even when she was in pain and didn't feel like doing anything, she didn't quit. Eventually, her breathing improved and the back pain disappeared. She was able to walk reasonable distances—and had energy to spare! Her doctor told her that he had never seen such progress in anyone her age. Grace attributes her health improvement to exercise.¹

Benefits of Physical Exercise

Exercise is a form of physical activity that is planned, structured, repetitive, and performed with the goal of improving health and fitness. So although all exercise is physical activity, not all physical activity is exercise.

Regular exercise is not only a preventive measure; it also works to maintain health at its best. Studies clearly demonstrate that participating in regular physical activity provides many health benefits. The Physical Activity Guidelines for Americans (PAGA) Advisory Committee, comprising 13 leading experts in the field of exercise science and public health, summarizes the benefits of exercise in the following table: ²

| Health Benefits Associated With Regular Physical Activity | |
|--|--|
| Children and Adolescents | |
| Strong evidence | |
| • Improved cardiorespiratory and muscular fitness | |
| • Improved bone health | |
| • Improved cardiovascular and metabolic health biomarkers | |
| • Favorable body composition | |
| Moderate evidence | |
| • Reduced symptoms of depression | |
| Adults and Older Adults | |
| Strong evidence | |
| • Lower risk of early death | |
| • Lower risk of coronary heart disease | |
| • Lower risk of stroke | |
| • Lower risk of high blood pressure | |
| • Lower risk of adverse blood lipid profile | |
| • Lower risk of type 2 diabetes | |
| • Lower risk of metabolic syndrome | |
| • Lower risk of colon cancer | |
| • Lower risk of breast cancer | |
| • Prevention of weight gain | |

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|---|
| <ul style="list-style-type: none"> • Weight loss, particularly when combined with reduced calorie intake |
| <ul style="list-style-type: none"> • Improved cardiorespiratory and muscular fitness |
| <ul style="list-style-type: none"> • Prevention of falls |
| <ul style="list-style-type: none"> • Reduced depression |
| <ul style="list-style-type: none"> • Better cognitive function (for older adults) |
| Moderate to strong evidence |
| <ul style="list-style-type: none"> • Better functional health (for older adults) |
| <ul style="list-style-type: none"> • Reduced abdominal obesity |
| Moderate Evidence |
| <ul style="list-style-type: none"> • Lower risk of hip fracture |
| <ul style="list-style-type: none"> • Lower risk of lung cancer |
| <ul style="list-style-type: none"> • Lower risk of endometrial cancer |
| <ul style="list-style-type: none"> • Weight maintenance after weight loss |
| <ul style="list-style-type: none"> • Increased bone density |
| <ul style="list-style-type: none"> • Improved sleep quality |

Studies show that people who are physically active for approximately seven hours a week have a 40-percent lower risk of dying prematurely than those who are active for fewer than 30 minutes a week. There's even substantially lower risk of premature death when people do two and a half hours of at least moderate-intensity aerobic physical activity a week.

Cardiovascular Disease

Heart disease and stroke are two of the leading causes of death worldwide. Studies show that a significant reduction in the risk of cardiovascular disease occurs at activity levels equivalent to two and a half hours a week of moderate-intensity physical activity.

The evidence is strong that greater amounts of physical activity up to one hour per day result in further reductions in risk of cardiovascular disease.

Musculoskeletal Health

The decline in bone density during aging can be slowed with regular physical activity beginning at one and a half hours a week and continuing up to five hours a week. Research studies of physical activity to prevent hip fracture show that participating in two to five hours of physical activity per week of at least moderate intensity is associated with reduced risk.

Metabolic Health

Metabolic Syndrome is a condition in which people have a combination of high blood pressure, a large waistline (abdominal obesity), an adverse blood lipid profile (low levels of high-density lipoprotein [HDL] cholesterol, raised triglycerides), and impaired glucose tolerance. Studies have shown that people with metabolic syndrome respond to persistent, regular physical activity; a restrictive diet; and appropriate medications.³ Other studies show that those who regularly engage in at least two to two and a half hours a week of moderate-intensity aerobic activity have a lower risk of developing type 2 diabetes than do inactive people.

Obesity and Energy Balance

Overweight and obesity occur when calories ingested through food and beverages are more than calories used. Research shows that within the space of a year it's possible to achieve weight stability through two and a half to five hours per week of walking at a pace of about four miles per hour. Such physical activity is a critical factor in determining whether a person can maintain a healthy body weight, lose excess body weight, or maintain successful weight.

Health benefits of physical activity far outweigh the risk of adverse events for almost everyone. Adults with chronic disabilities should consult their health-care provider about the types and amounts of activity appropriate for them. As long as the activity is within one's ability, it should be safe. In other words, if you want to postpone your funeral, exercise regularly!

Three Types of Physical Activities:

Physical exercises are generally grouped into three types⁴ and have different effects on the body:

1. Flexibility exercises, such as stretching, improve the range of motion of muscles and joints.⁵
2. Aerobic exercises, such as cycling, swimming, walking, skipping rope, rowing, running, hiking, or playing tennis, focus on increasing cardiovascular endurance;⁶ however, weight-bearing aerobic exercise, such as walking, climbing, and jogging, increases bone density.

3. Resistance exercises, such as weight training, increase muscle strength⁷ and lower or prevent bone loss associated with menopause.⁸

Four Levels of Physical Activity

The 2008 PAGA Advisory Committee report provides the basis for dividing the amount of weekly aerobic physical activity for adults into four levels:

1. **Inactive**—no additional activity beyond baseline (basic routine activities)
2. **Low**—some exercise, up to 150 minutes a week
3. **Medium**—exercise 150 to 300 minutes a week
4. **High**—exercise more than 300 minutes a week

These categories provide a rule of thumb for how the total amount of physical activity is related to health benefits. Low amounts of activity provide some benefit; medium amounts provide substantial benefit; and high amounts provide even greater benefit. If a person has not been exercising regularly, it's important to obtain health clearance from a physician before embarking on such a program.

Present Physical Activity Guidelines

The 2008 Physical Activity Guidelines for Americans recommend that a person accumulate two and a half hours a week in various activities. This would be applicable worldwide. Examples of aerobic physical activities and intensities are shown in the following table:

| Moderate Intensity |
|---|
| Walking briskly (three miles per hour or faster, but not racewalking) |
| Water aerobics |
| Bicycling slower than 10 miles per hour |
| Tennis (doubles) |
| General gardening |
| Vigorous Intensity |
| Racewalking, jogging, or running |
| Swimming laps |
| Tennis (singles) |
| Bicycling 10 miles per hour or faster |
| Skipping rope |
| Heavy gardening (continuous digging or hoeing, with heart rate increases) |
| Hiking uphill or with a heavy backpack |

How do we know the intensity of our exercise? As a rule of thumb, a person doing moderate-intensity aerobic activity can maintain a comfortable conversation during the activity. A person doing vigorous-intensity activity cannot say more than a few words without pausing for a breath.

Health benefits have not yet been proved for activities such as stretching, warming up, or cooling down, but they often are used in physical activity programs.

Safe While Active

Although physical activity has many health benefits, injuries and other adverse events do sometimes occur. The most common injuries affect the musculoskeletal system (bones, joints, muscles, ligaments, and tendons). Others problems, such as overheating and

dehydration, may occur during activity. The good news is that scientific evidence strongly shows that appropriate physical activity is safe for almost everyone, and that the health benefits of physical activity far outweigh the risks.

The Best Physical Activity

The current Physical Activity Guidelines for Americans encourage a person to accumulate at least two and a half hours a week in moderate-intensity physical activity, such as brisk walking. Dr. Kenneth Cooper, of *Aerobics* fame, promotes brisk walking rather than running or jogging. Walking appeals to many because it can be done almost any time or place. It's fun, convenient, inexpensive, and can be enjoyed alone or with friends. It requires no special equipment. Comfortable walking shoes and clothing are all that is needed. Brisk walking results in minimal injuries while exercising most muscles and systems of the body. It stimulates the release of endorphins, which elevate the mood and improve outlook in life.

More than 150 years ago Ellen G. White said, "Walking, in all cases where it is possible, is the best exercise, because in walking, all the muscles are brought into action."⁹

Proper Training Clothing

While exercising one should wear lightweight garments that offer maximum freedom of movement and are appropriate to climatic conditions. When exercising in an urban area, use brightly colored garments and reflector materials for safety.

Exercise generates heat, so it's better to dress in layers that can be removed as soon as one starts perspiring. If it's very cold, consider wearing a face mask or scarf to warm the air before it enters the lungs. A hat or headband will protect the ears, which are vulnerable to frostbite.

It's vital to wear protective gear, such as helmets, wrist guards, and knee guards, when engaging in physical activities that carry risk of injury, including bicycling, skateboarding, and rollerblading.

Proper Training Shoes

Feet bear the weight of the whole body, therefore it's important that shoes be comfortable, well-fitting, and supportive. Look for athletic shoes with absorbent cushioning, appropriate arch support, a solid and snug heel cup, flexibility, breathability, and good lacing so you can adjust tightness without pinching your feet.

Exercising Faith

As regular aerobic exercise helps us live better, so it is with the exercise of faith. We can trust God to lead our lives according to His loving prescription for health.

He gives power to the weak, and to those who have no might He increases strength. Even the youths shall faint and be weary, and the young men shall utterly fall, but those who wait on the Lord shall renew their strength; they shall mount up with wings like

eagles, they shall run and not be weary, they shall walk and not faint (Isa. 40:29-31, NKJV).

Life Application Questions

Chapter 2—354 words—**Exercise**

1. What are the most attractive benefits of regular exercise? How can I live longer with better cognitive function and lower my risk of getting cancer, cardiovascular disease, or diabetes? How does exercise offer better quality of life, less depression, ease of movement, and optimum body mass? As I look at my family history are there benefits of exercise that could prevent the adverse history being repeated in my life? Am I going to make the choice to exercise with these goals as motivating factors?
2. How much exercise am I currently getting per week? What level of exercise am I achieving? Do I need to choose to exercise for longer periods each day, or can I increase the level of activity? What activity can I do along with exercises such as walking to maximize my use of time? Should I use the time for personal growth, possibly spiritual, by listening to an audio version of the Bible or devotional books? What benefits would come from exercising with friends? Would I be able to maintain some long-distance relationships by talking on the phone while doing moderate-intensity aerobic exercise?
3. How can I become better motivated to exercise regularly? What types of exercise achieve flexibility, cardiovascular fitness, and improved bone health? Which of the three types will I start today? When will I include the next type of exercise?
4. The children of Margaret's neighbor have a problem with their weight, and Margaret is worried that they are at risk for diabetes. She wants to give them a gift at Christmas? What should she get that would make exercise fun for them?
5. Do I have a spouse who needs to be encouraged to exercise? Can we make time to walk together, thereby adding more bonding time to our marriage as well?
6. What is the best clothing and shoes for exercise activities? What will keep me safe in a busy city, at night, or during winter?

7. I sometimes find it hard to choose to exercise on a daily basis. How can I obtain spiritual strength to make this a priority in my life?

¹ "An Exercise Story"; http://nihseniorhealth.gov/stories/ca_grace.html. Accessed online April 4, 2012.

² U.S. Department of Health and Human Services (2008), *2008 Physical Activity Guidelines for Americans*, pp. 9-12. For online version go to www.health.gov/paguidelines.

³ "Effect of Physical Activity and Diet on the Treatment of Metabolic Syndrome"; <http://www.bioportfolio.com/resources/trial/75943/Effect-Of-Physical-Activity-And-Diet-On-The-Treatment-Of-Metabolic-Syndrome.html>. Accessed April 20, 2012.

⁴ "Your Guide to Physical Activity"; http://www.nhlbi.nih.gov/health/public/heart/obesity/phy_active.pdf. Accessed online April 4, 2012.

⁵ D. O'Conner, M. Crowe, W. Spinks (2005), "Effects of static stretching on leg capacity during cycling," *Turin*, 46 (1), pp. 52-56. Retrieved October 5, 2006, from ProQuest database.

⁶ J. Wilmore, H. Knuttgen (2003), "Aerobic Exercise and Endurance Improving Fitness for Health Benefits," *The Physician and Sportsmedicine*, 31(5). 45. Retrieved October 5, 2006, from ProQuest Database.

⁷ N. de Vos, N. Singh, D. Ross, T. Stavrinou, et al. (2005), "Optimal Load for Increasing Muscle Power During Explosive Resistance Training in Older Adults," *The Journals of Gerontology*, 60A(5), pp. 638-647. Retrieved October 5, 2006, from ProQuest Database.

⁸ WebMD (Nov. 10, 2010), "Resistance (Strength) Training Exercise"; www.webmd.com/a-to-z-guides/resistance-strength-training-exercise-topic-overview. Accessed online April 4, 2012.

⁹ Ellen G. White, *The Health Reformer*, July 1, 1872.