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Moderate Exercise: The Health Benefits Part I

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Your Life Your Health

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The real world-wide energy crisis involves human energy. In the United States, and throughout the industrial world, insufficient exercise is a major cause of disability, disease and death. In America, inactivity is an important contributor to 4 of the 6 leading causes of death: heart disease, cancer, stroke, and diabetes. In fact, inactivity is a greater risk factor for the development of congestive heart failure than is diabetes and it is one of the greatest contributions to the development of high blood pressure. A sedentary lifestyle accounts for some 250,000 premature deaths annually. That means that 12% of all the deaths in America are caused by slothfulness, as are 23% of chronic illnesses. It's a staggering burden of death, disability, and debt, and it's all the more tragic because it's unnecessary.

Multiple have documented the health benefits of exercise for nearly 50 years, but fewer than 25% of Americans get the exercise that they need. What accounts for the gap between theory and practice?

In part, we are victims of our own success. Before the industrial revolution, about a third of all the energy used in American agriculture and manufacturing was provided by human muscles; now, that contribution is very small and is getting smaller. We don't exercise because we no longer have to.

The Amish and Activities of Daily Living

Nothing has changed about the health needs of men and women. What has changed is our culture. If making a living and/or gathering our food still required physical activity, we could eliminate up to half of the expense of healthcare in America today. This was proved by a study of Amish men and women which was published in the journal *Medicine and Science and Exercise* in January, 2004. The result of a project at the University of Tennessee, the study documented that Amish men are six times more active than the average American. While the average American takes 2-3,000 steps a day; Amish men take an average of 18,425 steps a day and Amish women take an average of 14,196 steps a day. One Amish man took over 51,000 steps in a day, which is equivalent to walking 25 miles.

What is the result? The Amish have a 4% incidence of obesity and 26% were overweight as opposed to a 31% obesity and 64% overweight in the general American population. And, this is in spite of the very high-calorie, high-fat-content diet which the Amish typically consume.

Activities of Daily Living and Exercise

Can something as simple as walking further to get the mail or the newspaper make a difference in your health? Absolutely! In another study published in the May, 2004 issue of *Medicine & Science and Exercise*, the official journal of the American College of Sports Medicine, it was reported that middle-aged women who took at least 10,000 steps per day on average were much more likely to fall into recommended ranges for measures of body composition such as total body weight and body fat percentage. Conversely, inactive women those taking fewer than 6,000 steps per day were more likely to be overweight or obese and have higher waist circumferences, a strong predictor of increased risk of cardiovascular disease.

Middle-aged women who accumulate more daily steps have a more favorable body composition profile. This is the first study to specifically examine the relationship between average accumulated steps per day and body composition variables in women who are in their middle years. In the study, eighty women between the ages of 40 and 66 were first weighed and measured, then instructed to wear pedometers for one week and log the number of steps taken each day. They were asked to follow their typical work and leisure routines during the one-week period. Researchers classified the participants into groups of:

- * Inactive (6,000 or fewer average daily steps),
- * Somewhat active (6,000 9,999) and
- * Active (10,000 or more)

They then analyzed body mass index (BMI), body fat, and waist and hip circumference. The study showed a significant inverse correlation between average steps and each of these measurements. On average, those in the active category had only 26 percent body fat and were within the recommended BMI range while those in the inactive group had a body fat percentage of 44 percent and fell well into the overweight category for BMI.

Researchers pointed out the public health implications of the evidence, particularly the apparent benefit of accumulating steps throughout the day. Although dietary intake is of equal importance, the investigators suggest that this evidence may eventually lead to the establishment of a standard volume of daily walking for middle-aged women that may help to prevent unhealthy weight gain.

What Has Changed in Western Culture?

Cultural preferences and economic pressures add to the problem. The average American adult spends 170 minutes a day watching TV and movies and 101 minutes a day driving, but less than 19 minutes a day exercising. “Spectator” is a kind word for it; we are truly a nation of “couch potatoes.”

Healthcare professionals can't do much about our entertainment industry, advertising empire, or economic imperatives. And even if we could turn back from the information age, few

would want to. But we can, and should, deal with another set of barriers to healthful exercise. In fact, our profession has erected some of these barriers. The first is the confusing mix of exercise guidelines and recommendations; for example:

- The US Surgeon General currently advocates 30 minutes of moderate exercise a day
- The Institute of Medicine calls for 60 minutes a day
- The 2005 Dietary Guidelines for Americans recommends 30-90 minutes a day.

The second barrier has its roots in the very movement that put exercise on the map, “the aerobics revolution.”

The Aerobics Doctrine

The scientific study of exercise blossomed in the 1960s and 1970s. Its principal research tool was the maximum oxygen uptake test, which measures the amount of oxygen taken up by the lungs, pumped by the heart, and delivered to the muscles during maximal exertion on a treadmill or bicycle ergometer. Improvements in the maximum oxygen uptake, or *VO2 max*, quickly became the gold standard for judging the efficacy of exercise.

Research in many labs demonstrated that optimal improvement in *VO2 max* depends on rather vigorous exercise. The best results come from exercise that is intense enough to raise the heart rate to 70% to 85% of its maximum, prolonged enough to sustain that intensity for 20-60 minutes continuously, and frequent enough to occur 3-7 times a week. “The aerobics doctrine” was born.

In 1975, the American College of Sports Medicine issued its first exercise guidelines. They called for all healthy adults to exercise at aerobic intensity (60% to 90% of maximum) continuously for 20-30 minutes at least 3 times a week. These standards were soon adopted with only minor modification by the American Heart Association and the US Department of Health, Education, and Welfare, and they remained in effect for more than 2 decades.

Unintended Consequences

“The aerobics doctrine” gained acceptance just as Frank Shorter, Bill Rodgers, and Joan Benoit Samuelson showed that Americans could run. Running became the emblem of aerobic exercise, and the marathon was installed as the icon of success. Despite extraordinary individual achievements, however, the aerobics revolution did not succeed in getting our nation off its duff.

“The aerobics doctrine” is based on sound studies that showed that aerobic training is required to build optimal aerobic fitness. Epidemiologic studies soon confirmed that fit people are healthy people, with a reduced risk for coronary artery disease, hypertension, stroke, and diabetes and a reduced mortality rate. These data remain valid today: Aerobic-intensity training is excellent for fitness and health.

Health Benefits of Moderate Exercise

Without contradicting the value of aerobics, new data show that it is possible to attain nearly all of the health benefits of exercise without attaining high levels of aerobic fitness. Moderate exercise is the way to do it. In this formulation, intensity is less important than the net amount of exercise, and intermittent exercise is as effective as continuous activity. In fact, golf is very beneficial indeed, as long as players walk the course and play 2-3 times a week.

For most people, aerobic exercise is daunting. Moderate exercise should be much more appealing and accessible, but the message has not yet produced results. Part of the problem, is the lingering belief that moderate exercise is a distant second-best to aerobics, that walking is a pale imitation of running. When most people think of exercise, whether healthcare professionals or other folks, they hear the distant voice of their old coach barking, "No pain, no gain." For the 100-yd dash, your coach was right, but for achieving and maintaining health, moderate, painless exercise is extraordinarily beneficial.

Next week, we will continue this discussion of the health benefits of moderate exercise. Remember, it is your life and it is your health, so, "Get moving!"