

*Paul Jacobs, MD, Northwest Permanente Medical Group, discusses ways clinicians can help patients increase activity levels*

## Promoting Physical Activity and Exercise

By Paul O Jacobs, MD

### Introduction

The US Surgeon General has been impressing upon the American public the need for more physical activity and exercise in their lives and to this end has called clinicians to action.<sup>1</sup>

In this article, I focus on four points made by the Surgeon General:

- We must recognize that obesity is a major public health problem.
- We can help manage this problem by educating our patients in our offices about the benefits of good dietary habits as well as good physical activity habits.
- Because we live in a complex, multicultural society, the advice we give one person may not fit all people. Our advice, strategies, and prevention efforts must be appropriate for our diverse group of patients.
- Our job does not—and must not—end at the walls of our offices: We must link our patients to community resources that can facilitate weight control.

### How Did This Obesity Epidemic Happen?

For many years, we've had access to good information about what constitutes a healthful diet. Research has shown that fewer than 3% of people actually follow four of the five dietary recommendations for intake of fruits, vegetables, whole grains, breads and cereals, and other protein sources (meat and soy).<sup>2</sup>

Moreover, less than one third of the US population also follow the common recommendation for 30 minutes of physical activity at least three to five times per week.<sup>2</sup> A 1999 study<sup>3</sup> showed that, as a group, children have the most sharply increasing rates of obesity. In the past 20 years, the rate of obesity has doubled among preteenagers and has tripled among adolescents. Although the number of hours spent watching television has declined slightly in the past 20 years among children of high school age, well over a third of children of this age spend three or more hours watching TV each day.<sup>4</sup> Why we are faced with this problem of obesity and how we have reached this point is thus no mystery.

Widely held opinion asserts that losing only 5% of excess weight constitutes success. Why? Because, as we know, gaining weight and being overweight are really substantial health problems, and loss of only 5% to 15% of excess body weight has a substantial impact on the most deadly diseases facing us—primarily cardiovascular disease and diabetes.<sup>5</sup> Just as important as weight reduction are the psychosocial benefits derived from increased activity. Depression and mood swings improve substantially with exercise.

### The Role of Metabolism in Obesity

Understanding metabolism—in particular, fat storage and mobilization—is also important.<sup>6</sup> Fat storage primarily takes the form of triglycerides,

most of which are located in the fat cells. Muscle also stores fat. The same visual pattern of fat that we see in beef—the effect that we call marbling—is in our muscles as well.

Men and women differ in the way they store fat. In women, normal body content of fat is between 25% and 32%; in men, the normal percentage is 18%.<sup>7</sup> The distribution pattern of fat also differs between the sexes. A central (abdominal) obesity pattern is more common in men, whereas the pear-shaped pattern—accumulation of fat around the hips and thighs—is more common in women. The central obesity pattern more commonly seen in men is also correlated with a higher risk of cardiovascular disease.<sup>8</sup>

Now, here is both the good news and the bad news. When sitting, women do not burn as much fat as men do when sitting. However, when a woman stands up and starts moving around, the rate of fat metabolism in the woman actually increases more than it does in a man walking next to her. Part of the reason is the location of fat stored in the body. In people with the central obesity pattern, epinephrine released by exercise stimulates the fat cells to mobilize fat stores. The receptors that are stimulated by epinephrine during exercise are the alpha and beta receptors. Lipolysis (breakdown of fat) is stimulated

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through the beta receptors, and the laying down (storage) of fat is stimulated through the alpha receptors. Beta receptors are more sensitive in abdominal fat than in hip region fat. Therefore, in people with the pear-shaped obesity pattern, the receptors appear to be less sensitive to this effect of epinephrine.<sup>9</sup> A clinical correlate of this difference is one that we see often: Exercise changes body appearance much more quickly and readily in men with the central obesity pattern than in women with the pear-shaped fat distribution pattern.

Women and men also have a different metabolic preference for selection of an energy source—and I am not talking about Krispy Kreme™ versus Dunkin' Donuts®. Instead, I am referring to fat versus carbohydrate sources. Carbohydrate sources of energy tend to be the storage forms used most commonly in very-high-energy exercise activity. One reason that women burn fat more readily with activity is that they tend to have more fat distributed in muscle tissue than men do.

### **Reasons to Combine Exercise and Dietary Change**

Activity and exercise have physiologic benefits, and one of these is weight loss. However, asking our patients to exercise as the primary source of eliminating excess weight has had a disappointing outcome.<sup>10</sup> But combining exercise with a dietary program gives a better outcome: The effects on carbohydrate metabolism and on fat metabolism are substantial. Studies indicate that when people exercise regularly, their insulin resistance begins to fall.<sup>11,12</sup> Fat cells are sensitive to the epinephrine released with exercise. When exposed to this epinephrine, the fat cells give up their fat more

readily. This metabolic effect persists for 24 to 48 hours after activity.<sup>11</sup> So, if we advise our patients to do some exercise—even if it is every other day—they will probably experience some persisting metabolic benefit.

In addition, people experience psychological and emotional benefits as they become more physically active, even if they don't lose much weight with an exercise program. In one interesting study,<sup>13</sup> children watched television or videos for 15 minutes. A cohort of this group then exercised moderately. Measurable improvement in mood stabilization was seen in the children who were active.<sup>13</sup> This finding is particularly important given the increasing concerns about depression and suicide among younger children these days.

Although the degree of improvement in clinical depression with regular exercise therapy has been disappointing, the uplift and stabilization of mood (decreased severity of affective disturbance) as well as the stress hardiness that accrues from regular exercise is very potent—and that effect is what I “sell” to my patients. I tell them that they will really feel better and will be better able to cope with their day-to-day stress. In addition, most activities and exercise programs cause people to get out and connect with other people, and the social support aspects of this effect become highly beneficial for many people. Many people who are overweight or obese have never liked the way they look in exercise or active sportswear; however, as someone who becomes more active can begin to normalize the sense of themselves as a person who can be active.

### **If Exercise is So Good, Why Don't We Do It?**

Psychologists have been examin-

ing that question for a long time.<sup>14</sup> People need to be ready to change. A person's own attitude about the ability to perform exercise is very important. People who say, “You know, I have never been an athletic person: I am kind of a ‘klutz’” are inclined to be sedentary because they don't see themselves as having the skills to be active.

We encounter many barriers to getting our patients—and even ourselves—involved in exercise. As overweight people become less active, they lose strength, endurance, and their flexibility. Becoming active can therefore hurt. And as people become overweight, their weight-bearing joints and other structures begin to fatigue, and physical impairment develops. We therefore must help our overweight patients to find exercises and activities that can be done despite various types of impairment.

In our culture, it's easier to sit around too much and be inactive. We caregivers share with our overweight and obese patients the same barriers to getting enough exercise in our daily lives. For kids, a wide assortment of competing products serves as enticement to inactivity, whereas working adults are hindered from exercise by work-related stress, family demands, and worry about the economy and world affairs. All these things tend to demote physical activity to a lower-priority level in our daily lives. For elderly people, many of whom have physical impairment to worry about or are socially isolated, just getting to and from an exercise activity can be more difficult than for younger people.

As we Americans age, our fitness level falls and our weight increases. Whereas most young people think about exercise as fun, many older

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people associate activity with discomfort and have very real fears about injury and falls. For these people, social isolation compounds the difficulty of gaining access to exercise opportunities.

## What Defines a Good Exercise Program?

Basically, we want to say this to our patients: “you know, I want you to do something moderately active three to five times a week.” “Moderate” physical activity is activity that raises the heart rate to about half its maximum but does not feel overwhelming to the patient. We know also that low-intensity and long-duration activity is better than short bursts of high-intensity activity for burning fat.

As people intensify their exercise, they burn more calories, a greater proportion of which comes from carbohydrates. From the standpoint of what’s practical for our overweight and obese patients, we want to emphasize moderate, low-impact, long-duration physical activity.

Patients should also participate in different forms of exercise—not only to keep exercise interesting but to spare the body from overuse types of strain. We must link this advice to teaching our patients where to get good information. For instance, Kaiser Permanente (KP) maintains a collection of excellent videos at our Health Education Resource Centers. We can also educate people about community centers with swimming pools and exercise programs.

## Is Exercise Safe?

Clinicians with overweight patients have two major concerns about advising these patients to increase their exercise activity: Risk of injury and risk of death. Musculoskeletal system injury is common

among exercisers but is usually not serious. To reduce physical stress on bones, joints, muscles, and tendons, we recommend that patients increase their level of exercise slowly. The greater concern of clinicians—“Is my patient going to drop dead?”—can be answered this way: I think the chances of overweight patients dropping dead are a lot higher if they don’t get up out of their chairs and do some type of exercise! Because of the potential for overweight patients to have comorbid conditions, such as coronary artery disease and diabetes, clinicians must obtain from these patients a thorough medical history to identify these conditions and evaluate them as clinically indicated.

For overweight and obese patients, we should emphasize three types of low-impact exercise: walking during daily activities, use of a stationary bicycle, and exercise in a swimming pool. In an aquatic environment, many overweight and obese patients feel a physical freedom that they haven’t felt for years and that improves the joint range of motion. Aquatic exercise can also mobilize lymphedema and regular edema. We should recommend exercise programs that emphasize repetition and low resistance; those types of exercise are much more peaceful for the musculoskeletal system. The balance of activity and stretching also is very important: As people become more active, stretching helps to reduce musculoskeletal strain.

The word “exercise” is often scary to our patients, so we should use the word “activity,” which is a much kinder-sounding word. To demonstrate this concept, I’ve got my pedometer strapped on my belt all the

time for daily use in my practice. I point out to people that using a pedometer is both a scientific and a fun way to track daily physical activity. Basically, the difference between being sedentary and maintaining a good level of activity is about 10,000 steps a day (roughly five miles). I used to think I was pretty active—then I attached

the pedometer to my belt and discovered that on most days, I took only 5000 or 6000 steps! In contrast, my wife—who is a nurse in an ambulatory care setting—walks 24,000 steps per day. If your patients have a dog, get them to walk the dog; the exercise is great for both dog and person.

## How to Design an Exercise Program for Your Patient

Design different exercise programs for different groups of patients. For example, the elderly do better in social groups. Many of my elderly patients come in to my office very excited about the KP Silver Sneakers Program. They love it! They get to talk to other people in their own age group. They do exercises that are physically appropriate for the patients’ fitness level. For these patients, we should concentrate on activities that improve balance and coordination, because good balance and coordination help prevent falls. Keep the program simple: As people age, they don’t think of themselves as physically adept. And because some elders might think they don’t have enough fun in their lives, make the exercise program fun for them.

For children, provide a different array of activities so that the kids are not constrained into doing something

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they don't like. Anything we can do to get them off the couch and away from the television is good; remember that even short periods of activity are very good for improving children's mood fluctuations.

In general, men and women differ in the types of exercise they select. Men often seek to build muscular strength, and they enjoy the competitive aspect of physical activity. Women more often select exercise because they know it improves their health. They look for mood benefits, weight control, and social support. The social contact they get is very important—they enjoy and benefit from it, whereas more men appear to be content to just run off into the sunset all by themselves. We must understand that in our culture, women are most often the caregivers for elderly parents and for children and that our programs must therefore provide support for women by addressing their childcare needs, thus allowing them to participate in an exercise program. In addition, women perceive the discomfort of exercise to a greater degree than men. This perception can discourage women from activity but can be overcome with gently persistent efforts. Women struggle much more than men with our social imprinting on how we view and judge our bodies. The exercise environment is a great place to teach women to be healthy and strong instead of focusing solely on their weight and their appearance.

### Conclusion

As caregivers, we are uniquely positioned to address our nation's challenging epidemic of overweight and obesity. The words that we use, the advice that we give, and the examples that we set can be powerful

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tools to equip our patients with the knowledge, experience, and hope that enables them to change lifelong patterns of inactivity, thus freeing them to see a brighter and healthier future. Sometimes—now, for example—any step can be a step in the right direction. ♦

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