

## Regular Physical Activity: Forgotten Benefits



Both men and women who engage in regular physical activity experience statistically significant and clinically important reductions in the risk of dying from coronary heart disease, the leading cause of death in the United States.<sup>1</sup> Physical activity also reduces the risks of developing diabetes, hypertension, and colon cancer; enhances mental health; improves muscle, bone, and joint health, and helps maintain function and preserve independence in older adults.<sup>1</sup> In fact, regular physical activity may ameliorate many of the emerging and increasingly prevalent clinical, public health, and fiscal challenges that accompany the “Graying of America.” For example, today, 24% of the US population is 50 years of age and over, and 17 million are aged between 75 and 85 years, a number estimated to grow to 30 million during the next 30 years.<sup>2,3</sup> Brisk walking every day for only about 20 minutes, which can be practiced even among the oldest old, confers a 30%-40% reduced risk of myocardial infarction.<sup>4</sup> In the US today, 18% of the gross national product of about \$2.64 trillion is spent on health care, which is about double the proportion of other developed countries. Of that total, Medicare accounts for 21%, or \$554 billion. Most alarmingly, of that total, 28%, or about \$170 billion, is spent on health care during the last 6 months

of life.<sup>5</sup> In this context, it is important to note that physical inactivity accounts for about 2.4% of US health care expenditures, or approximately \$24 billion a year.<sup>6</sup>

In patients who have survived myocardial infarction, most clinicians would agree that rehabilitation is essential to reduce risks of subsequent myocardial infarction or stroke. Cardiac rehabilitation is a supervised program that typically includes an exercise plan. Even though patients are referred to cardiac rehabilitation after a heart attack, following discharge perhaps < 15% actually participate in cardiac rehabilitation.<sup>7</sup>

Such sobering statistics are even more alarming in the general US population. According to *Healthy People 2020*,<sup>8</sup> about 36% of adults engage in no leisure-time physical activity, despite the fact that walking may be comparable to more vigorous exercise in preventing cardiovascular events.<sup>4</sup> It also is true, however, that increasing walking time or combining walking with vigorous exercise appears to be associated with even greater risk reduction.<sup>4</sup> Although federal<sup>9</sup> and other guidelines<sup>10</sup> recommend moderate-intensity exercise for at least 30 minutes daily, over three-fourths of US adults do not adhere to these guidelines. Further, the *Physical Activity Guidelines for Americans*, issued by the US Department of Health and Human Services, recommend that children and adolescents aged 6-17 years should have 60 minutes (1 hour) or more of physical activity each day. Nonetheless, many do not achieve even this modest goal, and no physical activity guidelines exist for children under age 6 years.

All these sobering statistics should be viewed in the context that physical inactivity, along with cigarette smoking and obesity, are the leading contributors to premature morbidity and mortality.<sup>11</sup> Specifically, lack of physical activity accounts for 22% of coronary heart disease, 22% of colon cancer, 18% of osteoporotic fractures, 12% of diabetes and hypertension, and 5% of breast cancer.<sup>9,10</sup>

Communities can do much to increase levels of physical activity among people of all ages and thereby address this serious public health problem, but so, too, can individual clinicians. Clinicians should screen and refer obese patients to programs that offer intensive counseling for weight control and physical activity. Such a simple, straightforward, and easily achievable objective may be a necessary first step to lower the rates of obesity and physical inactivity in the US today.

When physicians prescribe physical activity, practical patient questions arise: “What exercise should I do?”

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“For how long, how often and how hard do I need to exercise?” The precise advantages and disadvantages of all types, intensities, frequencies, and durations of exercise are defined incompletely. However, most current guidelines recommend that, following appropriate screening, clinicians should advise their patients to engage in moderate-intensity cardiorespiratory exercise training for  $\geq 30 \text{ min} \cdot \text{d}^{-1}$  on  $\geq 5 \text{ d} \cdot \text{wk}^{-1}$  for a total of  $\geq 150 \text{ min} \cdot \text{wk}^{-1}$ , vigorous-intensity cardiorespiratory exercise training for  $\geq 20 \text{ min} \cdot \text{d}^{-1}$  on  $\geq 3 \text{ d} \cdot \text{wk}^{-1}$  ( $\geq 75 \text{ min} \cdot \text{wk}^{-1}$ ), or a combination of moderate- and vigorous-intensity exercise to achieve a total energy expenditure of  $\geq 500\text{-}1000$  metabolic equivalent  $\cdot \text{min} \cdot \text{wk}^{-1}$ . On 2-3  $\text{d} \cdot \text{wk}^{-1}$ , adults also should perform resistance exercises with each major muscle group, and neuromotor exercise involving balance, agility, and coordination. Crucial to maintaining joint range of movement, completing a series of flexibility exercises for each of the major muscle-tendon groups (a total of 60 seconds per exercise) on  $\geq 2 \text{ d} \cdot \text{wk}^{-1}$  is recommended also.<sup>12</sup>

Unfortunately, most Americans prefer prescription of pills to prescription of harmful lifestyles such as physical inactivity.<sup>13</sup> In general, any pharmacologic intervention should be an adjunct, not alternative, to therapeutic lifestyle changes such as increasing levels of physical activity. Drugs of lifesaving benefit include statins, aspirin, angiotensin-converting enzyme inhibitors, or receptor blockers, as well as beta-adrenergic blockers. In fact, the concept of a polypill is currently being tested in a large-scale randomized trial.<sup>14</sup> In the future, even if proven to be beneficial, this strategy should be an adjunct, not alternative, to therapeutic lifestyle changes such as increased physical activity as well as avoidance or treatment of obesity and cigarette smoking. Clinicians, however, should not let the perfect be the enemy of the possible because, based on the current totality of evidence, when compared with most pharmacologic therapies, exercise is more readily available at low cost and relatively free of adverse effects.<sup>15</sup>

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