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SPECIAL ISSUE: WALKING IN L.A.

Walking shows disease-fighting powers

Exactly how much good does that daily stroll do? For starters, it's terrific for the heart, studies show.

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STUDIES investigating the health wonders of exercise keep rolling in. But just like with eating habits, physical activity habits are tough to study in gold-standard, randomized clinical trials — after all, who would agree to be assigned to a marathoners' group for 20 years? Instead, most researchers do the next best thing: study people's exercise habits and see how they fare, health-wise, down the line.

Here's a snapshot of some high-profile studies that have focused on walking or other moderate-intensity physical activity:

Cardiovascular system: This is where the mother lode of walking benefits have been found.

Some examples: The Women's Health Initiative study (tracking 74,000 women ages 50 to 79) found a 30% lower risk of cardiovascular problems (such as heart attack or stroke) for those who walked briskly for at least 22 minutes a day.

Another study of 39,000 women (the Nurses Health Study), found half the risk of coronary heart disease for women who walked at least one hour a week. Time spent walking was more important than pace.

Men benefit too: A study of 2,700 retired men (the Honolulu Heart Program) found that those who walked at least 1.5 miles a day halved their risk of coronary heart disease.

Another, of 44,000 men (the Health Professionals Follow-Up Study), found an 18% lower risk of coronary heart disease for those who walked at least 30 minutes a day. In this case, how fast they walked was more important than how long.

How does it work? Moderate-intensity activity boosts levels of high-density lipoproteins (the "good" cholesterol), lowers levels of low-density lipoproteins ("bad" cholesterol), increases oxygen supply and improves heart contractions and blood pressure.

Type 2 diabetes: With 30 minutes of walking a day, you might lower your risk for developing diabetes by one-third to one-half, scientists say. At work are the same heart-healthy mechanisms, plus extras: weight loss, improved insulin response and better blood-sugar control.

Even a single bout of brisk walking can greatly improve glucose metabolism for up to 18 hours afterward; it does so by helping muscles take up glucose from the blood without using insulin (perhaps in the same way as the

diabetes drug metformin.)

And if you already battle diabetes, walking might help extend your life. In a decade-long study of 1,600 people in Southern California, diabetics who walked more than a mile a day were half as likely to die of any cause than those who walked less — even after adjusting for other factors such as sex, age, weight and smoking and drinking habits.

Cancer: Colon cancer appears especially affected by walking: Risk for the disease could drop by about 35% with 30 to 60 minutes a day of physical activity, scientists say. Walking might help with treatment too. In one study of 600 women, those who increased their activity levels after diagnosis lowered their risk of dying by one-half.

Breast cancer is also on the list. In the Women's Health Initiative study, women who did the equivalent of two hours a week of brisk walking dropped their risk of breast cancer by 18%. In the Nurses Health Study, breast cancer patients who walked from three to five hours a week were half as likely to die from the disease as those who didn't walk.

Scientists are planning a clinical trial to test a moderate-intensity physical activity program for breast cancer survivors.

Some studies have suggested that moderate exercise might help prevent stomach cancer, endometrial cancer and prostate cancer, but researchers say more research is needed.

Why physical activity helps fight or prevent cancer isn't clear, but the key might be in the way physical activity affects hormones or the immune system.

Bones and joints: Walking or other weight-bearing activity builds bone strength and slows the rate of bone-mineral loss as we age. In one study, postmenopausal women who walked four hours a week dropped their risk of hip fracture by about 40%, with brisk walkers experiencing the greatest benefit. But some researchers think that simply walking may not be enough to prevent osteoporosis: Strength training might be needed, too.

Knee osteoarthritis may also benefit from walking, but more data are needed.

Mood: Active folks are 30% to 50% less likely to be depressed or to develop depression down the road, researchers say. In one study, a walking program was just as effective in treating symptoms of depression as a jogging program. But more patients stuck with the walking program.

In other studies, regular exercise has sometimes been found to be as effective as psychotherapy for depressed patients; some researchers think that the combination of physical activity and medication might be more effective than medication alone.

Walking can reduce the risk of anxiety by about 25% to 50% too. One study found that over 10 weeks, a physical activity regimen was as effective in reducing anxiety in patients as was standard anti-anxiety medication. Another found enhanced creativity after just one walking session.

Some studies suggest that longer bouts — 30 minutes of walking each day versus three 10-minute bouts — bring about the greatest mood improvements.

How does it work? Scientists think that the well-exercised brain produces more opioids (such as endorphin) and is better able to use neurotransmitters (such as norepinephrine, serotonin and dopamine) — all of which works to improve brain functioning in much the same way as antidepressant drugs.

Sleep: Future sleep troubles might be warded off by walking at least 11 minutes a day, one study suggests — with

greater benefits for even longer stints. Another found that sedentary people who sleep poorly who tried brisk walking for 35 minutes four times a week were able to fall asleep faster and sleep longer. Some researchers suspect that exercise, as well as influencing mood, might help calibrate the body's circadian clock.

Alzheimer's disease and cognition: Brisk walking for at least 15 minutes at least three days a week might reduce risk of dementia and Alzheimer's by about 40%, researchers say. In the Nurses Health Study, gentle walking for 1.5 hours each week was associated with higher cognitive functioning — and less decline — in women 70 and older.

Experiments with mice on the exercise wheel have shown that physical activity decreases harmful plaque buildup in the brain and increases growth of neurons in the memory areas.

Parkinson's disease: The evidence is mixed, but a few studies suggest that regular physical activity might prevent or lessen the effects of Parkinson's. Researchers suspect that exercise might affect brain levels of dopamine, a chemical affected by the disease.

Stroke: In two large studies (the Nurses Health Study and the Harvard Alumni Study), women who walked an hour a day and men who walked 1.75 miles a day had a 40% drop in stroke risk — and women who walked briskly had their risk cut in half. Even one brisk, 20-minute walk triggers enzymes that help break down small blood clots. The effect can last an hour.

Sexual function: The Massachusetts Male Aging Study found that sedentary men who started the equivalent of briskly walking two miles a day had a 70% lower risk of erectile dysfunction than those who stayed inactive; In the Health Professionals Follow-Up Study, even walking only 2.5 hours a week reduced the risk by 20%. Researchers suspect that physical activity affects the availability of the key chemical nitric oxide as well as generally enhancing blood flow in the penis.

In women, low rates of physical activity have been linked to low sexual desire and difficulties with sexual arousal. How walking aids sexual function in women is still mostly a mystery.

Staying alive: Studies following large groups of people have found that walkers simply live longer. Some examples: Death rates dropped by 22% for 10,000 Harvard alumni who walked at least nine miles a week; by 50% for 700 retired Hawaiian men who walked at least two miles a day; by 29% for 9,500 women who walked about 10 miles a week. One study estimated that daily 30-minute walks can extend life by 1.3 years for men and 1.5 years for women older than 50.