

she wrote the book on strength- training

Best-selling author
Miriam Nelson tells
us why midlife women
are crazy if they don't
work out with weights

BY KATHLEEN MCAULIFFE

Many women still only do cardio exercise. Why?

"For the last forty years, we've been promoting aerobic exercise to achieve cardiovascular fitness and weight control. Historically, strength-training was thought to be for the male athlete. But when a woman who's been doing aerobic exercise adds weight-training, what we consistently see is a change in body shape: Her metabolism increases, and gradually weight control becomes much easier."

Is strength-training as important for women as it is for men?

"It's probably more important for women. Women naturally have less bone, less muscle

and more body fat than men. We also tend to live longer and have more chronic diseases.

"The typical woman starts losing one percent of muscle mass each year by her late thirties and early forties, and gains that amount in body fat. The health consequences of losing muscle start to snowball. When you're out of shape, you're more susceptible to heart disease. With less muscle cushioning the joints, you're vulnerable to arthritis. Muscles exert force on the bones, which builds bone density, so when you lose muscle, you're more prone to osteoporosis. Muscles are also the largest repository for glucose, so when you lose muscle, less can be stored and

blood-glucose levels tend to rise, a risk for type 2 diabetes.

"Strength-training helps to reverse these degenerative changes. And this is very doable—two or three times a week for thirty to forty-five minutes. If a midlife woman does that, she'll lose maybe three to five pounds of fat and gain that much muscle."

Will she look more youthful, too?

"Yes, by changing her body composition. If you put a twenty-five-year-old woman next to a fifty-five-year-old woman who is the same weight, the main reason they look fairly different is their body

composition—the older woman has much less muscle relative to fat."

But aren't hormone shifts at menopause also responsible for putting fat around the waistline?

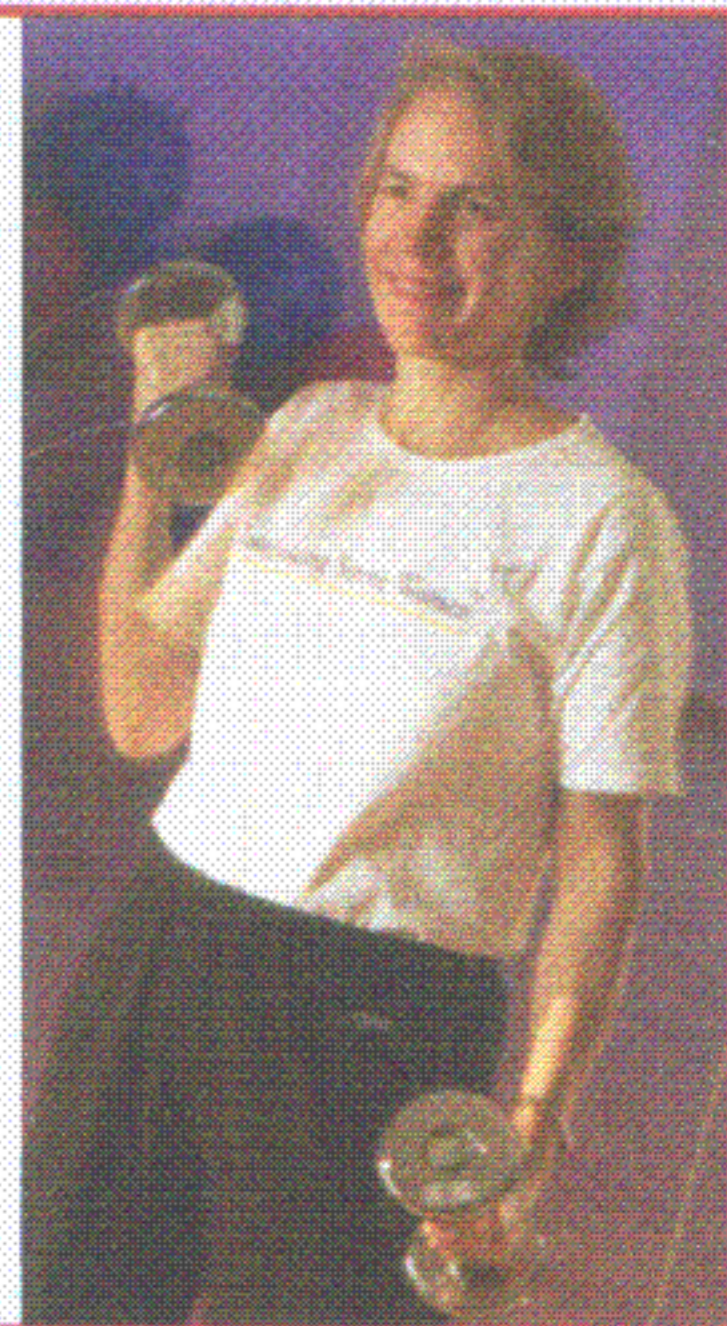
"We don't know. That's something we want to look into with a carefully controlled trial. I suspect the thickening of the waistline at menopause is probably due to a combination of hormone changes and a sedentary lifestyle."

In your landmark 1994 study, women who weight-trained lost inches without losing pounds. Can you tell us more?

"I recruited forty women, fifty to seventy years of age, none on hormone replacement therapy. Half the women strength-trained twice a week and a control group maintained their usual lifestyle. After a year, the women who strength-trained lost three pounds of body fat, and gained three pounds of muscle, on average. The control group gained one pound of fat and lost one pound of muscle, on average.

"Because muscle is denser or more compact than fat, the body becomes smaller. The

MIRIAM E. NELSON, Ph.D., is an associate professor at Tufts University and author of the best-selling *Strong Women* series: *Strong Women Stay Young* (Bantam 2000); *Strong Women Stay Slim* (Bantam 1998); and others.



women who weight-trained were leaner. Most dropped a dress size or two, and one dropped from a size sixteen to twelve, even though the scale hadn't budged."

There's a slew of new exercise and diet books being marketed for women at midlife. Do we need a different regime?

"The optimal exercise program combines strength-training, aerobic exercise and stretching for flexibility, regardless of your age. The issue is that, as we age, we may want to switch to an activity that's kinder on joints, such as walking, swimming or cycling. Jumping rope is not a good idea for people over fifty or fifty-five with joint problems, but it's great for someone who's forty and healthy. Women may also find that they need to exercise longer and do weight-training more religiously than when they were young. Youth can get away with a lot more neglect and abuse of the body."

Are there specific diets that will put on more muscle than fat—for example, the high-protein Atkins diet?

"No diet will build muscle. Only exercise does that. The Atkins diet in the short term may promote rapid weight loss, improving your fat-to-lean ratio in the process. But even if true—and research on the diet is still preliminary—that benefit comes at too high a price. Cutting back on carbohydrates in the form of whole grains, fruits and vegetables, as Atkins recommends, will deprive you of key phytochemicals that protect against type 2 diabetes, blindness, osteoporosis and heart disease. Instead, I advise eating

well-balanced meals rich in fruits, vegetables and whole grains, with fifteen percent of calories from protein and no more than thirty percent from fat. And that fat, ideally, should come from healthy sources, such as olive oil and nuts."

Will you lose muscle mass even if you're doing aerobic exercise regularly?

"Yes, very likely. Aerobic exercise is great for the heart and lungs, so it's critical for

cent more active than before, whereas the non-exercisers were less active."

If a woman is time-strapped, which is more important—cardio or strength-training?

"If she's only working out once a week, I'd have her do aerobic exercise, because cardiovascular fitness is so important. If she can manage three visits of thirty minutes each, however, I'd recommend she

hormone therapy, but with many more unwanted side effects. Nutrition and exercise should always be the first form of treatment."

Why does the American Heart Association now recommend weight-training?

"Preserving muscle mass is very important for the health of your cardiovascular system and also for preventing type 2 diabetes, a common precursor

IS IT TRUE THAT DIETING WITHOUT WEIGHT-TRAINING CAN BE COUNTER-PRODUCTIVE TO WEIGHT LOSS?

"Yes. If you weight-train while restricting calories, you lose roughly seventy-five percent fat and twenty-five percent muscle. Whereas if you diet alone, you see the reverse. And the lean tissue you lose includes muscle and bone. That's true no matter how much protein and calcium you eat."

cardiovascular fitness. But no aerobic exercise increases muscle mass—not even leg muscles. Very high-intensity cycling might develop your thigh muscles, but not running, walking or step aerobics. These activities increase muscle endurance, not strength.

"That's why weight-training and aerobics dovetail so beautifully, particularly if you want to lose weight. If you increase muscle mass with weight-training, your resting metabolism is higher twenty-four hours a day. Aerobic exercise speeds up your metabolism while you're doing it, but within an hour or two, you return to your base metabolism."

Does weight-training also make you more energetic?

"Yes. Several different studies show that. In our *JAMA* study, the women who strength-trained were twenty-five per-

devote one visit to weight-training and the other two to high-intensity aerobics. Hopefully, she'd squeeze in moderate-intensity activities by taking stairs instead of elevators and the like. The ideal is to do thirty to forty minutes of aerobic exercise five times a week and weight train for the same duration two or three times a week."

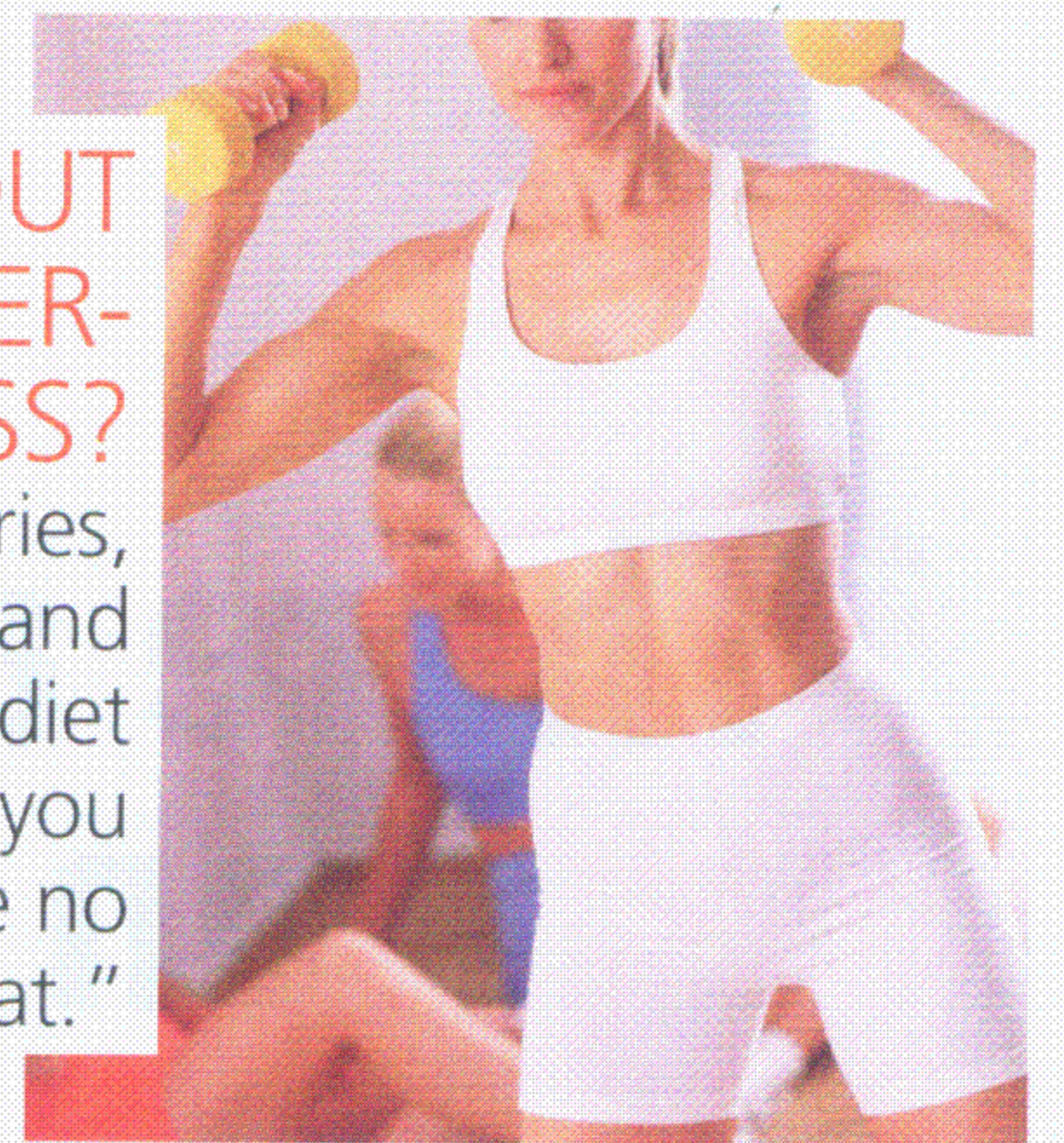
How does weight-training compare to hormone therapy in terms of building bone?

"It's a little hard to compare—it's apples and pears. With weight-training, we see a one or two percent improvement in bone density in the hip, spine and wrist. That assumes you're working the major muscle groups in the upper and lower body and trunk. You get about the same or slightly better results with

of heart disease. It helps to prevent weight gain and lowers blood pressure. Also, if you weight-train, muscles have more mitochondria, which help them use oxygen and create the energy to help you walk. So that contributes to cardiovascular fitness as well."

Can weight-training boost your mood?

"Nalin Singh, a colleague in our lab, decided to do a randomized, controlled trial with older adults with moderate depression. He saw quite dramatic decreases in depression and improvement in mood in the group that strength-trained as compared to the control group that simply received health education. The results were comparable to what's typically seen with standard antidepressants, but without side effects." ▶



How does weight-training help arthritis?

“Stronger muscles help absorb shock in the joints, reducing pain. In *The Journal of Rheumatology* last July, we reported that people with osteoarthritis who strength-train experienced a forty-three percent reduction in pain and forty-four percent improvement in physical function.”

Any tips on how to do weight-training?

“The aim is to do two sets of eight lifts, doing a total of eight or ten different exercises per session. Do this routine twice—or at most, three times—a week, with at least one day of rest in between.

“For maximum benefits and to prevent injuries, good posture is very important. Move slowly. Muscles won’t get trained if momentum (or gravity) does the work. Also, relax and keep breathing. Believe it or not, that’s something many people forget.

“Start with a relatively light weight—three to five pounds for each arm or leg, depending on your current strength. When you can do two sets of eight repetitions in good form, it’s time to increase the load. Weight-training should be hard. Puny weights produce puny results. But it should never be painful or cause extreme burning of the muscle. If it’s an unpleasant experience, you’re overdoing it.”

Are you likely to get better results using equipment as opposed to free weights?

“Each have their pluses and minuses. With free weights you learn about body control, coordination, kinesthetic awareness (where your body is in space), and you have to concentrate more. Machines

are better at isolating specific muscle groups, assisting with proper positioning and preventing poor technique. Mixing the two is very nice.”

What is your exercise regimen?

“I’ve got three kids, a full-time job and I travel a lot. So I’m eclectic and opportunistic. Our family does a lot of rock climbing. One to four times a week, I get outside and either run or walk at a fast pace. I’ll do that anywhere from fifteen minutes to three hours, if I set out for a hike. We live in a rural area outside Boston that has beautiful woods.

“Twice a week, I weight-train for twenty to forty-five minutes. I either use free weights at home or equipment here in the lab. I usually do two sets of eight to ten repetitions, moving slowly, three to four seconds up and about two seconds down.”

How quickly should women expect to progress?

“In the beginning, you’ll add weight every week, but after a few months, progress slows. In nine months to a year, you’ll typically hit a plateau, where it’s very difficult to progress to heavier weights. Unless you have competitive athletic goals, your aim at this point should be to maintain the strength you’ve gained. But try to progress by mixing things up. Try yoga, or new equipment to stimulate different muscles. This will help keep you interested and motivated—the key to staying fit.” ■

*Kathleen McAuliffe is a contributing editor for **more**.*

MORE ABOUT exercise, see www.more.com/strength.

NELSON'S 6 MUST-DO MOVES

Can't find more than 20 minutes to exercise? Nelson says you can still get in a total-body workout with these six exercises.

STANDING LEG CURL (FOR HAMSTRINGS)

EQUIPMENT: ANKLE WEIGHTS (3 POUNDS EACH)

Stand behind a chair, holding the back for support. Shift your body weight to your left leg. Keeping foot flexed, lift right foot until your leg forms a 90-degree angle. (Your knees should touch, your thighs should be even.) Pause for a deep breath, then slowly lower right foot to starting position. Repeat on other side. Do two sets of eight, alternating left and right leg, resting between sets.

KNEE EXTENSION (FOR QUADRICEPS)

EQUIPMENT: ANKLE WEIGHTS (3 POUNDS EACH)

Sit in a chair, feet shoulder-width apart, towel under your knees, toes just brushing the floor (put a towel under your knees if needed). Keeping foot flexed, slowly raise right leg until the knee is as straight as possible, without locking it. Pause for a deep breath. Relax foot and lower to starting position. Do two sets of eight, alternating left and right leg, resting between sets.

BICEPS CURL

EQUIPMENT: DUMBBELLS (3–5 POUNDS EACH)

Stand with feet shoulder-width apart, arms at sides holding dumbbells, palms facing legs. Keeping wrists straight and elbows gently pressed against sides, rotate and lift forearms until dumbbells are raised to shoulder height, with palms facing shoulders. Pause for a breath. Lower arms to starting position. Do eight reps for one set. Rest one minute, then do a second set.

OVERHEAD PRESS (FOR TRICEPS, SHOULDERS, UPPER BACK)

EQUIPMENT: DUMBBELLS (3 POUNDS EACH)

Stand with feet shoulder-width apart, holding dumbbells at shoulder height, palms facing forward. Slowly lift dumbbells over your head, keeping them in line with your body; you want to avoid locking your elbows above your head. Hold for a deep breath, then lower dumbbells to starting position. Do two sets of eight repetitions, resting between sets.

ABDOMINAL CURL

EQUIPMENT: NONE

Lie on your back, knees bent, feet flat on floor, hands folded on chest. Keeping eyes focused on the ceiling, slowly lift shoulders, neck and head one to three inches off the floor. (Chin should be slightly tucked in, but not touching chest.) Rotate torso right so left shoulder reaches to outside of right knee. Pause for a breath. Return left shoulder to straight position, then lower to start. Repeat on other side. Do eight reps for each shoulder, alternating sides—this is one set. Rest, then do another set.

BACK EXTENSION (FOR BACK AND BUTTOCKS)

EQUIPMENT: NONE

Lie face-down, right arm along your side, palm up, and left arm straight out above your head, palm down. Raise your right leg (from the hip) and left arm, shoulder and upper back as high off the floor as you comfortably can. Your head and neck will rise, too—keep them aligned with your arm. Pause for a breath, then slowly return to start. Do eight reps, then repeat on the other side—this is one set. Rest for a minute, then do a second set.