

RUNNER'S WORLD®

A female runner is captured in mid-stride on a dirt path. She is wearing a bright lime green sports top and white shorts with a grey waistband that has the brand name 'VIBE b150' printed on it. Her legs are in motion, and she is wearing blue and black running shoes. The background is a blurred green forest, suggesting a natural outdoor setting. The overall image conveys a sense of speed and athletic performance.

**COMPLETE
RUNNER'S
GUIDE**

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KEEP ON RUNNING

Whether you're a beginner or a master, your body's strengths, weaknesses, and nutritional needs change as the decades come and go. Here's a guide for running (and feeling) your best at every stage of life.

W

e runners love numbers. Whether it's our pace, finishing time, or resting heart rate, we view figures as a sign of our progress, our accomplishments, our dedication to the sport. So it's no surprise that many of us struggle with one number that increases each year, regardless of how hard we train: our age. But thanks to all the health benefits that running brings, you don't need to sweat each time a candle is added to your cake. "There's a big difference between biological age (how old your body says you are) and chronological age (how old the calendar says you are)," says Steven Hawkins, Ph.D., professor of exercise science at California Lutheran University. "The biological ages of runners are at least 10 years younger than their chronological ones, and the gap widens with time." To ensure that you keep that biological clock fooled, we present a decade-by-decade look at the life span of a runner, filled with advice from doctors, trainers, nutritionists, and amazing runners who define peak performance. [»](#)

THE TEENS



DECADE OF INNOCENCE

A**H, YOUTH.** Without even trying, you're gaining speed and recovering instantly. Your body is catapulting into adulthood, and everything about it—muscle mass, strength, bone density, and VO2 max (the volume of oxygen your body takes in and processes)—is on the rise. “A weakness?” muses Jeremy Acosta, who as a teen listed hills and his final kick as his fortes. “Um, maybe the middle mile of the race?” Yet even a young career can encounter roadblocks. As a high school freshman, Acosta suffered from Osgood-Schlatter, a common condition that strikes young athletes during growth spurts. It causes tenderness just below the knee but usually resolves itself once development slows. When it subsided, Acosta grew into one of his region's top runners.

YOUR STRENGTHS

- **POWER** Runners in the throes of puberty have superpowers—literally. A British study compared 12 boys and 13 men doing 10 sets of 10-second sprints. The boys sustained their power output better than the men did, partly because teens regenerate creatine (a compound that supplies muscles with energy) more quickly than older runners do.

Girls share the same ability to pour on the power—and they can

sustain it even better than boys can. Japanese researchers found that in a series of sprints, teenage girls lost 10% less power than boys their age did.

- **BONE MASS** As bones develop, running—or other weight-bearing exercise—helps make them as dense as possible. Studies that looked at the bones of female runners, triathletes, cyclists, and swimmers have shown that runners had the highest bone-mineral density and strength of the four groups.

YOUR WEAKNESSES

- **JOINTS** As fit as you are, your growing body still needs to be handled with care. Bones develop faster than their supporting ligaments and tendons do. As a result, joints and muscles can be prone to injury.
- **AMENORRHEA** Many young female runners who repeatedly miss their periods develop a condition called amenorrhea, says Anne Hoch, D.O., professor of sports medicine and women's health at the Medical



PERSONAL BEST

3 WAYS TO BE STREET-SAVVY

1. STAY IN SIGHT

The general rule is to run against traffic. But hills and curvy stretches are special cases. To avoid getting caught in a driver's blind spot, switch sides of the road—after looking for traffic—100 meters before clearing a climb or turn. Once you've regained visibility, return to the left side of the road.

2. PACK RULES

When running in a group, keep to the shoulder of the road, with no more than two abreast, and move as a unit. Use lingo like "Car up!" to warn your group of oncoming traffic.

3. LISTEN UP

So you're not deaf to danger, it's best to leave the headphones at home. If you must listen to tunes, try open-air (or supra-aural) earbuds and keep the volume low.

College of Wisconsin. One study determined that 30 to 41% of 422 high school- and college-age female runners had the disorder. Amenorrhea is a red flag for all female runners but is especially troubling for teens in the midst of their bone-building years. (Menstruation releases estrogen, which is vital for calcium absorption.)

• **RESTRAINT** Experts advise both girls and boys not to take on too much mileage too soon, although there isn't a consensus on what exactly "too much" is. For example, each year, a group of middle school and high school students runs the Los Angeles Marathon with a high finishing rate and very few medical problems on race day. However, many experts think the marathon is worth waiting for. Lyle Micheli, M.D., who is the director of sports medicine at Boston Children's Hospital, prefers a conservative approach: an upper limit of 3 miles 5 days a week for kids younger than 14, and 6 miles most days a week for kids 14 to 18.

Exercise Rx

Work on building your form and your endurance so you can become a balanced, injury-free runner down the road. Practice sprint-specific drills, such as high knees and skips, to build a strong foundation and fast turnover, ideally under a coach's supervision.

"If we can get an athlete to have good form during the early years, that helps so much with both performance and injury prevention in later years," says running coach Greg McMillan, owner of McMillan Running in Flagstaff, AZ. Boost aerobic capacity by increasing long runs by 5 minutes weekly. Go by minutes, not miles, and when in doubt, take it slow. "Not every training run should end with your hands on your knees," McMillan says.

Nutrition Rx

Got milk? You'd better—and yogurt, cheese, and other calcium-rich foods. To maximize your

Chocolate-Espresso Smoothie

San Francisco pastry chef David Chesarek is a chocoholic who's so dedicated that he eats the sweet stuff even after a run—although he learned the hard way not to reach for something too rich.



"Pounding brownies after a run isn't smart, trust me," says Chesarek. Instead, he gets his fix with this tasty chocolate-and-banana smoothie spiked with espresso. "It gets your blood sugar up and rehydrates you," he says.

HOW TO MAKE IT:

- 8 oz chocolate yogurt, such as Brown Cow Cream Top
- 1 lg ripe banana (a brown, frozen banana lends better flavor and texture)
- 2 shots espresso, chilled
- 2 c ice (about 14 ice cubes)
- 1 doz chocolate-covered espresso beans

Place half of the yogurt plus all of the remaining ingredients in a blender, and puree until smooth. Add the remaining yogurt, and pulse until smooth. (Note: If you add the full container of yogurt at the beginning, the mixture will be too thick to blend easily.)

For a thicker smoothie, blend in up to 1 cup more ice. Serves two.



bone-building potential, the National Institutes of Health recommends 1,300 mg of calcium daily (8 ounces of milk has about 300 mg) for boys

and girls up to age 18, when the recommendation drops to 1,000 mg until age 50. Girls with amenorrhea may need as much as 1,500 mg a day,

Hoch says. A smoothie is a quick source of calcium. (See the Chocolate-Espresso Smoothie recipe above.)

THE 20s



DECADE OF INVINCIBILITY

NHERENTLY STRONGER AND FASTER than a teenager, you likely run because you love it and you're good at it. "People typically race their best from their early 20s to their early 30s, when they have a high capacity for work and for recovery," says running coach Greg McMillan, owner of McMillan Running in Flagstaff, AZ. Still, challenges can emerge: Graduation can send athletes into a tailspin, as former Harvard University steeplechase star Rosalinda Castaneda discovered. After graduation, she moved to San Francisco and started working as a blood transfusion specialist to prepare for medical school. "My hours were all over the place, and I couldn't train consistently," Castaneda says. "It was a shock to my body, which was used to running on a set schedule for 8 years."

YOUR STRENGTHS

• MUSCLE MASS

You're on top of the physiological world. Around age 24, not only are your bones as dense as they'll get, but you're as muscular as you'll ever be (having attained the maximum number of fibers per muscle). Enjoy it—and shed your shirt during workouts without a second thought—because in your 30s, you'll start to lose muscle mass (about 4% per decade). "Age-related

muscle loss is obligatory and can't be stopped with exercise, but it can be slowed," says Steven Hawkins, Ph.D., professor of exercise science at California Lutheran University. "Runners also start with a higher level of muscle quality than sedentary people, so there's a much longer way to fall."

• **SPEED** You can impress competitors with a killer kick at the end of a 5-K—even if you haven't been doing speedwork. Your fast-twitch muscle fibers,

used for quick bursts, are most plentiful in your 20s, and your VO2 max is also at its peak. Even though both will eventually decline, runners have a massive advantage because their baselines are so much higher than the average person's. "A fit 70-year-old has the same capacity to move oxygen around the body as an unfit 40-year-old," says internist and longevity expert Walter Bortz, M.D.



PERSONAL BEST

4 WAYS TO LISTEN TO YOUR BODY

1. SORT OUT SIGNALS

Feeling sore after a hard run is expected, but a sharp pain that's in a specific area, doesn't fade with rest, or causes you to alter your stride means it's time to see a doc.

2. TRACK TRENDS

Record workout details in a log to help you spot messages your body is sending. Be specific: "My right calf hurt more today than yesterday, especially on the hills."

3. RUN HAPPY

If you're feeling unmotivated or burned out, change things up. Signing up for a race if you're unfocused or taking a break from performance goals if you're stressed will make your running more satisfying.

4. EAT RIGHT

When you "hit the wall," your muscles aren't alone in needing more fuel. Your brain runs on glycogen, too, and when it's not getting its fill, it tells you to slow down or stop. You may also feel cranky or despondent. To feel better, have a large banana right away along with a cup of sports drink. You'll start to feel better in 10 to 15 minutes.

YOUR WEAKNESSES

● **KNEES** You may start to feel twinges in your knees toward the end of your 20s. Cartilage, the gel-like, shock-absorbing substance that lines the ends of your bones, can become frayed as your 30th birthday looms. Adding insult to injury, chondrocytes, the cartilage cells in charge of repair, also decrease in number with age.

● **BALANCE** You'll likely do some self-inflicted damage before you figure out how to balance the demands of real life with running. "Young, unsupervised athletes usually don't get enough sleep, enough hydration, or adequate nutrition," says Bradley Young, Ph.D., sports psychologist in the School of Human Kinetics at the University of Ottawa. "At some point, usually the fourth or fifth year out of college, you realize that you can't stay up until 2 a.m. and belt out an 8-mile tempo run the next morning. You eventually learn to self-regulate—or you become a postuniversity running casualty."

Exercise Rx

Your most important training tool this decade? Self-control. Cardiovascularly, you're a rock star, but your musculoskeletal system can't always keep up with your heart and lungs. "The demands and impact of running are too intense on your joints and muscles to complete tough workout after tough workout without getting injured," says McMillan. He recommends that you take at least one easy day between hard runs and incorporate no-impact cross-training activities into your routine.

Nutrition Rx

When you're running, you want your body to tap into easily accessible carbs for fuel,

The Cross-Train Gain

The wise runner explores exercise options, both to supplement running during periods of good health and to substitute for running during injury recovery periods. It's a rare runner today who doesn't employ some cross-training.

→ Participating in another sport a couple of times a week gives your feet and legs a welcome respite from the constant pounding of running and also strengthens muscles that running doesn't exercise. In both ways, cross-training can help protect you from injury.

Replace an easy run or rest day with a cross-training workout. After all, often it's not total rest that your body needs so much as a break from the specialized action of running. The more muscles you can involve in your training program, the less likely you are to sustain an overuse injury. Also, by working more of your major muscle groups, you improve your overall fitness.

If you do become injured through running and have been cross-training regularly, you have an activity to turn to that will keep you fit while you recover. Overuse symptoms such as soreness and injuries caused by too much shock or jarring can be relieved through swimming or cycling. By using a stair-climber, rowing machine, or cross-country ski machine, you can take the stress off an injured area and still get an excellent cardiovascular workout.



not drain your protein stores. So what you eat before, during, and after a run should all be part of your training plan.

Before any run that's going to exceed an hour, eat about 40 g of carbs (1 cup

of sports drink and half of a banana or energy bar). If you're going longer than 1½ hours, restock your carbs every hour with 16 ounces of energy drink or with a gel and water. And within 1 hour of

finishing your run, jumpstart your recovery with a carb-and-protein snack such as a bagel and chocolate milk, or a smoothie. (See the Chocolate-Espresso Smoothie recipe on p. 7.)

THE 30s



DECADE OF THE BALANCING ACT

COMFORTABLY IN THE PRIME OF YOUR RUNNING YEARS, you're also likely coming into the prime of your career. What's more, you're probably married and possibly starting a family, and if so, running may not command the same attention it used to. But logging miles during the maelstrom of deadlines and diapers is a way to maintain your sanity. If you've taken time off because of pregnancy or lack of motivation (or sleep), you might feel as if you've lost your fitness—but your body is still raring to go. At the age of 36, Grace Padilla took 8 years off to finish college and have two kids. "When I returned to running in 2003, I was so hungry for it," she says. "The first time back on the track was painful, but the body remembers how to run fast, and the mind remembers how to deal with the pain."

YOUR STRENGTHS

• EFFICIENT MUSCLE

Natural strength peaks in this decade. "Over time, runners' bodies learn how to build and efficiently recruit the key running muscles," says Tim Noakes, M.D., a sports medicine specialist and author of *Lore of Running*. That means that in distances of 10-K and longer, you can clock consistent times until you're 35, regardless of how you train. "After that, you can't rely on your age to predict your

speed," says Hirofumi Tanaka, Ph.D., associate professor of kinesiology and health education at the University of Texas at Austin. "The amount and intensity of your training becomes very important."

• **DISTANCE** If you're a marathoner, you've found your tribe at these races: The average age of U.S. marathoners is 38. No doubt, a set training schedule adds structure to your otherwise chaotic life. But there's another good reason 30-somethings gather to run

26.2. Fast-twitch muscle fibers, used for sprinting, are lost before slow-twitch fibers, making it easier for you to go for distance than for speed as you age.

YOUR WEAKNESS

• **WEIGHT GAIN** That roll that's hanging over your running shorts? Sorry, but you can't blame it on your slowing metabolism. More likely, it's too many trips to the drive-thru and too few around the track. Yes, metabolism slows a bit

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PERSONAL BEST

4 WAYS TO DIVIDE AND CONQUER

1. THINK SHORT-TERM

Resolving to race a new distance or nab a PR can be equally inspiring and intimidating. To avoid psyching yourself out, zero in on easily attainable daily, weekly, or monthly targets that will keep you on track toward the ultimate goal.

2. SPEED SESSIONS

Rather than doing all of your runs as steady-state workouts, mix in intervals—several fast-paced segments separated by recovery periods—to boost your speed and overall fitness.

3. SPLIT IT UP

Conquer a daunting distance by dividing it into smaller, more manageable pieces—even if it's just focusing on running to the next tree.

4. RACE A NEW WAY

Try dividing a race into thirds. Run the first part with your head, the middle part with your personality, and the last part with your heart.

naturally—you need, on average, about 120 fewer calories per day at age 35 than you did at 25. But what really causes your metabolism to slam on the brakes is less lean body mass (you're not strength training) and less activity (you've cut your mileage). Adding a tempo run and some resistance training on top of your regular runs would be ideal. You could also incrementally up your mileage to maintain your weight. Researchers at the University of California, Berkeley, followed 5,000 male runners under the age of 50. The average 6-foot-tall runner gained 3.3 pounds per decade. To offset the gain, the researchers recommend running 1.4 more miles weekly per year. If increasing your mileage isn't an option (or appealing), cross-train more or eat less. (To calculate your ideal calorie intake, see "Nutrition Rx" below.)

Exercise Rx

Sure, you're changing a diaper with one hand and firing off e-mails with the other, but unless you also want to add nursing an injury to your to-do list, don't neglect strength training. Not only does it prevent sprains and strains by building up connective tissues around your joints, but resistance training also increases your running economy (by lowering the amount of oxygen you need to attain a certain speed). Don't worry—you don't need to join a gym: See the illustrated "Home Workout" that begins on the opposite page. On your runs, make the most of your limited time by periodically pushing the pace—do some pickups or a mile or two of tempo work.

Nutrition Rx

To prevent the need to upsize your shorts, re-evaluate your calorie needs. Find your ideal number by multiplying your weight by 10, adding the number of calories you burn running (a 150-pound person burns, hourly, about 600 calories for a 10-minute mile pace, 670 for a 9-minute mile, and 750 for an 8-minute mile), and then adding 10% of that figure to get your grand total for the day.

On days when you don't run, subtract 300 to 500 calories from your daily total (unless you're burning an equivalent amount

of calories cross-training), recommends Lisa Dorfman, R.D., a sports nutritionist in Miami. She also warns not to

skip meals: "Doing so slows your metabolism, which makes it more difficult to manage your weight."

Home Workout

Do these strength-training exercises on your nonrunning days, 2 or 3 days a week. Be sure to leave at least 48 hours between weight workouts of the same parts

of your body, because your muscles need time to recover and repair after a workout. Also follow these guidelines:

either with a light jog or by riding a stationary bike, jumping rope, or doing slow jumping jacks.

- Warm up for 5 minutes before starting,

- Do two sets of 12 reps each.

STANDARD PUSHUP

Get in a pushup position with your hands about shoulder-width apart. Bend at the elbows while keeping your back straight until your chin almost touches the floor, and then push back up.



CRUNCH

Lie on your back with your knees bent and your hands behind your ears. Slowly crunch up, bringing your shoulder blades off the ground.



LUNGE

Holding a dumbbell in each hand, stand with your arms at your sides and your feet hip-width apart; you'll need room to walk about 20 steps forward. Step forward with your right foot, and lower your body so that your right thigh is parallel to the floor and your left thigh is perpendicular to the floor. (Your left knee should bend and almost touch the floor.) Stand, and bring your left foot up next to your right. Then repeat with the left leg lunging forward.

If you don't have enough space, do the move in one place, alternating your lead foot with each lunge.



SQUAT

Hold a dumbbell in each hand with your palms facing your outer thighs. Set your feet shoulder-width apart, and keep your knees slightly bent, your back straight, and your eyes focused straight ahead. Slowly lower your body as if you were sitting back into a chair, keeping your back in its natural alignment and your lower legs nearly perpendicular to the floor. When your thighs are parallel to the floor, pause, and then return to the starting position.



BRIDGE

Start to get in a pushup position, but bend your elbows, and rest your weight on your forearms instead of on your hands. Your body should form a straight line from

your shoulders to your ankles. Pull in your abdominals, imagining that you're trying to move your belly button back to your spine. Hold for 20 seconds, breathing

steadily. As you build endurance, you can do one 60-second set. (This is the exception to the two sets/12 reps instruction for the other exercises.)



HAMSTRING SWISS-BALL CURL

Lie on the floor with your heels and calves on top of a stability ball, your upper back and shoulders on the floor, and your arms out to the sides. Raise your hips and lower back off the ground so they form a straight line with your legs. Keeping your abs tight, pull the ball toward your butt by digging your heels into the ball until your feet are flat and your knees and butt are high in the air. Pause, and then push the ball away from you until your legs are straight. [SW](#)



THE 40s



DECADE OF NEW BEGINNINGS

M

ICHELLE SIMONAITIS COULDN'T WAIT TO TURN 40.

“Looking forward to becoming a masters runner is what kept me going from 37 to 39, when I couldn’t compete as well in the open field,” she says. “It’s opened a whole new world of racing for me.” Has it ever: In the year after her milestone birthday, Simonaitis placed in the top three in seven high-profile races, including a first at the Carlsbad 5000. Whether your incentive is winning your age group, earning a whole new set of PRs, or being the hottest mom or dad in the PTA, running not only allows you to age gracefully, but it also enables you to redefine aging. While your friends dread the big “4-oh, no!” you can say, Bring it on! Still, if you want to stay healthy and

keep accumulating finishers’ medals, you do need to realize that you aren’t the young colt you once were. Watch your mileage, take rest days, and cross-train, strength train, and stretch regularly.

YOUR STRENGTHS

• **CONTROL** You can continue to take pride in your low resting heart rate. Although your heart rate declines a bit (somewhere between .7 and 1 beat a year), its influence on your performance is minimal. As with every decade, VO2 max continues to dictate how effectively you can push the pace. At least one element that

determines VO2 max is out of your control—your heart’s pumping ability naturally slows. However, you do have influence over three other factors: your muscle mass (the more muscle, the higher your max), your body composition (the more fat, the lower your max), and your training frequency and intensity (the less you push, the more your max falls). This means you can offset the drop of your

VO2 max with strength training and speedwork. The payoff? Not only can you reign over your local masters division, but you can also surpass runners half your age.

• **KNOW-HOW** You also have a secret weapon: your hard-earned savvy. “People underestimate the cognitive part of running, but mental toughness isn’t genetic—it’s honed through experi-



PERSONAL BEST

4 WAYS TO GET SMARTER

1. USE A TRAINING LOG

Looking back on a daily record of how far you ran, how fast you ran, and how you felt while doing it can help you pinpoint what went wrong if problems arise—and what went right when you PR.

2. TAP A RUNNING BUDDY

Have a fast friend? Ask for her favorite speed workout. Even better: Join her the next time she does it.

3. LEARN FROM PAST GOOFS

Every time a fueling plan or pacing strategy goes horribly wrong, you can cross it off your list of options.

4. CHECK OUT RACE WEB SITES

Use your goal race's course map and elevation chart to inform your training. Run part of the course, if possible, or mimic its hilliness—or lack thereof—on everyday runs. Here's where a treadmill can be a strong asset, even though it may not be your favorite running tool: Use it to program in the course's inclines.

ence,” says Bradley Young, Ph.D., sports psychologist in the School of Human Kinetics at the University of Ottawa.

YOUR WEAKNESSES

● **DEHYDRATION** Starting at age 40, your kidneys are less likely to conserve water as you dehydrate. And the nerves in your mouth and throat that tell you that you're thirsty don't function as well. So remember to hit the water stops in races and to carry a bottle while training.

● **BONE LOSS** Bones are deteriorating faster than they're forming. The loss hits women harder (from age 30 until menopause, women lose 1% of bone mass a year), but men aren't immune. Researchers studied the bone density of runners' spines and found that men had density losses similar to those of women. Take note: The runners (of both genders) who strength trained had the best density scores.

Exercise Rx

Does a midlife crisis have you reaching for your Asics for the first time in years? Give yourself time to get into the groove. “If you start running too fast or too much, you're inviting injuries,” says Bill Roberts, M.D., medical director for the Twin Cities Marathon in Minneapolis, who recommends 2 to 4 years of regular running before taking on a marathon. “The earlier, the longer, and the more consistently you run, the more resistant you are to injury.”

Runners who have been faithfully lacing up their shoes for decades need to watch out for the I'm-old-so-I'm-slow trap. Throw in some intervals to remind your muscles and your mind that you still have a fourth (or fifth) gear.

Nutrition Rx

“As you age, every calorie should be as nutrient-dense as possible,” says Lisa Dorfman, R.D., a sports nutritionist in

Miami. Replace white carbs—bread, pasta, and rice—with whole wheat versions. If you're starting to feel some aches and pains, especially in your knees, consider taking the joint supple-

ments glucosamine and chondroitin. Studies have shown that consuming 1,500 mg of glucosamine and 1,200 mg of chondroitin daily can ease joint pain, says Dorfman. [EW](#)

Getting Back into Running? Get a Checkup



→ You may feel fine, but if you're a man over age 45 or a woman over 55, and especially if you have risk factors for heart disease (obesity, family history, hypertension, or high cholesterol), get your doctor's clearance to start exercising, says Kathleen Rokavec, M.D., a family physician in Kealakekua, HI, and multiple marathoner. Starting to exercise if you have cardiovascular disease, which you may not know about, can put you at greater risk for a heart attack. You should get an annual physical anyway, so a plan to start running is a good excuse to get it scheduled.

THE 50s



DECADE OF FREEDOM

W

WITH RETIREMENT ON THE HORIZON and the kids moving (or better yet, already) out of the house, running can inch up on your to-do list again. Although there's no denying your speed isn't what it used to be, that may not matter. "Running is the thing that grounds my day and my soul," says Sharon Barbano, a Road Runner Club of America certified distance running coach who has been a dedicated runner for more than 3 decades. (She won the 1979 Finlandia Marathon and the 1980 Long Island Marathon.) Barbano, who works out with a personal trainer twice a week, is very conscious of what she needs to do to keep running for decades to come. "Longevity depends on protecting your body by strength and cross-training," she says. "So many people I was running with in the 1970s can no longer run today, because all they did was run."

YOUR STRENGTHS

• CONSISTENCY

Even though you'll see your intervals get a bit slower regardless of your training, you can still maintain a strong showing at distance events. Bradley Young, Ph.D., sports psychologist in the School of Human Kinetics at the University of Ottawa, tracked a group of Canadian masters runners and found that while age predicted

time for 1500-meter races, annual mileage determined speed more than age did in the 10-K. "This paints an optimistic picture for those who are motivated to do the work," Young says. "Consistent training lets you retain your performance."

• CONTINUED

STRENGTH Muscular strength peaks around age 30 but is "relatively well maintained" for decades to come, ac-

cording to Tim Noakes, M.D., a sports medicine specialist and author of *Lore of Running*. In one study of masters runners, 40-somethings and 70-somethings had similar leg power. (After age 70, leg power did decline—but 20 years later than it did in sedentary folks.)

• POSITIVE ATTITUDE

Emotionally, you're much better off, too. Studies have shown that masters athletes

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PERSONAL BEST

4 PATHS TOWARD BLISS

1. PLAY WITH YOUR ROUTE

Make your next run a game: Set out down your street. Turn left on the fourth side street (or third, or fifth—you make the rules). Then turn right on the next fourth side street. Repeat.

2. BREATHE RIGHT

Focus on the air going in and out of your lungs. When other thoughts creep in, acknowledge them, dismiss them, and return your attention to your breath.

3. RUN IN A PACK

Recruit some friends to run with: A Western Kentucky University study found that subjects enjoyed exercise considerably more when working out with people they liked.

4. TAKE A CLASS

On “off” days, do tai chi. This centuries-old practice of “moving meditation” is popular among athletes of all ages because the slow, flowing movements are said to harness energy while fostering flexibility and balance. It’s especially good for runners who’ve been plagued by injuries or chronic pain, want to improve form, or just need to add some yin to the yang of running. It’s best to begin any new class at a time when your running mileage and intensity are low. Once you’re familiar with the class format, try to fit it in on the day after an easy run.

are less depressed, angry, and fatigued than those who don’t exercise, according to internist and longevity expert Walter Bortz, M.D. Even better news: Bortz conducted a study that found that sexual satisfaction correlated with fitness level in those 50 and older.

YOUR WEAKNESS

● **BONE LOSS** Female runners are moving targets during this decade. The average age for menopause is 51, and during that phase, women can lose up to 90% of their estrogen, which causes bone mass to drop 2 to 5% annually for the 5 years following menopause. This increases the risk of osteoporosis. Although running can help regulate the mood swings of menopause, this activity alone can’t prevent bone loss. “The influence of menopause is beyond what running can overcome,” says Steven Hawkins, Ph.D., professor of exercise science at California Lutheran University, who strongly recommends that women strength train to solidify their bones. Men have it decidedly better: Testosterone levels and bone density decrease between .4 and .75% annually from age 45. By age 80, men have lost 20% of their bone mass; women, a whopping 40%. Still, running is a great antidote. “Osteoporosis isn’t exclusively about the quality of bone,” Hawkins says. “It’s also about the quality of muscle surrounding the bone. If your muscles are built up, you’re less likely to fall and break a bone, no matter what state it’s in.”

Exercise Rx

Your sense of balance fades with age. “Take a tai chi or yoga class, or prac-


tice closing your eyes and standing on one foot for 30 seconds,” Bortz says. These activities can also strengthen your trunk muscles and prevent back pain.

Keep the spring in your step by doing plyometrics—jumping moves that strengthen your legs, help program your central nervous system to respond quickly, and improve mobility in your joints. Plyometrics might initially be too jarring, especially for those with

joint issues, so start by jumping rope. Do one set of 10 jumps three times a week, working up to three sets. Then switch to jumping on one foot, beginning with one set, before progressing to moves such as step-ups and step-downs.

Nutrition Rx

Staying regular so you’re not a fixture in the porta-potty line gets harder this decade, as

your GI tract naturally slows. Eat at least 15 g of fiber daily—ideally, a combination of fruits, vegetables, beans, and whole grain breads and cereals. “Fibers also help manage blood sugar and cholesterol levels, which [at high levels] are risks for diabetes and heart disease and seem to creep up during your 50s,” says Lisa Dorfman, R.D., a sports nutritionist in Miami. 

Preventing Runner’s Knee

WHAT IS IT? Runner’s knee is soreness in the front of the joint due to a mistracking kneecap.

PREVENT IT: Strengthen your quads. Do wall squats, which don’t require equipment. Slide down a wall until your knees are roughly at a 60-degree angle (not quite perpendicular to the floor). Hold for 30 seconds. Work up to two sets of 10 repetitions.

TREAT IT: Ice your knee after exercise, reduce your running, and avoid running downhill. If running is painful, swim, cycle, or do some other activity. “Recovery is an active process,” says Vonda Wright, M.D., an orthopedic surgeon at the Center for Sports Medicine at the University of Pittsburgh School of Medicine.



THE 60s



DECADE OF HANGING TOUGH

W

HILE YOUR RETIRED PEERS TAKE BUS TOURS

around Rome, you're off running on a self-guided tour through the Italian Alps. Or at least that's what Richard Hillestad does. "I've run the Inca Trail, around lakes in Patagonia, and have done double crossings of the Grand Canyon and Sierra Nevada," says Hillestad, who won his age division in the Los Angeles Marathon on his 66th birthday. "My most fabulous runs have been nonraces." Your VO2 max drops precipitously this decade, and your pace dwindles accordingly. But your life experience, both on

and off the road, helps you take your age in stride and makes you smart about picking your battles. "I had to drop out of the Western States Endurance Run twice," Hillestad says. "I can now admit my body does much better at 50-milers than 100-milers."

YOUR STRENGTHS

• **FASTER THAN THE PAST** Your generation as a whole is getting faster. A 17-year study of the top 50 finishers in each age group of the 1983 to 1999 New York City Marathon revealed that runners ages 50 and older were significantly faster than those of the past. Overall performances of 20-somethings slowed, and those of the 30- and 40-somethings

had plateaued over the 17-year span. But men in 1999's 60-to-69 division were, on average, 1:14 faster than men in 1983's 60-to-69 division, and women in this age group bested their average by 3:47.

• **HEALTHIER THAN YOUR PEERS** If you have a family history of cardiovascular disease, keeping up with your speedwork might minimize your risk. A study of nearly 9,000 10-K

runners found that those who ran the fastest had lower blood pressure and triglyceride and cholesterol levels than those bringing up the rear. In addition, starting around age 60, bone density loss for women levels off to 1% a year for the rest of their life. Still, all women over age 65 should have a bone density scan, recommends Anne Hoch, D.O., professor of sports medicine and women's health at the Medical



PERSONAL BEST

3 WAYS TO KEEP RUNNING

1. SLOW DOWN

If most runs are about squeezing every last bit from your legs, they'll never have a chance to reap the benefits of your hard work. Do two slow recovery runs a week.

2. MENTALLY ZOOM OUT

Remind yourself of all the reasons why you run. Aim to become less competitively focused and more motivated by the sheer enjoyment of running.

3. RELY ON YOUR EXPERIENCE

It's one of the biggest strengths older runners have. Confidence can carry you, even if your interval times haven't been ideal.

College of Wisconsin. "If you have a history of missed periods, your weight is less than 127 pounds, your BMI is less than 20, or you were on oral steroids for more than 3 months, get checked sooner," Hoch says.

YOUR WEAKNESSES

● **OLD INJURIES** Previous sports injuries—especially those that didn't heal properly—may haunt you this decade. Osteoarthritis, which affects 21 million Americans, isn't a direct result of running but of abnormal joints or bad alignment, primarily in the hip and knee. A Swedish study concluded that female soccer players who had an ACL injury 12 years prior had a "high prevalence" of osteoarthritis. But running can help. "Resting is the wrong piece of advice," says internist and longevity expert Walter Bortz, M.D. Exercise helps keep the cartilage between joints healthy.

● **SHORTER STRIDE** Studying 78 men at the 7-mile mark of a marathon, researchers found that the stride length of runners over age 60 was 17% shorter, on average, than that of 40- to 49-year-olds.

Nutrition Rx

While your caloric needs continue to plummet, your need for nutrients doesn't cease, but your avenues for processing them do. "The mucosa membrane lining in your intestinal tract wears down with age, so it doesn't absorb as well as it used to," says Lisa Dorfman, R.D., a sports nutritionist in Miami. If you're not taking a daily multivitamin already, start now. Make sure it has 100% of the recommended B vitamins, which assist in everything from cell growth to immunity. Probiotics—live, healthy bacteria found in dairy products such as Activia yogurt, tempeh, and miso—also build up the mucosa and help it function as if it were 20 years old again.

Exercise Rx

To lengthen your diminishing stride, stretch after every run, concentrating on your hamstrings, quads, calves, and lower back. (See "Flex Plan" at right.) "In general, the muscles in the back of the leg stiffen more," says Steven

Hawkins, Ph.D., associate professor of exercise science at California Lutheran University. In addition, running coach Greg McMillan, owner of McMillan Running in Flagstaff, AZ, suggests throwing some strides—10- or 15-second pickups—into your regular runs to stretch out

your muscles.

Running on soft surfaces and using a stationary bike or an elliptical trainer can help you maintain your activity level if your joints start to feel creaky. And don't forget the weights. A study from the Mayo Clinic in Rochester, MN, has shown that the

stronger your quads, the more stable your kneecaps. What's more, quad strength protects against additional loss of cartilage behind the kneecap—a stable knee that tracks properly won't wear down cartilage as abnormal joint movement will. [EW](#)

Flex Plan

A little soreness after running is inevitable, but you can minimize the "morning after" effect by walking for a few minutes and stretching after your run. In addition to improving flexibility, stretching flushes the muscles with blood and oxygen, which promotes recovery. At the very least, focus on these areas.



HAMSTRINGS: Place your heel on a step or any elevated surface, and bend slowly at the waist until you feel a stretch in the back of your thigh. (You may also feel a stretch in your calf.) Avoid rounding your back. Hold for 30 to 60 seconds. Release, and repeat four or five times. Change sides.

QUADS: Stand up straight, bend one leg behind you, and grab your foot. Pull your foot toward your butt until you feel a stretch in the front of your leg. Hold for 30 to 60 seconds. Release, and repeat four or five times. Change sides.

CALVES: Place both hands on a wall, and take a step back with one leg. Keep your heel on the ground, and lean into the wall until you feel a stretch in your calf. Hold for 30 to 60 seconds. Release, and repeat four or five times. Change sides. Then repeat this stretch on both sides, this time bending the knee of the extended leg slightly, so you feel the stretch in the lower half of the calf.

LOWER BACK: Lie on your back on the floor, knees bent. Grasp your knees and pull to your chest. Hold for 30 to 60 seconds and release.

THE 70s+



DECADE OF GOING AND GOING

THINK YOU'RE TOO OLD TO GET INTO RUNNING, let alone marathoning? Wrong. Witness Margaret Davis of Azusa, CA, who entered her first marathon at age 79. She climbed Mount Whitney to celebrate her 80th birthday, and then followed that feat with another marathon. If you're like Davis, still logging miles, major kudos to you. Your body isn't doing you any favors, and you know from your small age group at races that you're a minority. But you're likely a celebrity because of it.

YOUR STRENGTHS

• **LONGEVITY** You'll be around to see your great-grandkids run their first races. Researchers have concluded that regular physical activity decreases the risks of cancer, cardiovascular disease, and all other age-related causes of death by 25% and increases life expectancy by up to 2 years.

Even though the speed you consider comfortable has decreased, you're likely still outpacing your friends. A study in the *Journal of the American Geriatrics Society* reported that

a faster walking speed correlated with a longer life span.

• **STRONG LEGS** Even if your quads and calves aren't as cut as they used to be, the fact that they're still strong is invaluable. "The most important body parts for keeping graybeards independent are your legs," says internist and longevity expert Walter Bortz, M.D.

YOUR WEAKNESSES

• **ONE SPEED** As you enter this decade, you're likely to become a one-pace wonder, if you haven't already. "World-

class masters over 70 spend more than 80% of their time training at one speed," says Bradley Young, Ph.D., sports psychologist in the School of Human Kinetics at the University of Ottawa. "The training journal of a 72-year-old who ran a world-record sub-three marathon showed very little speed- or power-work. The message is that athletes at this age can do amazingly well, in spite of their training. But perhaps there is the opportunity for better performance if they train more optimally."

• **LOSS OF HEIGHT** You might find that



PERSONAL BEST

THE ONLY WAY TO RUN ANOTHER DAY

FOCUS ON WARMUP AND RECOVERY
Muscles start to lose their “give” with each passing year. The added stiffness limits range of motion, which in turn increases the risk of injury. Before running do leg circles, grapevines, and toe walks. Then after your run, pay attention to your recovery. The first 15 minutes are crucial. That’s when you should rehydrate, replenish your proteins and carbs, and stretch—a lot. If you don’t feel ready to head out for another run, you haven’t stretched enough.

your running shorts hit you a bit farther down your legs. Between ages 30 and 70, men, on average, lose 1.2 inches of height, and women lose nearly 2 inches. By 80, men are down about 2 inches, and women lose more than 3 inches. “You may lose a little lung capacity as you shrink, because there’s reduced space in your chest cavity,” says Steven Hawkins, Ph.D., associate professor of exercise science at California Lutheran University.

Exercise Rx

If any past injury hasn’t already forced you to try pool running, do it now. With no impact on your joints and with all of the aerobic benefits of running, striding through the water at least once a week will help stave off any injuries lurking down the road. Try an interval workout: After a warmup, go hard for 1 minute, then easy for 1. Repeat 10 times, and then cool down.

Nutrition Rx

Eat 70 to 100 g of protein a day. Many times, people in this stage of life don’t get enough calories, and protein intake, which keeps muscles functioning optimally, suffers accordingly. “Lean meats and fishes are good choices,” says Lisa Dorfman, R.D., a sports nutritionist in Miami. More important, be sure to eat a piece of chocolate cake once in a while, too, to celebrate how far you’ve come. 🍰

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