

A Harvard Medical School Special Health Report

Core Exercises

6 workouts to tighten your abs, strengthen your back, and improve balance



In this report:

Why strengthen your core?

4 short workouts for when you're pressed for time

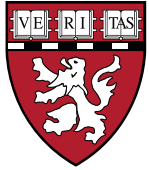
The right (and wrong) way to do 3 classic core moves

12 tips for exercising safely and effectively

Bosu, medicine ball, and stability ball routines

SPECIAL BONUS SECTION

Setting goals and motivating yourself



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CORE EXERCISES

SPECIAL HEALTH REPORT

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Dear Reader,

Often, exercise programs spotlight arms, legs, and abdominal muscles, while paying little attention to the many additional muscles that form your body's core. Yet building up core muscles is key to improving performance in almost any sport, including running, swimming, golf, and tennis. Do you dream of flashing washboard abs at the beach? Want to build up your balance and stability so that you're less likely to fall? Or are you simply hoping to make everyday acts like bending, turning, and reaching easier so that housework, fix-it projects, and gardening stay on your agenda? A strong, flexible core underpins all of these activities—and it's the secret to side-stepping debilitating back pain.

Core muscles go far beyond the readily recognized “six-pack” abs that swimsuit models sport. Your core includes back, side, pelvic, and buttock muscles as well. It forms a sturdy central link between your upper and lower body. Much like the trunk of a tree, core muscles need to be strong, yet flexible. A weak or inflexible core impairs how well your arms and legs function, draining power from many of the moves you make. For all of these reasons, core fitness should be part of every exercise program.

Many people start working on their core by doing Pilates. However, a traditional Pilates Reformer workout requires expensive equipment and a trainer. A newer type of exercise that also works the core involves the use of weights called kettle bells. However, these can cause muscle strains if used improperly. For this reason, this report focuses instead on core workouts that you can do on your own with very little equipment, simply by following the instructions and photos in this book.

Our six core workouts feature exercises that facilitate moves you make during sports and everyday life. We've skipped standard crunches in favor of more challenging exercises designed to buff more than one muscle group at a time. All of the exercises can be made easier or harder, depending on your current level of core fitness. We'll show you how to set achievable goals. Twenty to 40 minutes a few times a week—or even just five minutes a day—is all the time you need.

So flip through the pages of this report. Learn how core work can help you enjoy sports and daily activities, engage in the tasks you need to do with greater ease, and retain independence as you grow older. Then choose a goal for enhancing core fitness that suits your life, check out our safety tips, and turn to the workouts. Before long, you'll notice gains you can see and feel every day.

Sincerely,

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The importance of your core

Many people equate the core with their abdominal muscles. But your core is much more than that. It also includes muscles in the back, sides, pelvis, and buttocks. These muscles are essential for movement and affect your everyday life in dozens of ways. This chapter will explain why it's worth the time to develop your core—and show you just what the core really is.

Why strengthen your core?

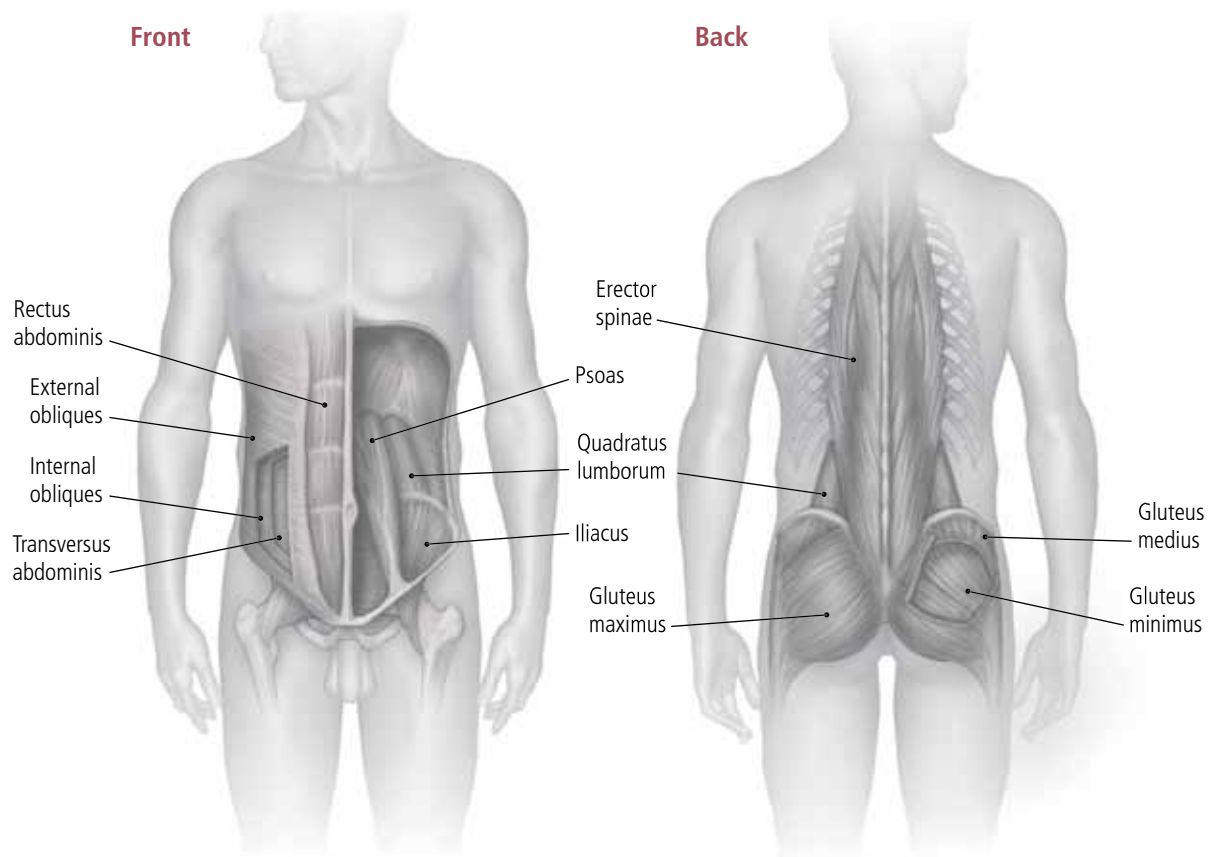
Think of your core muscles as the sturdy central link connecting your upper and lower body. Forces that

propel movement either originate in your core, or else transfer through it on the way from one part of the body to another. Weak, tight, or unbalanced core muscles can undermine the ease and power of the motions that are part of your everyday life.

When you toss a ball to a dog, for example, the complete arc of the movement (also known as the kinetic chain) should ideally run from the ground through your legs, hips, trunk and back, shoulder, elbow, and wrist in an even transfer of force. If there is a hitch in the chain—a weak hip, perhaps—it undercuts the strength of the movement and may start a

Figure 1: Front and back core muscles

Your core is composed of many different muscles in the abdomen, back, sides, pelvis, and buttocks. These muscles work together to allow you to bend, twist, rotate, and stand upright.



chain of misalignments in joints and limbs that feed into injuries over time.

No matter where a motion starts, it ripples upward and downward to adjoining links of the chain. Thus, weak or inflexible core muscles can impair how well your arms and legs function—and can sap power from many of the moves you make. In contrast, properly building up your core cranks up the power.

A strong core also enhances balance and stability. Therefore, it can help prevent falls and injuries during sports or other activities. In fact, a strong, flexible core underpins almost everything you do.

■ **Everyday acts.** Bending to scoop up a package, turning to look behind you, or simply standing in a line at the store—these are just a few of the many mundane actions that rely on your core and that you might not think about until they become difficult or painful. Basic activities of daily living—bathing or dressing, for example—call on your core.

■ **On-the-job tasks.** Jobs that involve lifting, twisting, and standing all depend on core muscles. But less strenuous tasks—like ones that involve sitting at your desk for hours—engage your core as well. Phone calls, typing, computer use, and similar work can make your back muscles surprisingly stiff and sore, particularly if you're not strong enough to practice good posture and aren't taking sufficient breaks.

■ **Sports and other pleasurable activities.** Golfing, tennis or other racquet sports, biking, running, swimming, baseball, volleyball, kayaking, rowing, and many other athletic activities are powered by a strong core. Less often mentioned are sexual activities, which call for core power and flexibility as well.

■ **Housework, fix-it work, and gardening.** Bending, lifting, twisting, carrying, hammering, reaching overhead—even vacuuming, mopping, and dusting are acts that spring from, or pass through, the core.

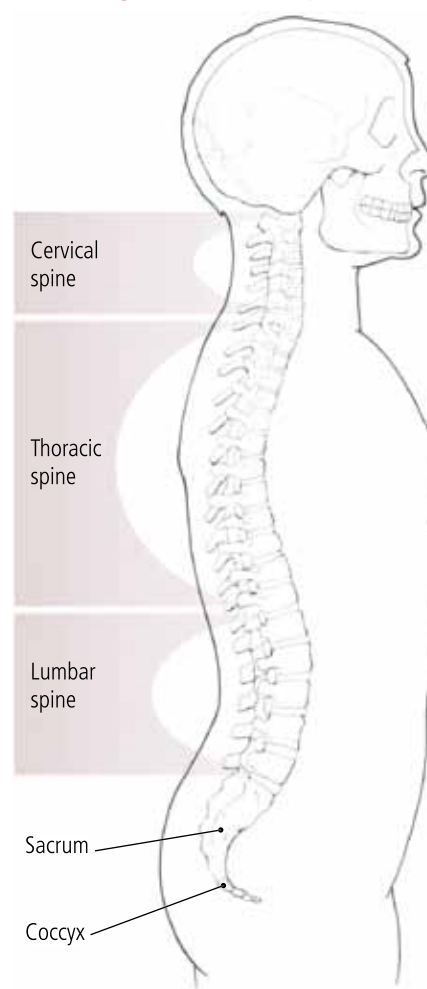
■ **A healthy back.** Low back pain—a debilitating, sometimes excruciating problem affecting four out of five Americans at some point in their lives—may be prevented by exercises that promote well-balanced, resilient core muscles. Moreover, when back pain strikes, a regimen of core exercises is often prescribed to relieve it, coupled with medications, physical therapy, or other treatments if necessary.

■ **Balance and stability.** Your core stabilizes your body, allowing you to move in any direction, even on the bumpiest terrain, or stand in one spot without losing your balance. As a result, core exercises can reduce your risk of falling.

■ **Good posture.** Weak core muscles contribute to slouching. Good posture trims your silhouette and projects confidence. More importantly, it lessens wear and tear on the spine and allows you to breathe deeply. Good posture helps you gain full benefits from the effort you put into exercising, too.

■ **Washboard abs.** If washboard abs are your holy

Figure 2: Regions of the spine



©Harriet Greenfield

Core work supports the spine, especially the thoracic and lumbar regions. Low back pain often originates in the lumbar area, which extends from the bottom of your rib cage to your sacrum (the triangular bone found between your hip bones) and includes the lowest five mobile vertebrae.

grail, it's essential to pare off fat with diet and aerobic exercise and build strong abdominal muscles through frequent core exercise sessions. However, it's unwise to aim all your efforts at developing rippling abs while snubbing other core muscles in the back and hips. Overtraining the abs at the expense of other core muscles can create imbalances that set you up for injuries and actually cut athletic prowess.

Major core muscles

Bounded largely by the rib cage and hips, your core spans muscles in your abdomen, back, sides, pelvis, buttocks, and hips (see Figure 1, page 2, and Figure 2, page 3). In addition, a few muscles higher up on the back—the trapezius and latissimus dorsi—are supporting players that also contribute to core stability. Here is an introduction to the major muscles that our core workouts focus on.

In the abdomen

- **Rectus abdominis** (middle front)—a pair of long, vertical straps of muscle running from the sternum (breastbone) and ribs to the pubic bone. These muscles enable you to flex your trunk.
- **External obliques** (both sides)—two large, flat muscles that enable you to twist your torso.
- **Internal obliques** (both sides, underneath the external obliques)—two smaller, flat muscles that enable you to twist your torso.
- **Transversus abdominis** (front and back, underneath the internal obliques)—a wide, flat girdle of muscle wrapping around the torso, which stabilizes your core.

Often, exercise enthusiasts refer to this quartet of muscle groups simply as “abs.” In fact, people do that even when singling out muscles like the rectus abdominis, which hogs the spotlight for its role in creating lean, chiseled athletes sporting “six-pack” abs.

Your waistline: A measure of health

If you're like many people, your most obvious core concern may be your waistline. It's not just a cosmetic issue. The Nurses' Health Study, a major long-term trial, showed that participants with larger waists had a greater risk of dying from heart disease or cancer, or dying prematurely from any cause. The larger the waist, the higher the risk. Even those at a healthy weight had a higher risk of dying from heart disease if their weight was distributed so that it concentrated in a muffin top.

You may wonder why belly fat is so worrisome. It has to do with the nature of the fat. Subcutaneous fat lies near the surface, tucked between abdominal skin and a wall of muscle. But another type of belly fat lies beneath those muscles, surrounding vital abdominal organs. Biologically, this so-called visceral fat is far more dangerous than subcutaneous fat because it isn't just a storage depot for calories. It actually produces compounds that contribute to insulin resistance, lipid imbalances (like too much harmful LDL cholesterol and too little helpful HDL cholesterol), and inflammation, all of which fuel heart disease, diabetes, and certain cancers.

How large a waist measurement is too big? A panel at the National Institutes of Health set the danger mark at 35 inches for women and 40 inches for men. But some public health officials think the guidelines should be stricter than that.

An international study of more than 168,000 people in 63 countries pegged entry to the metabolic danger zone at 31.5 inches in women and 37 inches in men.

What helps?

Whether or not you can do more side planks than the guy down the block, you can't spot-reduce your way to a smaller waist, according to current evidence. Getting sufficient exercise, however, can help shave fat off your entire body, including worrisome visceral fat, all the while improving your overall health. Plus, better posture and well-toned core muscles can help you look trimmer.

A three-pronged approach will set you up for success:

- **Eating habits.** If you need to lose weight, eat mindfully, and burn more calories than you take in. Emphasize vitamin-packed vegetables and fruits; whole grains; fish, lean poultry, and beans and other legumes as lean protein sources; plus healthy fats found in many nuts and olive, soy, corn, sunflower, and peanut oils. Cut back on unnecessary calories from sweets, sodas, refined grains like white bread or white rice, saturated fats and trans fats, fried and fast foods, and mindless snacking. And keep a close eye on portion sizes.
- **Aerobic exercise.** Regularly engage in moderate to vigorous aerobic exercise (walking, jogging, swimming, biking,

In the back

- **Erector spinae** (back)—a group of multiple vertical muscles collectively stretching along the entire back that help you straighten up and stand upright with good posture.

In the pelvis, buttocks, and hips

- **Gluteus maximus** (buttocks)—two bulky muscles that permit you to powerfully extend the hip and rotate the thigh.
- **Gluteus medius and minimus** (buttocks)—four fan-shaped muscles that let you rotate the hip, push the thigh away from the centerline of your body, and stabilize your pelvis while standing.
- **Iliopsoas** (pelvis and hips)—actually two muscle groups, the iliacus and the psoas, that reach down from the mid-spine and wrap around the hip joint to the thighbone, allowing you to rotate the pelvis, bend at the hips, and stabilize your body when you stand.

- **Quadratus lumborum** (pelvis and hips)—either of two straps of muscle (one on each side of the body) that stabilize the pelvis and permit you to bend to the sides and slightly backward, as well as hike up each hip.

Because the gluteus maximus, gluteus medius, and gluteus minimus all come into play during the course of certain core exercises, you may see them referred to collectively as your “glutes” or “gluteals.” These muscles straddle the realms of the hip joint and the muscles of the back that permit you to straighten up, such as the erector spinae group.

Beyond muscles

Though the core is essential for all full-body movements, your core muscles can’t do all the work by themselves. The spine, pelvis, and hip joints, plus other structures in your body’s core, are equally important for standing, sitting, and moving.

rowing), which works many muscles, including those of the core, while burning calories at a faster clip than isolated core work. This helps decrease total body fat and abdominal fat even in the absence of weight loss. Aim for two-and-a-half to five hours every week of brisk activity (such as walking at 4 mph), or vigorous exercise (jogging at 6 mph) for half that time. Bumping physical activity up to eight hours per week of brisk exercise or four hours a week of vigorous activity is three to four times more effective for trimming fat, though, even when no weight is lost.

- **Strength training.** Intriguingly, one study of strength training indicated that two weekly 45-minute sessions netted small but favorable changes in total body fat and abdominal fat among adults who were middle-aged or older, though it didn’t produce the same benefits in younger female participants who were not obese. A separate study of overweight and obese women who had not reached menopause was a bit less positive: over two years, abdominal fat increased by 7% for the strength-training group and 21% for the control group. So here, strength training slowed, but didn’t prevent, fat accumulation. It’s worth noting, though, that strength training benefits your body by helping to control blood sugar, increase bone strength, reduce the risk of falls, and improve overall function.



How to measure your waist correctly: Put a tape measure around the narrowest part (usually at the height of the navel and the lowest rib), keeping it parallel to the floor.

Don't ignore your pelvic floor: Exercises to prevent or treat stress incontinence

One essential set of core muscles is often ignored even by exercise mavens. This sling of muscles and ligaments stretches from the pubic bone to the tailbone to form the pelvic floor. It helps support the bladder and other pelvic organs.

When you urinate, your body consciously relaxes the pelvic floor muscles and the two sphincter muscles that cinch the neck of the bladder. If pregnancy, childbirth, aging, or excess weight weakens the pelvic floor muscles, one set of roadblocks that helps prevent urine leaks is compromised, and the bladder may slip downward. Often, leaks start occurring when you jump, cough, laugh, or exert yourself in ways that put pressure on your abdomen. This common problem is called stress incontinence.

Strengthening pelvic floor muscles can help relieve stress incontinence in many women. A Norwegian trial found that it also can help reverse pelvic organ prolapse in women. In men, strengthening these muscles and other behavioral treatments, such as delaying bathroom trips to retrain the bladder, helped cut urine leaks after prostate surgery by half, according to another study.

While no studies focus on posture and pelvic prolapse, this may matter, too, since slouching could put pressure on the pelvic floor. That's one more potential reason to strengthen core muscles and practice good posture often.

Find the right muscles

Kegel exercises can help tune up pelvic floor muscles if done regularly. First, you need to pinpoint the right muscles by following these directions.

- Empty your bladder.

- Tighten up the muscles you would use to avoid passing gas. If you're a woman, it may help to imagine tightening your vagina around a tampon. (An older tip—engaging the muscles you use to stop a stream of urine—has been discredited.) Generally, you should feel like you are pulling in the anal area.
- Now practice tightening up, holding, and releasing the muscles. As you do this, try not to contract abdominal or leg muscles—or, indeed, any other muscles. It may help to put your hand on your belly so you can sense whether you're tightening your abs. If you're still not sure you have the right set of muscles, biofeedback can help you learn to do Kegels correctly. Talk to your doctor about this.

How to do pelvic floor exercises

Pull in the pelvic floor muscles as described above. Hold for a count of three. Release and relax for a count of three. Do 10 to 15 times. Practice these exercises three times a day, preferably once while lying down, once while sitting, and once while standing.

While pelvic floor exercises may take three to six weeks to work, you may notice improvement earlier.

Need more help?

Talk to your doctor about other options if these exercises aren't enough. Reasons for urinary incontinence vary, and more than one problem may be involved. A thorough exam will help determine causes and identify the right treatment. Often, a doctor can suggest healthy habits and behavioral changes to help curb urine leaks, possibly in combination with medications, surgery, or other strategies.

Thirty-three interlocked vertebrae form the spine, a bony column that flexes along nearly all of its length. Vertebrae are divided into five regions. The top three regions are the cervical spine (neck), thoracic spine, and lumbar spine, the hot spot for lower back injuries and pain (see Figure 2, page 3). Sandwiched between the vertebrae in these regions are shock-absorbing discs that enable mobility. The bottom two regions form the sacrum, a triangular bone that connects to the pelvic girdle, and the short tail of the coccyx. Both consist of fused vertebrae and no discs, so this part of the spine is not flexible.

The bony girdle of the pelvis acts as the base of your core. The hip joints—two sockets that the balls at the top of the thighbones fit into neatly—are sited

in the lower third of the pelvis, toward the front.

Inside each hip joint, tough, flexible tissue called cartilage cushions the junction between bones and absorbs synovial fluid, a lubricant that helps protect against the wear and tear of friction. Ligaments made of strong, usually inelastic, tissue bind and stabilize the joint.

Throughout your core, stretchy cords of tissue called tendons tether muscle to bone and cartilage. Your brain coordinates lightning-quick signals passing along nerve pathways that instruct opposing muscles to contract and relax. The muscles tug on tendons attached to bones, allowing you to move in a multitude of ways—to walk and jump, dance and run, twist and bend. ♥

Before you start: Safety first

While it's tempting to skip right to the workouts, it's best to think about safety first. Check with a doctor, if necessary (see below for guidelines), to make sure it's safe for you to do the exercises in our workouts. Learn warning signs that should prompt a call to a doctor (see "Warning signs," below right). Then read and follow our tips to reap results from your efforts. Core work is subtle, so look carefully at our pointers on good form in the exercise instructions. Also see the sections "Posture, alignment, and angles: Striking the right pose" (page 10) and "The right (and wrong) way to do three classic core moves" (page 9).

When to check with a doctor

Should you check with a doctor before launching into a core workout? Generally, light to moderate exercise is safe for healthy adults. If you engage in regular activity, odds are good you can undertake the workouts without difficulty. But it's best to talk to a doctor first if any of the following apply:

- You've had hip surgery.
- You've got pain in your hip joints or back.
- You have a chronic or unstable health condition, such as heart disease or several risk factors for heart disease, a respiratory ailment, high blood pressure, osteoporosis, or diabetes.

The Physical Activity Readiness Questionnaire (PAR-Q), a tool developed by the Canadian Society for Exercise Physiology, can help you determine whether you should talk to your doctor before embarking on, or ramping up, any exercise program. You can find it at www.health.harvard.edu/PAR-Q.

If you do need to speak to a doctor, bring or fax the core workout pages in this report and ask if you can safely follow the program described. Your doctor may feel that the exercises are fine, or may modify a workout to make it safer for you. If you need a lighter core workout, you may want to refer to a new Har-

vard Medical School special report, *Gentle Core Exercises*, written by the authors of this report. (See the "Resources" section, page 49, for more information.)

If necessary, your doctor can refer you to a physiatrist, a physical therapist, or another health care specialist for further evaluation. Occasionally, a doctor may recommend working out with the supervision of an experienced personal trainer or health professional. Here is a brief explanation of the differences between these professionals.

■ **Physiatrists**, also known as rehabilitation physicians, are board-certified medical doctors who specialize in treating nerve, muscle, and bone conditions that affect movement. Back problems, knee or shoulder injuries, debilitating arthritis or obesity, and stroke are a few examples. A physiatrist can tailor an exercise prescription to enhance recovery after surgery or an injury, or to help you work out despite pain or limited movement. He or she can also tell you whether certain types of exercise will be helpful or harmful given your specific health history.

■ **Physical therapists** help restore abilities to people with health conditions or injuries affecting mus-

Warning signs

Call a doctor for advice if you experience any of these warning signs during or after exercise:

- ✓ sudden, sharp, or intense pain
- ✓ pain lasting one or two weeks (as distinct from delayed-onset muscle soreness, a response to working your muscles that usually peaks 24 to 48 hours after a workout, then gradually abates)
- ✓ dizziness; faintness; chest pain, pressure, heaviness, or tightness; or significant or persistent shortness of breath
- ✓ in hot, humid weather, signs of overheating such as headache, dizziness, nausea, faintness, cramps, or palpitations.

Feeling sore?

When you crank up physical activity by doing a new set of exercises, your muscles are likely to feel sore the next day or two. Delayed-onset muscle soreness is a normal response to taxing muscles. Usually, it peaks 24 to 48 hours after a workout before gradually easing, then disappears entirely in another day or so. By contrast, sudden, sharp, or long-lasting pain should prompt you to call a doctor for advice (see “Warning signs,” page 7).

If your muscles feel really sore a day or two after a core workout, you probably overdid it. Dial down your core work next time. Try to finish just one full set of each exercise in the workout. Still too much for your muscles? Do fewer reps of the exercises you find especially hard. Then build up gradually.

For example, instead of trying to do four front planks a day, start with one plank a day (see page 29). Try this for a few days, then add a second plank. When you’re comfortable at that level—that is, not feeling a lot of muscle soreness—add a third plank. And so on. If even one plank knocks you out, dial down the number of seconds you hold it: instead of 30 seconds, try 10 seconds for several days, then try 15 or 20 seconds. And so on.

cles, joints, bones, or nerves. Their expertise can be valuable if, for instance, you have suffered a lingering sprain or are recovering from a heart attack or hip replacement. Some specialize in cardiopulmonary rehabilitation, orthopedics, sports medicine, geriatrics, or other areas. After receiving a bachelor’s degree, physical therapists must graduate from an accredited physical therapy program. Most accredited programs in the United States offer doctoral degrees. Additionally, physical therapists must pass a national exam given by the Federation of State Boards of Physical Therapy and be licensed by their state. Specialists complete advanced training and additional national exams to become board-certified.

■ **Physical therapy assistants** provide physical therapy services under the supervision of a physical therapist. They must complete a two-year associate’s degree, pass a national exam, and, in most states, be licensed.

■ **Personal trainers** are fitness specialists who can help ensure that you’re doing exercises properly. While encouraging and motivating you, they can fine-tune your form, especially helpful in core work because subtle movements can make an exercise effec-

tive or ineffective. Personal trainers teach new skills, change up routines to beat boredom, and safely push you to the next level. No national licensing requirements exist for personal trainers, although standards for the accrediting fitness organizations that train them have been set by the National Commission for Certifying Agencies. Two well-respected organizations that offer certification and programs of study for personal trainers are the American College of Sports Medicine (ACSM) and the American Council on Exercise (ACE); others include the National Council on Strength and Fitness (NCSF), the National Strength and Conditioning Association (NSCA), and the National Academy of Sports Medicine (NASM). All fitness organizations have different requirements for training and expertise. Some trainers specialize in working with particular populations—for example, athletes or older adults—and may have taken courses and possibly certifying exams in those areas.

12 tips for exercising safely and effectively

1. **Warm up.** Before a full core workout, march in place for several minutes while swinging your arms, or dance to a few songs. It’s safe to skip this if you’ve already warmed up through other activities.
2. **Form first.** Good form means aligning your body as described in the exercise instructions and moving smoothly through an exercise. Read the “Tips and techniques” section of each exercise for advice on correct alignment. Also see “The right (and wrong) way to do three classic core moves,” page 9.
3. **Reps second.** Quality trumps quantity. Do only as many reps as you can manage with excellent form. And don’t hold a position longer than you’re able to do it with proper form. Work up to the full number of reps or seconds gradually. Once you can do a full set, consider adding another (up to three sets).
4. **Feel no pain.** Core work shouldn’t hurt. Stop if you feel any pain, especially in the lower back. Check your form and try again. If the pain persists, check with a doctor or therapist before repeating the move.
5. **Practice often.** You’ll see the best gains if you consistently do core exercises three times a week.

► The right (and wrong) way to do three classic core moves

Plank



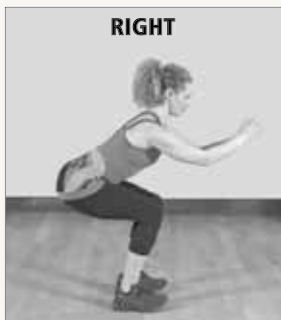
RIGHT



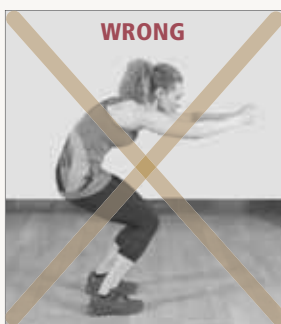
WRONG

Good form is crucial to protecting yourself from injury and getting the most benefit from an exercise. Here's a look at the right and wrong way to perform three exercises that are fundamental to a good core workout.

Squat



RIGHT



WRONG

Lunge



RIGHT



WRONG

6. Photos tell only part of the story. Photos can make core work look easier than it actually is. Carefully read the instructions in the “Tips and techniques” section of each exercise.

7. Brace yourself. Tighten your core muscles before starting the movement described in each exercise. Here's how: while sitting, standing, or lying on your back, gently but firmly tighten your abdominal muscles, drawing your navel in toward the small of your back. Tuck in your tailbone slightly, too. Once you're braced, a gentle push from any direction should not cause you to lose your balance. Some trainers suggest imagining that you're pulling in your muscles to zip up a tight pair of jeans. Try bracing or zipping up for 10 seconds at a time while breathing normally.

8. Reach beyond abs. Having a rippling six-pack but a weak back is a recipe for disaster. So don't just focus on abdominal exercises that create a buff appearance. A program that works all your core muscles protects your back and boosts sports performance.

9. Be flexible. Core flexibility is as important as core strength. In fact, too much strength without flex-

ibility can make your back throb and interfere with smooth, powerful moves in sports like tennis and golf. So don't skimp on stretches.

10. Start with stability, then add instability. Master exercise movement patterns, such as lunges, bridges, and planks, on a flat surface. Core work gets harder when an unstable surface, such as a stability ball or Bosu, is introduced, because your muscles have to work harder to hold a position steadily or stabilize you while moving. Take time to perfect difficult exercises on a stable surface before shifting to an unstable one.

11. If it's too hard, drop down. Do fewer reps or hold for fewer seconds. Still too difficult? Try the easier variation of the exercise in the “Too hard?” section of the exercise instructions. If you're still struggling, try fewer reps (or seconds) of the easier variation.

12. If it's too easy, move up. As it becomes easier to do exercises with excellent form, begin adding reps (up to 10) or seconds. Next, add sets or try the harder variation in the “Too easy?” section of the exercise instructions. As you move up to more challenging exercises, leave the simpler ones behind. ♥

Posture, alignment, and angles: Striking the right pose

Posture counts for a lot when you're exercising. Aligning your body properly is the key to good form, which nets you greater gains and fewer injuries. In fact, good posture helps any time you're moving. If one foot is always turned slightly inward, for example, it impedes power whether you're walking, climbing the stairs, jogging, or playing sports. Worse, it paves the way for injuries to the ankle, knee, hip, and beyond, since the effects of this physical quirk can zigzag their way up your body. Similarly, sitting up straight and comfortably aligned in a chair can make desk work feel less tiresome. Hours of computer and desk work tend to make your shoulders hunch and your head and neck jut forward uncomfortably.

Committing to core work will do much to improve your posture whether you're sitting, standing, or moving. A well-rounded set of exercises that targets all the core muscles is best. If you only work on strengthening abs, your back muscles will grow weaker by comparison. Then, instead of standing straight, your body will curve forward. Likewise, posture is thrown out of kilter when muscles lose flexibility, becoming tighter and eventually shortening so that your range of motion is increasingly limited. Among other problems, this can cause back pain.

Our workouts are designed to build strength and flexibility in all your major core muscles. Doing any of our full workouts, or the moves in our four short workouts, can help you avoid such problems.

Posture checks

Quick posture checks before and during exercise can also help you avoid injury and squeeze the most benefit from your workout. If possible, look in a mirror when exercising. Try to take a few moments each day to practice better posture, too. When exercise instructions in our workouts ask you to stand

up straight, that means the following:

- chin parallel to the floor
- shoulders even (roll them up, back, and down to help achieve this)
- arms at your sides, elbows relaxed and even
- abdominal muscles pulled in
- hips even
- knees even and pointing straight ahead
- feet pointing straight ahead
- body weight evenly distributed on both feet.

Stay neutral

Whether you're standing or seated, neutral posture requires you to keep your chin parallel to the floor; your shoulders, hips, and knees at even heights; and your knees and feet pointing straight ahead.

A neutral spine takes into account the slight natural curves of the spine—it's not flexed or arched to overemphasize the curve of the lower back. One way to find neutral is to tip your pelvis forward as far as is comfortable, then tip it backward as far as is comfortable. The spot approximately in the middle should be neutral. If you're not used to standing or sitting up straight, it may take a while for this to feel natural.

A neutral wrist is firm and straight, not bent.

And neutral alignment means keeping your body in a straight line from head to toe except for the slight natural curves of the spine.

Get the angle

When angles appear in exercise instructions, use these tips. Try visualizing a 90-degree angle as an L or two adjacent sides of a square. To visualize a 30-degree angle, mentally slice the 90-degree angle into thirds, or picture the distance between the minute hand and hour hand of a clock at one o'clock. ♥

Getting started

Where should core work fit into your exercise plans? What equipment, if any, will you need? This section answers those questions and explains the basic terminology used in the six core workouts.

To set goals and keep track of your progress, also see the special section, “Setting goals and motivating yourself” (page 15), as well as “Measuring gains” (page 20).

How does core work fit into your exercise plans?

Fitting core work into a broader exercise program will give you the biggest bang for your buck in terms of health benefits (see “Beyond the core: Why exercise?” on page 12). A well-rounded exercise plan has several facets, according to the Physical Activity Guidelines for Americans, issued by the U.S. Department of Health and Human Services. The guidelines include the following recommendations:

- Accumulate at least two and a half hours (150 minutes) of moderate aerobic activity per week, or one and a quarter hours (75 minutes) of vigorous activity per week. During moderate activity you can talk, but not sing; during vigorous activity you can’t say more than a few words without catching your breath (see Table 1, at right). Walking, running, biking, swimming, cross-country skiing, tennis, rowing, and many additional activities offer aerobic benefits.
- Do strength-training sessions twice a week for all major muscle groups, including your core.
- If you’re an older adult at risk for falling, add balance exercises.

Core work falls under the second and third categories: strength training and enhancing balance. Many of the exercises we’ve selected tone more than just core muscles: for example, lunges strengthen your legs, while planks work some arm and back muscles. But the core workouts here may not fulfill all of your

strength-training needs. Depending on which core workouts you decide to do and how often you do them, you may need to add some strength-training exercises to ensure that you’re working all major muscle groups twice a week.

Within reason, the more challenging core work you do, the greater your gains will be. So, for example, you’ll see more power in your golf or tennis game or better results in how toned your muscles look if you’re using our workouts two to three times a week or adding bursts of core exercise daily than if you include just a few extra core exercises in your twice-weekly strength-training sessions. Still, even a little

Table 1: How hard are you working?

INTENSITY	IT FEELS...	YOU ARE...
Light	Easy	<ul style="list-style-type: none">• Breathing easily• Warming up, but not yet sweating• Able to talk—or even sing an aria, if you have the talent
Light to moderate	You’re working, but not too hard	<ul style="list-style-type: none">• Breathing easily• Sweating lightly• Still finding it easy to talk or sing
Moderate	You’re working	<ul style="list-style-type: none">• Breathing faster• Starting to sweat more• Able to talk, not able to sing
Moderate to high	You’re really working	<ul style="list-style-type: none">• Huffing and puffing• Sweating• Able to talk in short sentences, but concentrating more on exercise than conversation
High	You’re working very hard, almost out of steam	<ul style="list-style-type: none">• Breathing hard• Sweating hard• Finding talking difficult

core work—such as a few planks twice a week—is better than none.

If you're a serious athlete or have set your sights on competing in a marathon, 5K, or sprint triathlon, core work should be part of your weekly routine. Sports medicine experts encourage athletes to rotate exercise routines involving different parts of the body. This builds power while putting less stress on joints and reducing overuse injuries. During the course of a week, that might mean swimming (which works the shoulders), biking (hips and thighs), running (thighs and lower legs), and engaging in core workouts. Consult with a personal trainer, who can help you build a safe, complete program aimed at achieving your goals.

When deciding how to fit core work into your weekly activities, consider which one of the following options best fits your schedule and goals.

■ **Full workouts.** Do a full core workout two to three times a week. Start with the standing core workout (page 25) or floor core workout (page 29), which teach

you movement patterns like lunges and planks on a stable surface, using only body weight for resistance. Once you master this, try some of the other workouts, which introduce new challenges like the medicine ball for added resistance, or the Bosu or stability ball, which force muscles to work harder to stabilize you and hold a steady position. Changing workouts occasionally can also help keep you motivated.

■ **Short workouts.** Do a short core workout two to three times a week (see “Four short workouts,” page 22). This is less of a time commitment than a full workout and works well during busy weeks or simply to introduce variety. The same advice applies: start by mastering the moves on a stable surface before introducing an additional level of challenge like the medicine ball, Bosu, or stability ball.

■ **Bursts of exercise.** Add short bursts of core work throughout the day (see “Fit it in,” page 22). You can do this daily, or start slowly by writing a reminder on your calendar—say, every Monday and Thursday—

Beyond the core: Why exercise?

Whether you find the government's Physical Activity Guidelines for Americans exhilarating or exhausting, following that prescription for regular exercise will help you feel, think, and look better. Exercise can take a load off aching joints by strengthening muscles and chipping away at excess pounds. Or it can help you avoid gaining weight or allowing pounds you've lost to sneak up again. Regular exercise enables some people to cut back on medications they take, such as drugs for high blood pressure or diabetes. And that can ease unwelcome side effects and save money.

Strong evidence from thousands of studies shows that engaging in regular exercise offers a host of health benefits beyond those already discussed for core workouts.

Regular exercise

- lowers your risks for early death, heart disease, stroke, type 2 diabetes, high blood pressure, high cholesterol, colon and breast cancers, and metabolic syndrome (a complex problem that increases the risk for stroke, heart disease, and diabetes by blending three or more of the following factors: high blood pressure, high triglycerides, low HDL cholesterol, a large waistline, and difficulty regulating blood sugar)
- strengthens muscles, lungs, and heart

- helps prevent falls that can lead to debilitating fractures and loss of independence
- helps prevent weight gain
- may aid weight loss when combined with the proper diet
- eases depression
- boosts mental sharpness in older adults.

Emerging evidence suggests that regular exercise also

- improves functional abilities in older adults—that is, being able to walk up stairs or through a store as you do your shopping, heft groceries, rise from a chair without help, and perform a multitude of other activities that permit independence or bring joy to our lives
- helps lessen abdominal obesity, which plays a role in many serious ailments, including heart disease, diabetes, and stroke
- helps maintain weight loss
- boosts bone density (provided the exercises are weight-bearing, meaning they work against gravity)
- lowers the risk for hip fractures
- promotes better sleep
- lowers the risk for endometrial cancer.

then gradually fold bursts of core exercise into additional days.

■ **Add-ons to strength sessions.** Add two to four extra core exercises (see “Fit it in,” page 22) to your twice-weekly strength-training sessions. This option is an excellent fallback position during especially busy weeks. When you’re not as busy, try to step it up again by doing a full or short core workout or sprinkling bursts of core work throughout your day.

How much time will core exercises take?

That depends. For full workouts, such as the standing core workout (page 25), estimate 20 minutes for one set of exercises and stretches or 40 minutes for two sets. For short workouts, like those on page 22, estimate 10 minutes for one set and 20 minutes for two. But shoehorning in bursts of exercise during the day or adding a few core exercises to your usual strength-training routine could take as little as five minutes.

The right stuff: Choosing equipment for workouts

You needn’t spend a cent on fancy equipment to get a good workout. Our standing core workout and floor core workout rely on body weight alone. The other workouts in this report do require some equipment, however. Consider buying just enough for the workout you’d like to do. Or if you have a gym membership, use the facility’s equipment. Below, you’ll find a description of all of the equipment used in the six workouts in this report.

■ **Chair.** Choose a sturdy chair that won’t tip over easily. A plain wooden dining chair without arms or heavy padding works well.

■ **Mat.** Choose a nonslip, well-padded mat. Yoga mats are readily available. A thick carpet or towels will do in a pinch.

■ **Yoga strap.** This is a nonelastic cotton or nylon strap of six feet or longer that helps you position your body properly during certain stretches, or while doing the easier variation of a stretch. Choose a strap with a D-ring or buckle fastener on one end. This allows you to put a loop around a foot or leg and then grasp the other end of the strap.

Why not just do a few sit-ups?

Once, sit-ups ruled in dusty school gyms, and planks were merely flooring. Now planks have claimed the spotlight as core workout stars while old standards like sit-ups and crunches have fallen out of favor. Why the shift?

First, sit-ups may hurt your back—literally—by pushing your curved spine against the floor, and also by overworking the hip flexor muscles, which run from the thighs to the lumbar spine of the lower back. When these muscles are too strong or overly tight, they tug on lumbar vertebrae, which can be a source of lower back discomfort.

Second, planks recruit a better balance of muscles on the front, sides, and back of the body than sit-ups, which target just a few muscles. Remember, your core goes far beyond the abs of six-pack fame.

Third, daily activities and athletics call on your muscles to work together, not in isolation. Sit-ups or crunches cherry-pick just a few muscle groups to strengthen. Our core workouts stress dynamic patterns of movement used in many activities that build up your entire core.

■ **Medicine balls.** Similar in size to a soccer ball or basketball, medicine balls come in different weights. Some have a handle on top. A 4-pound to 6-pound medicine ball is a good start for most people.

■ **Stability ball.** Large, inflatable orbs called stability balls come in several sizes (55 cm, 65 cm, and 75 cm are most common, but smaller and larger balls are available). To select a ball, check the package for a size chart based on your height. When you sit on a ball, your hips and knees should be at 90-degree angles. Select a durable, high-quality ball, such as Max Fitness or SPRI brands.

Air pressure counts: a firmer ball makes an exercise more challenging; a softer ball makes an exercise easier to do. Beginners, older adults, and people who are overweight or not yet in shape may want to start out with a softer ball, according to the American Council on Exercise.

■ **Bosu.** A Bosu Balance Trainer is essentially half a stability ball mounted on a heavy rubber platform that helps hold it firmly in place. Fully inflating the Bosu to nine inches in height makes it firmer and more stable; inflating it less increases instability, which is helpful for balance and core work as you progress.

Using the workouts

Start with the standing core workout (see page 25) or the floor core workout (see page 29), which will help you master key movement patterns, such as lunges, bridges, and planks, on a flat surface. Holding a medicine ball or introducing an unstable surface, such as a stability ball or Bosu, turns the challenge up several notches because your muscles have to work harder to hold a position steadily or stabilize you while moving. So don't attempt those workouts until you've perfected the simpler ones.

As you'll see, our exercise instructions include specific terminology, which is explained below.

■ **Repetitions (reps).** Each rep is a single, complete exercise. If you cannot do all the reps at first, do as many as you can manage with good form. Gradually increase the number of reps as you improve.

■ **Set.** A specific number of repetitions make a set. In our core workouts, a set is usually 10 reps. Generally, we suggest doing one to three sets. Just as with reps, only do the number of sets you can manage with good form and work your way up over time.

Building a better six-pack

Given all the time and energy it takes, creating six-pack abs ought to be considered a sport in itself.

First, you need to build up specific muscles—it's the ripples in the rectus abdominis, after all, that form that pleasing washboard silhouette. Among other key muscles are the obliques on each side; the transversus abdominis, which girdles the waist; the erector spinae, which serves as a guy-wire along the spine; and the quadratus lumborum, which stabilizes the pelvis (see Figure 1, page 2).

Second, you have to pare body fat to a minimum in order to show off even the buffest abs. And spot reducing isn't possible. To lose a layer of fat, you'll need to exercise restraint at the table, plus do sufficient aerobic work. Interval training, which varies higher-and lower-intensity activities during a workout, can be especially helpful.

Still interested? Take a look at the book *Abs Revealed: Exercises and Programs for Six-Pack Success* by Jonathan Ross (see "Resources," page 49) or talk to an experienced personal trainer, who can tailor a program of aerobics, healthy eating, and challenging moves.

■ **Intensity.** Intensity measures how hard you work during an exercise. By paying attention to cues like breathing, talking, and sweating, you can measure intensity through perceived exertion (see Table 1, page 11).

■ **Hold.** Hold tells you the number of seconds to pause while holding a pose during an exercise. You'll see this in stretches, which are held for up to 30 seconds, and in plank exercises, for example. Start with a comfortable number of seconds, then work up. Holding for the full time recommended will give you the best results from the stretch or exercise.

■ **Rest.** Resting gives your muscles a chance to recharge, which helps you maintain good form. We specify a range of time to rest between sets, or sometimes between reps for especially tiring exercises like planks. How much of this time you need will differ depending on your level of fitness and the intensity of the exercises. No rest is needed during warm-ups and stretches.

■ **Tempo.** This provides a count for the key movements in an exercise. For example, a 2–2 tempo requires you to count to two as you drop down into a squat, then count to two as you return to the starting position. A 2–4–2 tempo requires you to count to two while extending one arm and one leg, hold for a count of four, then count to two as you return to the starting position. It helps to count while watching or listening to seconds tick by on a clock to avoid hurrying. When you can no longer maintain the recommended tempo, your muscles are fatigued. Stop that particular exercise, even if you haven't finished all of the reps.

■ **Starting position.** This describes how to position your body before starting the movement of the exercise.

■ **Movement.** This explains how to perform one complete repetition correctly.

■ **Tips and techniques.** We offer two or three pointers to help you maintain good form and reap the greatest gains from the exercise.

■ **Too hard?** This gives you an option for making the exercise easier.

■ **Too easy?** This gives you an option for making the exercise harder. ♥

Setting goals and motivating yourself

This section will help you set smart goals, carve out time to exercise, and rev up motivation. Exercising consistently is sometimes hard, so we've highlighted tips to help you identify—and smooth out—likely bumps in the road.

Choose a goal

How will adding core work to your activities benefit you? Check off your goals from the options below, and write a personalized goal in the space provided in “Make your commitment” on page 17.

I want to

- ☐ keep my back strong and flexible in order to help me avoid lower back pain
- ☐ ease back pain or stiffness so I can move, sit, and sleep comfortably
- ☐ reclaim the strength and flexibility I need for everyday tasks like bending, turning, lifting, yanking, reaching items on high shelves, and the many actions required for gardening, fix-it work, and housework
- ☐ build up the strength and flexibility I need for on-the-job tasks like lifting heavy items, twisting, or standing or sitting at a desk for hours

- ☐ add power for athletic activities I enjoy like tennis or other racquet sports, a marathon or triathlon, golf, kayaking, and other active pursuits
- ☐ enhance my balance and stability, which will help prevent debilitating falls while making walking and other activities easier
- ☐ improve my posture, which can trim my figure visually, make clothes fit well, help ease the stress of desk and computer work, and help prevent back injuries
- ☐ help tone my waistline (maybe adding to a larger program to trim a burgeoning belt line)
- ☐ buff muscles for six-pack abs
- ☐ spice up my weekly workouts by adding variation.

Be SMART

Fitting core exercises into your life will pay off in everyday activities,

sports successes, a stronger lower back, independent living, and all-around fitness. Sounds great, right? Even so, marshaling the time and will to do these exercises may not be easy. Experts say you're more likely to meet success if you set goals that are SMART—that is, specific, measurable, achievable, realistic, and time-based. So as you're setting a goal and penciling it in on the calendar we've provided, make sure it passes the SMART test, described below.

SMART: Set a very **specific** goal—for example, *I will do the Bosu workout on Mondays and Wednesdays. Or, I will do a set of front and side planks on Tuesday, Thursday, and Sunday.*

SMART: Find a way to **measure** progress—for instance, *I will log my efforts daily on my calendar, checking off days when I met my goal.*

SMART: Make sure it's **achievable**. Be sure you're physically capable of safely accomplishing your goal. If not, aim for a smaller goal initially. Instead of doing the Bosu workout, for example, start with

the floor core workout or standing core workout, which are easier since the exercises are done on a stable surface.

SMART: Make sure it's **realistic**. Choose the change you're most confident you'll be able to make, not the change you most need to make. Focus on sure bets: on a scale of 1 to 10, where 1 equals no confidence and 10 equals 100% certainty, your goal should land in the 7–10 zone. If it doesn't, cut it down to a manageable size. For example, *I'll do two planks three times a week.*

SMART: Set **time** commitments. Pick a date and time to start—for example, *Starting this week, I'll get up half an hour earlier on Wednesday and Friday to do the floor core workout.* Also choose weekly

check-in times to keep track of whether you're meeting goals or hitting snags: *I'll check my calendar every Friday evening and decide if I should make any changes in my routines to succeed.* Outside deadlines can be really helpful here, too: Signing up for a tennis tournament or knowing you'll need to wiggle into beach clothes in six weeks prods you to get your core program under way.

Motivate yourself

Usually, we do our best work when motivated. That extends to exercise, too. It's not uncommon to launch a new exercise program raring to go, only to wind up back on the couch with your feet propped up just a few weeks later. If your will wavers, the tips here may help.

Refresh your memory. Remind yourself how the exercises will help you by reading your goals again. Emphasize the positive aspects. Rather than sternly saying, "I should do my core workout," try saying aloud "My back feels better when I do my core exercises," or "My backhand and serve are much stronger when I do my core exercises consistently."

Find the time. Skimming time from your busy schedule is an art. Here are some ideas that can help. Over the course of a week, skip two half-hour TV shows, or exercise while you watch; you can also fit core exercises into commercial breaks or downtime in your workday. Get up half an hour earlier each day to finish a full workout. Throughout the day, be on the

Not getting anywhere?

Brainstorming solutions for likely bumps in the road can start you off on the right foot and help keep workouts on track. Once you get going, jot down any hurdles you run into on your monthly activity calendar and then think your way around them. Here's some help with common hurdles.

- Need the okay to start doing core exercises? Call your doctor today. It may help to fax or send a copy of the workouts you hope to do, then follow up with a phone call to discuss whether any modifications will be needed.
- Don't belong to a gym (or can't seem to get to one)? Try the standing core workout or the floor core workout,

which require no equipment. Or buy the equipment necessary for doing certain core workouts at home. Start with the less expensive items, such as medicine balls or a stability ball, and work up.

- Just don't feel motivated? Ask a friend to check up on you, or consider working out with a personal trainer.
- Not yet buff enough to make it through a workout? Try one or more of these options:
 - Focus on the easy variations of exercises you find too hard.
 - Start with fewer reps (or holding a position like a plank for fewer seconds). When that becomes easy, do additional reps or hold longer.

– Do just half of the exercises in a workout twice a week. Each week, try to add another exercise until you're doing the full workout.

– Try the short workouts in "Fit it in" on page 22.

- Bored by your routine? If you've mastered the basic moves, try the harder variations. Or change over to another workout entirely.
- Still stuck? Sometimes breaking a bigger goal down—*I want to do two core workouts a week*—is the best way to succeed. For example, the options in "Not yet buff enough ..." (at left) offer a way to break down a big workout into more manageable steps.

lookout for pockets of time (see “Fit it in,” page 22). Be efficient: a short, challenging workout tunes up core muscles just as well, if not better, than racking up set after set of easier exercises. As you advance to more challenging exercises, leave the simpler ones behind to make the best use of your time.

Slip core activities into your day. While on the phone, do 10 side leg lifts or pliés, or try a few core stretches like the quadriceps stretch, the hamstring stretch, or others (look for the exercises flagged as “stretch”). Before shifting from calls to other projects or back again, do a few front or side planks. Spend the first five minutes of your lunch break doing reverse lunges, squats with knee lifts, and the clam.

Plan simple rewards. Give yourself a pat on the back for every small or big step toward success. Blast your favorite tune at the end of a workout. Download the “Attaboy” app for your iPhone or iPod to enjoy a stream of compliments whenever you need to hear it. A bigger reward for staying on track toward your goal for two to four weeks might be new workout gear or sports equipment you’ll enjoy.

Get a workout buddy. Workouts with a friend or family member are more fun, plus you’re less

likely to cancel on the spur of the moment. Or, if you belong to a gym, ask if there is a buddy program. Some gyms offer interactive workout equipment like Expresso bikes or Concept2 rowers, which let you race against a real or virtual buddy or compete in team or individual challenges.

At home, you could try clicking on your computer and working out with a friend via Skype. If finding a real-time or virtual workout buddy isn’t possible, go low-tech: ask a friend to check in with you regularly—on workout days or maybe just once a week—to give you a pat on the back or a pep talk.

Reach for your smartphone. Or iPad, computer mouse, or game system remote. Smartphone fitness apps, health-driven websites, and a slew of fitness games on systems like Wii and Xbox make it easy to set baselines and log calories and activities. Cyber options like these can help you learn new exercises, track progress, and get friendly nudges that encourage you stick to your goals. Check smartphone fitness options at Apple’s App Store, Google’s Android Market, or Blackberry’s App World.

On the Web, try the American Council on Exercise fitness library (www.acefitness.org/exerciselibrary)

or other virtual trainer and interactive tools. You can find fitness games at local gaming shops, large retailers, and online stores.

Make your commitment

Now, put your SMART goal and plans together into a commitment statement. Here’s an example:

I’m making a commitment to my health, well-being, and enjoyment of life. My goal is a more powerful tennis game. I plan to start on Wednesday, Jan. 15, by doing the mixed core workout on Wednesdays at 6:30 a.m. and Sundays at 5 p.m. I’ll check my calendar weekly on Sunday nights to see if I’m succeeding. If not, I’ll brainstorm ways to jump hurdles and motivate myself to get back on track.

Now you try

I’m making a commitment to my health, well-being, and enjoyment of life. My goal is _____.

I plan to start on _____ by doing _____ on _____.

I’ll check my calendar weekly on _____ to see if I’m succeeding.

If not, I’ll brainstorm ways to jump hurdles and motivate myself to get back on track. ♥

My monthly activity calendar

Make copies of the blank calendar below so that you'll be able to fill it out each month. Put each month's calendar in an easy-to-see spot. Then follow these instructions:



Month _____

1. Use the notes to the right to jot down your commitment and your reward.

2. Pencil in days and times you plan to do core work, and what you'll be doing (for example, bursts of exercise or a particular

workout). Remember, core work should be part of a larger exercise plan, as explained in "How does core work fit into your exercise plans?" on page 11. So, when penciling in your core exercise schedule, it makes sense to write down

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	
<div></div>	<div></div>	<div></div>	<div></div>	
<div></div>	<div></div>	<div></div>	<div></div>	
<div></div>	<div></div>	<div></div>	<div></div>	
<div></div>	<div></div>	<div></div>	<div></div>	
<div></div>	<div></div>	<div></div>	<div></div>	



3. Put a big splashy check mark next to each success. Anytime you fall short, record the hurdle in the notes section, then try to brainstorm and jot

4. Once a week, look over what you've checked off. Think about what's working well for you. Decide whether your solutions for jumping hurdles

are working, or whether you need to break your goal down into smaller steps in order to be successful (see “Not getting anywhere?” on page 16). And collect any reward due, as planned.

HURDLES

SOLUTIONS

REWARDS

Measuring gains

If you're trying to wiggle back into too-tight clothes or hoping for rippling abs to emerge, time may seem to pass awfully slowly. Truth to tell, though, you don't need to wait very long to notice positive changes. If you do core work consistently, you can start to see progress in as little as two weeks. The more you step up your program by challenging yourself, the sooner you'll achieve your goals.

We recommend doing a baseline test of endurance, strength, and flexibility before you start your core program. Only do as many reps, or hold for as many seconds, as you can manage with good form while following the tempo specified. If necessary, use the easier variation of the exercise for your baseline test. Jot down the answers in the space provided. Then measure again every two to four weeks.

Of course, you can measure gains more informally, too. Are you closer to success in the goal you set? Are any tasks easier to accomplish? Does your back hurt less? Is your forehand, swimming stroke, or golf swing more powerful? Do your clothes fit better? Are you standing up straighter? Has your balance improved? Factors like these will help you gauge your improvement over time, perhaps even more meaningfully than being able to do a certain number of reps or sets.

Endurance

Perform a front plank (see page 29), holding it for as long as you can.

Date of baseline: _____	How many seconds _____
Date of test 1: _____	How many seconds _____
Date of test 2: _____	How many seconds _____
Date of test 3: _____	How many seconds _____
Date of test 4: _____	How many seconds _____

Strength

Perform the side squat with knee lift exercise (see page 26), doing as many reps as you can.

Date of baseline: _____	How many reps _____
Date of test 1: _____	How many reps _____
Date of test 2: _____	How many reps _____
Date of test 3: _____	How many reps _____
Date of test 4: _____	How many reps _____

Flexibility

Perform the YMCA sit-and-reach test (described below) three times, noting the best measurement. Have a friend help you keep your legs straight as you reach without interfering with your movement, and check the measurements. If you don't have a yardstick, simply note how far the tips of your fingers extend beyond a body landmark like your knees, ankles, or toes.

■ **Starting position.** Tape a yardstick to the floor by running a strip of tape across the 15-inch mark. After a full-body warm-up lasting at least five minutes, take off your shoes and sit on the floor with your legs 10 to 12 inches apart. Position yourself so that the yardstick is between your legs, with the zero mark pointing toward you and your heels at the 15-inch mark.

■ **Movement.** Put one hand on top of the other, middle fingers touching. Exhale as you slowly stretch forward with arms extended and your fingertips sliding lightly along the yardstick (or floor, if there is no yardstick). Don't bounce or jerk. Return to the starting position. Rest a few seconds and repeat. Do three sit-and-reach stretches, noting the farthest measurement.

Date of baseline: _____	How far did you stretch? _____
Date of test 1: _____	How far did you stretch? _____
Date of test 2: _____	How far did you stretch? _____
Date of test 3: _____	How far did you stretch? _____
Date of test 4: _____	How far did you stretch? _____

Balance

Perform a single leg stance. Start by standing comfortably near the wall, holding your arms in any position

Challenging yourself and maintaining gains

Are you wondering when and how to progress? Or do you feel you've gone far enough and just want to maintain gains you've made? Either way, our tips below will help.

When to progress

Repeatedly challenging muscles makes them stronger. As you get stronger, exercises in your routine will become easier to do. You're ready to progress if you can manage all four of these tasks throughout each exercise:

- maintain good form
- stick to the specified tempo
- use a full, or comfortable, range of motion
- complete the suggested number of reps or hold the position for the suggested number of seconds.

How to progress

You can continue to challenge your muscles by making one of these choices:

- adding sets (up to three)

- adding resistance (such as a heavier medicine ball)
- trying the harder variation of the exercise (see the "Too easy?" options in the workouts).

How to maintain gains

At some point, you may be satisfied with the gains you've made. To maintain gains, stick to the highest level of challenge you've achieved and do a core workout at least once a week. Or, if you usually do bursts of core work throughout the day, continue that routine.

If you get sick or take time off for other reasons, you may need to drop down a level—that is, choose less resistance or do fewer reps and sets—then build up again.

What if your routine no longer feels challenging? That's a signal that you need to step it up again if you want to maintain gains you've made. And if you begin to feel bored, go over your goals again. Then vary your core work by trying a new workout or selecting new exercises to do throughout the day. (For options, see the six core workouts and "Fit it in," page 22.)

you choose. Lift one foot an inch or two off the floor so that you are balancing on the other foot. Time how long you can do this before having to put the raised foot down or touch the wall for support.

If you can't stand on one leg, lightly touch the wall or hold the back of a chair with one or both hands for support. Use less support as you improve your balance. If this exercise is too easy, try timing yourself while standing on a less stable surface such as a Bosu or as you bounce and catch a ball while you have one foot raised off the floor.

Date of baseline: _____	How many seconds _____
Date of test 1: _____	How many seconds _____
Date of test 2: _____	How many seconds _____
Date of test 3: _____	How many seconds _____
Date of test 4: _____	How many seconds _____

If you can hold a single leg stance for 60 seconds or more, you have excellent balance. If you can't hold the stance for more than 10 seconds, you are at risk for a fall. In this case, talk to your doctor about ways to improve your balance and reduce your chances of falling. ♥

Fit it in

Even the busiest of us have moments of downtime during the day. Challenge yourself to see how often you can slip in a burst of core work. Before leaving home in the morning? During TV commer-

cial breaks? Or maybe at the office, since exercises like squats and lunges are stealthy enough to be done while talking on the phone, assuming your workspace provides privacy!

Choose cues to serve as a trigger. While waiting for the light to change, for example, check your posture (see page 10) or practice bracing yourself (see page 9). Instead of sipping coffee when your computer is firing up, try a few front planks, side squats with knee lifts, or pliés. When you finish a task, take an active break to do side leg lifts or reverse lunges.

None of the core exercises below require any special equipment—only your own body weight for resistance. Depending on whether you have one minute or five, choose one to three favorites:

Four short workouts

Each of these four short workouts showcases four great moves plus one all-around stretch. Try them on busy days, or when you just need a change.

The first two workouts use only body weight for resistance and are performed on a stable surface, which makes it easier to master the movements. The third puts together strong moves for runners, while the fourth takes aim at racquet sports. As always, only do as many reps (or hold for as many seconds) as is possible with good form. Remember to warm up first for several minutes.

Short workout 1

Bridge, page 29
Front plank, page 29
Opposite arm and leg raise, page 30
Side squat with knee lift, page 26
Full body stretch, page 32

Short workout 2

Side plank, page 30
Alternating reverse lunges, page 26
Alternating toe taps, page 31
Side squat with knee lift and rotation, page 28
Full body stretch, page 32

Short workout 3

V-sit with Russian twist, page 35
Front plank on Bosu, page 43
Wall squat with stability ball, page 39
Bridge, leg extension, and hamstring curl, page 38
Full body stretch, page 40

Short workout 4

Cross chop and lift, page 33
Lunges with rotation, page 34
Front plank on medicine ball, page 34
Bridge with pullover, page 35
Full body stretch, page 36

Standing exercises

- Side leg lift (see page 25)
- Knee lift (see page 25)
- Side squat with knee lift (see page 26)
- Alternating reverse lunges (see page 26)
- Plié (see page 26)
- Curtsy plié with side leg touch (see page 27)
- Side lunge (see page 27)
- Side squat with knee lift and rotation (see page 28)
- Quadriceps stretch (see page 28).







































































































Floor exercises









































- Bridge (see page 29)
- Front plank (see page 29)
- Side plank (see page 30)
- Front plank with knee drops (see page 30)
- Opposite arm and leg raise (see page 30)
- Modified side bridge (see page 31)
- Alternating toe taps (see page 31)
- Clam (see page 32)
- Hamstring stretch (see page 32). ♥






































Improve your game






































Core strength and flexibility help you pump up the power in many sports. Which exercises and stretches are best for your favorite sport? Table 2 (below) shows which moves offer benefits for six popular ones. Use it to focus on the stretches and power moves that will help you step up your game.

Table 2: Core exercises that improve sports performance

STANDING CORE WORKOUT	Racquet sports	Golf	Running	Swimming	Biking
Side leg lift					
Knee lift					
Side squat with knee lift					
Alternating reverse lunges					
Plié					
Curtsy plié with side leg touch					
Side lunge					
Side squat with knee lift and rotation					
Quadriceps stretch					
FLOOR CORE WORKOUT	Racquet sports	Golf	Running	Swimming	Biking
Bridge					
Front plank					
Side plank					
Front plank with knee drops					
Opposite arm and leg raise					
Modified side bridge					
Alternating toe taps					
Clam					
Hamstring stretch					
Full body stretch					
MEDICINE BALL WORKOUT	Racquet sports	Golf	Running	Swimming	Biking
Cross chop and lift					
Squat with knee lift and rotation					
Plié with overhead lift					
Lunges with rotation					
Front plank on medicine ball					
V-sit with Russian twist					
Single leg stance with medicine ball					
Bridge with pullover					
Child's pose stretch with diagonal reach					
Full body stretch					

STABILITY BALL WORKOUT	Racquet sports	Golf	Running	Swimming	Biking
Seated knee lift					
Abdominal crunch on stability ball					
Bridge, leg extension, and hamstring curl					
Reverse curl with stability ball					
Push-up on stability ball					
Wall squat with stability ball					
Front plank on stability ball					
Arm V-lift on stability ball					
Pretzel stretch					
Full body stretch					

BOSU WORKOUT	Racquet sports	Golf	Running	Swimming	Biking
Alternating knee lifts					
Bosu squat					
Side squat with leg lift					
Reverse lunges with torso rotation					
Diagonal opposite arm/leg raise on Bosu					
Front plank on Bosu					
V-sit with alternating toe taps					
Single leg bridge on Bosu					
Torso rotation stretch					
Full body stretch					

MIXED CORE WORKOUT	Racquet sports	Golf	Running	Swimming	Biking
Cross chop and lift on Bosu with medicine ball					
Front plank on Bosu					
Side squat with rotation/medicine ball					
Opposite arm /leg raise on Bosu					
Push-up on stability ball					
Side plank					
Bridge, leg extension, hamstring curl					
Reverse curl with stability ball					
Chest stretch					
Full body stretch					

Standing core workout

The standing core workout is a great first step toward a stronger core. It allows you to practice classic movement patterns like squats and lunges on a stable surface, yet also teaches new twists. Like the floor core workout (see page 29), it requires only body weight to help you build strength, making it perfect for home or travel. Because you stand while doing the exercises in this workout, it's easy to do a few throughout the day. Focus on good form. If you find an exercise especially difficult, do fewer reps or try the easier

variation. For a more vigorous workout, try the harder variation.

Equipment: Sturdy chair (optional); yoga strap (optional).

Special thanks to the Equinox Fitness Club on Dartmouth Street in Boston for the use of its facilities, and to the following personal trainers for demonstrating the exercises depicted in this report: Kristy DiScipio, Josie Gardiner, Shane Genakos, and Paul Gozbekian.

Standing core workout

1 Side leg lift



Reps: 10 per leg
Sets: 1–3
Intensity: Light to moderate
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Stand up straight with your feet together and your hands on your hips.

Movement: Exhale as you lift your left leg straight out to the side until your foot is about six inches off the floor,

then return to the starting position. Keep your hips evenly aligned throughout. Finish all reps, then repeat with the right leg.

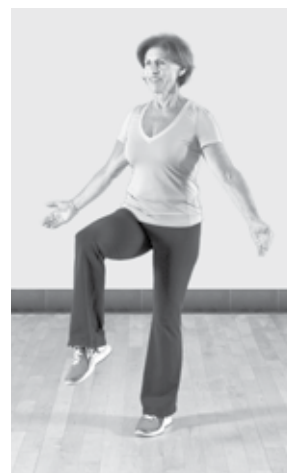
Tips and techniques:

- Keep your spine neutral and your shoulders down and back.
- Tighten the buttock on your standing leg for stability throughout the lift.

Too hard? Hold on to a chair.

Too easy? Hold the side leg lift for four counts before returning to the starting position.

2 Knee lift



Reps: 10 per leg
Sets: 1–3
Intensity: Light to moderate
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Stand up straight with your feet together. Put your hands out to the sides, elbows slightly bent.

Movement: Lift your right knee toward the ceiling as high as is comfortable, then lower the foot to the floor. Finish all reps, then repeat with the left leg.

Tips and techniques:

- Keep your chest lifted and your shoulders down and back.
- Tighten your abdominal muscles throughout.
- Squeeze the buttock of your standing leg for stability.

Too hard? Hold on to the back of a chair for support.

Too easy? Lift your right knee toward the ceiling. Lower the knee without touching the floor, then repeat. Finish all reps, then repeat with the left leg.

3 Side squat with knee lift



Reps: 10 per leg

Sets: 1–3

Intensity: Moderate

Tempo: 2–2

Rest: 30–90 seconds between sets

Starting position: Stand up straight with your feet together and hands by your sides.

Movement: Step to the right, hinge forward at your hips and bend your knees to lower your buttocks into a squat as if sitting down. As you do so, clasp your hands loosely in front of your chest. Exhale as you lift up from the squat and bring your right foot up and your hands to your sides. Return to the squat and repeat until you finish all reps. Repeat with your left leg.

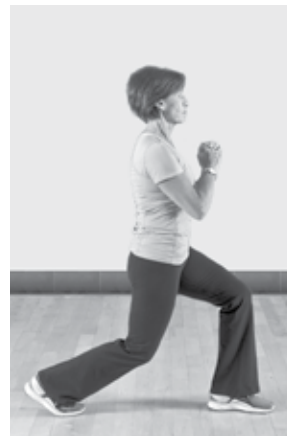
Tips and techniques:

- Keep your spine neutral and your shoulders down and back.
- Keep your knees aligned over your ankles and pointing forward as you squat.
- Your knees should extend no farther than the arch of the foot.

Too hard? Skip the knee lift.

Too easy? Hold each squat for four counts before rising up from the squat for the knee lift.

4 Alternating reverse lunges



Reps: 10

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–90 seconds between sets

Starting position: Stand up straight with your feet together and your hands at your sides.

Movement: Step back on the ball of your right foot and sink into a lunge, bending your knees and bringing your hands up in front of your chest, elbows bent. Your left knee should align over your left ankle, and your right knee should point to the floor.

Exhale as you return to the starting position. Repeat with your left leg. This is one rep. Continue to alternate legs as you finish all reps.

Tips and techniques:

- Keep your weight evenly distributed between the right and left foot.
- In the lunge position, your shoulder, hip, and rear knee should be aligned.
- Keep your spine neutral and your shoulders down and back.

Too hard? Make your lunge smaller.

Too easy? Hold the lunge for four counts before returning to the starting position.

5 Plié



Reps: 10 **Sets:** 1–3

Intensity: Moderate

Tempo: 2–2

Rest: 30–90 seconds between sets

Starting position: Stand up straight with your feet wider than your hips. Turn your toes slightly outward (rotating from the hips) and rest your hands on your thighs.

Movement: Keep your back straight as you bend your knees and lower your buttocks toward the floor. Stop before your buttocks reach knee level. Exhale as you return to the starting position.

Tips and techniques:

- Keep your knees aligned over your ankles when in the plié position.
- Keep your spine neutral, body upright, and your shoulders down and back as if you have a rod in your spine.
- Tighten abdominal muscles throughout.

Too hard? Make your pliés smaller.

Too easy? Hold the plié for four counts before returning to the starting position.

6 Curtsy plié with side leg touch



Reps: 10 per leg

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–90 seconds between sets

Starting position: Stand up straight with your right leg out to your side, toe touching the floor. Extend your arms to each side at shoulder level.

Movement: Bring your right foot behind your left leg. Place your weight on the ball of the rear foot and bend your knees as if curtsying. Let your right hand touch your left knee. Exhale as you return to the starting position. Finish all reps, then repeat sequence on the opposite side.

Tips and techniques:

- Keep your spine neutral and your shoulders down and back.
- Keep your weight evenly distributed between the front and back foot when you are in the curtsy position.
- When returning to the starting position, exhale and tighten the buttock on your standing leg for stability as you lift up.

Too hard? Make the plié smaller or do fewer reps.

Too easy? Rise from the curtsy, then lift your leg out to the side before returning to the starting position.

7 Side lunge

Reps: 10 per leg

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–90 seconds between sets

Starting position: Stand up straight with your feet together and your hands at your sides.

Movement: Step way out to the right side into a lunge position, hinging forward at your hips and bending your right knee. Keep your left leg straight and put your hands on your right thigh for support. Exhale as you return to the starting position. Finish all reps, then repeat on the opposite side.

Tips and techniques:

- Keep your spine neutral, your shoulders down and back, and your abdominal muscles tightened throughout.
- Hinge at the hips as you lunge.
- Keep the knee of the lunging leg aligned over the ankle. Most of your weight will be on the lunging leg.

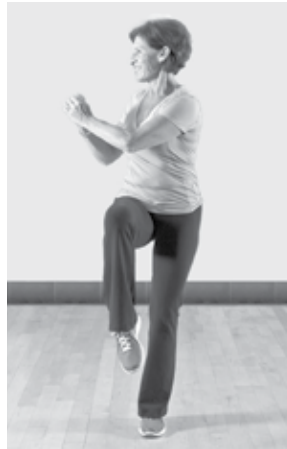
Too hard? Make the lunge smaller.

Too easy? As you return to the starting position, lift up and bring your right foot toward your left knee, keeping the bottom of the foot parallel to the floor.



Standing core workout

8 Side squat with knee lift and rotation



Reps: 10 per leg

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–60 seconds between sets

Starting position: Stand up straight with your feet together and your hands at your sides.

Movement: Step out to the right, hinge forward at your hips, and bend your knees to lower your buttocks into a squat as if sitting down in a chair. Simultaneously, clasp your hands loosely in front of your chest. Exhaling as you lift up, bring your right foot toward your left knee as you rotate your upper body to the right. Return to the squat. This is one rep. Finish all reps, then repeat the sequence on the opposite side.

Tips and techniques:

- Keep your spine neutral and your shoulders down and back.
- Keep your knees aligned over your ankles and pointing forward as you squat.
- Your knees should extend no farther than the arch of the foot.

Too hard? Make the squat smaller.

Too easy? Hold the squat for four counts.

9 Quadriceps stretch

STRETCH



Reps: 3–4

Sets: 1

Intensity: Moderate

Hold: 10–30 seconds

Rest: No rest needed

Starting position: Stand up straight with your feet together and your hands at your sides.

Movement: Bend your right knee and bring the heel of your right foot toward your right buttock. Reach back with your right hand to grasp your foot.

Raise your left hand toward the ceiling. Hold. Slowly lower your foot to the floor to return to the starting position. Repeat with your left leg. This is one rep.

Tips and techniques:

- Stretch to the point of mild tension, not pain.
- Breathe comfortably.

Too hard? Place a yoga strap around your foot to assist with the stretch. Hold on to the back of a chair for support, if needed.

Too easy? Press your hip forward a bit more to increase the stretch. ♥

Floor core workout

The floor core workout is a great first step toward a stronger core. It allows you to practice essential movement patterns like bridges and planks on a stable surface, yet also teaches new twists. Like the standing core workout (page 25), it requires no special equipment other than your own body weight to help you build strength, making it perfect for home or travel.

However, a mat, towels, or carpet will make you more comfortable as you do these floor exercises. Focus on good form. If you find an exercise especially difficult, do fewer reps or try the easier variation. For a more vigorous workout, try the harder variation.

Equipment: Mat, towels, or carpet for comfort; yoga strap (optional).

Floor core workout

1 Bridge



Reps: 10
Sets: 1–3
Intensity: Light to moderate
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your back with your knees bent and feet flat on the floor, hip-width apart. Place your arms at your sides. Relax your shoulders against the floor.

Movement: Squeeze your buttocks, then lift your hips up off the floor as high as is comfortable. Keep your hips even and spine neutral. Return to the starting position.

Tips and techniques:

- Squeeze your buttocks before lifting.
- Keep your shoulders, hips, knees, and feet evenly aligned.
- Keep your shoulders down and relaxed into the floor.

Too hard? Lift your buttocks just slightly off the floor as you move into the bridge.

Too easy? Lift up into the bridge to a count of two. Pull your right knee in toward your chest. Hold for two counts, then return to the bridge to a count of two. Pull your left knee into toward your chest. Hold for two counts, then return to the bridge to a count of two. Lower your buttocks to the floor. This is one rep.

2 Front plank



Reps: 2–4
Sets: 1
Intensity: Moderate to high
Hold: 15–60 seconds
Rest: 30–90 seconds between reps

Starting position: Start on your hands and knees.

Movement: Tighten your abdominal muscles and lower your upper body onto your forearms, clasping your hands together and aligning your shoulders directly over your elbows. Extend both legs with your feet flexed and toes touching the floor so that you balance your body in a line like a plank. Hold.

Tips and techniques:

- Keep your neck and spine neutral during the plank.
- Keep your shoulders down and back.
- Breathe comfortably.

Too hard? Instead of extending your legs, put your knees on the floor for an abbreviated plank position.

Too easy? While holding your body in the plank position, lift your right foot off the floor, hold for eight counts, and lower it to the floor. Then lift your left foot, hold for eight counts, and lower to floor. Continue doing this for 15 to 60 seconds.

3 Side plank



Reps: 2–4 per side
Sets: 1
Intensity: Moderate to high
Hold: 15–60 seconds
Rest: 30–90 seconds between reps

Starting position: Lie in a straight line on your right side. Support your upper body on your right forearm with your shoulder aligned directly over your elbow. Stack your left foot on top of your right foot. Rest your left hand on your left hip.

Movement: Tighten your abdominal muscles. Exhale as you lift your hips off the floor and raise your left arm toward the ceiling. Keeping shoulders and hips in a straight line, balance on your right forearm. Hold. Return to the starting position. Finish all reps, then repeat on your left side.

Tips and techniques:

- Keep your head and spine neutral, and align your shoulder over your elbow.
- Focus on lifting the bottom hip.
- Keep your shoulders down and back.

Too hard? Bend at your knees and put your feet behind you. Keep your knees on the floor as you lift your hips.

Too easy? Lift your top foot up toward the ceiling.

4 Front plank with knee drops

Reps: 2–4
Sets: 1
Intensity: Moderate to high
Tempo: 2–2
Rest: 30–90 seconds between reps



Starting position:

Kneel on all fours with your hands and knees directly aligned under your shoulders and hips, respectively. Extend both legs with your feet flexed and toes touching the floor so that you balance your body in a line like a plank.



Movement: Tighten your abdominal muscles. Lower both knees toward the floor without touching it, then extend your legs again to return to the plank. Do this 10 times to complete one rep.

Tips and techniques:

- Keep your neck and spine neutral during the plank.
- Keep your shoulders down and back.
- Breathe comfortably.

Too hard? Just hold the plank for 15 to 60 seconds without dropping your knees.

Too easy? This is a two-part movement, starting from the plank position. First, bring your right knee toward your left shoulder, then return to the plank position. Second, bring your left knee toward your left shoulder, then return to the plank position. Do this five times.

5 Opposite arm and leg raise



Reps: 10
Sets: 1–3
Intensity: Moderate
Tempo: 2–1–2
Rest: 30–90 seconds between sets

Starting position:

Kneel on all fours with your hands and knees directly aligned under your shoulders and hips. Keep your head and spine neutral.

Movement: Extend your left leg off the floor behind you while reaching out in front of you with your right arm. Keeping your hips and shoulders squared, try to bring that leg and arm parallel to the floor. Hold. Return to the starting position, then repeat with your right leg and left arm. This is one rep.

allel to the floor. Hold. Return to the starting position, then repeat with your right leg and left arm. This is one rep.

Tips and techniques:

- Keep your shoulders and hips squared to maintain alignment throughout.
- Keep your head and spine neutral.
- Think of pulling your hands and legs in opposite directions, lengthening your torso.

Too hard? Extend your right arm; return to starting position. Extend your left leg; return to starting position. Repeat with the left arm, followed by the right leg. This is one rep.

Too easy? Move your extended arm and leg on a diagonal (think of a clock: instead of noon and six, move them to one and seven, or 11 and five, depending on which arm and leg are in action).

6 Modified side bridge



Reps: 10 per side
Sets: 1–3
Intensity: Moderate to high
Tempo: 2–1–2
Rest: 30–90 seconds between sets

Starting position: Lie on your right side with legs and arms extended, left palm on top of your right hand. Align your shoulders and hips evenly, and keep your spine neutral.

Movement: Tighten your abdominal muscles. Raise both legs together and lift your upper body slightly off the floor while you move your left arm in an arc overhead until your palm rests on your left thigh. Hold. Return to the starting position. Finish all reps, then repeat on the opposite side.

Tips and techniques:

- Keep your body in a straight line. Don't let your legs move forward, forming a broad V with your torso.
- Keep your shoulders down and back.
- Breathe comfortably, exhaling as you lift.

Too hard? Just lift both legs while keeping your upper body on the floor.

Too easy? Extend your upper arm straight up from the shoulder toward the ceiling as you do the side bridge.

7 Alternating toe taps



Reps: 10
Sets: 1–3
Intensity: Moderate
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your back. Raise your knees so that they are aligned over your hips—with your legs forming a 90-degree angle at the knee—and your calves are parallel to the floor. Rest your hands at your sides.

Movement: Tighten your abdominal muscles. Keeping your knees bent and your lower back flat against the floor, tap your right foot on the floor, bring it back up to the starting position, then repeat with your left foot. This is one rep.

Tips and techniques:

- Keep your spine neutral throughout.
- Only lower the foot as far as you comfortably can while keeping your lower back flat against the floor.
- Breathe comfortably throughout, exhaling as you lower the foot toward the floor.

Too hard? Lower each foot less.

Too easy? Lower both feet toward the floor simultaneously while keeping your lower back flat against the floor.

8 Clam



Reps: 10 per side

Sets: 1–3

Intensity: Light to moderate

Tempo: 2–2

Rest: 30–90 seconds between sets

Starting position: Lie on your right side, knees bent and heels in line with your buttocks. Rest your head on your right arm and place your left hand on the floor at your waistline.

Movement: Keep your feet together as you lift your left knee up toward the ceiling, then return to the starting position. Finish all reps before repeating on the opposite side.

Tips and techniques:

- Keep your hips stacked and still throughout the movement.
- Lift the top knee up as high as possible without letting the top hip move backward.
- Exhale as you lift.

Too hard? Lift your top knee less high.

Too easy? Hold the position at the top for a count of three.

9 Hamstring stretch



Reps: 3–4

Sets: 1

Intensity: Light to moderate

Hold: 10–30 seconds

Rest: No rest needed

Starting position: Lie on your back with your right knee bent and foot on the floor. Hold your left leg with both hands behind the thigh so the knee is bent and directly above your hip.

Movement: Flex the foot of the left leg and lift the heel toward the ceiling, straightening the leg as much as possible without locking the knee. Hold for 10 to 30 seconds. Return to the starting position and repeat with the right leg. This is one rep.

Tips and techniques:

- Stretch the leg extended to the ceiling to point of mild tension without any pressure behind the knee.
- Breathe comfortably.

Too hard? Place a yoga strap around your foot to assist with the stretch.

Too easy? Straighten the leg with the bent knee, so that it's flat on the floor.

10 Full body stretch



Reps: 3–4

Sets: 1

Intensity: Light

Hold: 10–30 seconds

Rest: No rest needed

Starting position: Lie on your back with your knees bent,

feet flat on the floor and hip-distance apart. Rest your arms at your sides.

Movement: Slide your feet until your legs are flat on the floor. Lift your arms to raise them over your head, lowering them until the backs of your hands and arms touch the floor. Hold. Return to the starting position.

Tips and techniques:

- Stretch to the point of mild tension.
- Breathe comfortably.

Too hard? Place a pillow above your head, so that your arms do not lower as far in the stretch.

Too easy? Press the small of your back against the floor. ♥

Medicine ball workout

After mastering essential movement patterns on a stable surface by doing the floor core workout or standing core workout, you're ready to add a new challenge. Bumping up resistance with a medicine ball makes core muscles work harder. Start with a two-pound ball, then work up to heavier balls as the exercises become easier to do. The rotational and diagonal moves in this work-

out tone the waist and are a great tune-up for those who enjoy racquet sports, golf, and swimming. Focus on good form. If you find an exercise especially difficult, do fewer reps or try the easier variation. For a more vigorous workout, try the harder variation.

Equipment: Medicine ball; mat, towels, or carpet for comfort.

Medicine ball workout

1 Cross chop and lift



Reps: 10 per side
Sets: 1–3
Intensity: Moderate
Tempo: 2–2–2
Rest: 30–90 seconds between sets

Starting position: Holding a medicine ball close to your chest, squat slightly with your feet hip-width apart, hinging at the hips and bending your knees. Extend your arms to bring the medicine ball toward the outside of your left knee, shifting your weight to your left foot and raising your right heel slightly.



Movement: Keeping your arms extended, shift your body weight to your right foot, raising your left heel slightly as you lift the medicine ball diagonally up to the right just above your right shoulder. Hold. In a chopping motion, bring the medicine ball down and across your body toward the outside of your left knee. This is

one rep. Finish all reps, then repeat on the other side.

Tips and techniques:

- Keep your spine neutral and your shoulders down and back.
- Reach only as far as is comfortable.
- Hinge at the hips, bend your knees slightly as you reach down.

Too hard? Do the exercise without a medicine ball.

Too easy? Use a heavier medicine ball.

2 Squat with knee lift and rotation

Reps: 10 per side
Sets: 1–3
Intensity: Moderate to high
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Stand up straight with your feet hip-width apart, holding a medicine ball at your chest.

Movement: Hinge forward at your hips and bend your knees to lower your buttocks into a squat as if sitting down in a chair. Stop with your buttocks above knee level. As you rise from the squat, lift your right foot to the level of your left knee, rotate your torso to the right and back to center, then repeat the squat sequence. Finish all reps, then repeat on the other side.

Tips and techniques:

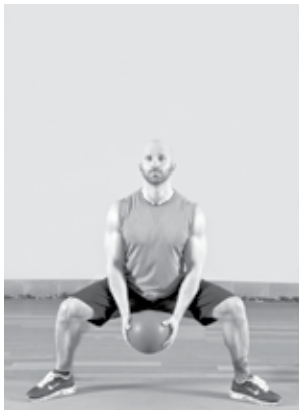
- Hinge forward from your hips and press your weight back into your heels as you squat.
- Keep your hips and knees pointing to the front while rotating from the waist.

Too hard? Just do the squats without the leg lift and rotation.

Too easy? Hold the squat for four counts, rise from the squat and rotate to the side, then back to center before returning to the squat.



3 Plié with overhead lift



Reps: 10

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–90 seconds

between sets

Starting position: Stand up straight with your feet placed slightly wider than your hips. Turn your feet outward as far as is comfortable, keeping your knees, ankles, and toes aligned. Hold the medicine ball at your waist.

Movement: Keeping your shoulders down and back, bend your knees until they are directly aligned over your ankles. As you return to the starting position, lift the medicine ball overhead. Then for the remaining reps, lower the medicine ball below your waist as you sink into a plié and lift the ball overhead as you rise to the standing position.

Tips and techniques:

- Keep your torso upright and your spine neutral throughout.
- Keep your knees aligned with your second toe.
- Squeeze your inner thighs as you straighten your legs to return to the starting position.

Too hard? Do the plié and lift without a medicine ball.

Too easy? Use a heavier medicine ball.

4 Lunges with rotation



Reps: 10

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2–2–2

Rest: 30–90 seconds

between sets

Starting position: Stand up straight, feet together, holding the medicine ball at your waist.

Movement: Step forward on your right leg, keeping the medicine ball in front of your chest as you bend your knees and sink into a lunge. Your right knee should align over your ankle and your left knee should point to the floor. Rotate your torso to the right as far as is comfortable, then come back to center. Return to the starting position and repeat the sequence with your left leg forward, rotating your torso to the left. This completes one rep.

Tips and techniques:

- In the lunge position, align the knee of the forward leg over the ankle. The heel of the rear leg lifts off the floor, and that knee bends enough to form a straight line from shoulder to hip to knee.
- Keep your spine neutral throughout.

Too hard? Skip the rotation.

Too easy? Use a heavier medicine ball.

5 Front plank on medicine ball



Reps: 2–4

Sets: 1

Intensity: Moderate to high

Hold: 15–60 seconds

Rest: 30–90 seconds between reps

Starting position: Start on your hands and knees with both hands gripping the sides of a medicine ball. Lift your chest and roll your shoulders down and back.

Movement: Tighten your abdominal muscles. Extend both legs with your feet flexed and toes touching the floor so that you balance your body in a line like a plank. Hold.

Tips and techniques:

- Keep your neck and spine neutral during the plank, not curving upward or downward.
- Breathe comfortably.

Too hard? Perform the plank with your knees on the floor. Be sure your body is in a straight line from head to knees and align your shoulders over your elbows.

Too easy? While holding the plank, lower both knees toward the floor, then return to the plank. Do 10 times.

6 V-sit with Russian twist



Reps: 10
Sets: 1–3
Intensity: Moderate to high
Tempo: 2–2–2–2
Rest: 30–60 seconds between sets

Starting position:

Sit on the floor with your knees bent and feet flat on the floor, hip-width apart. Hold the medicine ball in front of your chest.

Movement: Keep your chest lifted and your shoulders down and back. Lean back into a V position, bringing your feet off the floor with your knees bent so that your lower legs and heels are parallel to the floor. Rotate to the right and touch the medicine ball to the floor near your right hip, then return to center. This is one rep. Rotate to the left and touch the ball to the floor near your left hip, then return to center. This is your second rep. Continue to alternate sides as you finish all reps, then return to the starting position.

Tips and techniques:

- While holding the V position, keep your neck and spine neutral.
- As you rotate, keep your shoulders down and back, away from your ears.
- Breathe comfortably.

Too hard? While in the V position, place your heels on the floor for support.

Too easy? Use a heavier medicine ball.

7 Single leg stance with medicine ball



Reps: 10 per leg
Sets: 1–3
Intensity: High
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Stand on your left leg holding your

right foot slightly off the floor at the height of your left ankle. Hold the medicine ball at your waist.

Movement: Keep your chest lifted and your shoulders down and back. Tighten your abdominal muscles. Hinge forward at your hips, bending your knee slightly and allowing your right leg to rise behind you for balance as you extend your arms to lower the medicine ball toward the floor. Lift back up to return to the standing position. Finish all reps, then repeat, standing on the right leg. This is one set.

Tips and techniques:

- Focus on tightening the buttock of the standing leg for stability.
- Only lower the ball as far as is comfortable.
- Exhale as you lift.

Too hard? Keep both feet on the floor as you hinge forward at your hips, bending your knees slightly, and bring the ball to the floor.

Too easy? Use a heavier medicine ball.

8 Bridge with pullover



Reps: 10
Sets: 1–3
Intensity: Light to moderate
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your back with your knees bent and feet flat on the floor, hip-width apart, so that your heels are in line with your buttocks. Hold the medicine ball on the floor above your head.

Movement: Tighten your buttocks and lift your hips off the



floor only as high as is comfortable while keeping your spine neutral. Simultaneously lift the medicine ball up toward the ceiling above your chest. Lower your hips and the medicine ball to the starting position.

Tips and techniques:

- Keep your wrists, neck, and spine neutral throughout the movement.
- When lowering the medicine ball toward the floor, go only as far as is comfortable.
- Exhale as you lift your hips and the ball up off the floor.

Too hard? Do the exercise without a medicine ball.

Too easy? Use a heavier medicine ball.

9 Child's pose stretch with diagonal reach



Reps: 3–4

Sets: 1

Intensity: Light to moderate

Hold: 10–30 seconds

Rest: No rest needed

Starting position: Start on your hands and knees. Walk your hands diagonally out to the right and place your left hand on top of your right hand. Keep your shoulders down and back.

Movement: Slowly drop your buttocks back toward your heels. Hold. Return to the starting position. Repeat on the opposite side. This completes one rep.

Tips and techniques:

- Keep your head down, so you are looking at the floor.
- Stretch only to the point of mild tension.
- Breathe comfortably.

Too hard? Place a pillow or towel between your thighs and calves. Lower your buttocks only as far as is comfortable.

Too easy? Reach farther to the side, on more of a diagonal.

10 Full body stretch



Reps: 3–4

Sets: 1

Intensity: Light

Hold: 10–30 seconds

Rest: No rest needed

Starting position: Lie on your back with your knees bent, feet flat on the floor and hip-distance apart. Rest your arms at your sides.

Movement: Slide your feet until your legs are flat on the floor. Lift your arms to raise them over your head, lowering them until the backs of your hands and arms touch the floor. Hold. Return to the starting position.

Tips and techniques:

- Stretch to the point of mild tension.
- Breathe comfortably.

Too hard? Place a pillow above your head, so that your arms do not lower as far in the stretch.

Too easy? Press the small of your back against the floor. ♥

Stability ball workout

Want a bigger bang for your exercise buck? After you've mastered essential movement patterns on a stable surface (see "Floor core workout," page 29, or "Standing core workout," page 25), add a stability ball. By making a wide range of muscles—not just your core—work hard to hold a position steadily and move smoothly through each exercise, these

exercises up your game in sports and daily activities. Focus on good form. If you find an exercise especially difficult, do fewer reps or try the easier variation. For a more vigorous workout, try the harder variation.

Equipment: Stability ball; mat, towels, or carpet for comfort.

Stability ball workout

1 Seated knee lift



Reps: 10 per leg
Sets: 1–3
Intensity: Light to moderate
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Sit on the stability ball with your feet hip-width apart. Rest your hands at your sides on the ball.

Movement: Exhale as you lift your right knee and left hand straight toward

the ceiling. Lower your right foot to the floor and left hand to the ball. This is one rep. Finish all reps, then repeat with your left knee and right hand.

Tips and techniques:

- Keep your spine neutral and your shoulders down and back.
- Think of zipping up a really tight pair of jeans, then closing your jacket to engage your core muscles, while tightening your buttocks muscles to enhance stability.
- Keep movements slow and controlled.

Too hard? Hold the stability ball with both hands while lifting your knee.

Too easy? Close your eyes.

2 Abdominal crunch on stability ball



Reps: 10 per side
Sets: 1–3
Intensity: Moderate to high
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Sit on the stability ball. Roll downward

until the ball is centered under your back, positioning your feet hip-width apart on the floor. Rest your right hand lightly behind your head, elbow out. Extend your left hand toward the ceiling.

Movement: Exhale and tighten your abdominal muscles. Lift your head and shoulders up as you reach your left hand up toward the ceiling. Return to the starting position. This is one rep. Finish all reps, then repeat on the other side.

Tips and techniques:

- Keep your spine neutral and your shoulders down and back.
- Keep your eyes focused on the ceiling as you lift.
- Between sets, sit on the ball. Clasp your hands and reach them toward the ceiling to stretch your abdominal muscles.

Too hard? Rest both hands lightly behind your head, elbows out.

Too easy? Lift your toes up, keeping your heels on the floor, as you do the exercise.

3 Bridge, leg extension, and hamstring curl



Reps: 10
Sets: 1–3
Intensity: Moderate to high

Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your back on the floor with your knees bent and feet flat on the upper side of a stability ball. Put your hands down at your sides on the floor.

Movement: The movement is bridge, leg extension, hamstring curl, then repeat the leg extension and hamstring curl while keeping your hips raised to finish all reps before lowering your hips back to the floor to return to the starting position.

For the bridge: Squeeze your buttocks while lifting your hips by pressing your feet into the stability ball.

For the leg extension: Keeping your core still and stable, straighten your legs to roll the ball away from you. (A)

For the hamstring curl: Pull the ball back toward you by bending your knees in a hamstring curl as you return to the bridge. (B)

Tips and techniques:

- Keep your spine neutral and avoid arching your back.
- Avoid locking your knees as you extend your legs on the ball.
- Keep your hips even.

Too hard? Do the bridge and then lower your hips to the floor for the leg extension and hamstring curl.

Too easy? Try lifting your arms off the floor and crossing them on your chest.

4 Reverse curl with stability ball



Reps: 10
Sets: 1–3
Intensity: Moderate
Tempo: 2–2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your back with your knees bent over the stability ball and heels gripping it. Place your arms on the floor at your sides.

Movement: Grip the ball with your heels as you tighten your abdominal muscles to lift your hips and the ball off the floor. Hold for two counts, then return to the starting position.

Tips and techniques:

- In the starting position, keep your knees directly over your hips.
- Exhale and tighten your abdominal muscles as you curl your hips toward your ribs.

Too hard? Press your palms down into the floor to help stabilize the movement as you lift your hips and the ball off the floor.

Too easy? Gently clasp your hands behind your head, elbows out to the sides. Lift your head and shoulders a few inches off the floor. Hold that position while performing the reverse curls.

5 Push-up on stability ball



Reps: 10
Sets: 1–3
Intensity: Moderate to high
Tempo: 3–1
Rest: 30–90 seconds between sets

Starting position: Lie on your stomach on a stability ball with your hands on the floor in front of you. Tighten your abdominal muscles,

then walk your hands out until you are in a comfortable plank position with your legs on the ball and your hands directly under your shoulders.

Movement: Keeping your abdominal muscles tight, bend your elbows to lower your chest toward the floor. Exhale as you straighten your arms to return to the starting position.

Tips and techniques:

- Keep your neck and spine neutral.
- Lead with your chest (not your head) as you lower yourself into the push-up.
- Be sure not to arch your back.

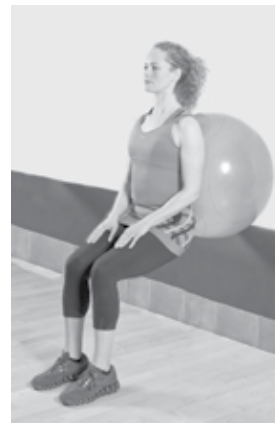
Too hard? Walk your hands out a shorter distance so that the ball is positioned higher on your legs before doing the push-up.

Too easy? Walk your hands farther so that the ball is positioned lower on your legs before doing the push-up. Make sure your hands are aligned directly under your shoulders.

6 Wall squat with stability ball

Reps: 10
Sets: 1–3
Intensity: Moderate
Tempo: 4–4
Rest: 30–90 seconds between sets

Starting position: Stand up straight and place the stability ball between the back of your waist and the wall. Walk your feet out about 18 to 24 inches and rest your hands on your thighs.



Movement: Slowly bend your knees and hips into a squat as if you were sitting down in a chair. Stop before your buttocks reach knee level. Straighten your legs to return to the starting position. The ball will roll slightly up and down as you perform this exercise.

Tips and techniques:

- Keep your spine neutral, chin parallel to the floor, chest lifted, and shoulders down and back.
- Keep your knees aligned over your ankles and pointing forward as you squat.
- Exhale as you return to the starting position.

Too hard? Do a smaller squat.

Too easy? Hold the squat for eight counts. Or do a single leg squat with one foot lifted off the floor. Finish all reps, then repeat on the other side.

7 Front plank on stability ball



Starting position: Kneel on the floor. Place your forearms on top of the stability ball, elbows bent.

Movement: Tighten your abdominal muscles as you lift your knees off the floor and extend your body into a plank position with your legs straight and balls of your feet on the floor. Hold.

Tips and techniques:

- Keep your abdominal muscles tightened throughout the movement.
- Keep your neck and spine neutral.

- Keep your shoulders down and back to stabilize your shoulder blades.

Too hard? Perform the plank with your knees on the floor. Be sure your body is in a straight line from head to knees and align your shoulders over your elbows.

Too easy? Make the ball move slightly front and back or side to side while performing the plank.

Reps: 2–4
Sets: 1
Intensity: Moderate to high
Hold: 15–60 seconds
Rest: 30–90 seconds between reps

Stability ball workout

8 Arm V-lift on stability ball



Reps: 10
Sets: 1–3
Intensity: Moderate

Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your stomach on a stability ball, keeping the ball centered under your waist. Place your hands in front of the ball on the floor. Position your feet hip-width apart, then lift your knees off the floor so that you are balancing on the stability ball with the balls of your feet pressing into the floor.

Movement: Exhale as you lift your hands toward the ceiling, thumbs pointing up, until your body is in a straight line from the top of your head to your tailbone. Keep your spine neutral, rather than arching it. Return to the starting position.

Tips and techniques:

- Keep your neck neutral throughout the movement.
- Squeeze your shoulder blades as you lift your arms up.

Too hard? Lift one arm at a time.

Too easy? Do an additional 10 lifts with your arms extended out to the sides.

9 Pretzel stretch



Reps: 3–4
Sets: 1
Intensity: Light to moderate
Hold: 10–30 seconds
Rest: No rest needed

Starting position: Lie on your back with your right knee bent and your foot on the floor. Rest

your left ankle on your right thigh, just above the kneecap. Your left knee should point toward the wall. Grasp the back of your right thigh with both hands.

Movement: Relax your shoulders down and back as you lift your right foot off the floor until you feel tightness in your left hip and buttock. Hold. Return to the starting position. Repeat on the other side. This is one rep.

Tips and techniques:

- Stretch to the point of mild tension.
- Hold the stretch as still as possible without bouncing.
- Breathe comfortably.

Too hard? Lie on your back with your knees bent and feet on the floor. Cross your right knee over your left. Holding your right knee, gently bring both knees toward your chest. Repeat on the other side. This is one rep.

Too easy? Extend the leg you're holding toward the ceiling.

10 Full body stretch



Reps: 3–4
Sets: 1
Intensity: Light

Hold: 10–30 seconds
Rest: No rest needed

Starting position: Lie on your back with your knees bent,

feet flat on the floor hip-distance apart. Rest your arms at your sides.

Movement: Slide your feet until your legs are flat on the floor. Lift your arms to raise them over your head, lowering them until the backs of your hands and arms touch the floor. Hold. Return to the starting position.

Tips and techniques:

- Stretch to the point of mild tension.
- Breathe comfortably.

Too hard? Place a pillow above your head, so that your arms do not lower as far in the stretch.

Too easy? Press the small of your back against the floor. ♥

Bosu workout

Ready for a new challenge after mastering the floor core workout or standing core workout? The curved dome of the Bosu forces muscles from your ankles up through your shoulders and neck to work in concert so you can hold a position steadily and move smoothly through each core exercise. This workout improves your balance, which pays off when reaching and rotating in sports like tennis and golf or when walking and running on uneven terrain. The extra strength and stability you gain may help prevent falls, too. Fully inflat-

ing the Bosu makes it firmer and more stable; inflating it less increases instability. Focus on good form. If you find an exercise especially difficult, do fewer reps or try the easier variation. For a more vigorous workout, try the harder variation.

Equipment: Bosu Balance Trainer; mat, towel, or carpet for comfort. (Note: Running shoes may not provide enough support for certain movements, so wear cross-trainers or other athletic footwear that offers support and soles that grip.)

Bosu workout

1 Alternating knee lifts



Reps: 10
Sets: 1–3
Intensity: Moderate to high
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Stand up straight on top of the Bosu with your hands at your sides. Lift your chest and keep your shoulders down and back.

Movement: Tighten your abdominal muscles and buttocks for stability. Bring your arms out to your sides just below shoulder level to help with balance. Exhale and lift your left knee up toward the ceiling as high as is comfortable, then return it to the starting position. Repeat with the right knee. This is one rep.

Tips and techniques:

- Keep your chest lifted and your shoulders down and back.
- If you lose your balance, take a moment to stabilize yourself.
- Think of zipping up a really tight pair of jeans to engage your core muscles for stability.

Too hard? Don't lift each knee as high.

Too easy? Hold each knee lift for four counts.

2 Bosu squat



Reps: 10
Sets: 1–3
Intensity: Moderate to high
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Stand up straight on top of the Bosu with your arms at your sides. Try to stand evenly on both feet, pressing your big toes into the Bosu. Lift your chest

and keep your shoulders down and back.

Movement: Hinge forward at your hips and bend your knees to lower your buttocks toward the Bosu as if sitting down in a chair. Simultaneously, bring your hands together in front of your chest. Stop with your buttocks above knee level. Exhale as you return to the starting position. This is one rep.

Tips and techniques:

- Keep your hips, knees, and toes pointing forward and your spine neutral.
- Your knees should extend no farther than your toes.
- Exhale as you lift.

Too hard? Make the squat smaller.

Too easy? Hold the squat for four counts.

3 Side squat with leg lift



Reps: 10 per side

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–90 seconds rest

between sets

Starting position: Stand up straight with your hands at your sides and the Bosu to your right. Place your right foot on top of the Bosu and your left foot on the floor. Center your body weight between your feet.

Movement: Hinge forward at your hips and bend your knees to lower your buttocks toward the Bosu as if sitting down in a chair, stopping with your buttocks above knee level. Simultaneously, bring your hands together in front of your chest. Exhale as you lift up onto your right leg on the Bosu, simultaneously lifting your left leg off the floor and extending it out to the left as you bring your hands straight out to your sides. Return to the squat position. This is one rep. Finish all reps, then repeat the sequence with your left foot on the Bosu.

Tips and techniques:

- Keep your hips and the knees and toes of the supporting leg pointing forward.
- Keep your spine neutral and your shoulders down and back.
- Tighten the buttock of the leg on top of the Bosu for stability as you lift up and extend the other leg.

Too hard? Make the movements smaller.

Too easy? Hold the leg lift for two counts.

4 Reverse lunges with torso rotation



Reps: 10

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2–2–2

Rest: 30–90

seconds between sets

Starting position: Stand with both feet on top of the Bosu, elbows bent and hands in front of your chest. Lift your chest and keep your shoulders down and back.

Movement: Step backward off the Bosu, placing the ball of your right foot on the floor behind you. Sink into the reverse lunge position by bending your knees until your right knee points to the floor and your left knee aligns over your left ankle. Keep your torso straight as you do this and evenly distribute your weight over both legs. Now rotate your upper torso to the left, and then come back to center. Exhale as you return to the starting position. This is one rep. Repeat the lunge with your left leg, then rotate your upper torso to the right and back to center before returning to the starting position.

Tips and techniques:

- Keep your knees aligned over your ankles.
- Keep your chest lifted and your spine neutral.
- Tighten your abdominal muscles and buttocks for stability.

Too hard? Skip the torso rotation.

Too easy? Hold the torso rotation for four counts.

5 Diagonal opposite arm and leg raise on Bosu



pointing your toes, as you simultaneously reach out in front of you with your left arm, thumb up. Keeping your shoulders and hips squared, try to move your left arm to the left and your right leg over to the right to form a diagonal line. Your extended limbs should be parallel to the floor. Hold for a count of four, then slowly return to the starting position. This is one rep. Repeat with your right arm and left leg. Continue to alternate as you finish all reps.

Reps: 10

Sets: 1–3

Intensity: Moderate to high

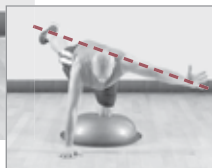
Tempo: 2–4–2

Rest: 30–90 seconds

between sets

Starting position: Kneel with your knees on the Bosu and your toes resting on the floor behind you. Place both hands on the floor in front of you, directly under your shoulders. Keep your head and spine neutral.

Movement: Extend your right leg off the floor behind you,



Tips and techniques:

- Think of a straight line from your fingers to your toes.
- Keep your neck and spine neutral.
- Tighten your abdominal muscles for stability.

Too hard? Lift your arm and leg in a straight line without the diagonal.

Too easy? Lift the toes of the leg resting on the Bosu off the floor.

6 Front plank on Bosu



Reps: 2–4

Sets: 1

Intensity: Moderate to high

Hold: 15–60 seconds

Rest: 30–90 seconds

between reps

Starting position: Place your forearms on top of the Bosu with your elbows under your shoulders, hands loosely clasped, and knees on the floor with your toes tucked under. Keep your head and spine neutral.

Movement: Tighten your abdominal muscles as you lift your knees off the floor and extend your lower body into a full plank position. Check that your shoulders are directly over your elbows. Maintain neutral alignment from the top of your head to your heels. Hold. Return to the starting position.

Tips and techniques:

- Keep your abdominal muscles tightened throughout the plank.
- Keep your shoulders down and back.

Too hard? Perform the plank with your knees on the floor. Be sure your body is in a straight line from head to knees.

Too easy? While holding the plank position, lift one leg off the floor for four counts, then the other leg off the floor for four counts. Continue repeating this throughout the plank.

7 V-sit with alternating toe taps



Reps: 10

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–90 seconds

between reps

Starting position: Sit on top of the Bosu with your knees bent and feet flat on the floor in front of you. Place your hands behind you on the Bosu for support, elbows slightly bent.

Movement: Lean back into a V position with your knees bent, lifting your feet off the floor. Your lower legs and heels will be parallel to the floor. Drop your right toes to tap the floor, then return to the V position. This is one rep. Repeat with a left toe tap. Continue to alternate as you finish all reps.

Tips and techniques:

- Keep your chest lifted and your shoulders down and back.
- Tighten your abdominal muscles for stability and keep your neck and spine neutral.

Too hard? Hold the V position for 15 to 60 seconds without tapping the floor.

Too easy? Bring your arms out in front of you at shoulder level.

8 Single leg bridge on Bosu



Reps: 10
Sets: 1–3
Intensity: Moderate

Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your back with your knees bent. Place your right foot on top of the Bosu and extend your left foot straight up toward the ceiling. Rest your arms at your sides on the floor.

Movement: Squeeze your buttocks as you lift your hips off the floor. Lower your buttocks to floor. This is one rep. Repeat with the left leg. Continue to alternate as you finish all reps.

Tips and techniques:

- Keep your spine neutral.
- Keep your shoulders, hips, and knees in a straight line in the bridge.
- Exhale as you lift.

Too hard? Perform a bridge with both feet on the Bosu.

Too easy? Hold each single leg bridge for four counts.

9 Torso rotation stretch



Reps: 3–4
Sets: 1
Intensity: Light

Hold: 10–30 seconds
Rest: No rest needed

Starting position: Lie on your back with your knees bent and your feet together flat on the floor. Put your arms comfortably out to each side just below shoulder level, palms up.

Movement: Tighten your abdominal muscles as you lower both knees together to the left side on the floor. Keeping your shoulders relaxed and pressed into the floor, look in the opposite direction. Feel the stretch across your chest and torso. Hold. Return to the starting position. Repeat in the opposite direction. This is one rep.

Tips and techniques:

- Stretch to the point of mild tension.
- Try to bring both knees up into the fetal position.
- Breathe comfortably.

Too hard? Don't lower your knees as far.

Too easy? Put your right hand on top of your left knee (or your left hand on top of your right knee, depending on the direction of the stretch).

10 Full body stretch



Reps: 3–4
Sets: 1
Intensity: Light

Hold: 10–30 seconds
Rest: No rest needed

Starting position: Lie on your back with your knees bent,

feet flat on the floor hip-distance apart. Rest your arms at your sides.

Movement: Slide your feet until your legs are flat on the floor. Lift your arms to raise them over your head, lowering them until the backs of your hands and arms touch the floor. Hold. Return to the starting position.

Tips and techniques:

- Stretch to the point of mild tension.
- Breathe comfortably.

Too hard? Place a pillow above your head, so that your arms do not lower as far in the stretch.

Too easy? Press the small of your back against the floor. ♥

Mixed core workout

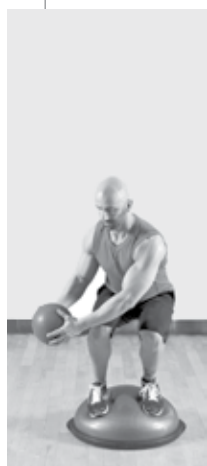
Once you master essential movement patterns on a stable surface by doing the floor core workout (see page 29) or standing core workout (see page 25), crank it up. Complex combinations incorporating the Bosu Balance Trainer, stability ball, and medicine ball make this core workout especially challenging. Rotational and diagonal moves tone your waistline

and pump up power for racquet sports, golf, and swimming. Focus on good form. If you find an exercise especially difficult, do fewer reps or try the easier variation. For a more vigorous workout, try the harder variation.

Equipment: Bosu Balance Trainer; medicine ball; stability ball; mat, towel, or carpet for comfort.

Mixed core workout

1 Cross chop and lift on Bosu with medicine ball



Reps: 10 per side
Sets: 1–3
Intensity: High
Tempo: 2–2
Rest: 30 seconds between sets

Starting position: Stand up straight on the Bosu, holding a medicine ball close to your waist. Try to stand evenly on both feet, pressing your big toes into the Bosu. Lift your

chest and keep your shoulders down and back.

Movement: Hinge forward at your hips and bend your knees to lower your buttocks toward the Bosu as if sitting down in a chair. Simultaneously, bring the medicine ball down to the outside of your right knee. As you rise to return to the starting position, lift the medicine ball up diagonally to the left just above your shoulder. Finish all reps, then repeat on the opposite side.

Tips and techniques:

- Keep your hips, knees, and toes pointing forward and your spine neutral.
- Your knees should extend no farther than the arches of your feet.
- Exhale as you lift.

Too hard? Perform only a squat on the Bosu without the cross chop and lift. Hold the medicine ball in front of your chest.

Too easy? Use a heavier medicine ball.

2 Front plank on Bosu



Reps: 2–4
Sets: 1
Intensity: High
Hold: 15–60 seconds
Rest: 30–90 seconds between reps

Starting position: Place your forearms on top of the Bosu with your elbows under your shoulders, hands loosely clasped, and knees on the floor with your toes tucked.

Movement: Tighten your abdominal muscles as you lift your knees off the floor and extend your lower body into a full plank position. Check that your shoulders are directly over your elbows. Hold. Return to the starting position.

Tips and techniques:

- Keep your abdominal muscles tightened throughout the movement.
- Maintain neutral alignment from the top of your head to your heels.
- Keep your shoulders down and back.

Too hard? Perform the plank with your knees on the floor. Be sure your body is in a straight line from head to knees and align your shoulders over your elbows.

Too easy? While holding the plank position, lift one leg off the floor for four counts, return it to the floor, and then lift the other leg off the floor for four counts. Repeat throughout the plank.

3 Side squat with rotation holding medicine ball



Reps: 10 per side
Sets: 1–3
Intensity: Moderate
Tempo: 2–2
Rest: 30–90 seconds between sets

Starting position: Stand up straight, feet together, and hold a medicine ball in front of your chest. Lift your chest and keep your shoulders down and back.

Movement: Tighten your abdominal muscles. Step out to the right, hinging forward at the hips and bending your knees to lower your buttocks into a squat as if sitting down in a chair. As you return to the starting position,

bring your right foot up to your left knee while rotating your upper torso and the medicine ball to the right. Rotate back to center as you return to the side squat. Finish all reps and repeat the sequence to the left.

Tips and techniques:

- When lowering yourself into the squat, hinge from the hip.
- Keep your spine neutral, chest lifted, and shoulders back and down.
- Exhale as you lift upward and rotate.

Too hard? Skip the rotation.

Too easy? Use a heavier medicine ball.

4 Opposite arm and leg raise on Bosu



Reps: 10
Sets: 1–3
Intensity: Moderate to high
Tempo: 2–4–2
Rest: 30–90 seconds between sets

Starting position: Kneel with knees on the Bosu and toes resting on the floor behind you. Place your hands on the floor in front of you, directly under your shoulders. Keep your head and spine neutral.

Movement: Slowly extend your right leg off the floor behind you as you simultaneously reach out in front of you with your left arm, thumb up. Keep your hips and shoulders squared while trying to bring that leg and arm parallel to the floor. Hold for a count of four. Slowly return to the starting position. Repeat with the left leg and right arm for one full rep.

Tips and techniques:

- Tighten your abdominal muscles throughout the exercise for stability.
- Imagine someone pulling your arm and leg in opposite directions to lengthen your torso.
- Keep neck and spine neutral.

Too hard? Try lifting only an arm or leg.

Too easy? When extending your arm and leg, move them on a diagonal (think of a clock: instead of noon and six, move them to one and seven, or 11 and five, depending on which arm and leg is in action).

5 Push-up on stability ball



Reps: 10
Sets: 1–3
Intensity: Moderate to high
Tempo: 3–1
Rest: 30–90 seconds between sets



Starting position: Lie on your stomach on a stability ball with your hands on the floor in front of you.

Tighten your abdominal muscles, then walk your hands out until you are in a comfortable plank position with your legs on the ball and your hands directly under your shoulders.

Movement: Keeping your abdominal muscles tight, bend your elbows to lower your chest toward the floor. Exhale as you straighten your arms to return to the starting position.

Tips and techniques:

- Keep your neck and spine neutral.
- Lead with your chest (not your head) as you lower yourself into the push-up.
- Be sure not to arch your back.

Too hard? Walk your hands out a shorter distance so that the ball is positioned higher on your legs before doing the push-ups.

Too easy? Walk your hands farther so that the ball is positioned lower on your legs before doing the push-ups.

6 Side plank



Reps: 2–4 per side

Sets: 1

Intensity: Moderate to high

Hold: 15–60 seconds

Rest: 30–90 seconds between reps

Starting position: Lie on your right side with your hips and feet stacked, and your upper body supported by your right forearm. Your elbow should be directly aligned under your shoulder. Rest your left hand on your left hip.

Movement: Tighten your abdominal muscles and lift your hips

up off the floor. Keep your chest lifted and your shoulders down and back. Try to maintain a straight line from your shoulders to your hips and feet. Repeat on the opposite side. This is one rep.

Tips and techniques:

- Keep your neck and spine neutral.
- Focus on lifting your bottom hip off the floor.
- Exhale as you lift up.

Too hard? Bend your knees and bring them slightly forward. Keep your knees on the floor when lifting into the side plank position.

Too easy? Lift your top foot up toward the ceiling.

7 Bridge, leg extension, and hamstring curl



Reps: 10

Sets: 1–3

Intensity: Moderate to high

Tempo: 2–2

Rest: 30–90 seconds between sets

Starting position: Lie on your back on the floor with your knees bent and feet flat on the upper side of a stability ball. Put your hands down at your sides on the floor.

Movement: The movement is bridge, leg extension, hamstring curl, then repeat the leg extension and hamstring curl with your hips raised to finish all reps before lowering your hips back to the floor to return to the starting position.

For the bridge: Squeeze your buttocks while lifting your hips by pressing your feet into the stability ball.

For the leg extension: Keeping your core still and stable, straighten your legs to roll the ball away from you. (A)

For the hamstring curl: Pull the ball back toward you by bending your knees in a hamstring curl as you return to the bridge. (B)

Tips and techniques:

- Keep your spine neutral and avoid arching your back.
- Avoid locking your knees as you extend your legs on the ball.
- Keep your hips even.

Too hard? Do the bridge and then lower your hips to the floor for the leg extension and hamstring curl.

Too easy? Try lifting your arms off the floor and crossing them on your chest.

8 Reverse curl with stability ball



Reps: 10
Sets: 1–3
Intensity: Moderate

Tempo: 2–2–2
Rest: 30–90 seconds between sets

Starting position: Lie on your back with your knees bent over the stability ball and heels gripping it. Place your arms on the floor at your sides.

Movement: Grip the ball with your heels as you tighten your abdominal muscles to lift your hips and the ball off the floor. Hold for two counts, then return to the starting position.

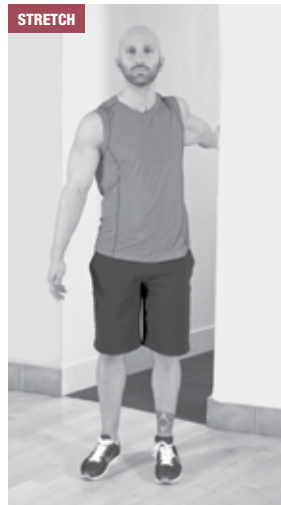
Tips and techniques:

- In the starting position, keep your knees directly over your hips.
- Exhale and tighten your abdominal muscles as you curl your hips toward your ribs.

Too hard? Press your palms down into the floor to help stabilize the movement as you lift your hips and the ball off the floor.

Too easy? Gently clasp your hands behind your head, elbows out to the sides. Lift your head and shoulders a few inches off the floor. Hold that position while performing the reverse curls.

9 Chest stretch



Reps: 3–4
Sets: 1
Intensity: Light
Hold: 10–30 seconds
Rest: No rest needed

Starting position: Stand in a doorway. Put your left hand on the edge of the door frame slightly below shoulder level, palm facing forward. Keep your shoulders down and back.

Movement: Slowly turn your body to the right, away from the door frame, until you feel

the stretch in your chest and shoulder. Hold. Repeat on the other side. This is one rep.

Tips and techniques:

- Stretch to the point of mild tension.
- Breathe comfortably.

Too hard? Limit the stretch by not turning your body as far away from the door frame.

Too easy? Lift your hand a bit higher on the door frame without going above shoulder level.

10 Full body stretch



Reps: 3–4
Sets: 1
Intensity: Light

Hold: 10–30 seconds
Rest: No rest needed

Starting position: Lie on your back with knees bent, feet flat on the floor and hip-distance apart. Rest your arms at your sides.

Movement: Slide your feet until your legs are flat on the floor. Lift your arms to raise them over your head, lowering them until the backs of your hands and arms touch the floor. Hold. Return to the starting position.

Tips and techniques:

- Stretch to the point of mild tension.
- Breathe comfortably.

Too hard? Place a pillow above your head, so that your arms do not lower as far in the stretch.

Too easy? Press the small of your back against the floor. ♥

Resources

Publications

Abs Revealed: Exercises and Programs for Six-Pack Success

Jonathan Ross
(Human Kinetics, 2010)

Written by a personal trainer, this book is devoted to paring away midsection fat and building chiseled abdominal muscles. Ross provides well-illustrated exercises—many of them advanced—aimed at defining abs, and week-by-week workouts.

Core Performance Essentials

Mark Verstegen and Pete Williams
(Rodale, 2006)

High-performance coach Mark Verstegen focuses on helping everyday people get into shape in this pared-down version of his core fitness workouts and nutrition program. Verstegen and Williams have written several other core fitness books targeted for women, golfers, and endurance sport enthusiasts.

Gentle Core Exercises

Edward Phillips, MD, and Josie Gardiner, master trainer
(Harvard Medical School, 2013)

When standard core workouts are too challenging, perhaps because of a back injury or surgery, this new Harvard Special Health Report can help by providing easier workouts that still develop your core. To order, to go www.health.harvard.edu or call 877-649-9457 (toll-free).

Organizations

American Academy of Physical Medicine and Rehabilitation

9700 W. Bryn Mawr Ave., Suite 200
Rosemont, IL 60018
847-737-6000
www.aapmr.org

This professional organization for physiatrists (medical doctors trained in physical medicine and rehabilitation) promotes education. A referral service on the website locates physiatrists state-by-state.

American College of Sports Medicine

401 W. Michigan St.
Indianapolis, IN 46202
317-637-9200
www.acsm.org

ACSM educates and certifies fitness professionals, such as personal trainers, and funds research on exercise. A referral service on the website locates ACSM-certified personal trainers.

American Council on Exercise

4851 Paramount Drive
San Diego, CA 92123
888-825-3636 (toll-free)
www.acefitness.org

ACE is a nonprofit organization that promotes fitness and offers educational materials for consumers and professionals. The ACE website has a referral service to help locate ACE-certified personal trainers and a free video library of exercises.

The Institute of Lifestyle Medicine

Joslin Diabetes Center
One Joslin Place
Boston, MA 02215
617-309-2501
www.instituteoflifestylemedicine.org

Led by Edward M. Phillips, MD, the medical editor of this report, the Institute seeks to reduce the prevalence of lifestyle-related disease by changing behaviors. Physicians work with patients to change lifestyle choices that damage health and longevity.

Glossary

aerobic activity: Any activity that speeds heartbeat and breathing through repetitive use of large muscle groups. Examples include walking, running, swimming, and biking.

cartilage: Tough, flexible tissue that cushions the intersection between bones and absorbs synovial fluid, a lubricant that helps protect against the wear and tear of friction.

exercise: A structured program of physical activity to help you become physically fit.

extend: Straighten out a joint (for example, extending your arms overhead).

flex: Bend a joint (for example, flexing your knees).

intensity: A measure of how hard you are exercising.

joint: A junction in the body where bones are linked together.

ligament: Strong, usually inelastic, tissue that binds joints.

neutral alignment: Keeping your body in a straight line from head to toe except for the slight natural curves of the spine.

neutral posture: Positioning your body with chin parallel to the floor; shoulders, hips, and knees at an even height; and knees and

feet pointing straight ahead, whether standing or seated.

neutral spine: A position in which the back is straight except for the slight natural curves of the spine.

physical activity: Any voluntary body movements that burn calories, including walking up stairs, going for a brisk stroll, or engaging in a structured exercise program.

range of motion: The extent of movement—and thus flexibility—in a joint, measured in the degrees of a circle.

repetition: A single, complete performance of an exercise. Also called a rep.

set: A specific number of repetitions of an exercise.

strength: The ability of muscles to exert force.

strength training: Popular term for exercises that harness resistance supplied by body weight, free weights such as dumbbells or weighted cuffs, resistance tubing or bands, or specialized machines. Also known as resistance training or weight training.

tempo: The count for key movements in an exercise.

tendon: A cord of tissue that tethers muscle to bone and cartilage.



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Back Pain	Hearing Loss	Sensitive Gut
Balance	Heart Disease	Sexuality
Caregivers	Heart Disease & Diet	Six-Week Eating Plan
Change Made Easy	High Blood Pressure	Skin Care
Cholesterol	Incontinence	Sleep
Core Workout	Knees & Hips	Strength Training
Depression	Living Longer	Stress Management
Diabetes	Living Wills	Stroke
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Exercise	Nutrition	Women's Health
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Periodicals Monthly newsletters and annual publications, including:

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Harvard Women's Health Watch	Harvard Men's Health Watch	