

THE
NEW

POWER CIRCUIT

YOUR BODY IS PART OF A SCIENCE EXPERIMENT THAT'S REFORMULATING HOW YOU SHAPE UP FROM NOW ON. GYMS EVERYWHERE ARE CLEARING THEIR FLOORS OF TRADITIONAL WEIGHT MACHINES TO MAKE SPACE FOR A SMARTER, FASTER WAY TO BUILD STRENGTH. LEARN HOW TO TAKE THE REINS ON YOUR ROUTINE.

BY TULA KARRAS PHOTOGRAPHS BY DYLAN COULTER

When you imagine a state-of-the-art gym—one that's outfitted with the most innovative equipment—what do you envision? A gleaming, Olympic-style lab with sci-fi-like exercise contraptions that have been crafted by NASA engineers?

Try a padded room with ropes, medicine balls and boxes, where the weight machines you grew up with have been all but weeded out. Gyms, like sneakers, are having a minimalist moment, and they're taking the training wheels off your workout tools. The age of surfing your way through a circuit of strength machines has given way to a new mode of DIY lifting and lunging that science says will make you tighter and stronger in less time.

And the best part: It's easier than ever to get the kind of cutting-edge workouts going on right now at the most elite gyms, even if you're not a member at any. Here's why.

The F Word

"If you walked into one of our clubs 10 years ago, you wouldn't have seen any functional fitness

equipment and a much larger selection of fixed-path resistance equipment," says David Harris, the vice president of personal training at Equinox, which has 67 clubs nationwide. Harris is giving me a tour of the chain's New York City flagship location on a recent Tuesday morning. We head past a bank of weight-stacked strength machines, all of which are the fixed-path breed he mentioned—that is, traditional-looking ones that isolate one muscle group, with handlebars that are rigid and therefore ensure that each rep follows an identical trajectory. It's this sameness of lifts that's in part responsible for the fixed-path machines' fall from favor, although there are ways to tease more functionality out of them. (See "Lift Tricks," at right.) Not one of these machines is being used.

We then walk through a section where several men and women are plating up barbells and finally to an open workout area. This is where the real action is. I watch as a twentysomething woman jumps onto a plyo box, counting reps, and as another member hoists a ViPR (short for "vitality, performance and reconditioning") weight—a rubber log that looks as if it could be a jet muffler. (See "Meet the Muscle Makers," on page 76.) "Over the last few years, we've

LIFT TRICKS

To get more of a functional workout using fixed-path machines, try these techniques from Paul Juris, the executive director of the Cybex Research Institute.

Explode on the effort. Lift up or out as quickly and as powerfully as you can, then lower slowly.

Shift the seat. For machines like the horizontal chest press, change the position of the seat several times during your sets, lowering or raising it so that your angle of movement varies and you work different muscle fibers.

Stop and start. Choose different points in space where you'll deliberately stop and restart the movement in the same direction—this helps to work muscles that are responsible for putting on the brakes, and it engages your brain.

Alternate legs and arms. Work one leg or arm at a time, which may require your body to engage stability muscles to stay balanced.

Switch your grip. Space hands wider apart or closer on the handle of arm machines to target different muscle fibers.

WEEDING OUT THOSE ONE-TRICK-PONY WEIGHT MACHINES IS YOUR GYM'S WAY OF SAYING GET UP!

devoted 10 to 15 percent of our floor space in our clubs to functional fitness," Harris explains. In practice, that means they've slimmed their stable of up to 30 fixed-path machines down to just 8 to 14. "There's only one machine for each isolated muscle group: one chest press, one shoulder press, one leg press and so on," he says.

Why the seismic shift? It boils down to the buzzword *functional*.

"Over the last five years, the functional fitness movement has gone mainstream, changing the landscape of the gym," says Diane Vives, a spokeswoman for the National Strength and Conditioning Association. Strength training had long evolved from targeting just one muscle group at a time, as fixed-path machines do, to incorporating functional moves—that is, those that require all your muscles to work together, as they do in real life. Weeding out many of those one-trick-pony weight machines is your gym's way of saying *Get up!* In other words, sitting on a leg-extension machine is out, and doing squats is in. (Don't worry about cardio machines; they're not going anywhere.)

Gyms have also responded by replacing some of those booted fixed-path styles with models that are more multipurpose or cable-based. By making the path of your lift more free-range, the new weight machines require you to put more muscle into each rep to balance and hoist. And toning more muscle fibers means faster results.

Even if you still love your leg adductor machine (the seated one on which you squeeze your inner thighs together), its days may be numbered. Cybex, one of the nation's top manufacturers of resistance machines, confirms that the workout-floor face-lift is only accelerating. "There are indications that some gym operators are ordering fewer of the traditional, fixed-path machines and, instead, opting for cable



UN-GYM MEMBERSHIPS

The rise of boutique fitness clubs—including CrossFit boxes, high-intensity boot camps, and indoor-cycling and barre studios—is also redefining the gym workout. Go to fitnessmagazine.com/ungyms for the latest services that allow you to build a studio-based week of functional training, often at a discount.

machines and jungle-gym apparatuses," says kinesiologist Paul Juris, the executive director of the Cybex Research Institute. "I recently had one guy who's opening a gym tell me he's not ordering any fixed-path machines at all." (Regarding your inner thighs: Watch how to tone them with a cable machine at fitnessmagazine.com/weightmachines.)

Take Life Time gyms, which has 113 clubs nationwide. In 2012, the company embarked on what it's calling the Flip. "In most of our clubs, we're taking the large space, where the traditional weight equipment resides, and flipping it out to create significantly more room for functional training," says Jason Stella, the director of education for Life Time Training. Fixed-path weight machines are positioned on the sidelines to give the spotlight to devices like a large metal tower decorated with TRX suspension systems.

"AT FIRST, ABOUT 25 PERCENT OF OUR CLIENTELE WAS ASKING, 'WHERE ARE THE STRENGTH MACHINES?' AND THEY WERE NOT HAPPY ABOUT IT. TODAY IT'S A DIFFERENT STORY. EVERYONE'S ON BOARD WITH FUNCTIONAL TRAINING. I COMPARE IT WITH GOING FROM EIGHT-TRACK TAPES TO SPOTIFY."

—Jay Wright, a designer of high-end gyms

Likewise, Town Sports International—the owner of Boston, Philadelphia, New York and Washington Sports Clubs—is so convinced that the functional fitness trend is lasting that it has carved out 800 square feet of artificial turf (called a UXF zone) in pretty much all of their 164 locations.

If your club isn't yet showing signs of such radical redesign, it probably will soon, experts say. "I believe this trend is here to stay, and five years from now it will be the norm," predicts Jay Wright, a trainer and the owner of the Wright Fit, a New York City-based company that designs high-end gyms; in the 40 clubs he's developed since 2007, Wright says he's installed just one type of fixed-path machine—for hamstrings. "At first, about 25 percent of our clientele was asking, 'Where are the strength machines?' and they were not happy about it. Today it's a different story. Everyone's on board with

functional training. I compare it with going from eight-track tapes to Spotify.”

Fad or Fitness?

Let’s face it—not every exercise trend is grounded in science (hello, Shake Weight) or has staying power (toning ThighMaster, anyone?). But even if you are boot camp shy, the research on total-body exercises makes it hard to sit this one out.

A landmark 2008 study in the *Journal of Strength and Conditioning Research* found that exercisers using free-form cable machines became 58 percent stronger than those doing similar moves on fixed-path equipment; the cable-machine group also had greater improvement in balance.

And the good news for non-gymgoers is that you can cut the cable cord

THE THINKING ON STRENGTH TRAINING HAS SHIFTED FROM HITTING MUSCLES ONE-BY-ONE TO ONE-AND-DONE SESSIONS.

completely. Doing toning exercises without any form of machine will give you similar advantages, according to experts.

“Just like cable machines, functional strength equipment like free weights and kettlebells requires you to move in all sorts of directions, which means your body must recruit both the primary muscles and stabilizer muscles to keep the load traveling in a certain path,” explains William J. Kraemer, Ph.D., a professor of medicine in the Department of Kinesiology at the University of Connecticut who has conducted an extensive amount of research on strength training. “It’s a more complex movement than doing an exercise on a fixed-path weight machine, involving more coordination, more body parts and more brainpower to direct all that action.”

MEET THE MUSCLE MAKERS

1. Kettlebells Because all of the weight is below the handle in these metal swingers, “they’re more unstable than a dumbbell, which means you have to use more balancing muscles to control the movement,” physiologist Michele Olson, Ph.D., says. (**Gold’s Gym 10 lb. Cast Iron Kettlebell**, \$15, walmart.com)
Try it. Check out fitnessmagazine.com/bell for a 15-minute kettlebell routine.

2. TRX This strap system requires that you suspend a part of your body in space while performing an exercise. “Because you’re working in an unstable environment, you’re using more muscles to create stability,” Jennifer Burke, a master instructor of TRX, explains. (**TRX Home**, \$200, trxtraining.com)
Try it. Sample a six-move TRX routine at fitnessmagazine.com/trx.

3. Battle ropes These heavy, giant ropes come in different diameters (1.5 to 2 inches) and lengths (usually 50 to 60 feet). They create momentum when you wave them up and down. “It’s like doing an upper-body sprint,” says Gregg Cook, who teaches a rope class for Equinox in New York City. (**Gold’s Gym Extreme 20-foot Training Rope**, \$60, walmart.com)
Try it. Standing with feet shoulder-width apart, knees slightly bent, take rope handles in an under- or overhand grip and move them up and down as quickly as possible, alternating arms. Keep abs tight and shoulders down. Continue for 30 seconds.

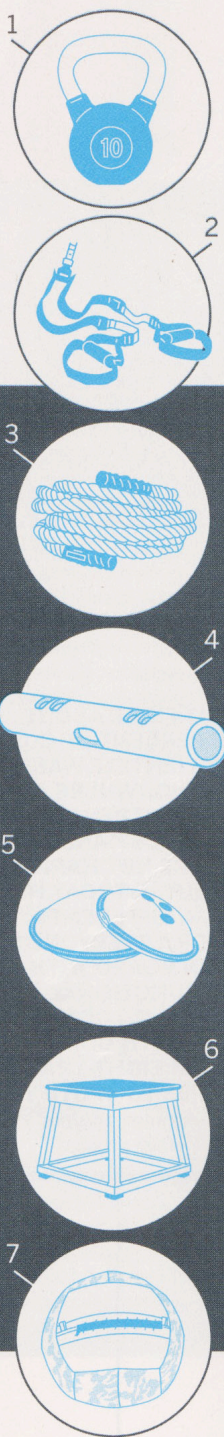
4. ViPR This weighted rubber log with cutout handgrips comes in two lengths (40 and 48 inches) and various weights (from 4 to 26 kilograms). It was created to mimic the hauling-a-bale-of-hay-type movements its inventor, Michol Dalcourt, did while growing up on a farm. (**ViPR**, \$158 and up, performbetter.com)
Try it. Stand with feet hip-width apart, gripping ViPR

with both hands using hand slots, arms extended in front of chest so ViPR is parallel to floor. Step forward with right foot, reaching ViPR out to the right, then bringing it back to center. Step forward with left foot and repeat, bringing ViPR out to the left. Continue alternating for 15 to 20 seconds.

5. Sandbags These sand-filled tools, weighing from 2 to 50 pounds, are easy to grab and swing. “When you use these as free weights, you’re also working hand and wrist muscles with the grip,” says Jennifer Galardi, the director of wellness programs at the Omni Barton Creek Resort and Spa in Austin, Texas. (**Hyperwear SandBell**, \$10 and up, hyperwear.com)
Try it. Stand holding SandBell overhead, both hands gripping opposite edges, then jump up. As you land, slam SandBell on floor as hard as you can. Squat, pick up SandBell and jump up as you raise it overhead. Do 2 sets of 8 to 10 reps.

6. Plyo box These square boxes vary in height from 6 inches and up and are typically used for plyometric or jumping moves. “You can get a killer cardio session while you strength train with plyo boxes,” Galardi says. (**Gold’s Gym Extreme Adjustable Plyometric Jump Box**, \$50, walmart.com)
Try it. Go to fitnessmagazine.com/plyobox for a total-body box routine.

7. Soft medicine ball Popular in CrossFit, these squishy weighted balls range from 6 to 12 pounds. “They’re great for throwing or partner work,” physiologist Jessica Matthews says. (**Ugi Ball**, \$129 and up, ugifit.com)
Try it. Stand facing a wall about an arm’s length away, holding ball with both hands in front of chest. Lower into a squat then press up, tossing ball up to hit wall at about 8-foot mark. Catch ball and repeat for 30 seconds. Do 5 sets, resting 30 seconds between sets.



On the downside, using cable-based systems or going machine-free calls for more know-how on the exerciser's part. And if you don't understand what you're doing, you can up your chances of getting hurt. "Anything that involves more of the body and incorporates more dynamic elements, like waving battle ropes or swinging a kettlebell, may put you at greater risk for injury if you don't know proper technique," Juris says. Your best bet is to build your skills in a small group class or, Vives advises, to invest in a session with a certified pro (find one at nsc.com or acsm.org) to learn the ropes, battle or otherwise.

In the meantime, those strength machines your health club has cherry-picked as keepers can serve as guides to good form. "They help you learn the movement with proper technique before you move on to free weights," says Jessica Matthews, an assistant professor of exercise science at Miramar College. Plus they're not inherently bad (see "Key Machines for Forgotten Muscles," at right) as long as they're not the only thing you're using. "The mistake comes in the sole use of these machines," Kraemer says.

Bottom line: If fixed-path weight machines are the staple of your strength routine, switch up your resistance—body weight, free weights, cable-based—to finally see some changes.

Thinking 2.0

Even before machines got the heave-ho, the thinking on strength training had shifted from hitting muscles one-by-one to one-and-done sessions that worked them in a more integrated way. (Remember focusing on one muscle group each day? It's an approach for bodybuilders, not everyday exercisers, Matthews says.) The question now—without the paint-by-numbers simplicity that the old machine routines provided—is how to create a total-body regimen in the new gym playground.

Expert guidelines say to train each major muscle group—arms, back, chest, abs, butt, legs—two or three days a week with 48 to 72 hours between sessions. (Find

dozens of functional, full-body workouts at fitnessmagazine.com/totalbody.) The trick to getting more muscle fibers firmed each week is to alternate your days between light resistance and heavy resistance.

"Think of strength training as a spectrum in which you have the heavy-resistance workouts—free weights, cable machines, kettlebells and even select fixed-path machines—on one end, and the lighter workouts—TRX, Pilates, plyo boxes and resistance bands—on the other," says Michele Olson, Ph.D., a professor of exercise physiology at Auburn University at Montgomery.

This sort of "undulating" (aka non-linear periodization of resistance) training increases strength better than doing a fixed number of reps each time. In a study by Kraemer published in *Medicine & Science in Sports & Exercise*, women who switched between light resistance (12 to 15 reps per set using lighter weights), moderate (8 to 10 reps with moderate weights) and high (3 to 5 reps using heavy weights) each time they did a workout got significantly stronger than those who stuck with the same sets and reps.

To get your calorie-burning cardio in at the same time, cut rests between sets or add aerobic intervals: Simple weight lifting burns about 193 calories an hour for a 140-pound woman; with bursts of activity in between, you'll burn 511 calories. Many functional workouts, like boot camps and ViPR classes, also fall in the cardio category. (Go to fitnessmagazine.com/hict for a list of top high-intensity circuit classes.)

Otherwise, Olson recommends clocking 45 minutes or so of pure cardio on the days you do light resistance.

"There are a lot of ways to skin a cat," says Scott Riewald, Ph.D., a high-performance director for the U.S. Olympic Committee's winter-sports training center in Colorado Springs. When I ask Riewald, the biomechanics guru behind plenty of gold-medal bodies, for a short list of specific equipment I should be hitting, he insists that you want to give your muscles more, rather than less, stimuli in order to make them change. Even fixed-path machines have a place. "They're all tools in the toolbox," he says. "Mix it up." ●

KEY MACHINES FOR FORGOTTEN MUSCLES

These fixed-path machines are worth keeping in your strength circuit so you don't miss a spot, says exercise physiologist Michele Olson, Ph.D.

Lat pull-down

It's really hard to work your latissimus dorsi—a large back muscle that wraps around your sides along the middle and lower back—without using a pull-down machine.

Hamstring curl

Even functional exercises like squats don't fully work the hammies, because if your quads are stronger—as most women's are—they tend to do the heavy lifting.

Assisted pull-up

Many women just don't have the upper-body strength to do an unassisted pull-up. Without this machine, which works your trapezius, latissimus dorsi, biceps and pecs, you would be missing out on the move altogether.

LET'S FACE IT—NOT EVERY EXERCISE TREND IS GROUNDED IN SCIENCE (HELLO, SHAKE WEIGHT) OR HAS STAYING POWER (THIGHMASTER, ANYONE?). BUT EVEN IF YOU ARE BOOT CAMP SHY, THE RESEARCH ON TOTAL-BODY EXERCISES MAKES IT HARD TO SIT THIS ONE OUT.