

BESTLIFE

Health & Fitness

A no-nonsense look at the often nonsensical world of fitness clubs.

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A state-of-the-art health club recently opened in Rochester, Minnesota, where I live. A gleaming cathedral of exercise, it cost \$22 million to build and features an expansive climate-controlled fitness floor beneath three-story ceilings and a soaring wall of windows. Like most American health clubs—a \$17.6 billion industry made up of more than 29,000 clubs and 42.7 million members—the facility reserved its nerve center to house its greatest treasure: hundreds of futuristic and impossibly sleek cardio- and strength-training machines. Walking these aisles is like entering the showroom of a Mercedes-Benz dealership.

You can't help but touch the things, to rub their cool slate-gray exteriors and to squeeze their padding. The mechanical housing has become more unisex, the digital readouts more technical, and the end result is an impressive ability to make you forget that this is the same basic collection of machines that have anchored the floors of health clubs for almost four decades. There are leg-extension, leg-press, leg-curl, and upper-body workstations in the aisles for building muscle, and treadmills, elliptical trainers, and stationary cycles in the aisles for developing cardio fitness.

On a recent afternoon, it thrummed with activity: Men and women logged obedient noiseless reps on a range of machines; runners banged out the miles on treadmills; and one gal raced away on an elliptical machine, legs neither running nor swinging, but doing something inexplicable in a feverish Road Runner–like blur. It's a vision of exercise utopia that is mirrored in gyms across the country. Except that a growing chorus of critics find fault with it: The man jackknifed into the leg-extension machine could be risking knee injury; the exercisers slaving away on other stationary machines are building individual muscles in place of whole-body strength; the people slogging away on the treadmills with their eyes glued to TV screens seem like automatons.

No wonder the attrition rate for gym members hovers at 35 percent a year, according to the International Health, Racquet & Sportsclub Association (IHRSA), and the latest estimates show that almost half of exercisers give up on a new routine within a year. It seems fair to ask if health clubs are partially responsible for the obesity epidemic, a trend that has followed the rise of the industry. Perhaps the first development has not been caused by the second, but it certainly hasn't been helped either. With all the fancy equipment and with all the desire out there to look good, why can't we keep the weight off? Why can't we stick to our gym workouts? Is it our fault? Or does the fault lie elsewhere?

"The health-club culture tries to create a dependency on machines," says Vern Gambetta, a trainer with 38 years of experience training professional and recreational athletes, and the author of *Athletic Development: The Art & Science of Functional Sports Conditioning*. "If you have a limited amount of time to work out, you're better off ditching the machine to do different kinds of body-weight and whole-body exercises. You'll get more caloric burn for your time spent." Critics also charge that a traditional machine-centric regimen has other downfalls. In general, it relies excessively on the discipline of the exerciser, it promotes training muscles in isolation (as opposed to how muscles really work, in a chain of movement), and it can stress vulnerable joints more than is necessary. At issue is not only the very meat and potatoes of how you work out, but also the best way to get the most out of your time in the gym.

There is potential for pain in any workout. The key to preventing injury is to find your weak links and then modify your exercise to fortify your weak links, while also not putting stress on them, says Nicholas DiNubile, MD, an orthopedic surgeon specializing in sports medicine and the author of *FrameWork: Your 7-Step Program for Healthy Muscles, Bones, and Joints*. The three most common strength-training-related injuries Dr. DiNubile sees are rotator-cuff problems, knee issues, and lower-back pain. While these are not exclusive to machine-based training, the nonfunctional movements that some machines require, coupled with heavy loads and less-than-perfect form, can cause problems—especially in men over 40 whose joints are getting creaky—and are not especially meaningful.

Researchers, for instance, have known that the leg-extension machine (the unit in which you sit with your shin behind a padded bar attached to a weight stack and then straighten your leg in front of you) trains you to do just one thing: become very strong at the leg-extension machine. In one of the few studies on this subject, researchers from the University of Kentucky studied 23 patients with knee pain to see what made them stronger: a step-up test or doing leg extensions. While they found that both groups eventually became stronger at doing leg extensions, only the group doing the step-up test actually became stronger at stepping up and doing functional activities. The reason: The seated leg-extension machine has nothing to do with how we use our legs, which are meant to hold us upright against gravity while we walk, climb, or descend.

In fact, Chris Powers, a biokinesiology researcher at the University of Southern California, determined that although the thighbone rotates under



the kneecap as we walk, using a leg-extension machine actually causes the kneecap to rotate on the thighbone. The mechanics of the leg-extension machine simply doesn't simulate what happens in functional activity (e.g., walking, running, or going down steps). "The leg-extension machine puts a lot of strain on the knee ligaments and the patella," says Tim Hewett, PhD, a professor in the departments of biomedical engineering and pediatrics at the University of Cincinnati. "I would never consider letting our athletes use a leg-extension machine."

Paul Juris, EdD, executive director of the Cybex Institute, the research and education arm of the leading stationary-equipment manufacturer, says "maybe" to the criticism that leg-extension machines impose pressure on the knee, but adds that shear forces exist in a host of exercises, such as lunges and squats. "On the leg-extension machine," he says, "I can mitigate those forces by moving the pad higher up the shin, raising the weight, and then using only the top 15 percent of the machine's range of motion." It's a thoughtful response, but it undercuts the primary selling point of machine-based training, which is that using a machine is always safer than other forms of training. When it comes to promoting strength that is not meaningful, the leg-extension machine is one of many.

The leg press is equally disconnected from the reality of human anatomy. Doubters can Google the sight of 77-year-old televangelist Pat Robertson leg pressing what he claims to be half a ton, while former secretary of state Madeline Albright, who is 70, has stated that she is good for up to 400 pounds on a leg-press machine. Either these two septuagenarians are as strong as linebackers or something's wrong here.



"There are no motor-control requirements on a leg-press machine," explains Stuart McGill, PhD, professor of spine biomechanics at the University of Waterloo, in Ontario. "You just push. In real-life tasks, you have to balance on one leg, you have to sidestep, and you have to get all the muscles to coordinate together. These are very different patterns." Machines such as the leg press and the leg extension give off a faulty assumption that muscles are to be strengthened one at a time—in isolation—rather than in the ever-changing alliances in which they must actually produce and reduce force in real life. According to Cybex's Juris, we need to isolate muscles to get at hidden weaknesses, that, thanks to our body's desire to protect its weakest link, we won't otherwise find.

"If you have a weakness in a particular portion of your musculature, the body will compensate to protect that weakness," says Juris. "The only way you can target that weakness is by isolating a joint." Critics see the targeting of isolated muscle weakness as hubris, plain and simple. "How are you going to isolate every one of those weak areas anyway?" asks Gambetta. "That's a reductionist view of the body. I take a holistic view of the body." Gambetta calls "compensation for weakness" the beauty of the body. "The body is not a machine," he says. "The body is smart."

Many critics also say that health clubs perpetuate the false divide between strength and cardio. "This dichotomy is artificial," says Gambetta. His argument is based on the perceived importance of VO2 max, the term for your maximum oxygen absorption potential and the holy grail of most sessions spent on a treadmill, stair climber, rower, stationary cycle, or elliptical trainer. "VO2 max is a popular yardstick for health because it is measurable," says Gambetta, "but it is just one of many factors related to endurance performance." If it's the steady elevation of heart rate you're after, any strength program based on whole-body movements will have your heart rate elevated as readily as the most popular elliptical trainer. It's hard to understand how we came to the point where a healthy person with two good knees can find himself stepping off an elliptical trainer and climbing onto a commercial-grade Total Gym, a newly marketed device otherwise known as a gravity machine. Aren't we all *living* on a gravity machine?

When he passed away on August 28, at the age of 80, Arthur Jones died having accomplished nothing less than fundamentally rewriting the way we exercise. In the late 1960s, Jones designed the multistation Blue Monster (later renamed the Nautilus), the first user-friendly strength-training machine. His invention "led to the 'machine environment' that is prevalent today in health clubs," according to his obituary in *The New York Times*. The consensus within the health-club industry was that Jones's legacy was for the better, both for the physical health of Americans and the financial health of modern health clubs. Joe Moore, president of IHRSA, says, "Many of the innovations he came up with in the 1970s are still incorporated into strength training on machines of all brands." Nautilus vice president of product development Greg Webb said in *The New York Times*, "The idea of a health club changed. It became big business. Arthur Jones started that."

If that is the case, it might trouble some to know that our machinery-based approach to fitness, far from having been distilled through years of careful academic study of biomechanics, was in fact set in motion by a ninth-grade dropout and amateur anatomist who carried a Colt .45, rode the rails, imported and hunted exotic animals, married six different women who were between the ages 16 and 20 when they married him, and "lived on a diet of cigarettes, chocolate, scrambled eggs, and coffee," according to *The New York Times*. There's no doubt that Jones's invention brought resistance training to the masses, but his claim that he created a "thinking man's barbell" is more marketing than truth. In fact, most strength machines are designed for bodybuilding and require relatively little expertise for either the user or the trainer, and therein lies both their appeal and their flaw.

If you are a bodybuilder—that is, if you have strength trained for years and dieted so rigorously that your body-fat percentage is in the single digits—then it potentially makes sense to train individual muscles in isolation. The other case in which machine-based training makes sense is in rehab, when the body has become so disabled that it must be rebuilt brick by brick. But most of us are neither crippled nor on the verge of entering the Mr. Olympia competition, so why do we train as if either is the case? The answer is a combination of the gyms' desire to maximize profits, and our own desire to find workouts that don't involve work.

"The club owners bought into what the equipment industry told us," says Michael Scott Scudder, a former club owner and a leading consultant to the industry since 1991. And what the equipment makers ultimately told the gym owners was that if you stocked enough machines, you could do without as much one-on-one attention from trainers. "I don't think fitness happens best in isolation," says Steve Myrland, manager of Myrland Sports Training and a former strength coach for the University of Wisconsin and the San Jose Sharks. Various studies back this up, showing that people who exercise in groups maintain greater motivation to train than those who work out alone. "This is hard stuff, and it's a lot easier to share hard stuff than do it yourself. At the clubs, you are going to be turned loose on the machines, and a machine is like an isolation booth."

The desire to retain customers also has led to a modern gym environment that some critics believe sends mixed messages. "The problem with our

gyms is that they misrepresent the fact that you are fundamentally there to do work," says Jack Berryman, PhD, a professor of medical history at the University of Washington and a historian for the American College of Sports Medicine. "The modern gym is a techno holiday with gadgets and lights. They're trying to entertain people." And this can be detrimental to exercisers who are trying to stick with their workouts. Performance psychologist Jim Loehr, EdD, author of *The Power of Story* and chairman and CEO of the Human Performance Institute, in Orlando, Florida, advises busy corporate executives on how to become more successful at sustaining their commitment to fitness. He has found that a primary component for making exercise sustainable is to stop tuning out during workouts. "We don't want you disengaged while you are working out," he says. "We tell ourselves that exercise is so painful that the only thing you can do to get through it is to watch TV. Watching television and working out is a form of multitasking. To me, however, real value lies in paying attention. It is an engagement practice, it gets your mind off work, and it aligns what you're doing with what you're thinking."

Perhaps the best evidence against traditional health clubs is that these days most elite athletes rarely step foot in one. They work out in environments designed for functional training. Evolving on the sidelines of the fitness industry for the last decade or so, functional training, or FT, has become the buzzword within the fitness industry, and many observers feel that it can cure some of the ailments plaguing health clubs.

An FT approach to fitness stresses the training of movements over muscles, the irrelevance of strength without mobility, the neurological foundation to strength and athleticism, and the use of simple tools to gain complex results. The main purpose of FT is to bridge the gap between absolute strength and functional strength, to achieve peak performance, and to prevent injuries, says Gambetta, one of FT's early proponents. In general, FT discourages the use of machines in favor of free weights, body-weight exercises, and certain devices used in physical therapy, such as medicine balls, stability balls, wobble boards, and resistance bands.

The proliferation of FT-based approaches has touched various sports and all levels of athletes. For instance, there's Bill Knowles, director of iSport Training, in Vermont, who has trained various Olympic athletes, and Greg Roskopf, founder of Muscle Activation Techniques, who has worked as a biomechanical consultant for the Denver Broncos, the Denver Nuggets, and the Utah Jazz. Core-training gurus such as Paul Chek and Mark Verstegen have built up extensive client lists with athletes from all the major professional sports. Boutique FT clubs are cropping up all over the country, such as Conrad's Body Tribe, in Sacramento, California; Exuberant Animal, in Seattle; and Myrland's Morning Movement Mayhem, in Madison, Wisconsin. In 2001, Gregg Glassman founded CrossFit, a back-to-basics functional-training program that's popular with the military and law enforcement; it now has close to 200 affiliates, with outposts in almost every state.

Health clubs themselves are also adapting. "Most IHRSA clubs can now offer functional training," says Moore, but you will have to seek it out. "Aerobics areas often have smaller classes that utilize free weights, dumbbells, and different types of balance mechanisms." While men have traditionally avoided large classes, more and more are participating in small group exercises, says Richard Cotton, the American College of Sports Medicine national director of certification. "There's a trend of groups of two or three signing up for a session together," he says, "especially if they are transferring from a machine-based regimen to a functional-training approach, because learning the proper form is essential. Some guys worry that they'll lose bulk, but that's a misperception. You can still make strength and mass gains, and the advantage is that your body will be in better balance." Michael Rogers, a professor of human performance at Wichita State University who has studied functional training in older adults, concurs: "Many young men strength train purely for appearance," he says, "while older men are looking for exercises that will improve function in their daily lives, whether it's a golfer strengthening his swing with a resistance band or a triathlete training his core on a stability ball. They realize it's more meaningful to work out to enhance an aspect of your life." In recent years, manufacturers such as FreeMotion and Hammer Strength Ground Base have built cable-based strength machines and special functional machines to build whole-body strength. Many allow ground-based training that does not conform to a factory-set plane of movement. In fact, my gym has some of these new machines, and a lot of health clubs have them, so there are some good choices to be made in many gyms if you know what to look for. But the essence of training smarter doesn't require a high-end piece of gear, but rather the ability to absorb a small set of principles. Gambetta, who created the Freethinker's Workout (opposite page), recommends using these guidelines to make the best decisions in the gym.

Train on your feet. Sitting is an unnatural body position for strenuous work. Once you sit, you lose your body's natural anchor: the muscles of the back, butt, abdominal core, and legs. Ground-based training immediately puts an end to a host of outdated stationary-machine and free-weight lifts, including the bench press, military press, incline press, and chest press, and leg extensions, leg presses, leg curls, preacher curls, and so on. You'll find that staying on your feet keeps your heart rate up, requires you to think creatively, and keeps your workout moving along efficiently. You're either exercising or walking it off. That keeps your awareness up and boredom down.

Vary your pace. Stationary running or cycling can become a semiconscious plod, anesthetized by television. Structuring tempo builds aerobic capacity, burns calories more efficiently, builds strength, and helps develop the ability to absorb force while in motion. Tempo changes do not have to be intense, only clearly drawn, whether you alternate 30-second efforts or do an "inverted pyramid" of descending durations of effort. Mentally, varying your tempo makes the time go by faster as well. With alternating durations of effort, you are pushing, recovering, or holding steady, and never simply tuning out.

Train movements, not muscles. The five basic movements to develop in any exercise session are limited to different forms of stepping, pushing, pulling, squatting, and rotating. There's no need to do one exercise for your biceps, another for your shoulders, and another for your chest. Two good pushing drills take care of them all. Instead of targeting the upper back and then the lower back, simply pull (in the form of pull-ups or incline pull-ups) and bridge (holding your torso stiff to build strength in your back). For the lower body, lunge, step-down, and squat drills are all it takes, and body weight alone is usually more than enough load.

Train for the four elements: stopping, slowing, descending/ascending, and catching. Many gyms don't value the reduction of force—the catching of a ball, landing from a step-down, or changing direction—because there's no easy way to measure it. Yet stopping, descending, and absorbing momentum are far more valuable for joint safety than any isolated strength-building exercise. This means not only throwing a medicine ball but also catching each return throw or rebound. It means stepping downward on one leg, running downhill, developing footwork agility, and squatting or lunging with control.



Prepare to use the distant corners of your gym. Since gyms are not often set up for clients who move their bodies across space or in multiple directions, who toss weighted balls, or who need to do drills that require stopping and starting quickly, a more athletically based use of your health club will often require taking over its less populated areas. Empty basketball courts, aerobics classrooms, and other open areas are necessary in order to train dynamically indoors, so get used to feeling like a pioneer on the prairie.

While Gambetta's workout can be done in any commercial gym, some exercisers are looking for salvation outside the proverbial box. To build Revolution Defense and Fitness, a small commercial gym tucked away in a light industry business park in suburban Minneapolis, Damian Hirtz spent about as much on gear as the typical health club spends on its pec deck. Hirtz's low-tech fitness center is an affiliate of CrossFit and has a climbing rope, kettlebells, medicine balls, jump ropes, a set of heavy bags, a set of big plates, and a chin-up station made from galvanized pipe he admits he bought in the plumbing aisle at Home Depot. That's about it. No machines, no mirrors, no benches.

It's not that he's cheap. It's just that it's hard to break the bank when you've intentionally turned your back on the vast majority of gear that adorns the floor of the typical gym. "Why do I want distractions?" says the 33-year-old father of two boys, ages 6 and 13. "My clients want a workout that's fast and efficient." One of those clients is Brian, a 36-year-old mechanic, who is currently banging out the 30 pull-ups required for today's "Dirty 30" workout, a timed set of 30 box jumps, walking lunges, kettlebell swings, medicine-ball wall throws, and other full-body exercises scrawled on a marker board. Hirtz allows Brian, and the other guys and one woman in attendance, to do the chin-ups with resistance bands to help them get over the bar. Or they get themselves up by swinging their torsos. Or they break up their work into smaller sets. Pulling is pulling.

All that's required is that they do today's workout together and mark their workout time when they're done. "You compete only against yourself," says Hirtz, "but you might work a little faster if you notice the guy next to you is working harder than you are." Joining us for today's effort are a 36-year-old bariatric surgeon named Chuck, a 33-year-old insurance underwriter named Mark, a 57-year-old musician named George, and a 36-year-old trainer named Gina. They share little in common other than no one looks overly fed or overly built. To a man (and one woman), they look lean and all-around strong. "Put them in any sport," says Hirtz, "and they can hang."

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