

# SPRINT WORKOUTS

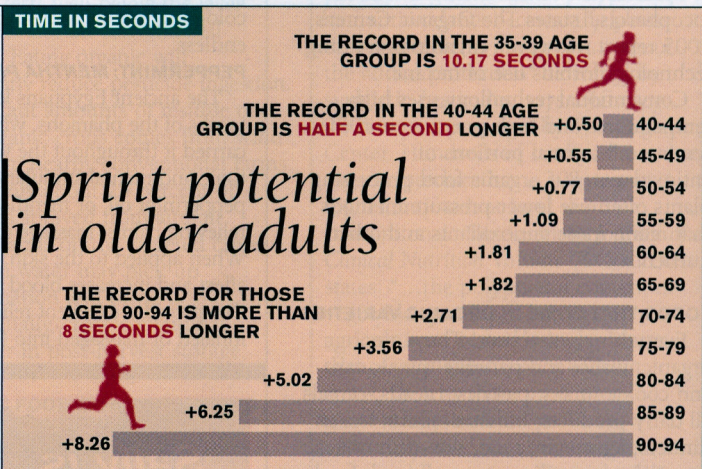
The performance of aging sprinters was recently compared by a large newspaper. From the viewpoint of speed and peak performance, the report shows that for every five years of life, peak performance goes down. **By Phil Campbell**

**F**or fitness professionals, this report means that if a client (who happens to be a 60-year-old former sprinter) asks if he has a shot at making the next Olympic team in the 100-meter sprint, you can show him this report and tell him, it's not going to happen. But, there's some great news in this report worth sharing with this client and all your middle-aged clients.

While the Olympic Sprint Team wouldn't be a realistic goal for most trainees, outstanding results in body-fat loss and fitness improvement can be achieved with sprint workouts – *modified for age and fitness level, of course.* The chart used in the report clearly shows the near-unbelievable potential that middle-aged and older adults have when fitness professionals add anaerobic sprint training (and the necessary progressive buildup programming) to fitness training plans.

While the chart deals with running sprints, *keep in mind there are many forms of sprinting* – sprint swimming, sprint cycling, and sprint cross-country skiing, just to name a few. There can even be sprint power walking if the cardio exercise recruits the fast-twitch muscle fiber to accomplish the sprinting aspect of the program, and it gets your trainees really winded in 30 seconds or less.

Look at the chart and compare a 60-year-old sprinter in terms of fitness and performance with the total



population, and I think you'll see the wonderful potential sprint training can provide for your trainees – not to mention attracting new clients to the fitness professional who produces superior results. In fitness centers, sprint training certainly draws attention to knowledgeable trainers – *especially from prospective clients who perform book-reading pace cardio for hours and wonder why they haven't seen any improvement in years.*

The chart shows that the 60-year-old adult sprinter is only 1.81 seconds (less than two seconds) slower in the 100 meters than his 35-year-old counterpart. And, at age 60, he is **only** 2.2 seconds slower than the current world record holder, Asafa Powell, who ran 100 meters in 9.77 seconds in his early 20s. Your optimistic trainee won't be able to make the Olympic Sprint Team, but think about this for a moment. There are 60-year-old sprinters

who are only 2.2 seconds slower than the world record.

If you want to fully appreciate the significance of what this means for your middle-aged and older trainees, try this next time you see a 100-meter track & field event on TV. The moment the first place athlete crosses the finish line, count out loud, "One-thousand-one, one-thousand-two." Then visualize your 60-year-old client crossing the finish line. That's how fast and furious a 60-year-old man can run. And that's how much potential sprint training brings to the table for healthy middle-aged and older adults.

At age 85, the potential exists to only be 6.25 seconds behind the 35-year-old, and 6.65 seconds slower than the 100-meter world record. That means that the world record holder will finish the race and the 85-year-old will be around the 60-meter mark. At age 85, I'll take that deal all day long!

## USE COMMON SENSE & PROGRESSIVE RAMP-UP TRAINING PLAN.

Obviously, I'm not talking about taking middle-aged newcomers to the track and having them run several 100-meter sprints back-to-back. Starting with slow-intensity cardio and building to moderate-intensity, with higher velocity of movement, is the wise place to begin the cardiovascular conditioning process and fast-fiber development process, which is necessary to prepare the body for the wonderful benefits of anaerobic sprint training.

While we are born with slightly different muscle fiber composition, researchers show that the two types of fast-twitch muscle fiber can be developed if exercised properly. Unlike the masters track & field sprinters on the chart, most people become slow-twitch oriented in their 20s. And many people continue developing slow-twitch muscle with most fitness improvement programs today. This means that most adults are taking half their muscle fiber (the two types of fast fiber) and throwing it out the window. And this is a huge mistake!

*Use it or lose it* applies to fast-twitch muscle because these muscle cells are in the body for a lifetime. And they are in the body for a reason. Like many systems in the body, fast-fiber muscle cells get small and weak when they aren't used. If you think about it, most people unknowingly start the muscle withering process (atrophy = the wasting away of muscle fiber) on half of their muscle cells before age 30, because they think they should be doing long-slow, book-reading pace cardio.

From a fitness programming standpoint, using a progressive cardiovascular conditioning and fast-fiber training ramp-up strategy is wise, because it takes six to eight weeks of progressively building the fast muscle cells in legs and core muscles to run sprints and perform high-velocity sprint cardio on a cardio machine. Typically, I suggest only doing two to four 30-second cardio



sprints on a recumbent or upright bike initially, because the bodyweight is supported. And this lessens intensity for those who are new to sprint cardio. Using a cardio machine to support the bodyweight significantly reduces intensity on the hamstrings, quads and Achilles, whereas going straight to running sprints reaches max intensity on these muscle groups that need time to adapt to higher velocities.

While the recumbent bike can be tough on the glutes and the upper hamstrings, this machine gives the trainer control of the resistance and control of the velocity of movement, which is important during the early stages. Don't lessen the work effort of your clients during cardio sprints on a machine, but slightly slow down the velocity of movement initially (by turning up the resistance level) and advance to faster cycling

movement progressively during the six-week buildup period. Some trainees may need the six weeks, but don't be surprised if some clients improve quickly in conditioning and velocity of movement.

After the anaerobic conditioning base is in place and the fast-fiber is adapting to the velocity of the 30-second, cycling cardio sprints, trainees may wish to increase intensity by running sprints. Some runners may wish to jump right in and run sprints. However, distance runners need to take a similar progressive buildup approach. Serious distance runners still need progressive anaerobic, ATP-CP energy system conditioning, and fast-twitch muscle fiber strengthening specifically for running fast with higher knee action, which only comes when muscles adapt to running fast. A few sessions of sprint cardio on

a machine to lessen intensity on the hamstrings initially is a wise strategy for the progressive buildup phase.

#### **MY FAVORITE CARDIO SPRINT PROGRAM FOR NEWCOMERS**

The recumbent bike is my favorite machine for newcomers to sprint training because it gets all aspects started in the right direction a few weeks before running sprints. After a two-minute warm-up on the recumbent at a very low resistance level, raise the resistance level (example: on a 20 resistance level machine, perhaps experiment using level 8 to 10 for the initial cardio sprint, and level 2 for the warm-up and recovery phases).

For the cardio sprint, have your trainees pedal for 30 seconds of hard and fast work. Encourage clients every 10 seconds to "keep going," "half way," "15 seconds to go," or "hang onto it." For the last 5 to 10 seconds, give clients a countdown, "almost there, 5, 4, 3, 2, 1, you're finished. Go slow and breathe deep."

Once each sprint is finished, immediately drop the resistance down to the warm-up level, and instruct trainees to pedal slowly for a full, 90-second recovery.

During the recovery, a few endurance-trained clients may ask if going faster during the recovery is better. "No, it's not" should be the answer, and explain, "The goal is to recover so more intensity can be placed into the next sprint." For many trainees, a 90-second recovery will come around too fast. But the 90-second recovery will keep clients' heart rate up, so you will be multi-tasking an aerobic and an anaerobic workout in a 20-minute time frame.

Once clients become cardio sprint conditioned, explain that if they can go for more than 30 seconds during the cardio sprint, the intensity is too low. Technically, you are trying to use up the stored energy in the ATP-CP energy

system so the body will get into the lactate energy system as quickly as possible. Long-slow cardio seeks to keep people below lactate threshold, and while it's not pleasant, reaching lactic acid quickly is where sprint training hits the triple-bonus jackpot by releasing significant amounts of exercise-induced growth hormone.

#### **RUNNING SPRINTS**

Once your trainee is ready for the full sprinting workout, find a stable and reliable surface. A soft track is perfect. And grass is good, if it's a reliable and trusted surface.

People who have been doing interval training may feel like they are ready for sprint training, but sprinting is a totally different animal. Trainees seem to understand when it's explained that running intervals recruits the fast IIa muscle fiber (that moves five times faster than the slow), but sprinting takes it up to the IIb muscle fiber recruitment level (moves ten times faster than the slow); and once the stored-up energy in the ATP-CP energy is depleted (8-10 seconds), lactic acid hits hard and fast. So it's important to begin with two or three sprints of 60 meters, or 70 yards of a football field. And progressively build to eight sprints over time.

Sprinting doesn't mean running "all out" on every sprint. It means running hard enough to get really winded. The first of eight 70-yard sprints should be at 30 percent speed/intensity pace, and increase in speed to 60 percent during the last 20-30 yards of the sprint. When reaching the finish line, instruct clients to keep the toes up, ankles dorsiflexed, and spend at least 10 yards slowing down after the sprint. Stopping too quickly at the finish makes the hamstrings flop around and this can increase the risk of injury. Also, dropping the toes at the finish line places undue stress on the patella and patellar tendon in front of the knee.

Spend the 90-second recovery



walking back to the start line after every sprint. And encourage trainees not to rush the recovery so they can place more intensity into the following sprint.

The second sprint should begin at a pace of 40 percent speed and increase to 60 percent speed. Third sprint begins at 50 percent and increases to 70 percent speed. Most individuals should stop after the second or third sprint during the first few sessions to insure that the fast fiber is ready to take it up to really high levels of anaerobic speed/intensity.

When your trainee is ready, sprint number four begins at 60 percent speed and goes to 80 percent. Sprint five begins at 70 percent and goes to 90 percent. And sprints six, seven and eight are at 95 percent speed/intensity.

Always have trainees listen to their body, and just before running each sprint, assess, assess, before moving to the next sprint. Questions to ask include, "Are you really warm?" "How do your hamstrings feel, loose... tight?" You get the picture. Progressively go through all eight sprints, assessing along the way on every sprint during the first few training sessions of the full sprint 8. The goal is not to do eight 70-yard sprints on the first day. The goal is to do eight 70-yard sprints without injury.

**WHATEVER YOU DO, DON'T DO THIS!**

Don't start with a hard, all-out sprint when running sprints. Even if you are young and in great cardiovascular shape, sprint cardio is clearly the most productive type of cardio training, but running sprints is also the most risky. Supporting your body weight on a cardio machine lessens intensity and this provides trainers a great tool to progressively add intensity and build fast-twitch fiber for running sprints later. Hamstrings are a primary target for injury. And anyone with a heart condition or medical problem should get physician clearance before performing anaerobic exercise. Even young athletes in great cardiovascular condition,

need to progressively ease into fast-fiber sprinting workouts.

If you train any ex-jocks, remind them that it takes several weeks of progressive buildup to strengthen the fast muscle fiber, and they should resist the temptation to "air-it-out" on the last sprint until they have at least eight weeks of progressive conditioning.

Another very important point to remember is that during the sprint intervals, a person may be tempted to clutch onto the machine if it's a treadmill, revolving staircase or elliptical trainer. From the get-go, inform your trainee that grabbing the machine's rails will defeat the entire purpose of sprint cardio, and may even result in back and hip strain, and possibly foot problems (in the case of the treadmill, since holding on during a sprint makes the feet slam down unnaturally hard). Encourage body movement that resembles natural movement in the open as much as possible: hands off the rails when using the treadmill and revolving staircase, and only light fingertips on the elliptical rails, if at all.

Sprint training is the most effective tool a fitness professional can have in the training arsenal, but it takes thought and a progressive intensity buildup of the heart muscle and the fast-twitch fiber specifically for the exact type of sprinting movement.

**BE PREPARED FOR BUSINESS GROWTH**

Be prepared for business growth as you deploy sprint training in your fitness plans. As clients experience the endurance gains only possible from this type of training and begin telling their friends about their results with your training plan, be prepared for prospects to ask questions about sprint training. Explaining how the three energy systems line up with the three muscle fiber types, and how to release exercise-induced growth hormone, should quickly turn a prospect asking some questions into a long-term client. 📌