

the **CrossFit** JOURNAL ARTICLES

Training for Special Medical Populations

Cardiac Concerns

Jennifer McKenzie

We all have those exercises that we hope won't pop out of the hopper. Mine include heavy thrusters and Tabata pull-ups. Why? Because they test my abilities and highlight my weaknesses—they're hard! If you gathered your potential clients into a hopper, are there some you're hoping you won't have to deal with? Maybe you dread getting a call from that client with heart disease because you have less experience or the challenge is risky. Training the unfit or sick is hard. It can test our abilities not only as a trainer but as a person.

Working with special populations is a new challenge for many CrossFit trainers. As more and more people discover the benefits of CrossFit, we will see a corresponding increase in clients with a variety of maladies such as coronary arterial disease, multiple sclerosis, lymphoma, and cancer. CrossFit can uniquely benefit these patients who struggle for health. Every client who walks through our door has a purpose: to get better. Every workout, every rep, every grueling second is all about getting better.



Trainers walk a fine line when they work with clients who are medically fragile. A common thread with cardiac and pulmonary patients, as well as many other types of special populations, is that the client's capacity to do work is often greatly diminished. Furthermore, they are typically being told by the medical community not to push themselves beyond what feels good. As a result, they suffer a lack of confidence in their ability to do anything physically demanding. The CrossFit approach to performance based measurements is a great tool for assisting clients who, in the end, just want to see an improvement in their quality of life.

Heart disease can vary drastically from client to client, even within the same client over a period of time. There is no doubt that training a client with a heart condition will be more demanding of your time and knowledge as a trainer. Being an effective coach for this type of athlete requires a lot of preliminary work, including research and an in-depth discussion with the client and his or

1 of 3

Training for Special Medical Populations (continued...)

her medical team. You may find yourself learning new skills and doing things you never thought you'd do, like taking blood pressure before, during, and after exercise. You should also familiarize yourself with the medicines your athletes are on and how they affect the body. You don't need to be an expert in cardiology to work with a client who has heart disease, but you should have an up-to-date understanding of your client's condition and how it is affected by exercise.

A very real challenge when working with clients with heart disease is knowing which limitations are self-imposed (and can be pushed for the client's benefit) and which limitations are real and potentially dangerous to push beyond. Talking to the client's physician will take a lot of the guess work out of training your client. Ask for specific, concrete limitations such as a maximum blood pressure or heart rate. More often than not, the physician will give his patient no restrictions at all. Your client is your next best source of information about his or her condition: after all, they're living with it. Listening to your clients will provide you a number of insights, including what limitations they perceive they have and what coping methods they have been using. Once you know their real vs. perceived limits, you will be more confident and effective in coaching them through a CrossFit workout.

You can alter rather than completely rewrite programs to suit cardiac patients and other special populations. To do this, you need to know how to appropriately scale the workout and how to judge when you can progress. The universal scalability of CrossFit is what makes the program work for any clients who are willing to push themselves to get better. Lifting a wooden dowel off the floor with perfect form and then pressing it overhead is where we start with all of our clients, with or without heart disease, so that we get the mechanics correct. Once clients can consistently perform basic movements, we add weight. When they are comfortable with weight, we can begin to gradually increase loads and/or add the elements of time and reps to reap the benefits of intensity. With cardiac patients, this progression doesn't change. We still start with form and mechanics, and then work on consistency and add intensity as tolerated. As with healthy clients, the rate at which cardiac patients progress is widely varied based on their condition. Some of our athletes will never experience the lactic acid burn and heart rate pound of a three-minute "Fran," but those clients they can still experience the joy and fulfillment

and challenge of performing functional movements at a relatively high intensity.

The best gift we can give our medically challenged athletes is the knowledge and ability to perform their daily tasks with more efficiency. All the weightlifting exercises CrossFit advocates can be used with clients who have a heart condition. The squat and deadlift are perfect movements to start with. Monostructural exercises such as running, swimming, biking, and rowing can be scaled to the patient's comfort zone. Gymnastics exercises help increase not only strength but also body control and awareness. Push-up mechanics and stimulus can be modified nearly indefinitely, from pushing the body away from a wall while standing at a slight incline against it to doing full handstand push-ups. Pull-ups variations can be performed without the feet ever leaving the floor, at various inclines, using bands, or with a spot. Overhead presses are useful unless the patient has had recent open heart surgery. The progression overhead for those who have had open heart surgery—who have had their chest muscles cut and their sternum cracked—will take a lot longer than most, and some clients will never get there. (Weakness, inflexibility, and phantom pain from this surgery can last for years.) The most appropriate place to begin with these patients is range of motion exercises before adding any kind of weight. Again, the actual mechanics of movements don't change at all. Scaling exercises up and down to fit the needs of a client is an art practiced by CrossFit trainers. For cardiac patients or others with medical conditions, it just requires additional attention to the specifics of their situation.

As mentioned above, this population often suffers a lack of confidence in their abilities to perform physical tasks. In the CrossFit setting, with the input of competent trainers, our athletes receive immediate, positive feedback. Medical measures of markers such as cholesterol, triglycerides, fasting blood sugar, and blood pressure are all important, but it may take months for clients to see positive changes in these variables. Statistically, more than half of new exercisers quit their programs before enough time has elapsed for them to see these positive results. CrossFit's reliance on performance-based measurements allows clients to immediately see the progress they are making. Learning to squat on the first day is a huge success. Every workout is an opportunity for accomplishment and improvement.

Training for Special Medical Populations (continued...)

The majority of cardiac patients that we see have already completed a twelve-week phase II cardiac rehabilitation program. Phase I occurs while the patient is still in the hospital and consists primarily of education and working to get the patient out of bed. In a few weeks (if their doctor prescribes it and insurance pays for it), clients generally begin twelve weeks of phase II cardiac rehab. Most phase II programs include three days per week of medically supervised low-intensity endurance activities monitored by EKG. This program avoids any stress on the heart and focuses on allowing the patient to become comfortable with being active again. The patients also receive continuous education and support from clinicians and each other. A minority of programs will include some element of strength training. The goal of a cardiac rehabilitation program is to help the patient regain some strength and ability to move, prevent their condition from worsening, and prevent future heart problems. Although I highly recommend a phase II cardiac rehabilitation program, twelve weeks of this kind of therapy isn't enough for many patients to close the gap between what their work capacity is and what they need it to be to have a fulfilling life. My goal as a trainer is close that gap.

One man I worked with came to me with acute congestive heart failure. Most physicians would not clear such a patient for exercise, but he got the okay to begin walking. I secretly planned to squeeze in a few squats at various increments along the way. I quickly learned that working with cardiac patients requires flexibility in programming. On our first session, he walked out his front door and to the corner of the next block before wheezing and calling it quits. I also learned that every client progresses differently. The next day, he walked three blocks to the park before heading for home. Within the month, he was walking around the park

(about a mile). Although jogging was beyond his limit, he completed the mile walking forward, backward, and sideways, with lunging and squatting at various intervals. When he went to see his doctor again for the next round of blood work, EKG, and other tests, the doctor told him that, on paper, he shouldn't be able to walk across the room. Sometimes the medical variables don't improve with cardiac patients, yet sometimes they do. Either way, this client still succeeded and gained back some of his quality of life.

When I train clients with heart disease, the completion of the workout (no matter how scaled down) is the goal. Workouts are given task priority. Yes, they can complete a scaled "Fran." We may not use a clock, they will probably use a dowel and some bands, but they can do "Fran." And most importantly, they are stronger and more capable as a result. Every workout has a purpose and offers a chance for growth.

My success as a coach is affirmed not only in my star athletes' performances in competition, but also in the small improvements and increasing capacities of all my athletes, both inside and outside the gym, on a daily basis.



Jennifer Marder McKenzie owns [CrossFit Hyperformance](#) in Savannah, Georgia, with her husband, Drew McKenzie. They met at the local hospital, where Drew was working as an exercise physiologist when Jennifer's CrossFit workout caught his attention. Both have earned master's degrees in exercise physiology as well as CrossFit level-I certifications. Drew maintains his CSCS certification and coaches wrestling for his high school alma mater. Jennifer is an ACSM Clinical Exercise Specialist, extending CrossFit methods to various special populations.