Transcript Details
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Understanding CPET for Athletes: Protocols and Pitfalls

Announcer:
Welcome to *Heart Matters* on ReachMD. On this episode, we'll hear from Dr. Benjamin Levine, who's a Professor in the Department of Internal Medicine at UT Southwestern Medical Center and a member of the Division of Cardiology as well as the Director of the Institute for Exercise and Environmental Medicine at Texas Health Presbyterian Hospital Dallas. He'll be sharing advanced cardiopulmonary exercise testing approaches for elite athletes, which he discussed at the 2026 American College of Cardiology Annual Scientific Session and Expo. Here's Dr. Levine now.

Dr. Levine:
You can't just buy a metabolic cart, stick it in a room with a treadmill, and think that you know how to evaluate an elite athlete. It's not just interpreting a test, but understanding the underlying physiology. That's most important. So that's, I think, my first practical step. That could be reading, it could be going and visiting another laboratory that uses CPET on a regular basis—that can help with challenging cases and getting experience doing that before you just do it yourself.

I would say, particularly at the beginning, don't just hire an exercise physiologist, stick them in a room, and then go walk to see a patient in another room. Cardiologists or clinicians who want to start doing CPET need to be there during the testing, particularly at the beginning, to make sure that they watch and see how the athlete is performing and understand what's going on over the course of a test. I think there really is no substitute for watching the athlete and being physically present. And the more complex the testing that you're doing, the more knowledge base you have to have; that's a big knowledge base. It doesn't just come from liking sports. It comes from in-depth reading; attending symposia, like Care of the Athletic Heart; and making sure that you're participating in meetings like the American College of Sports Medicine, the American Medical Society of Sports Medicine, or the European Congress of Sports Sciences. All these will expose the clinician to real basic exercise physiology.

I would urge every clinician who's starting a CPET to throw away the Bruce Protocol; that's what's going to be programmed into your device, but it's useless for a competitive athlete. In fact, I will go so far as to say I think it is completely inappropriate. The changes in speed and grade are completely irrelevant for competitive athletes. I hope that you'll be able to buy a large enough treadmill that you can control the speeds and grades. I hope that you'll establish your own protocols, like a version of the Saltin protocol, which includes a prolonged submaximal stage and two prolonged submaximal stages followed by an incremental test to max.

Those are the things that you really need to know. And then as you get better at it and are talking to the athletes' coaches and understanding what the coach wants, you can, from a cardiopulmonary exercise test, get not only VO_2max and various thresholds—what I call the maximal steady state—but you can measure exercise economy. That can be done by running or by cycling, and you can measure the velocity during running at VO_2max, which correlates most closely with things like 5,000 meter performance. So I think that the better your understanding of exercise physiology, the better you will be at applying CPET to your clinical practice.

Announcer:
That was Dr. Benjamin Levine talking about how we can optimize cardiopulmonary exercise testing in elite athletes. To access this and other episodes in our series, visit *Heart Matters* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!

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