TuSalud

Winning Measures

Athletes at all levels are using high-tech devices to boost their sports performance.

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When it comes to competing against others or yourself, serious contenders at all levels of fitness show a keen interest in enhancing their athletic prowess. Now, some athletes looking to win are opting to use high-tech data collection devices, called fingertip pulse oximeters, to measure their blood oxygen saturation levels. By monitoring the amount of oxygenated hemoglobin in the blood, they’re able to know whether they have enough oxygen in their muscles and tissues to boost athletic performance.

Dotsie Bausch

Dotsie Bausch, a 2012 Olympic silver medalist, seven-time USA Cycling national champion and a two-time gold medalist at the Pan American Games, incorporates pulse oximetry into her training regimen. She prepped for the 2012 games with a Masimo pulse oximeter she says helped her to change how she trains and recovers.

In turn, Bausch showed Antoinette Padilla, a track-and-field athlete who just missed making the team that went to Rio for the 2016 Olympics, how to use the MightySat. (Padilla is currently training for the London World Championships in 2017.) Bausch also introduced John Porter, a father, professional personal trainer and masters track and field athlete, to the MightySat.

In general, these devices work by shining light through a finger so that the pulse oximeter's sensors can calculate how much oxygen is in the blood. This key measurement helps individuals evaluate and revise their training programs to avoid overtraining or undertraining.

Here, these athletes, who are all brand ambassadors for Masimo, talk about their use of pulse oximetry and the MightySat device.

Please briefly tell us what sport you play, how you train, how many days you work out and what your exercise program involves.

DOTSIE: My sport is track cycling. I am now retired after the 2012 Olympic Games. But for 15 years leading into that Olympics, I trained twice each day for six days each week. My workout program involved a big strength training base, about 25 hours a week on the road bike, 10 hours per week on the track bike, speed work, neuromuscular speed and coordination work, balance and agility work and lots of mental prep!

ANTOINETTE: I run track professionally. I run the 100-meter and 200-meter dashes. I train four to five times each week.

JOHN: Track and field is the primary sport I compete in. I also participate in local CrossFit competitions from time to time. My training for those sports is broken up into two segments: in-season training and off-season training. Off-season training is based on the CrossFit Football/Power Athlete program by John Welbourn, as well as my own program, which consists of various training modalities. My in-season program is a combination of training systems that relate to my given event and strength training provided by John Welbourn and his team. I'm a personal trainer certified by the National Academy of Sports, and, having multiple certifications, I enjoy challenging myself and adding fresh components into my programs.

MightySat Pulse Oximeter

In what ways do you use the MightySat to help you train, stay fit or improve your athletic performance?

DOTSIE: Pulse oximetry is a valuable tool for any athlete competing in a multitude of sports to guide them through health and training decisions. Athletes using pulse oximetry to guide daily training and living activities are going to have a distinct advantage over those who don’t. Knowing that something is not going in the right direction before it becomes a problem is essential to prevention of overtraining or undertraining. Monitoring oxygenation can function as a spot check for athletes to know that they are capable of having a really good training session—or if they are not hitting their training goals, a direction to the reason why.

The pulse oximeter and the other variables of the MightySat pulse oximeter can be used as a

prevention tool. The reward is that it may pay off just before or at a crucial sporting event. Finally, it is a great feeling for the athlete to know what is going on inside the body. Use of oxygen measurements can give the athlete confidence that the body's physiology is doing well and that nothing has changed. When you have the confidence that everything is going as planned, this can be as valuable as actually training. Knowing the body is optimally oxygenated gives an athlete a mental edge that everything is going as well as possible.

ANTOINETTE: I use the MightySat to aid in recovery. I train very hard, and recovery is key to running faster. If I'm not properly recovered, my performance suffers.

JOHN: I use my MightySat oximeter four times each a day: when I wake up, before my workout, after a workout and at bedtime. This allows me to track how my body feels as well as how it's reacting to my current training program.

Of what value to you is measuring oxygen saturation in your blood?

DOTSIE: Autonomic nervous system biofeedback is very important for me. During breath-holding exercises, I can see in real time how my SpO2 (blood oxygen level) and heart rate responds. In addition, I can visually appreciate the SpO2 optimizing my breathing techniques. Also, I can plan for optimal oxygenation to address different situations that might arise, such as competing at sea level and experiencing altitude problems, and when I'm fatigued or ill. When you measure blood oxygen levels, it removes the guesswork out of altitude training.

ANTOINETTE: It's of great value. I never tested that before, and I wasn't aware of how important oxygen saturation is in the blood. Now, I'm aware of it and see the value behind it, because this measurement tells me when I can train hard or not and allows me to adjust my training.

JOHN: It's of high value to me. When I know my oxygen saturation rate, this allows me to know ahead of time whether I should go all out or scale back my intensity and duration for that particular day. If my body can't provide a sufficient amount of oxygen to the blood that flows into my working muscles, it'll greatly affect my results. That's something I cannot afford.

How did you learn about this device, and how easy or hard is it to use?

DOTSIE: I learned how to use the MightySat from my Australian track cycling coach; it's very easy to use.

ANTOINETTE: Dotsie showed me how to use the device.

JOHN: I learned about it through my good friend Dotsie Bausch. She filled me in on the MightySat oximeter and how it could change the way I train and recover forever. Based on her testimony about using the device to prep for the 2012 Olympics, I was compelled to give it a go.

John Porter, Jr.

After you use the MightySat to monitor your athletic conditioning, how do you effectively use that information to improve your athletic performance?

DOTSIE: I use the SpO2 and pulse rate numbers generated by the device every morning and night to guide the intensity of my program and recovery from my workouts. The device offers me an individualized review of how my body recovers from workouts, which allows me to make key changes to the design of my training program with my coach so I don’t overtrain or undertrain.

ANTOINETTE: This information is part of my morning and nighttime regimen, and I use it every day. I also use the device to check my hydration level. Since my sport is performed outside and summer days are hot, I want to make sure I’m hydrated because that affects your performance as well.

JOHN: Based on the digital readout on the device, I can modify my day-to-day training regimen in real time. In addition, I use it to vary my program so my training is more effective.

How do sports experts regard athletes incorporating these devices into their training program?

DOTSIE: They think these devices are the next wave in tracking athletes’ fitness and recovery, and they expect that pulse oximeters, such as the MightySat, will take the market by storm.

ANTOINETTE: Some have to try out these devices so they can see what its value is. I believe they can help athletes improve their performance and recovery. I tried using it for a week, and I was amazed. Sometimes you don’t realize if you’re overtraining.

JOHN: Every professional in the industry speaks very highly of utilizing a device like this with their athletes. As a coach, it is our responsibility to guide our athletes in the right direction so that together we achieve positive and lasting results.

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