Drinkable Oxygen? New Study Investigates Super Oxygenated Water Claims

By Mark Anders

The Claims:
Aqua Rush (aquarush.com):
- "dramatically elevates the levels of dissolved oxygen in the water...ten times higher than the tap water you are drinking at home."
- "Promotes more energy; increases blood oxygen; reduces pulse rates; promotes alertness; increases stamina; improves digestion."

SerVenRich (servenrich.com):
- "SerVenRich is bottled with 800% more pure oxygen than ordinary water."
- "Serves higher energy levels; Maintains greater mental concentration..."
- "It’s the water my daughters, Serena and Venus, rely on during their training," Richard Williams says. "It’s the water, they need while on the court, as they train and prepare for their training, for their match."

Athletic Super Water (anewlife.co.uk/oxygenized-super-water.html):
- "Oxygen content of Athletic Super Water is up to seven times higher than that of regular bottled water and up to 10 times higher than normal tap water."
- "...perfect for the athlete looking for a competitive edge or anyone who wants to be truly healthy."

Rush, Athletic Super Water, SerVenRich and AquaForce boast up to ten times more O2 content than normal tap water. And more is better, right? Advertisements say the body absorbs the extra O2, resulting in improved stamina and athletic performance, reduced recovery time, and better mental clarity. So ACE enlisted the Human Performance Research Lab at the University of Wisconsin, La Crosse to test those claims and compare the physical performance effects of super oxygenated water, which range in price from $1.00 to $2.50 per liter, to those of regular tap water.

The Study
Led by John Porcari, Ph.D., the research team recruited 12 healthy, college-aged women and men to participate in the study. Separated into two groups of six, subjects were randomly assigned to drink either 16 ounces of super oxygenated water or regular tap water. [Note: researchers chose to use Aqua Rush and Aquaporcari for this test because it is one of the most readily available products for consumers.]

After drinking the assigned type of water, subjects sat quietly in a chair for five minutes while researchers measured heart rate, blood pressure, blood lactate, and oxygen consumption. Next, each subject performed a multi-stage VO2max test on a treadmill. At the end of each stage (and at maximal exertion), heart rate, blood pressure, ratings of perceived exertion (RPE) and oxygen consumption (VO2) were recorded. Blood lactate was also measured at key times throughout the test. One week later, subjects returned to the laboratory and completed the same protocol using the opposite condition (i.e., drinking the other type of water).

The Results
Researchers found that drinking super oxygenated water had no measurable effect on the subjects’ resting heart rate, blood pressure or blood lactate values. Similarly, there was no effect on heart rate, blood pressure or blood lactate values during either the sub-maximal or maximal exercise tests.

Ahead of His Time
In 1774, when scientist Joseph Priestly first isolated oxygen he noted, “The feeling of it to my lungs was not sensibly different from that of common air, but I fancied that my breast felt particularly light and easy for some time afterwards. Who can tell in this time, this pure air may become a fashionable article in luxury.”

Porcari says the results of the study were not a surprise to the researchers. There are only two possible ways to carry oxygen in the blood: Oxygen is either bound to hemoglobin or dissolved in the plasma. “In normal healthy exercisers, hemoglobin is already 97 to 98 percent saturated with oxygen,” explains Porcari. “Obviously, there is very little room to improve upon this factor.” And the only known way to increase the amount of oxygen dissolved in the blood is to increase the partial pressure of oxygen in the lungs by breathing either hyperventilated (higher percentages of oxygen) or hyperbaric (greater pressure than can be found within the body) oxygen mixtures during exercise. Both techniques have shown increases of dissolved oxygen in the plasma and have resulted in lower exercise heart rates, lower blood lactate values and higher maximal oxygen consumption values. However, this technique is only valuable during exercise and not beneficial if done pre-exercise or during recovery.

In addition, Porcari notes that the super oxygenated water must first be ingested and absorbed in the gut. Even if the oxygen is absorbed, he explained, it would have to be absorbed into venous blood. As soon as it passes through the lungs for the first time, the blood would either release oxygen at the alveolar membrane or, more likely, not pick up as much additional oxygen.

Although the researchers studied and analyzed only two different brands of water, Porcari is confident all of the super oxygenated waters on the market would provide similar results. “I don’t think it makes much difference how much oxygen the water contains,” says Porcari. “They can pump a thousand milliliters of oxygen into the water but there’s still no physiologic mechanism to get that oxygen in the blood stream where it can be used.”

The Bottom Line
At this time, there is no scientific evidence or logical rationale to suggest that drinking super oxygenated water can in any way increase the amount of oxygen in the blood stream. Therefore, any potential benefits of super oxygenated water would undoubtedly be attributed to the placebo effect. The bottom line is that this stuff is no more beneficial than regular tap water,” says lead researcher John Porcari, Ph.D. “The physiological mechanism is not there to get any potential benefit from the extra oxygen. There’s just no physical way this product can improve blood oxygenation.”

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The Theory Behind Super Oxygenated Water
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Children's Room
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What's Really in the Water?

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TAP WATER SAMPLE
Aqua Rush (sample 1) 7.1
Aqua Rush (sample 2) 7.7
Aqua Rush (sample 3) 7.9
SerVenRich (sample 1) 7.0
SerVenRich (sample 2) 6.6
SerVenRich (sample 3) 6.8
Normal tap water 7.1