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A PRELIMINARY REPORT: The metabolic effects of Sports OxyShot and placebo on trained athletes in response to several aerobic exercises

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INTRODUCTION

Sports OxyShot is an electrically-activated liquid oxygen supplement providing a verifiable 150,000 ppm (15% v/v) diatomic oxygen at time of manufacture. It is an outgrowth of an American product with only 5% oxygen content. The Australian product is by far superior due to greatly improved manufacturing practices and has been widely used throughout Australia by hundreds of athletes for achieving optimal performances through enhanced physical endurance.

STUDY PURPOSE

A six-month-long research project was initiated in May and concludes in late November 2005 for the purpose of investigating the product's presumed facilitation of peak athletic performance through enhanced endurance. A suitable placebo (a dilution of chlorinated water) was also used in this randomized and blinded study.

TEST SUBJECTS

Originally, nine healthy male and female athletes, aged between 19 and 27 years (mean 22.9 years) volunteered for 6-month physical exercise trials that consisted of cycling (on a stationary bicycle ergometer), running (performed on a motorized treadmill) and skiing (done on short roller-skis on an oversized treadmill with participants wearing harnesses that are attached to ropes to prevent them from shooting back off the moving surface). But out of the nine, only 6 fulfilled the entire trial. One subject had to stop due to Meniere's disease which appeared after 3 months into the study; and two other subjects dropped out in the beginning of the 5th month when fall classes at one of the local universities commenced, that required them to both carry heavy class schedules.

EXPERIMENTAL PROCEDURES

For each of the exercise trials previously cited, two athletes apiece (male and female) managed to remain with the program until its near completion (as of October 31st 2005). The cycling participants performed two incremental maximal exercise tests on a cycle ergometer every other week: the first test was always a pre-test; after a 3-minute warm-up at 50 W, the load was increased every 2 minutes until exhaustion. All running tests were undertaken on a motorized treadmill set at 1% grade to compensate for the lack of air resistance during treadmill running such that the energetic cost was equivalent to running outdoors. Both subjects performed a consistent individual warm-up before each treadmill test, and wore the same running shoes and lightweight running apparel on each occasion, every other week. To

stimulate cross-country skiing at the Kearns ice Oval in West Valley City, the final pair roller-skied on an oversized treadmill, while wearing specially fitted harnesses that were attached to ropes to prevent them from shooting off the back of it; they roller-skied every other week to the point of near exhaustion to measure their stamina levels.

DOSAGES

Subjects were instructed to use either the Sports OxyShot or its equivalent placebo twice daily in 10 mils on an empty stomach during non-testing weeks, but given 20 mils of the stabilized oxygen or placebo 30 minutes prior to trials on testing weeks (also taken on an empty stomach).

MEASUREMENTS

Each subject underwent a physical examination prior to the experiments. Body height was taken independently of other measurements at time of physical exams. Body weight was periodically measured throughout the trials, as also were heart rates and blood pressures. Expired airflow and CO2 and O2 tensions from the mouth of each athlete were continuously measured and recorded using an on line breath-by-breath system. (The standard procedure for administering a VO2 max test is to have each athlete wear a clear-plastic face mask and while exercising, breathe into a large hose attached to the bottom of it. The purpose of this test is to see just how well a physically-active body is extracting oxygen from the blood.)

During the same VO2 max testing, every subject's lactate levels were regularly monitored by pricking his or her finger tips and taking small blood samples that were then inserted into a blood lactate analyser. Deep-vein blood draws were additionally made from the wrists sometimes and submitted to a hospital pulmonary lab for blood gas analyses.

PRELIMINARY FINDINGS

Since this study is still underway it has about another three weeks to go. And because of its blinded aspect, we cannot provide definite conclusions until the exercise trials are finished. However, we do have the incomplete data of three of the original nine participants (who dropped out for previously given reasons) to go by. It is from these that the following extrapolations have been made:

A. One pair (a male and female) who went through the study for at least four months, demonstrated much higher peak performances with Sports OxyShot than they did while on the placebo. However in the skiing exercise, their physical performances dipped somewhat with product and fell noticeably with placebo (this was more so with the female than the male subject).
B. The onset of Meniere's disease in the other female athlete was marked by clinically recognizable vertigo, nausea, vomiting, tinnitus, and progressive deafness. What's interesting here is that she excelled in the skiing exercise with Sports OxyShot but not as well in the other two events. Also when her disease symptoms began manifesting themselves early-on while she was still in the program, her vertigo (or dizzy mental confusion) progressed the least while she was still taking the Sports OxyShot, but dramatically increased when she was switched over to placebo and eventually had to withdraw.

C. More importantly, blood lactate levels in two of the three dropouts didn't increase as much as was expected during intensified workouts while they were using the Sports OxyShot. But an elevation in such levels was noticed when they switched to placebo. Also, their blood gas analyses showed definite increases in arterial blood oxygen (PaO2) as well as elevated discharges of carbon dioxide waste matter (PaCO2).

D. The average person's VO2 max is around 30 mils of oxygen for every kilogram they weigh. But in the trio of athletes using Sports OxyShot this seems to have been nicely increased with each event (especially so for the female participating in the skiing exercise just prior to the onset of her Meniere's symptoms). No such raises in VO2 max, however, were detected when the three were switched to placebo. In fact, two of them actually fell a bit while on the placebo.

THEORETICAL CONSIDERATIONS

There is a clear relationship between oxygen supply and lactic acid production. If the local circulation carries adequate oxygen for the exercise rate being performed, then all of the necessary energy requirements may be supplied by ATPs generated by aerobic mechanisms. But if the number of muscle units which must contract to generate the required power exceeds the oxygen delivery and exhausts the O2 stores in places, then the oxygen level will drop to critical levels in each muscle unit and prevent the ATP (which is needed for the muscle contraction) from being generated at an adequate rate by the respiratory enzymes in the mitochondria. This will inevitably result in heightened anaerobic glycolysis to sustain the availability of ATP. The consequence is an increased rate of lactic acid production.

The exact role of Sports OxyShot in all of this still remains, for the most part, something of a mystery. However, from the incomplete data supplied by three study dropouts, we can surmise at this point, that the product does indeed, at least increase arterial blood oxygen. We tend to think that this, in turn, may facilitate better respiration as demonstrated in the somewhat increased VO2 max of each of these three subjects. For, where there is more oxygen intake there will obviously be more energy to be expended. We are also inclined to believe that the enhanced discharges of CO2 waste gases by the product, ultimately contributes to lactic acid reductions. With such lower anaerobic thresholds in mind and improved respiratory gas exchanges during exercise, there is going to be prolonged endurance above and beyond the normal standards.

We will know more when our study has concluded and all of the available statistical data is properly compiled and correctly interpreted. The final report should be finished sometime in the first half of next year and submitted for publication to several recognized sports medicine journals.