The liver is responsible for processing nutrients and toxins that enter the bloodstream. Like any other internal organ, it requires oxygen (O2) to do its job properly. Several studies have documented an increase in the liver’s O2 demand during processing of toxins like ethanol. Conversely, a significant decrease in the rate at which the liver can process toxins has been recorded in low O2 environments [1-6]. Additional studies have shown a significant increase in the elimination of toxins following ingestion of superoxygenated fluids. Increases in the rate of toxin elimination as high as 60% have been reported [13,7]. The solubilized O2 content of O2 Natural Recovery drink is greater than or equal to that found in superoxygenated fluids that have been studied thus far. Of note, no measurable increase in the elimination of toxins via the liver has been shown in studies where pure O2 was administered via inhalation as opposed to ingestion [2,7,8].

Why then does only ingested O2 allow the liver to process toxins more efficiently? The liver receives blood from two different sources. The first is the systemic blood supply: the heart receives blood from veins and pumps it to the lungs where it is oxygenated in exchange for CO2 then pumped back out to the body via the arteries. In the body, O2 is then exchanged for CO2, which is carried back to the heart by the veins. This system provides the liver with only a small amount of blood (~25%) but nearly 50% of its O2 supply. The second source of blood is the portal venous system, which provides the liver with the vast majority of its blood (~75%) but only 50% of its O2. In other words, a low volume of systemic blood feeds the liver but has a high O2 concentration, while a high volume of portal venous blood feeds the liver but has a low O2 concentration.

Veins in the gastrointestinal (GI) tract serve as a direct path for ingested nutrients and toxins to reach the liver for processing before they enter the systemic blood stream. As previously stated, systemic arterial blood is nearly 100% saturated with O2 after it reaches the lungs. This is why even inhalation of 100% O2 will have little to no effect on the O2 level in arterial blood, assuming normally functioning lungs and otherwise normal atmospheric conditions [1]. On the other hand, portal venous blood is only 75% saturated with O2 because the organs of the GI tract (stomach, intestines, pancreas) have already absorbed O2 from it in exchange for CO2. Simply put, ~75% of the blood that reaches the liver is low in O2 and cannot be reoxygenated by the lungs prior to reaching the liver. Therefore, the only way to directly increase the O2 content of the liver is to oxygenate portal venous blood by drinking solubilized oxygen [9].
Caffeine

Moderate amounts of caffeine can exert many beneficial effects on the cardiovascular and central nervous system (CNS). These effects include pain relief, central vasoconstriction, and CNS excitability. Cerebral vasodilation, which can cause headaches, and CNS slowing, which can cause fatigue, dizziness, and decreased alertness, are common signs of toxins within the bloodstream. Caffeine acts as a potent central vasoconstrictor and can therefore provide immediate relief from headaches. It also promotes wakefulness and prevents CNS slowing by counteracting adenosine receptors in the brain. Additionally, several studies have suggested that moderate caffeine intake can lead to gains in athletic performance (increased strength and peripheral blood flow) and enhance post-workout recovery (enhanced glycogen synthesis/uptake and decreased post exercise soreness) [10-13]. Moreover, recent scientific research has shown that caffeine, which has long been thought to cause dehydration, has no detrimental effect on fluid balance if consumed regularly and in moderation [14-18]. Finally, O2 Natural Recovery drink contains only natural caffeine from green coffee beans, which is absorbed more gradually than artificially manufactured caffeine.

Water and Electrolytes

The proportion of electrolytes in O2 Natural Recovery drink is comparable to that of IV fluids—the gold standard for rehydration in medicine. O2 Natural Recovery drink also comes in 16 oz servings, which is roughly equivalent to a standard sized 500 cc fluid bolus used for IV fluid resuscitation. 500 cc’s is enough to be effective without causing fluid overload.

REFERENCES


