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Enjoying a few drinks with friends is a fun way to spend an evening, but excessive alcohol intake can also result in liver damage and hangovers.

### **The Cause: Alcohol**

Alcohol is a toxin. After alcohol is consumed, our body attempts to protect itself by producing enzymes to metabolize and remove the toxins. In particular, the liver is the organ which produces enzymes that help to metabolize the alcohol in the body. If you drink enough and the toxin level exceeds your body's ability to metabolize the toxins in an efficient manner, you experience the unpleasant symptoms associated with a hangover.

It is important to note that you do not need to consume a tremendous amount of alcohol to induce a hangover. Studies conducted over the past 30 years have shown that 1.5 g alcohol per kg of body weight (approximately 5 to 6 drinks for an 80-kg man and 3 to 5 drinks for a 60-kg woman) almost always lead to hangover.

The typical symptoms associated with an alcohol related hangover include: headache, nausea, fuzziness depression, anxiety/palpitations, fatigue/energy drain. However, everybody is different and the effects and after-effects of drinking alcohol vary by individual.

### **The Problem: Hangovers**

Hangovers are marked by general feelings of fatigue, pain, and headaches. This occurs because the effects of alcohol intake produce a toxic byproduct called acetaldehyde that is more damaging than the alcohol itself.

If too much alcohol is consumed, the body will also be in short supply of glutathione, therefore allowing acetaldehyde to wreak havoc in the body, resulting in cell damage and symptoms such as malaise and headache.

### **The Fix: Genus Serum**

Genus Serum is turmeric extract, Curcumin, with a combination of revolutionary Solubilisation Technology. It is fully water and fat soluble, stably dispersed in water, and particle size of 8.9NM.



Curcumin and its derivatives protect DNA against free radical damage induced by alcohol. Curcumin has shown anti-inflammatory, anti-oxidant, antifungal, and antibacterial activity, not to mention protection against the development of liver diseases, which has been recently demonstrated in animal models. [1], [2]

Curcumin has been shown to inhibit several factors like nuclear factor-kappaB, which modulates several pro-inflammatory and pro-scarring cytokines as well as its anti-oxidant properties, and provides a rational molecular basis for use in liver disorders.

Additionally, curcumin has been shown to reduce liver injury induced by alcohol and aid in the prevention of cirrhosis to some extent. [3]

### ***References***

- [1]. Arterioscler Thromb Vasc Biol. 1997;17:3406–3413.
- [2]. Am J Physiol Gastrointest Liver Physiol. 2003;285:G20–G30
- [3]. Vet Ital. 2010 Jan-Mar;46(1):83-92.

### **Some Interesting Facts**

In the United States \$148 billion per year is lost due to the falling productivity and absenteeism related to hangovers.

The average annual opportunity cost due to hangovers adds up to \$2000 per person and job. In other countries, the trends are similar. The damage in Great Britain adds up to \$3.3 billion, in Canada \$1.4 billion, in Australia \$3.8 billion, and in New Zealand \$331 million. In Finland, which has a population of only 5 million people, more than 1 million are lost each year due to hangovers.