

- Drinking of alcoholic beverages

Need a strong hangover cure? While hangover pills may provide some relief, they are not a magic bullet.

Learning about hangover pills and how they work

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In a country like the Philippines where celebrations often involve a hearty serving of social drinking, the morning-after experience of a hangover is all too familiar. Enter hangover pills, a growing trend marketed as a quick fix for postalcohol misery. But what exactly are these supplements and how do they work from a medical perspective? Let's dive into the science.



Hangover symptoms—headache, nausea, fatigue, dry mouth, and brain fog—are not caused solely by alcohol. In fact, symptoms tend to appear when blood alcohol levels are low and peak when they reach zero (Verster, 2008). Several factors contribute to this state, including alcohol metabolites like acetaldehyde, hormonal disruptions, inflammatory cytokines, and even congeners (non-alcoholic compounds in alcoholic beverages). These, coupled with individual variables such as genetics, personality, and concurrent drug use, influence the severity and type of hangover symptoms experienced (Prat et al., 2009; Swift & Davidson, 1998).

Hangover pills are dietary supplements formulated to alleviate hangover symptoms by addressing the biological disruptions caused by alcohol consumption. These pills often contain a mix of antioxidants, anti-inflammatory agents, vitamins, and herbal extracts aimed at combating oxidative stress, inflammation, and dehydration.

Common ingredients found in hangover pills:

1. **Antioxidants:** Combat oxidative stress caused by alcohol metabolism. Ingredients like red ginseng and fermented *Akebia quinata* are potent in neutralizing free radicals.
2. **Vitamins and minerals:** Vitamin B complex (B1 and B6), vitamin C, magnesium, and omega-3 fatty acids help replenish nutrients depleted by alcohol.
3. **Herbal Extracts:** *Opuntia ficus-indica* (prickly pear), dandelion juice, and *Acanthopanax senticosus* polysaccharides have shown potential in reducing inflammation and immune modulation.
4. **Alcohol metabolizing agents:** Ingredients like Korean pear juice stimulate alcohol dehydrogenase and aldehyde dehydrogenase, speeding up the breakdown of toxic acetaldehyde into less harmful substances (Lee et al., 2013).

Alcohol metabolism plays a central role in hangover development. When alcohol enters the liver, it is converted into acetaldehyde by the enzyme alcohol dehydrogenase. Acetaldehyde, a toxic intermediate, is then broken down into acetate by aldehyde dehydrogenase. Accumulation of acetaldehyde

triggers symptoms like nausea, flushing, and rapid heart rate. Hangover pills often include compounds that boost the activity of these enzymes, accelerating acetaldehyde clearance. Additionally, alcohol consumption generates free radicals, leading to oxidative stress. Ingredients such as red ginseng and *Akebia quinata* provide antioxidant effects, while vitamins and minerals help restore the body's natural balance. Anti-inflammatory agents target cytokines—immune system messengers implicated in symptoms like fatigue, headache, and difficulty concentrating.

What symptoms do hangover pills address?

Hangover pills are designed to alleviate a variety of symptoms, though their effectiveness varies:

- Central nervous system symptoms: Fatigue, headache, and difficulty concentrating are addressed through anti-inflammatory and antioxidant mechanisms.
- Gastrointestinal symptoms: Nausea and dry mouth may improve with hydration-promoting ingredients like electrolytes and herbal extracts.
- Dehydration and electrolyte imbalance: Magnesium and vitamin C help combat the diuretic effects of alcohol, reducing thirst and dry mouth. These supplements rarely tackle all symptoms. Emotional symptoms like guilt, embarrassment, and irritability, often termed the “emotional hangover,” remain unaddressed.

Are they effective?

Studies on hangover remedies have yielded mixed results. Systematic reviews from 2005 and 2010 concluded that no treatment completely cures all hangover symptoms (Pittler, Verster, & Ernst, 2005; Verster & Penning, 2010). However, some interventions show promise:

- Korean pear juice has been shown to reduce acetaldehyde levels, particularly in individuals with specific genetic variations in aldehyde dehydrogenase activity (Lee et al., 2013).
- Prickly pear extract and polysaccharides from *Acanthopanax senticosus* demonstrated a reduction in inflammation and immune system overactivation, addressing fatigue and cognitive issues. That said, the effectiveness of these remedies depends on individual factors, including genetics, gender, age, and drinking habits. Variations in alcohol metabolism across ethnic groups also complicate the universal applicability of these treatments.

While hangover pills may provide some relief, they are not a magic bullet. Factors like hydration, food intake, and the type of alcohol consumed (congeners in dark liquors often worsen hangovers) significantly influence outcomes. Additionally, most studies conducted on hangover remedies involve controlled settings that may not fully replicate realworld drinking behaviors.

Hangover pills offer a scientifically backed yet imperfect solution to managing the aftermath of alcohol consumption. They address symptoms such as fatigue, nausea, and dehydration but fall short of providing comprehensive relief. For now, the best cure remains prevention: drink moderately, stay hydrated, and nourish your body before indulging.

Hangover pills are not a license to overindulge but rather a tool for recovery. Understanding their mechanisms and limitations empowers individuals to make informed choices when celebrating life's milestones responsibly.