Can hangovers be prevented or cured?

As party season kicks off, Pam Mason takes a look at some old and new hangover remedies and the theories behind how they might work.

Over Christmas and the new year, thousands of people will suffer the aftereffects of drinking too much alcohol, known collectively as a hangover. Having a hangover means suffering from a combination of any of the following symptoms after drinking alcohol:

- Headache
- Nausea or vomiting, or both
- Mild diarrhoea
- Tremor
- Red eyes
- Thirst
- Generally feeling unwell
- Sensitivity to light and noise
- Hot flushes
- Aching muscles
- Dizziness
- Fatigue
- Feeling depressed or irritable
- Poor concentration and memory
- Impaired visual spatial skills

However, the causes of alcohol hangovers are not fully understood. Several culprits, such as dehydration and acetaldehyde, have been suggested. The sleep disturbances associated with excessive drinking can also contribute to a hangover.

**Dehydration** Alcohol acts as a diuretic (it inhibits the effect of antidiuretic hormone on the kidneys) so drinking too much of it causes dehydration. This, in turn, can result in many hangover symptoms including headache and thirst. Headache can be made worse by vasodilation.

**Acetaldehyde** Acetaldehyde is the main metabolic product of ethanol. It can cause flushing, a throbbing headache, palpitations and nausea, as well as a host of other symptoms. It is on this basis that disulfiram (Antabuse) is used to treat alcohol dependence — disulfiram blocks the oxidation pathway so acetaldehyde accumulates.

**Congeners** The severity of hangovers appears, in part, to be determined by the concentration of congeners in the drink. Congeners include substances such as amyl alcohol, butyl alcohol, methyl alcohol, propyl alcohol and isopropyl alcohol. They are present as impurities in most drinks to varying degrees, but they also give drinks flavour, smell and colour. Vodka, gin and other clear alcoholic drinks are generally lower in congeners than darkly coloured drinks (eg, whisky, port, brandy, bourbon, red wine) because of the filtering and distillation processes involved in making them, and are, therefore, associated with a less intense hangover.

**What are the cures?**

Not surprisingly, there is an enormous variety of “hangover cures”. Perhaps the best known is “hair of the dog”, which involves drinking more alcohol. This is supposed to alleviate the withdrawal symptoms of an alcohol overdose, but the effects are temporary and the hangover has to be faced at some time. Some say that cocktails like a Bloody Mary are great restoratives but this behaviour should not be encouraged because it can lead to alcohol abuse.

Other remedies advocated by drinkers include blended recipes containing ingredients such as cabbage, bananas, eggs, honey, olive oil, lemon juice, tomato ketchup, Tabasco sauce and Worcester sauce. Drinking caffeinated drinks (eg, coffee, cola) or eating cold pizza, yeast spread on toast or dry toast on its own are other common suggestions.

There is no hard evidence that any of these help. Isotonic drinks have also been recommended to achieve quick rehydration.

**Over-the-counter products** A number of over-the-counter medicines are frequently
used to alleviate hangovers. Some, such as Alka-Seltzer, Andrews Plus and Resolve, are marketed as stomach settlers and not specifically for hangovers. They contain an analgesic together with antacids (usually carbonates and bicarbonates), and dissolve in water to produce a fizzy drink. Anecdotally, they help some people, although hangover sufferers may not welcome the bloated feeling from a carbonated drink. In any case, if the person has nausea or vomiting he or she may be unable to keep anything down.

Analgesics, such as aspirin, ibuprofen and paracetamol, are frequently used to treat hangovers, but whether they are effective is debatable. Products containing paracetamol might be preferable because aspirin can further irritate a delicate (and empty) stomach.

Eye drops containing naphazoline can be recommended for red eyes.

Preventing hangovers

Unfortunately, the best advice for preventing a hangover is not to drink alcohol at all or to drink it in moderation. However, such advice usually falls on deaf ears, particularly during drink it in moderation. However, such advice usually falls on deaf ears, particularly during drink consumed. This might also help to reduce the dehydrating effects of alcohol.

Eat a meal before drinking — food in the stomach slows the absorption of alcohol and may reduce the risk of a hangover.

Drink plenty of water before you go to bed.

Avoid or limit drinks that contain congeners, such as whisky, brandy and cheap red wine.

The rationale for the inclusion of many of these substances (eg, dextrose, succinic acid, fumaric acid, L-glutamine) is that they either inhibit the formation of acetaldehyde or they accelerate its metabolism and removal from the bloodstream. Sugars are also added in an attempt to limit the blood glucose lowering effect of alcohol. Charcoal is believed to absorb congeners.

Herbal ingredients such as artichoke and milk thistle are included on the basis that they can help to detoxify the liver. B vitamins and vitamin C are lost through diuresis and this forms the rationale for their inclusion.

Whether these products work is debatable. Product websites contain testimonies of benefit, but evidence from clinical trials on these remedies, either for use prevention or treatment of hangovers, is limited.

A recent review summarised evidence from randomised controlled trials for gamma-linolenic acid from *Bosnica officinalis* (borage), *Cyamanaca scolymus* (artichoke), *Opuntia ficus indica* (prickly pear cactus) and yeast. Borage, prickly pear cactus and yeast were associated with some benefit in hangover symptoms, while artichoke did not seem to be effective. The reviewers stated that the results with *O ficus indica* were not as positive as they appeared in the original paper which, for example, included the risk of a severe hangover being halved. There was no significant difference in mean overall hangover symptom index between the treated and placebo groups.

**Panel 1: Tips for reducing hangover risk and severity**

- Give your body time to metabolise the alcohol — limit yourself to one drink per hour.
- Alternate alcoholic drinks with non-alcoholic drinks to reduce the amount of alcohol consumed. This might also help to reduce the dehydrating effects of alcohol.
- Eat a meal before drinking — food in the stomach slows the absorption of alcohol and may reduce the risk of a hangover.
- Drink plenty of water before you go to bed.
- Avoid or limit drinks that contain congeners, such as whisky, brandy and cheap red wine.

**Panel 2: Products marketed for preventing hangovers**

<table>
<thead>
<tr>
<th>Product</th>
<th>Main ingredients</th>
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<tbody>
<tr>
<td>Chaser</td>
<td>Calcium carbonate, charcoal, vitamin B&lt;sub&gt;2&lt;/sub&gt;</td>
</tr>
<tr>
<td>Hangover-Over!</td>
<td>Chlorella, artichoke, lemon balm, vitamin C, Siberian ginseng, selenium, echinacea, dandelion extract, milk thistle, B vitamins</td>
</tr>
<tr>
<td>Rebound</td>
<td>Succinic acid, fumaric acid, L-glutamine, dextrose, vitamin B&lt;sub&gt;1&lt;/sub&gt;, B&lt;sub&gt;2&lt;/sub&gt;, folic acid vitamin C, barley grass juice, L-cysteine</td>
</tr>
<tr>
<td>RU 21</td>
<td>Succinic acid, fumaric acid, L-glutamine, dextrose</td>
</tr>
<tr>
<td>Russia Party</td>
<td>Dextrose, succinic acid, L-glutamine, fumaric acid, vitamin C, potassium, milk thistle, sesamine extract, B vitamins</td>
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**References**


**Resources**