

HEALTH MATTERS



NATURAL HEALTH
& WELLNESS CENTRE

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Overindulgence

Einstein once said, “Only two things are infinite: the universe and human stupidity.” After a brief pause, he added, “But I’m not certain about the universe”. And to prove his point, the holidays are right around the corner. Now, I’m no Einstein, but I’ve always said that natural medicine can treat any condition except one, and that one untreatable condition is stupidity. Fortunately, natural medicine can help treat the consequences of human stupidity, including overindulgence. Of course, I would be remiss if I did not advise you, “Don’t overeat or overdrink”, but I know you won’t listen. So instead, you might want to print out this issue of Health Matters and keep it handy – if not for yourself then perhaps for a “friend” ☺ A little prevention goes a long way in the ongoing battle against stupidity!

In Aqua Vitae

Indeed, water is essential to life, but hydration will also help prevent and correct many of the impending perils of the holiday season. You are about 60-70% water, and dehydration is a major contributor to many of the unpleasant symptoms associated with hangovers. Ethanol (the chemical name for alcohol) has a strong diuretic effect (technically, it slows your pituitary making vasopressin, or anti-diuretic hormone). This explains the delayed effect in peeing after alcohol – it takes a while but once you start you just keep on peeing.

Thus, to prevent hangovers, follow this one, simple, **General Rule:**

Drink one full glass of water for every 2 alcoholic drinks.

Now, you should kindly ignore what the health “authorities” call a “standard drink” because 1) it’s stupid¹ and 2) it bears no relation to what we might call a “drink” in real life.²

I define a REAL drink as

- 50ml shot of 40% spirit (known in the UK as a double shot and in Russia as a half shot), or
- ½ pint of 6% beer or cider, or (the pint is the UK version of “supersize me”)
- 175ml “small” glass of 12% wine

Each of these real drinks contains ~15 g of ethanol (aka 2 “standard drinks”) and will cause your body to lose 200-300 ml of water (about half a pint). Five real drinks and your body is already down 1-1.5L of water. Have five pints, two bottles of wine, or half a litre of vodka and you are well on your way to your dream of becoming a raisin, having lost almost 3L of body water. Dehydration is a major culprit in creating the hangover headache – the dehydrated brain literally pulls on the membranes surrounding the brain, producing mild meningitis.

The Body Electric

Dehydration is bad enough, but wherever water goes so goes your electrolytes (especially potassium & sodium and to a lesser extent, magnesium & calcium). Electrolytes, as their name suggests, allow your body to carry electrical charges, which turns out to be rather critical for nerve conduction and muscle movement. Much of the fatigue, weakness, and foggy head after a night of drinking come from low electrolytes.

Fruits, vegetables, nuts & seeds are our best food sources of electrolytes. It is not by accident that bar owners often provides salted snacks to accompany drinks. Not only does the salt make you thirstier, but added electrolytes mean that you can drink more without a hangover. Some classic hangover treatments like tomato juice help by replenishing electrolytes and blood sugar.

The Russian tradition of always eating a small appetizer (*zakuski*) with every shot of vodka has about 500 years of folk wisdom behind it (well... let’s call it “wisdom” anyways), but you can definitely drink more without ill effects. Snacking, especially on salty and high mineral foods like nuts, seeds, crudités, smoked salmon, etc while drinking will definitely help.

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Acetaldehyde

Alcohol must be detoxified, of course, and in the first step, it is broken down to acetaldehyde. Unfortunately, acetaldehyde turns out to be about 30-times more toxic than ethanol itself. Ideally, the acetaldehyde is quickly detoxified further into acetic acid (vinegar), and your cells can use it for energy. This last, critical step of detoxification depends on an enzyme known as acetaldehyde dehydrogenase. A high percentage of people of Asian descent (including American Indians) lack this enzyme and modest amount of alcohol can produce whopping hangovers.

Your body can bind acetaldehyde using a sulphur molecule found in the amino acid cysteine and in the mini-protein glutathione. Glutathione reserves are fairly limited in the body and are rapidly depleted if you drink. Cysteine is abundant in any animal protein, and to a lesser extent in sulphur-tasting foods like garlic, onions, broccoli, cabbage, mustard, etc. But, any cysteine you eat will be depleted within 3 hours, which helps explain the benefits of snacking throughout the evening to prevent hangover symptoms. The best supplement form of cysteine is N-acetyl Cysteine, as it is better absorbed, easily crosses into the brain, and L-cysteine can cause nausea in higher doses. 500 mg of N-acetyl-Cysteine taken every 2-3 hours (WITH water, of course) is probably the best single method of preventing a hangover. In fact scientists have shown that giving rats Cysteine (along with some vitamin B1 and C) makes a normally deadly dose acetaldehyde essentially non-toxic.³

Prevention & Recovery Strategy

Supplements for Prevention & Recovery (Take 1 cap on your way out & 1 cap on your way to bed):

- [Thorne Basic B-Complex](#) - Since your liver has enough to do, use only the active forms of the B vitamins (most B-Complex contain the cheaper precursor form of B vitamins).
- [Thorne Cysteplus](#) – Mops up excess acetaldehyde. Dosage: may take up to 1 cap every 2 hours if you are being spectacularly ebullient (or what a sober friend would call stupid)
- [Vital MultiMinerals](#) – Replenishes electrolytes and aids detoxification.
- [Nutri Poly-Ascorbates](#) – Helps maintain the reduced (antioxidant) form of cysteine, glutathione and vitamin B1.
- [Xymogen ALAmax](#) – Alpha lipoic acid is helpful for people who drink excessively on a regular basis (like the average British person every Friday). 1 cap per day will prevent a lot of cellular damage

Prevention Foods: what to eat before you go out:

- Fried Chicken (no, I am not kidding): the fat slows alcohol absorption from the stomach and allows slower more controlled detoxification in your liver & chicken is one of the highest food sources sulphur containing amino acids (cysteine, methionine & taurine). Cysteine binds excess acetaldehyde and taurine helps mineral metabolism, especially magnesium. Any meat or fish & fat combo would do, but chicken has a slight edge nutritionally.
- Salt: don't skimp on it. It helps keep you hydrated.

Recovery Foods: what to eat when you stumble home:

- Soft-boiled or lightly fried or scrambled eggs: easily digested, a multivitamin and mineral food, and high in L-cysteine which mops up excess acetaldehyde
- Toast with salty butter: because you are British
- Fruit Smoothie (low acid fruits are better): high in electrolytes, fructose & glucose to jump start cellular energy production.
- Did I mention water?

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On The Virtues of Beer

“A herd of buffalo can only move as fast as the slowest buffalo. And when the herd is hunted, it is the slowest and weakest ones at the back that are killed first. This natural selection is good for the herd as a whole, because the general speed and health of the whole group keeps improving by the regular killing of its weakest members.

“In much the same way, the human brain can only operate as fast as the slowest brain cells. Excessive intake of alcohol, as we know, kills brain cells. But naturally, it attacks the slowest and weakest brain cells first. In this way, regular consumption of beer eliminates the weaker brain cells, making the brain a faster and more efficient machine.

“And that is why you always feel smarter after a few beers...”⁴



Cocktail Party Trivia: The medical name for a hangover is **veisalgia**, which comes from combining the Norwegian word for "uneasiness following debauchery" (*kveis*) and the Greek word for "pain" (*algia*). 🦉 Which raises the larger question...why do Norwegians have a single word for "uneasiness following debauchery"?



Happy Holidays

¹ The “standard drink” is an arbitrary creation. Each country defines a standard drink as slightly different, which, of course, legitimizes me to create my own definition.

² A “unit” of alcohol – so popular to the government and health authorities and so incomprehensible to the rest of us – is defined in the UK as 10 ml of alcohol, containing 7.9 g of ethanol, and is supposed to be the amount of alcohol in a “standard drink”. For instance a pint of weak 4% ABV beer or cider contains 2.3 units. To drink one unit, you’d have to ask the bartender for 0.43 pints – or just spill 14% of your half pint on your way back to your table (nevermind that most beer and cider are stronger than 4%). Similarly, you’d have to spill half of your small glass of 12% ABV merlot or chardonnay. The only direct correlation is that a 25ml shot of 40% spirit is exactly one unit, but this seems more probably just a crafty way to charge twice as much for a proper shot of vodka.

³ Sprince H *et al.*, Protectants against acetaldehyde toxicity: Sulfhydryl compounds and ascorbic acid. *Fed Proc* 33(3) (Part 1): March 1974.

⁴ This pearl of wisdom was originally uttered by the character Norm on the American sitcom “Cheers”.