



THE  
**PEOPLE'S  
PHARMACY**

## *Graedon's Guide to*

# *Drug & Alcohol Interactions*

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### ***Beta Carotene***

Beta carotene, a precursor to vitamin A, is a popular antioxidant supplement that may help prevent heart disease. But new research in baboons suggests that beta carotene may be harmful to heavy drinkers.

Studies at the Bronx VA show that of alcohol combined with beta carotene led to more liver damage than that produced by alcohol exposure alone. Although more research is needed in humans, people who drink regularly and use beta carotene should discuss this interaction with their physician.

# A

lcohol is a drug and like any drug it can interact with a wide variety of other compounds. But alcohol isn't like most medicine, because it's so much a part of many people's lives. Who stops to think that the beer they down at a ball game or the glass of wine with dinner could affect their judgment and make driving hazardous? And yet, in combination with some common drugs, even modest amounts of alcohol can cause trouble.

Most people are aware of the precaution that often appears on over-the-counter cold and allergy remedies, "Avoid alcoholic beverages while taking this product. Do not drive or operate heavy machinery." The reason is that antihistamines tend to make people drowsy and less coordinated. Add that effect to just a drink or two, and you could be a real hazard behind the wheel.

At least people are warned on the label

about antihistamines and alcohol. Many other medicines do not come with such precautions. **Dalmane** is a long-acting prescription sleeping pill. The drug tends to accumulate in the body over time. A person who takes this drug might not realize that an interaction with alcohol is possible even a day or two later.

Most anti-anxiety agents, antidepressants, sedatives, and even seizure medicines can add to the incoordination, slowed reflexes and other common consequences of alcohol. Fortunately, such reactions are well known and conscientious pharmacists will put a warning sticker on the prescription bottle.

Some drugs may actually boost blood alcohol above expected levels through a fascinating metabolic action. This interaction is less well known and still controversial.

## **DRUGS THAT RAISE BLOOD ALCOHOL LEVELS**

After the ulcer medicine **Tagamet** became popular, reports began to surface that it might increase blood alcohol levels after a seemingly innocuous amount of beer, wine or other beverage.

When researchers began investigating these reports, they discovered that many men have an active enzyme in the stomach, alcohol dehydrogenase (ADH), that breaks down some of the alcohol from a drink even before it is absorbed into the blood stream. ADH in the stomach diminishes with age and regular alcohol intake and is present only at low levels in women.

This esoteric enzyme would be of interest only to a few scientists except for one thing: a number of medicines have been reported to deactivate it, leading to higher blood alcohol levels, and a longer period of elevated blood alcohol concentrations. One study has confirmed that aspirin (2 extra-strength tablets) taken an hour before drinking interferes with ADH activity enough to raise blood alcohol levels. The ulcer medicine **Tagamet** may also reduce enzyme activity, and there is preliminary evidence that other drugs, including acetaminophen (**Anacin-3**, **Panadol**, **Tylenol**, etc.), **Axid**, **Edocrin**, propranolol (**Inderal**), ranitidine (**Zantac**) and verapamil (**Calan**, **Isoptin**, and **Verelan**) may have this effect. Further research is needed.

Is this interaction important? Opinions vary. The most noticeable effect occurs in people who drink modestly--one and a half or two drinks--after eating (not on an empty stomach). The FDA has concluded for now that this interaction is not sufficiently dangerous to warrant changing the label or warning patients. More tests have been called for. Until the final word is in, however, we urge caution for anyone who drinks and engages in activities that require attention, especially driving.

References: Bauer et al., *Clin. Pharmacol. Ther.* 1992; 52: 6-10. DiPadova et al., *JAMA* 1992;267:83-86. Fraser et al., *Am. J. Gastroenterology* 1993;88:217-221. Palmer et al., *Am. J. Gastroenterology* 1991;86:1749-1755. Roine et al., *JAMA* 1990;264:2406-2408.

## SOME MEDICINES CONTAINING ACETAMINOPHEN

4-Way Cold Tablets	Lortab
Aceta	Maximum Strength Sinutab
Actifed Plus	Maximum Strength Sudafed Sinus
Allerest Sinus Pain Formula Tablets	Medi-Flu
Anacin-3	Midol
Anexsia	NyQuil Nighttime Cold Medicine
APAP	Pamprin
Benadryl Plus Tablets	Panadol
BQ Cold Tablets	Percocet
Bromo Seltzer	Percodan
Chlor-Trimeton Sinus Caplets	Percogesic
Comtrex	Phenaphen w/ Codeine
Contact (some formulas)	Robitussin Night Relief Colds Formula
Coricidin (some formulas)	Sinarest Tablets
Darvocet-N	Sine-Off Maximum Strength No Drowsiness
Datril Extra Strength	Sinubid Tablets
Dimetapp Plus Caplets	TheraFlu Flu & Cold Medicine Powder
Dolene AP	Triaminic Tablets
Dristan-AF Tablets	Tylenol
Drixoral Plus Tablets	Tylox
Excedrin	Vicks Formula 44M
Fioricet	Vicodin
Hycomine Compound Tablets	Viro-Med Tablets
	Wygesic

### ***Acetaminophen***

The risk that this over-the-counter pain reliever might cause higher blood alcohol levels from modest amounts of alcohol is still uncertain and may not turn out to be terribly important. The real trouble comes when someone uses both acetaminophen and alcohol on a regular basis. This can put quite a strain on the liver, which metabolizes both drugs. You don't have to be an "alcoholic" to get into trouble. If you have a drink every day, don't make a habit of using medicines containing acetaminophen. Not only might you risk serious liver damage, you might find that ordi-

nary doses are less effective than expected and be tempted to take extra.

Be alert for acetaminophen in many other products besides nonprescription pain relievers. It is an ingredient in many cold, allergy or sinus formulas, menstrual cramp remedies, and even a number of prescription pain relievers (for example, **Darvocet-N** or **Tylox**). The list above contains some examples, but be sure to read the label of any medication if you need to watch for this interaction.

### ***Antabuse***

This interaction is almost too obvious to mention. It can, however, be extremely hazardous. **Antabuse** (disulfuram) is prescribed for alcoholics who need chemical assistance to reinforce their resolve to abstain. In combination with alcohol, even the small amounts found in cough syrup or cold remedies, this medication

produces violent illness. The symptoms are nausea, vomiting, stomach cramps, palpitations, flushing, low blood pressure, blurred vision, breathing problems and headache. In some cases, the reaction could be lethal, so anyone on **Antabuse** really needs to watch out for alcohol.

### ***Anticoagulants***

Moderate to heavy drinkers (at least two or three drinks daily) may metabolize blood-thinners like **Coumadin** (warfarin) more rapidly. This could be a problem if a person suddenly changed

drinking habits dramatically. The dose of the medicine might need adjustment. For most people an occasional beer or cocktail is not likely to interfere with anticoagulant medication.

Beware! Some antidepressants can make people feel drowsy or spaced-out. They may have trouble paying attention. Alcohol in addition could make matters worse. A drink or two can also slow metabolism of amitriptyline and possibly other antidepressants. Driving or operating machines may become far

more dangerous with the double whammy of alcohol and medicine.

The antidepressant **Wellbutrin** (bupropion) could also be a problem with alcohol. Susceptibility to seizures may increase when people change drinking patterns. Abstinence is recommended.

Most antihistamines, except for **Claritin**, tend to make people feel groggy and less than alert. In fact, a person taking a sedating non-prescription antihistamine like **Benadryl**, for hind the wheel as someone who is legally drunk. Alcohol can intensify this

common reaction. Remember, cold medicines as well as allergy pills may well contain antihistamines. Do not drive if you have had alcohol together with such medication. Reflexes and coordination could be seriously impaired.

Barbiturates just don't mix well with booze at all. The interaction is actually rather complicated, but the results are simple. People become incapable of doing complicated things like driving, walking or even breathing. You might as well play Russian roulette with all the cham-

bers loaded. If you are taking one of these medicines, play it safe and steer clear of alcohol in any guise, including medicines. Barbiturates include **Amytal, Butisol, Fiorinal, Lotusate, Mebaral, Mysoline, Nembutal**, phenobarbital, **Seconal**, and others.

Heart and blood pressure medicines such as **Corgard, Inderal, Lopressor, Tenormin** and others like them may be affected by alcohol. Beta blockers like these can increase the impact alcohol

has on reflexes and coordination. Current research suggests this is not usually a serious interaction unless you are driving, but you might want to be judicious in your alcohol intake.

## ***Antidepressants***

Adapin	Norpramin
amitriptyline	Pertofrane
desipramine	Sinequan
Desyrel	Surmontil
doxepin	Tofranil
Elavil	Triavil
Endep	Wellbutrin

## ***Antihistamines***

## ***Barbiturates***

## ***Beta Blockers***

atenolol  
 Blocadren  
 Cartrol  
 Corgard  
 Inderal  
 Kerlone  
 Levatol  
 Lopressor  
 Normodyne  
 propranolol  
 Sectral  
 Tenormin  
 timolol  
 Trandate  
 Visken

## **ALCOHOL IN MEDICINES**

Alcohol is an ingredient in many over-the-counter and even some prescription medicines. The amounts are modest in most cases, but a few get up to concentrations of 40 or 50 proof. Cough and cold elixirs are the most likely sources, but some vitamin "tonics" or laxatives also contain alcohol.

For most people, the amount of alcohol in a spoonful of cough syrup is negligible. Anyone taking a medicine that reacts with alcohol like **Antabuse** does needs to be especially cautious, though. Some alcohol-containing medicines are listed below. Careful label reading is also advised.

Ambenyl-D Decongestant	Geriplex-FS Liquid	Triaminic Expectorant with Codeine
Benadryl Plus Nighttime	Gevrabon Liquid	Trind Liquid
Benylin Decongestant	Hycotuss Expectorant	Tuss-Ornade Liquid
Black-Draught	Lomotil Liquid	Tussar SF Liquid
Cheracol Plus Head Cold/ Cough Liquid	Medi-Flu Liquid	Tylenol Cold Night Time
Comtrex Liquid	Novahistine Elixir	Vicks Formula 44 (D or M) Liquid
Contac Nighttime Cold Medicine Liquid	NyQuil Nighttime Cold	Vigortol Liquid
Entex Liquid	Peri-Colace	Vitamin B Complex Elixir
Geravite Elixir	Pertussin PM Liquid	Zantac Syrup
	Phenergan VC Syrup	
	Senokot Syrup	

## **Cephalosporin Antibiotics**

Some of these high-powered antibiotics should not be taken before having a drink, or you might well regret it. **Cefobid, Cefotan, Mandol** and **Moxam** have all been reported to trigger an **Antabuse**-like reaction, with flushing, wheezing and breathing difficulties, nausea and vomiting,

sweating and rapid heart beat. This potentially dangerous interaction can come on right away, or it may be delayed by as much as a few days. There aren't reports on **Monocid** or **Precef**, but their chemical makeup suggests that they too should not be mixed with alcohol.

## **Diabetes Drugs**

Oral diabetes medicines interact in peculiar ways with alcohol. People on **Glucotrol** may find that their blood sugar stays low longer after a drink or two, but drinkers on **Orinase** might discover that its effectiveness starts wearing off more quickly. In other words, more than a single drink from time to time could mess up blood sugar and make it harder to control.

**Diabinese** is reported to interact with alcohol much as **Antabuse** does, producing flushing, headache, nausea and even rapid heart beat. This unpleasant experience is more likely with moderate or heavy alcohol intake. Even people on other diabetes pills, such as **DiaBeta, Dymelor, Micronase** or **Tolinase**, would be wise to exercise caution.

## **Ibuprofen**

Advil  
Ibuprofen  
Medipren  
Motrin IB  
Rufen  
Nuprin

This popular pain reliever may interact with alcohol in several ways. For one thing, both ibuprofen and alcohol can have a negative effect on the digestive tract. Regular use could increase the risk of indigestion, heartburn and even ulceration. There is also

the possibility that ibuprofen may prolong the effects of alcohol within the system. Although this interaction is not yet well documented, it would be wise to use caution in drinking if you are relying on ibuprofen for pain relief.

## **Indocin**

Indomethacin and alcohol are both irritating to the digestive tract. You are skating on very thin ice if you think you can mix and match these two drugs. Equally dangerous is the effect on the brain. **Indocin** can cause dizziness, drowsiness, and incoordination. Combined with alcohol this complication could be aggravated.

Most other anti-inflammatory agents can cause stomach upset and many can produce some degree of sedation. People taking **Anaprox, Ansaid, Clinoril, Feldene, Lodine, Meclomen, Motrin, Nalfon, Naprosyn, Orudis, Tolectin** and **Voltaren** should also be prudent and avoid alcoholic beverages.

## **Major Tranquilizers**

chlorpromazine  
Compazine  
Mellaril  
Permitil  
Phenergan  
Prolixin  
Serentil  
Sparine  
Stelazine  
Tamaril  
Thorazine  
Tindal  
Trilafon  
Vesprin

Many of the medicines used to treat serious mental disturbances can make people feel "spaced out" or interfere with their alertness. Add alcohol, and you have a situation where dizziness, drowsiness, and lack of coordination could become downright dangerous. Muscle twitching and uncontrolled movements can be triggered with such a combination.

No one taking a major tranquilizer should be drinking. Driving is dangerous with these medicines all by themselves. If someone were foolish enough to add even one glass of wine, he could be a major hazard on the highways. Don't do it!

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Methotrexate is a potent medication used to treat cancer, severe arthritis and psoriasis. It can cause liver toxicity and requires very careful

monitoring. Since alcohol can also injure the liver, it is probably a good idea to avoid drinking alcoholic beverages while taking methotrexate.

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This medication has become quite popular in fighting a number of infections. It can cause dizziness, unsteadiness, and incoordination all by itself. These side effects may be aggravated by alcohol.

In addition, some people experience nausea, vomiting, stomach cramps, flushing and headaches when they consume alcohol together with metronidazole. Best to avoid drinking while on this drug.

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Heavy-duty pain relievers can themselves interfere with alertness and coordination. In combination with alcohol, any of them could make a person feel like a zombie. Driving or

doing anything at all that requires concentration would be a big mistake. Medical examiners see far too many overdose deaths associated with this combination of drugs. Stay alive--don't imbibe.

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Nitroglycerin comes in many formulations. There are pills (**Nitro-Bid**, **Nitrong**, **Nitrostat**), ointments (**Nitrol**) and transdermal patches (**Minitran**, **Nitrodisc**, **Nitro-Dur**

and **Transderm-Nitro**). No matter how you use nitro, though, you should avoid alcohol, as it may lower your blood pressure and make you dizzy and vulnerable to fainting and falls.

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**Nizoral** (ketoconazole) is a very effective antifungal drug. It can, however, cause liver toxicity and requires periodic monitoring with blood tests. Regular drinking might increase the risk of liver problems.

There are also reports that some individuals may react to the combination of alcohol and **Nizoral** with symptoms of nausea, headache, flushing and discomfort, apparently similar to an **Antabuse**-type reaction.

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This interaction isn't well documented so it may not be a problem for all women. In one study, alcohol was metabolized more slowly by women on

estrogen-containing birth control pills. One or two glasses of wine might not cause trouble. Heavier drinking may produce longer lasting intoxication.

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**Parlodel** (bromocriptine) may produce more severe side effects if alcohol

is taken at the same time. Watch out for nausea, stomach pain & dizziness.

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Medications such as **Cardura**, **Flomax**, **Hytrin** and **Minipress** (prazosin) are often prescribed for symptoms of prostate enlargement. Any of these, in combination with alcohol, could result in an unex-

pected drop in blood pressure. A person might feel dizzy or faint. Those who tend to flush when they imbibe appear to be at highest risk of this interaction.

## ***Methotrexate***

Folex  
Rheumatrex

## ***Metronidazole***

Femizole  
Flagyl  
Metizol  
Metryl  
Protostat

## ***Narcotics***

codeine	Percodan
Darvocet	propoxyphene
Darvon	Talwin
Demerol	Tylenol w/
Empirin w/	codeine
codeine	Tylox
Percocet	Vicodin

## ***Nitroglycerin***

## ***Nizoral***

## ***Oral Contraceptives***

## ***Parlodel***

## ***Prostate/Blood Pressure Drugs***

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## **Reglan**

Few people would suspect their medicine for heartburn would interact with a beer or cocktail. But **Reglan** (metoclopramide) can cause drowsiness,

involuntary muscle movements and dizziness. Alcohol could make such reactions worse. It would be prudent to avoid alcoholic beverages.

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## **Salicylates**

Alka-Seltzer  
Anacin  
Ascriptin  
aspirin  
Bayer Aspirin  
Bufferin  
Cope  
Empirin  
Excedrin caplets  
Pepto-Bismol

We're talking about America's favorite drug--aspirin--acetylsalicylic acid. Many people pop a few aspirin tablets before going out for a big night on the town in the hopes of heading off a hangover. New research suggests this might be a bad idea. Not only could it increase stomach irritation, but someone might end up more impaired because of higher blood alcohol levels.

One study found that aspirin taken an hour before drinking a modest amount of alcohol (one and a half drinks) raised levels in the blood stream 26 percent. The authors caution that this could be enough to "impair some complex forms of human behavior."

Reference: Roine, R., et al. "Aspirin Increases Blood Alcohol Concentrations in Humans After Ingestion of Ethanol." *JAMA* 1990; 264:2406-08.

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## **Sedatives & Sleeping Pills**

Ambien  
Ativan  
Centrax  
Dalmane  
diazepam  
Halcion  
Librium  
Serax  
Tranxene  
Valium

This is one drug-alcohol interaction we worry about more than most others because it is so common. People swallow tons of sleeping pills and anti-anxiety agents. They almost take these drugs for granted. But many of these compounds can alter reaction time and interfere with driving ability. In combination with

alcohol, coordination and concentration can be severely impaired. Even a sleeping pill like **Dalmane** taken the night before can interact badly with a drink or two the next afternoon. Do not try to drive or engage in work that requires hand-eye coordination if you are mixing and matching such drugs, or you could be tempting fate.

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## **Time Capsules**

Compazine Spansule  
Dexedrine Spansule  
Isoclor Timesule  
Nicobid Tempule  
Ornade Spansule  
Tuss-Ornade Spansule

This interaction is controversial, but if you use one of these timed-release medicines, you may want to keep it in mind. The fear is that alcohol might dissolve away the protective coating that would normally slow absorption and spread it out over several hours.

Once this coating is gone the active ingredients can quickly end up in the blood stream, and instead of 12-hour action you might end up getting too much medicine too fast. Play it safe and avoid alcohol when taking any slow-release time capsules.

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## **Verapamil**

This popular medicine is prescribed for high blood pressure and heart problems. Research in healthy young men has shown that verapamil together with alcohol can raise blood

alcohol levels and prolong its effects in the body. In an older person on multiple medications, that could lead to unanticipated dizziness and a risk of falling.

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## **Vitamin C**

Here's a twist. In one study, the volunteers who took one gram of ascorbic acid (vitamin C) every day for two weeks got the alcohol out of their bloodstream slightly more quickly. Perhaps they revved up their

alcohol dehydrogenase this way; no one is quite sure. This does *not* offer license to go out and drink. More research is needed for confirmation, but it shows it's hard to go wrong with vitamin C.