



## Alcohol/Drug interactions

### References:

1. *A Toast to Health in Later Life - a guide to health-wise drinking.* Arlene Fink & Associates 2009
2. Dr Andy Towers (2014) *NZ Longitudinal Study of Ageing.* Massey University
3. *Psychopharmacology - A handbook for New Zealand Health Professionals* H. Dunn; W. Trimmer & K. Laracy 2011. Whitirea NZ

# General principles

- Alcohol-related problems can also be the result of drug interactions. If you drink alcohol and also take certain medicines (both prescription and non-prescription), the alcohol can change the effect of the drugs, leading to illness or worsening an illness you already have.
- Combining medicines and alcohol can also increase the effect of the **alcohol**, causing more rapid intoxication. It can cause drowsiness or impair reflexes sufficient to have an accident at home or on the road.
- Some drugs are contra-indicated if you have existing liver damage
- Certain medicines are always dangerous with alcohol, even if you are taking just that one drug and drinking only small amounts.
- Risk increases exponentially with the number of medications a person is on. **If you take six or more drugs (no matter what they are) and add alcohol, the combination can be risky. (HART study).**



# Lay Descriptions

If you take. . .

- Antihistamines
- Aspirin

...and drink even small amounts, you may find...

- you get drowsy or fall asleep
- you bleed more (even from simple cuts) or get stomach problems



# Lay Descriptions cont...

- Non-steroidal anti-inflammatory drugs (like Advil and Ibuprofen)
- Blood pressure medicines
- Diabetes medicine
- you get stomach or liver problems
- you get dizzy
- your medicine does not work as well as it should



# Lay Descriptions cont...

- Medicine for ulcers or other stomach problems
- Medicine for depression or anxiety or other emotional problems
- you feel sleepy or dizzy after just 1 or 2 drinks, or your balance may become impaired
- you become confused or your reaction time may be slowed



# Lay Descriptions cont...

- Medicine for sleep disorders
- you become drowsy and confused, get a headache, or generally feel awful
- Antibiotics for bacterial infections or medicine for fungal infections
- you may have headache, nausea and vomiting, rapid heart rate, and shortness of breath



# Common Medicines - Trade names

Type of medicine:	Examples:
<b>Pain Medicines</b>	Pethidine, Codeine, Morphine, Oxycodone, Tramadol, Buprenorphine (Suboxone)
<b>Ulcer or Stomach Medicines</b>	Zantac, Tagamet, Losec
<b>Diabetes</b>	Metphormin, Insulin
<b>High Blood Pressure Medicines</b>	Cilazapril (Inhibace), Aldomet (Aldoril, Dopamet), Hydralazine (Apresoline), 'water pills'
<b>Blood Thinners</b>	Dipyridamole (Persantine), Aspirin
<b>Heart Medicine</b>	Nitrates, Isordil, Nitroglycerin patch, Digoxin, Lasix



# Common medicines cont...

Type of medicine:	Examples:
<b>Seizure Medicine</b>	Dilantin, phenobarbital, Tegretol Sodium Valporate
<b>Depression Medicine</b>	Nardil, desipramine, Prozac, SSRIs, Venlafaxine (Efexor, Effexor)
<b>Sedatives or Sleeping Medicines</b>	Valium, Librium, Xanax, Ativan, Halcion, Lorazepam, Oxazepam, Zopiclone, Temazepam
<b>Tranquilizers</b>	Seroquel (Quetiapine), Thorazine, Haldol, Mellaril,
<b>Antihistamines</b>	Benadryl, other antihistamines
<b>Antibiotics or anti fungal medications</b>	Erythromycin or Flagyl
<b>Arthritis and Pain Medicines</b>	Ibuprofen, Voltaren, Naprosyn,



# Specific actions

- **Pain Relievers**

- In general, painkillers containing morphine and codeine-like compounds can increase the effects of alcohol on attention and coordination, as well as on breathing, which has resulted in some fatalities, particularly with *dextropropoxyphene* (Doloxene)
- Alcohol has also been associated with rapid release of morphine from extended-release preparations
- Paracetamol has few side-effects and is regarded as generally safe, although excess or sustained use can lead to potentially life-threatening liver damage and occasionally kidney damage



# Specific actions cont...

- **Opiate-Based Pain Relievers**
  - In addition to reducing pain, opiates also cause sedation drowsiness and depresses breathing
  - Opiates can impair thinking and physical abilities required for driving or operating machinery
  - The most frequent side effects of opiates include light-headedness, dizziness, nausea, vomiting, shortness of breath and sedation



# Specific Actions cont...

- **Drugs used to treat heart problems and high blood pressure**
  - Drinking over recommended limits over a long period of time raises blood pressure and may reduce the effectiveness of drugs used to treat high blood pressure. Some people also experience low blood pressure, dizziness and fainting shortly after having drunk alcohol. The risk of these interactions increases with age
  - Patients who take *glyceryl trinitrate* (spray or patches) while drinking alcohol may feel faint and dizzy



# Specific Actions cont...

- **Drugs used to treat mental health problems**
  - All drugs that may cause drowsiness have the potential to enhance the effects of alcohol in this sensation
  - *Benzodiazepines* (valium, lorazepam, oxazepam) and related drugs for anxiety and sleep problems increase the effect of alcohol on attention and coordination. Alcohol may also increase the plasma levels *diazepam* (valium)
- **Drugs used to treat epilepsy or for stabilising mood**
  - Heavy drinking might increase the rate of which *carbamazepine* (tegretol) is cleared from the body, thereby lowering its level in the bloodstream
  - Acute intoxication from alcohol can be considerably increased by taking *meprobamate* (Miltown, Equanil)



# Specific Actions cont...

- Drugs used to treat allergies

- Some drugs used to treat allergies can cause drowsiness, which can be increased by alcohol. NB They may be purchased over the counter and often slip through the screening net. These include:

*Hydroxyzine* (Vistaril, Atarax)

*Diphenhydramine* (Benadryl)

*Promethazine* (Phenergan)

- Drugs used to treat infections

- Alcohol can cause a small reduction in the absorption of *erythromycin*
- 'Disulfiram-like reactions' can occur in those who drink alcohol and take *cefamandole, cefmenoxime, cefoperazone, cefotetan, latamoxef, metronidazole* or *ketoconazole*



# Disulfiram (Antabuse) Reaction

- Under normal metabolism, alcohol is broken down in the liver by the enzyme alcohol dehydrogenase to acetaldehyde, which is then converted by the enzyme acetaldehyde dehydrogenase to the harmless acetic acid
- Disulfiram blocks this reaction at the intermediate stage by blocking acetaldehyde dehydrogenase
- After alcohol intake under the influence of disulfiram, the concentration of acetaldehyde in the blood may be five to ten times higher than that found during metabolism of the same amount of alcohol alone



## Disulfiram Reaction cont...

- As acetaldehyde is one of the major causes of the symptoms of a "hangover", this produces immediate and severe negative reaction to alcohol intake
- Five to ten minutes after alcohol intake, the patient may experience the effects of a severe hangover for a period of thirty minutes up to several hours.
- Symptoms include flushing of the skin, accelerated heart rate, shortness of breath, nausea, vomiting, throbbing headache, visual disturbance, mental confusion, postural syncope (fainting), and circulatory collapse.



# Commonly Used Trade Names

- Cefamandole - Mandol
- Cefmenoxime - third-generation cephalosporin antibiotic
- Cefoperazone - Cefobid or Cefazone
- Cefotetan - Cefotan
- Latamoxef - Tamoxifen is an antagonist of the oestrogen receptor in breast tissue
- Metronidazole - Flagyl
- Ketoconazole - Nizoral, Extina, Xolegel, Kuric



## Specific Actions cont...

- **Drugs used to treat nausea and vomiting**
  - Metoclopramide (Maxalon) can increase the rate of alcohol absorption; thereby raising blood alcohol levels
- **Other prescribed medicines**
  - Nicotine patches may increase the effect of alcohol on heart rate and reduce the time taken to reach highest blood alcohol levels



# Non-prescription drugs

- **Cannabis** - early and long term use appears to change the structure of the brain and appear to affect concentration
- **Inhalants** - many have similar effects to alcohol
- **Opioids** - hypoxic brain injury due to lack of oxygen during overdose
- **Amphetamine type stimulants** - appear to change the structure of the brain

