

Alcohol related diseases

NATASHA JIWA

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Introduction

- ▶ Dangers of alcohol
- ▶ Recommended alcohol consumption guidelines
- ▶ Alcohol dependence
- ▶ Sequelae of alcohol
- ▶ Acute effects of alcohol
- ▶ Alcohol withdrawal
- ▶ Liver disease
- ▶ Effect of alcohol on other organs

Dangers of alcohol

- *statistics from the UK*

- ▶ 32% men
 - ▶ 20% women
- } Drink more than their recommended units per week
- ▶ Of these up to 50% drink at levels associated with alcohol related harm (ONS 2000)
 - ▶ 1 in 13 adults *dependent* on alcohol
 - ▶ Similar trend developing in Africa

What are the effects of alcohol?

International Classification of Diseases

ICD-10 code description

- ▶ F10 Mental and behavioural disorders due to use of alcohol
- ▶ 142.6 Alcoholic cardiomyopathy
- ▶ K70 Alcoholic liver disease
- ▶ K73 Chronic hepatitis, not elsewhere classified
- ▶ K74 Fibrosis and cirrhosis of the liver
- ▶ X45 Accidental poisoning by and exposure to alcohol

Looking at these definitions a little more closely

- ▶ Alcohol dependence ICD-10
 - ▶ Psychological symptoms and behavioural indicators
- ▶ Harmful alcohol use ICD-10
 - ▶ Physical or mental damage as a result of alcohol, not associated with dependence
- ▶ Hazardous alcohol intake
 - ▶ M: 3-7 units most days **or** ≥ 7 drinks 3x/week
 - ▶ F: 2-5 drinks most days **or** ≥ 5 drinks 3x/week

What are the recommended guidelines?

- ▶ Females: 2-3 units/day
- ▶ Males: 3-4 units/day
- ▶ Pregnancy: 1-2 units once or twice a week
 - ▶ NICE guidelines:
 - ▶ none in first trimester
 - ▶ 1.5 units/d max in 2nd and 3rd trimester

Alcohol dependence syndrome

ICD-10 criteria for alcohol dependence syndrome

3 or more of the following in the last year:

1. Strong desire / compulsion to drink
2. Difficulty controlling drinking behaviour e.g. level of drinking
3. Development of tolerance
4. Physical withdrawal symptoms on cessation
5. Prioritisation of drinking behaviour
6. Continued drinking despite negative consequences

Alcohol Dependence

- ▶ tolerance
- ▶ withdrawal
- ▶ use often greater than intended
- ▶ repeatedly trying without success to reduce alcohol use
- ▶ spending much time using alcohol, recovering, or trying to obtain it
- ▶ reducing / abandoning important work, social, or leisure activities because of alcohol use
- ▶ continuing to use alcohol, despite knowing that it has probably caused ongoing physical or psychological problems.

What causes alcohol dependence?

- ▶ Genetic – drinking behaviour
- ▶ Environmental
- ▶ Biochemical
 - ▶ ?neurotransmitters, ?alcohol dehydrogenase
- ▶ Psychiatric disease
 - ▶ Phobia, depression
- ▶ Social
 - ▶ Prevalence of dependency is proportional per capita consumption

Data supporting genetic influences on alcohol consumption

- ▶ 4 times the risk in primary relatives with alcohol dependence
- ▶ MZ / DZ twins = 2:1
- ▶ Adopted away children – 4 times the risk



Estimating Units per Drink

Drink	Units
Large glass wine 250ml 12%	
1 pint cider 6.2%	
1 pint lager 4.2%	
Double gin 70ml 37.5%	
Bottle alcopop 275ml 5%	

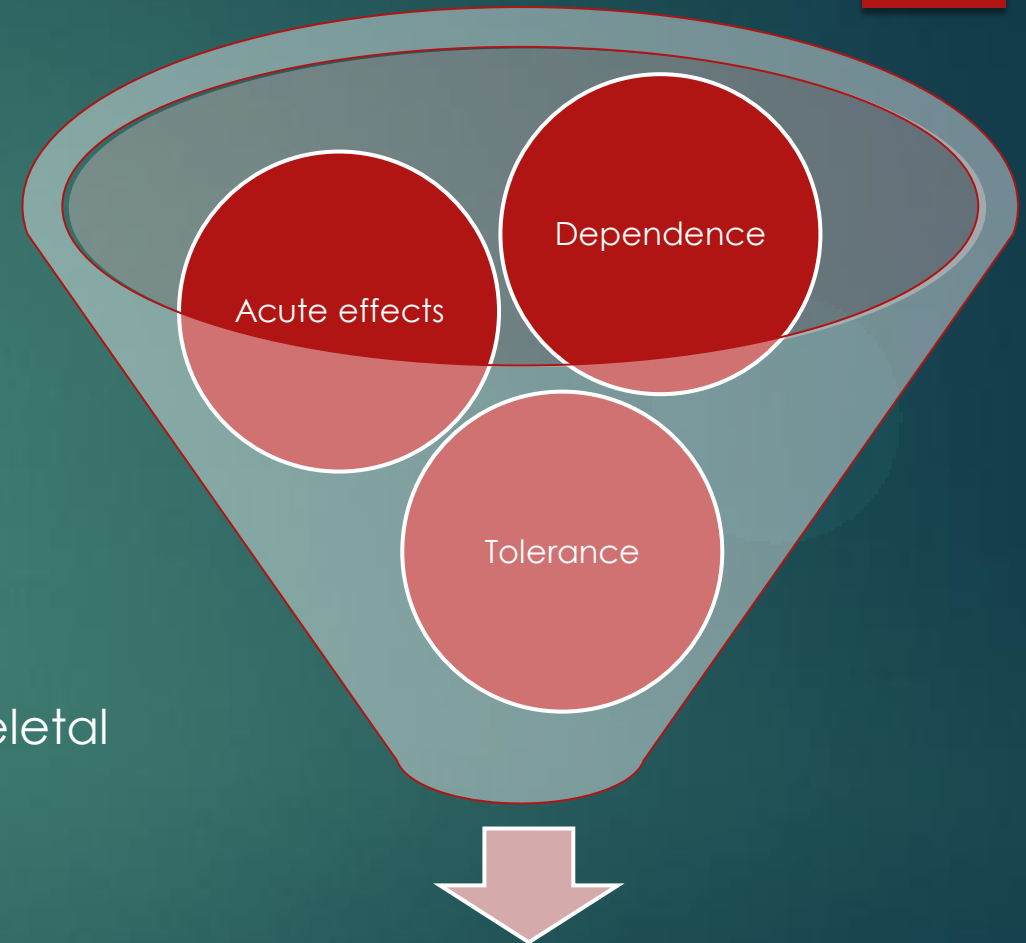
Estimating Units per Drink

Drink	Units
Large glass wine 250ml 12%	3
1 pint cider 6.2%	3.5
1 pint lager 4.2%	2.67
Double gin 70ml 37.5%	2.6
Bottle alcopop 275ml 5%	1.5

Sequelae of alcohol

- ▶ Social
- ▶ Acute Effects
- ▶ Withdrawal Syndrome
- ▶ Organs

1. Liver
2. Gastrointestinal tract
3. Brain
4. Cardiovascular
5. Haematological
6. Foetus
7. immune
8. Musculoskeletal
9. Endocrine
10. Cancer



End organ damage

Social consequence of alcohol

- ▶ 7-25% deaths at work
- ▶ 38% drowning
- ▶ Suicides – 39% chronic drinkers, 70% drinking at the time of death
- ▶ Reduction in real price of alcohol in the last 30 years in directly linked to a increase in alcohol morbidity and mortality

Alcohol related hospital attendances

- ▶ 12% A&E attendances
- ▶ 35% orthopaedic admissions
- ▶ 33-50% head injuries

Hospital admissions related to alcohol increased 40% in last 5 years

- ▶ 30% patients admitted for non-alcohol related reasons are drinking at hazardous levels
- ▶ Sometimes quite easy to look over the cause for these attendances or turn a blind eye

Cannot overlook impact on crime

Alcohol a factor in

- ▶ 60% homicides
- ▶ 75% stabbings
- ▶ 50-70% domestic violence
- ▶ 59 % Death in custody (IPCC 2002)



Acute effects of alcohol

Units	Bld conc ⁿ (mg/dl)	Effects on behaviour
1.5-3 – M 0.5-2 - F	20-50	Relaxation, ↑confidence
3-5 – M 2-3 – F	50-80	Euphoria, impaired judgement, flushing, loss of fine motor control
5-8 – M 3-5 – F	80-120	Slowed reflexes, slurred, ↓ coordination, control and attention
8-15 – M 5-10 – F	120-160	Loss of balance, aggressive, emotional, loss of memory and comprehension
15-26 – M 10-15 – F	260-400	Extreme confusion, inability to stand, ↓ BP, body temp, respiration. Vomiting
>26 – M >15 - F	>400	Coma. Death likely >500mg/dl (respiratory centre depression)

Alcohol Withdrawal

DSM criteria

1. Occurs during cessation of heavy use of alcohol.
2. Two or more of signs of withdrawal [P and Temp elevated; tremor; insomnia; nausea; hallucinations or illusions; agitation; anxiety; seizures]
3. distressed or impaired
4. not better accounted for as part of another disorder

Alcohol Withdrawal

Early

Onset 3-12hr, peak 24-48, lasts 5-7 days

Tremor, sweating, anorexia, nausea, anxiety, insomnia, tachycardia, systolic hypertension

Withdrawal seizures

10-60hr, peak 12-24hr, grand mal, usually self limiting

Predisposing factors: ↓glc, ↓K, ↓Mg²⁺, epilepsy, sepsis

Delirium tremens

2-5d post cessation

5% incidence, may be precipitated by intercurrent (febrile) illness

Up to 20% mortality if poorly managed

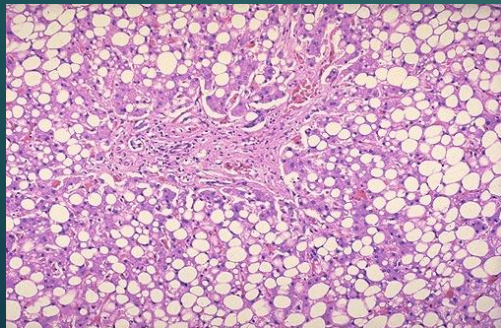
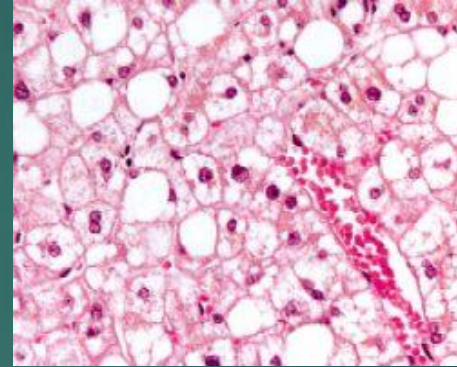
Older, arrhythmias, concurrent illness

Alcohol's effects on the body

LIVER

- ▶ Alcoholic liver disease

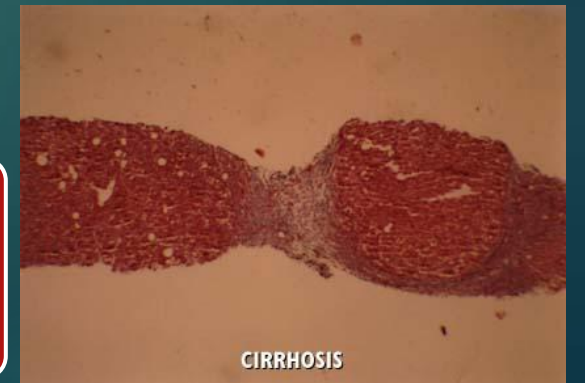
ETOH excess
Steatosis



Steatohepatitis



Cirrhosis



Alcohol's effects on the body

LIVER

▶ STEATOSIS

- ▶ Common and reversible, few symptoms
- ▶ O/E: hepatomegaly
- ▶ Investigations: slightly raised liver enzymes ALT/AST

▶ STEATOHEPATITIS

- ▶ Less common, also presents with few symptoms
- ▶ Is a precursor of cirrhosis
- ▶ Can cause multi-organ failure and death (alcoholic hepatitis)

Alcohol's effects on the body

LIVER

▶ CIRRHOSIS

- ▶ Eventually develops in around 20% of patients
- ▶ Is IRREVERISBLE damage to the liver
- ▶ Presents with significant morbidity
 - ▶ Jaundice
 - ▶ Ascites
 - ▶ Encephalopathy
 - ▶ Infections
- ▶ The risk of HCC is 3% per year!
- ▶ Most patients die within 10 years

Alcohol's effects on the body

GI TRACT

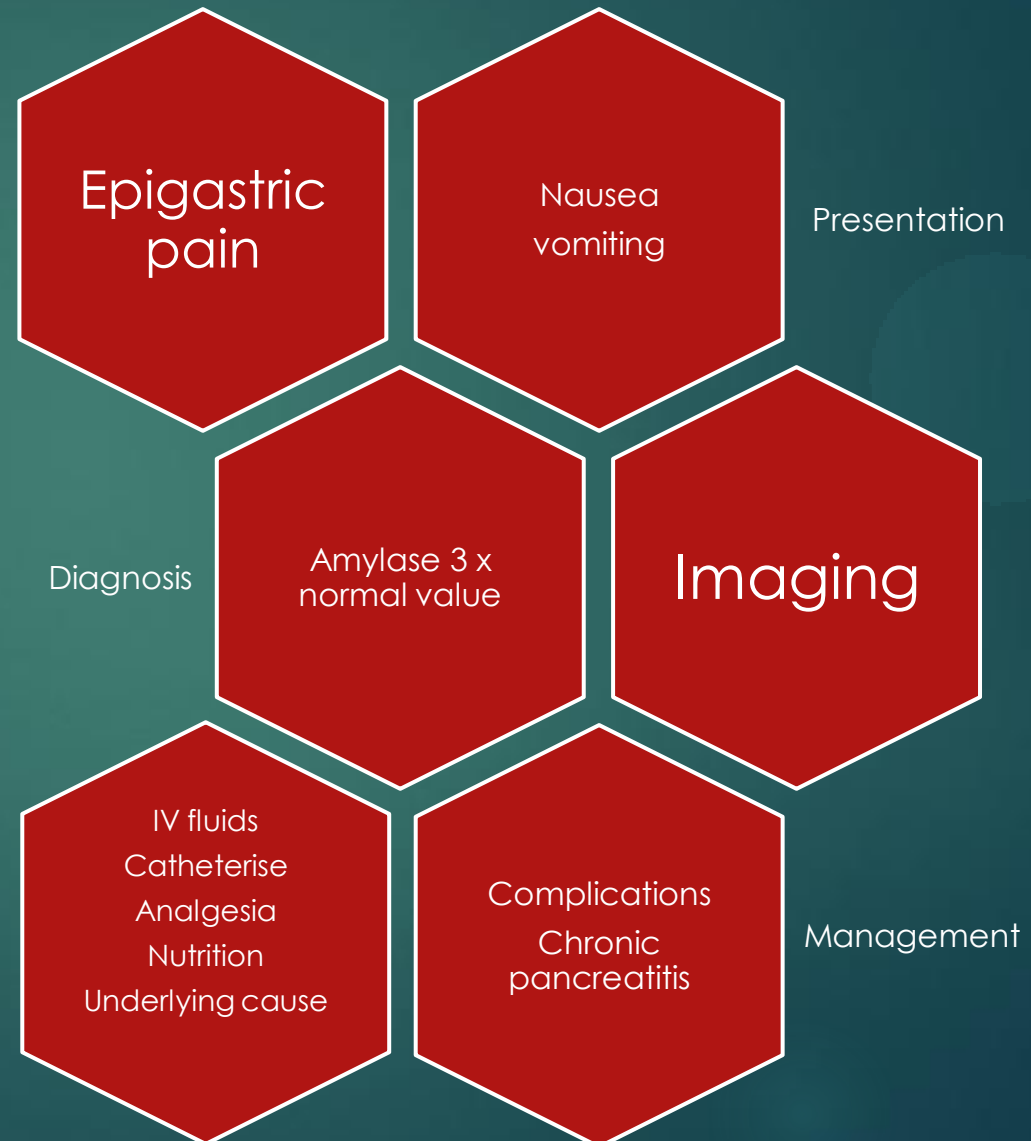
- ▶ Predisposes to pathology in every part of the GI tract

OROPHARYNX	Cancer
OESOPHAGUS	Cancer
STOMACH	Ulcers Gastritis
COLON	Cancer

Alcohol's effects on the body

PANCREATITIS

- ▶ Acute pancreatitis
 - ▶ GET SMASHED
 - ▶ **G**allstones (40%)
 - ▶ **ETOH (40%)**
 - ▶ Trauma
 - ▶ **S**teroids
 - ▶ **M**umps
 - ▶ **A**utimmune
 - ▶ **S**corpion bite
 - ▶ **H**yperlipidaemia
 - ▶ **ERC**P
 - ▶ **D**rugs



Alcohol's effects on the body

NEUROLOGICAL

- ▶ Alcohol dementia
- ▶ Depressive pseudodementia
- ▶ Wernicke's/Korsakoff's

Wernicke's
(reversible)

- Ataxia
- Ophthalmoplegia
- Nystagmus

Korsakoff's
(irreversible)

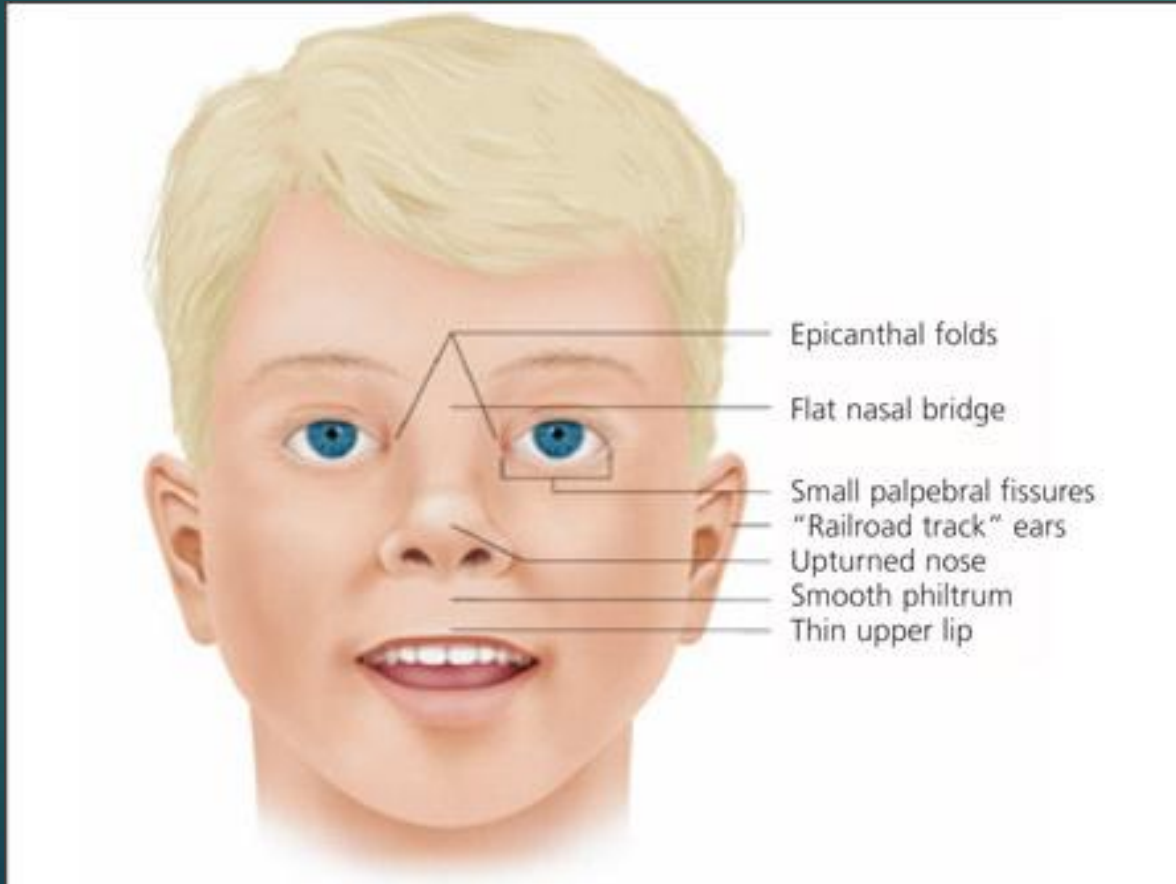
- Confabulation
- Profound amnesia
- Cognitive impairment



Alcohol's effects on the body

FOETUS

▶ Fetal Alcohol Syndrome

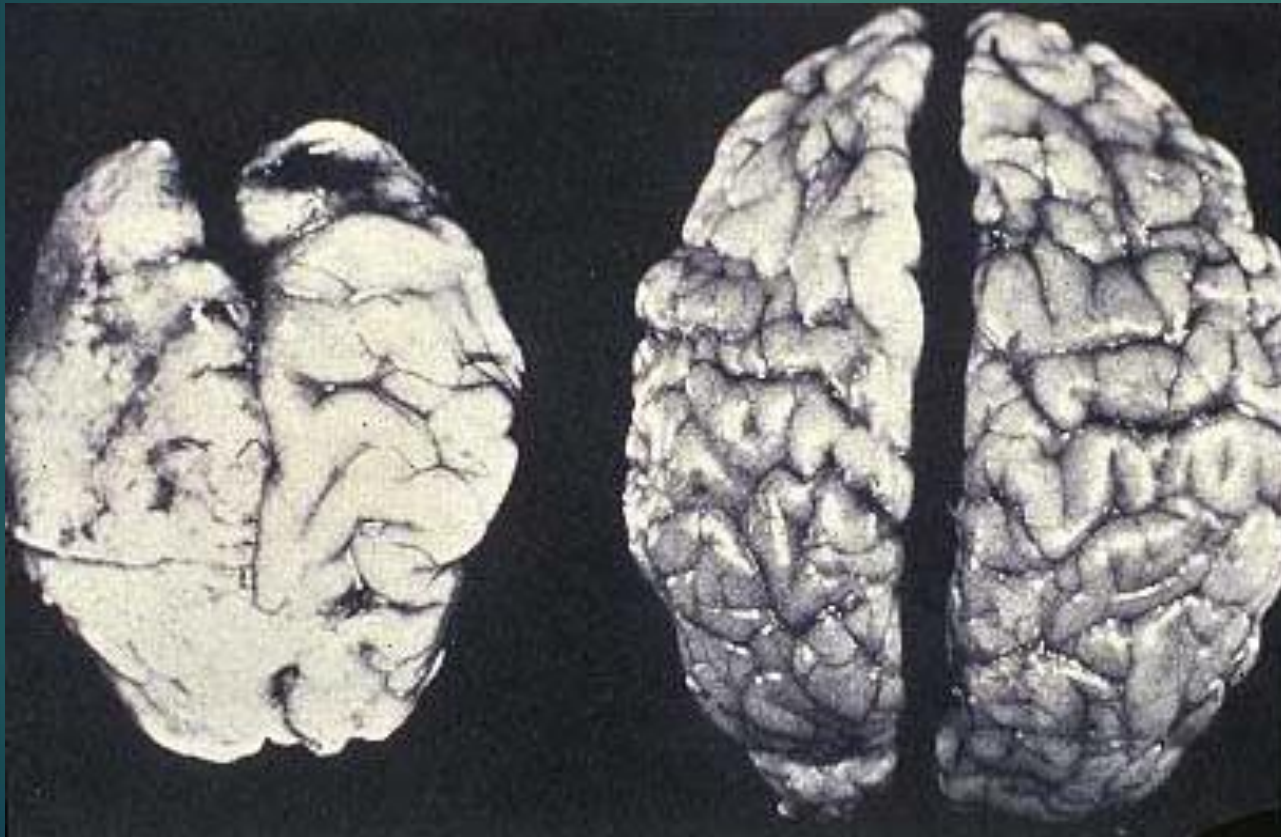


Skeletal, heart
defects
abnormal palmar
creases urogenital

Alcohol's effects on the body

FOETUS

► Fetal Alcohol Syndrome



Effects on the brain

- Microcephaly
- Migration abnormalities
- Agnesis of corpus callosum
- Abnormal cerebellum
- Dilated ventricles

Alcohol's effects on the body

MUSCULOSKELETAL

- ▶ Dupuytren's contracture
- ▶ Fractures
- ▶ Osteomalacia
- ▶ Osteoporosis
- ▶ Myopathies



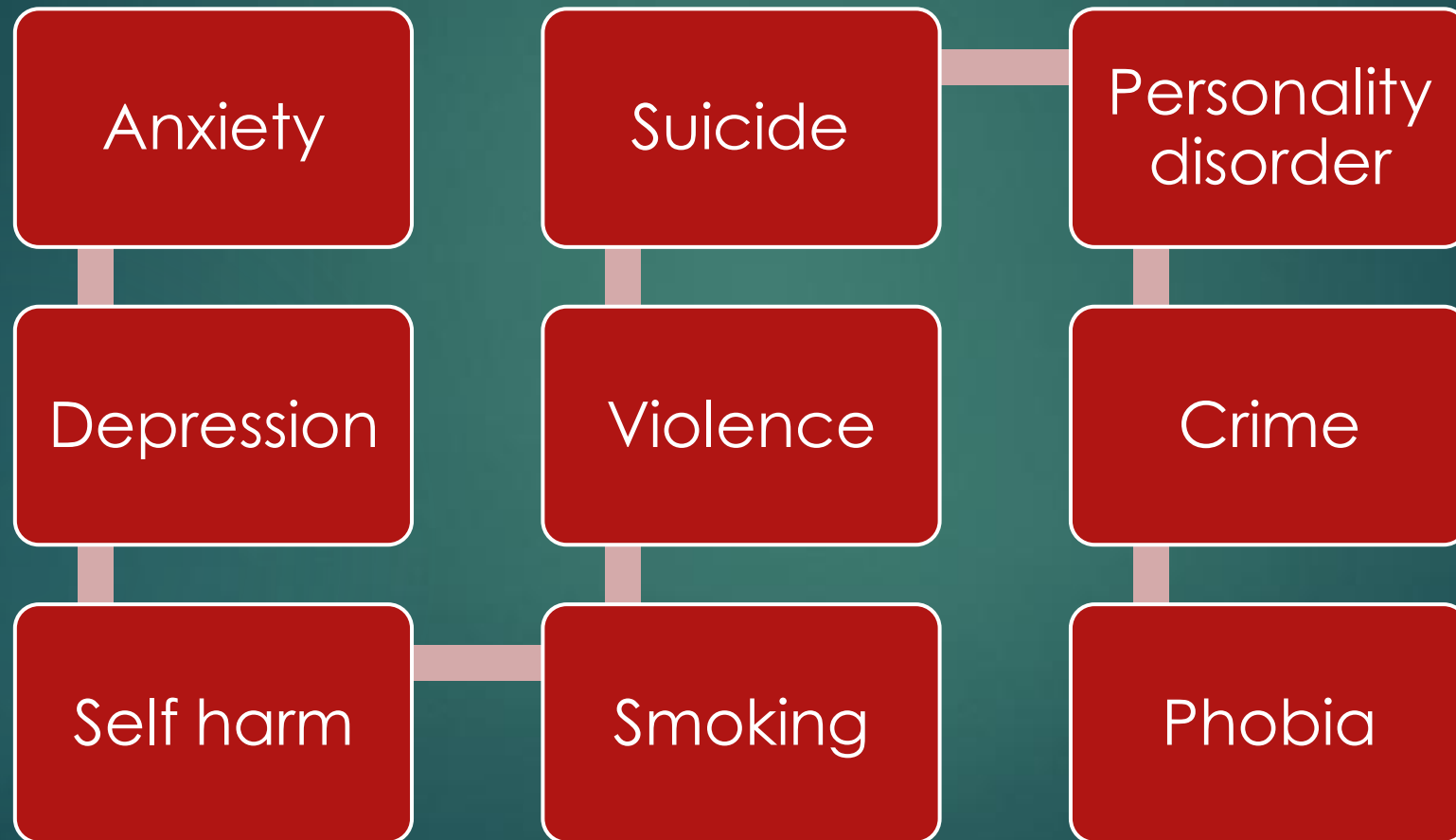
Alcohol's effects on the body

CANCER

- ▶ There is a relationship between excess ETOH and these cancers
 - ▶ Oral cavity
 - ▶ Pharynx
 - ▶ Larynx
 - ▶ Oesophagus
 - ▶ Liver
 - ▶ Colorectal female breast cancer
 - ▶ Lung
 - ▶ Stomach
- ▶ There is no relationship between ETOH and these cancers
 - ▶ Non Hodgkin's lymphoma
 - ▶ Renal

Alcohol's effects on the body

PSYCHOLOGICAL EFFECTS



Summary

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Be wise...

