



**ALCOHOL
and
HEALTH**

Presentation to
**Divisions of General
Practice
Network Forum 2003**

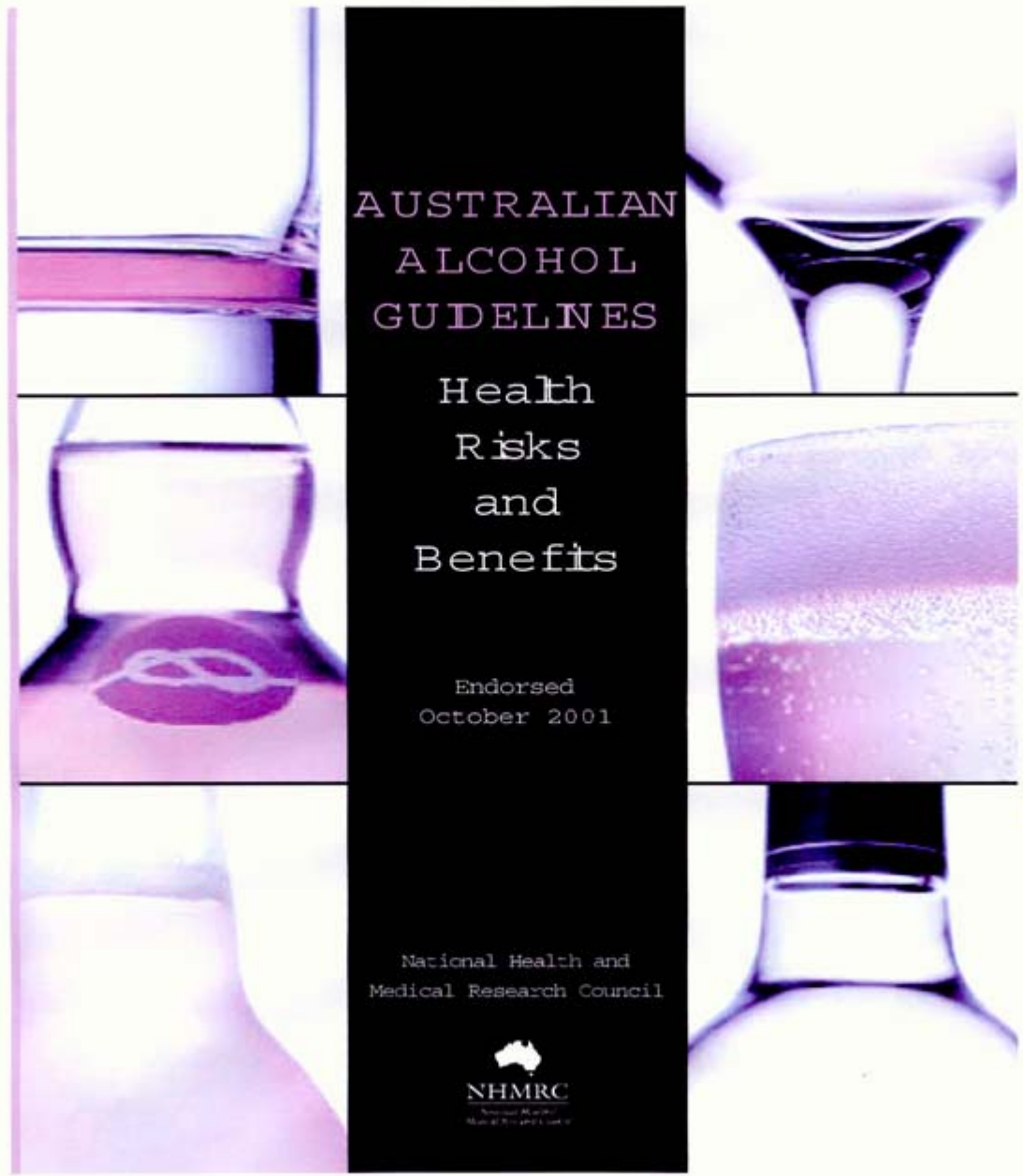
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Australian Associated Brewers Inc**



The presentation mainly concentrates on ...

- NHMRC guidelines entitled “Australian Alcohol Guidelines”.



AUSTRALIAN
ALCOHOL
GUIDELINES

Health
Risks
and
Benefits

Endorsed
October 2001

National Health and
Medical Research Council



NHMRC

- The NHMRC has produced two separate guidelines on Australian alcohol consumption. The first in the early 90s and the second over the period of 1999-2001.
- A condition imposed by the NHMRC was that all statements concerning health risks and benefits of alcohol consumption must be evidence-based.

Evidence Based Guidelines

- Still have to balance competing issues, questions and interest.
- Do help to contain a bias and ideology.
- But evidence is not always satisfactorily available.
- Transfer evidence to policy, law, regulations, population health and individual practice is not easy.
- Evidence is often population based (long term well controlled large pop. studies) and hence has a “probability quality”.
- Biomedical evidence often is very complicated e.g. genetic information.

Why does Australia need alcohol guidelines?

The problem boils down to four main issues and four main areas of response.

The Dimensions of the Debate

Public Attitudes and Behaviours	Intoxication and Acute Vulnerability (Binge Drinking)
Health Benefits of Mild to Moderate Drinking	Health Risks of Chronic Immoderate Drinking

The dimension of the response to the Debate/Dilemma

Legal and Regulatory Issues	Cultural Change Issues
Community Education Issues	Individual Interactions (Health professionals, Patients and Clients)

Alcohol is part of our culture

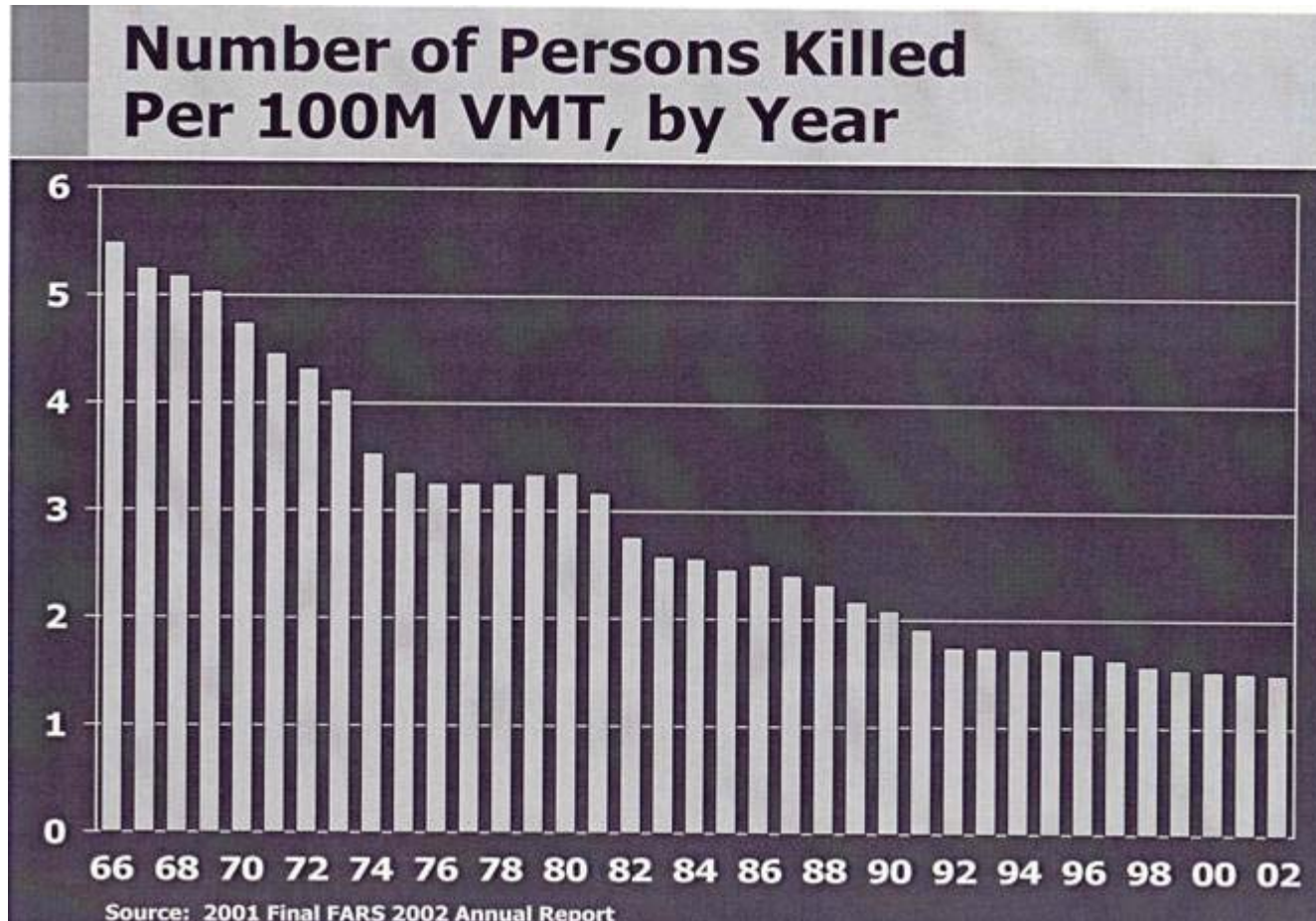


- It is viewed as a pleasant part of our culture, having an important role in our social and cultural life.
- It is estimated that about 85-90% of Australians drink alcohol from time-to-time up to daily.
- Most of these people drink at a level which is safe and healthy.
- About 3% of Australians drink at a level which is considered to be at considerable risk and a further 5% at some risk.
- It is noted that all cultures have drugs as part of their normative life and that as cultures change the issues related to the use of those drugs need to be thought out.
- People do not drink as a general rule with their health in mind.
- In summary, the efforts of the NHMRC both in relation to its Australian Alcohol Guidelines and the federal government and Ministerial Council on Drug Strategy in relation to alcohol in Australia, issues and strategies attempt to address the fact that the understanding of the role of alcohol in our culture has and is changing.

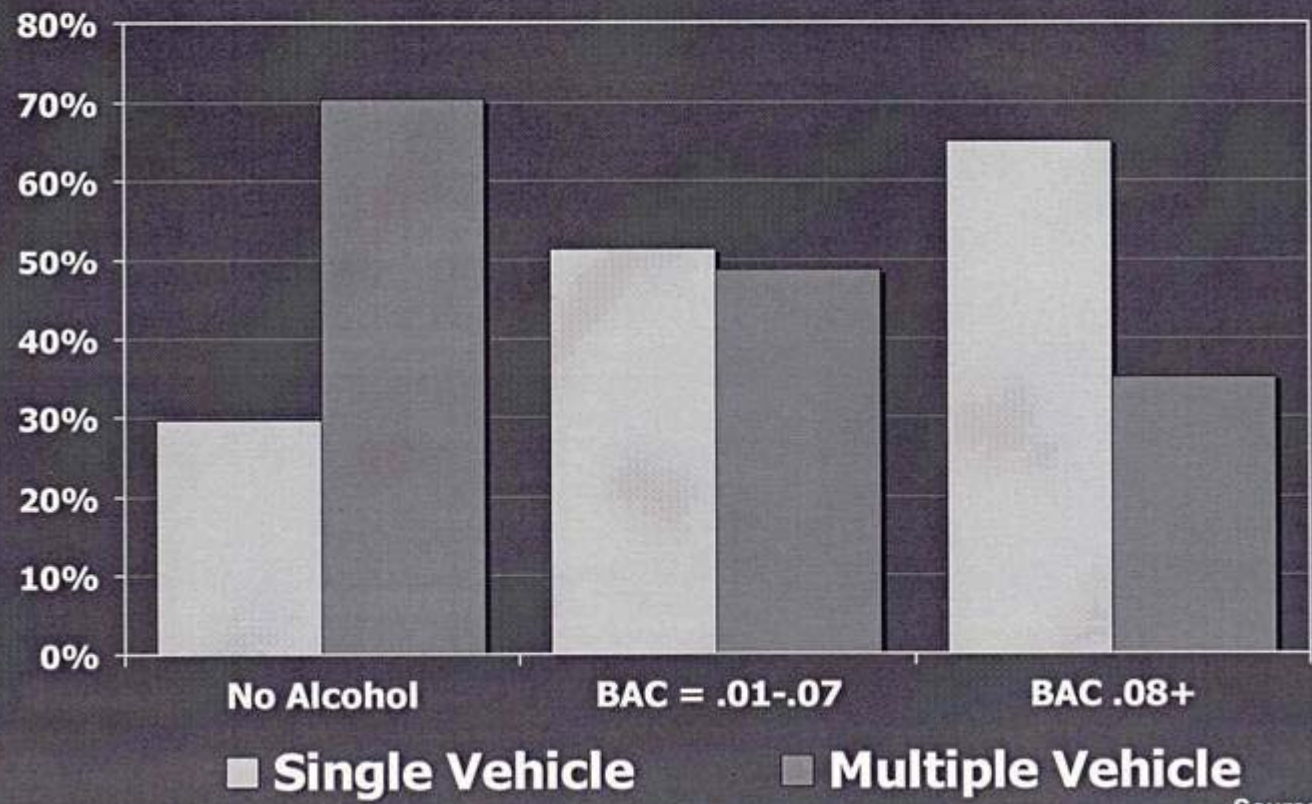
The major issues here are

1. That there are clear risks associated with the use and particularly the misuse of alcohol
2. That the patterns of drinking are critical to an understanding of risks and health benefits from alcohol
3. As a general rule risks are divided into acute risks for example those associated with excessive drinking in relation to situations which require high levels of mental and physical coordination such as driving or using heavy machinery or making difficult decisions.
4. Binge drinking which is considered to be particularly harmful in the young
5. Mild to moderate chronic drinking that is the habitual intake of alcohol as part of a normal lifestyle and normal diet- all of which predicts good health
6. Habitually immoderate drinking to excess which leads to chronic disorders

An example of acute risks – alcohol related car accident fatalities



Crash Type By Driver BAC

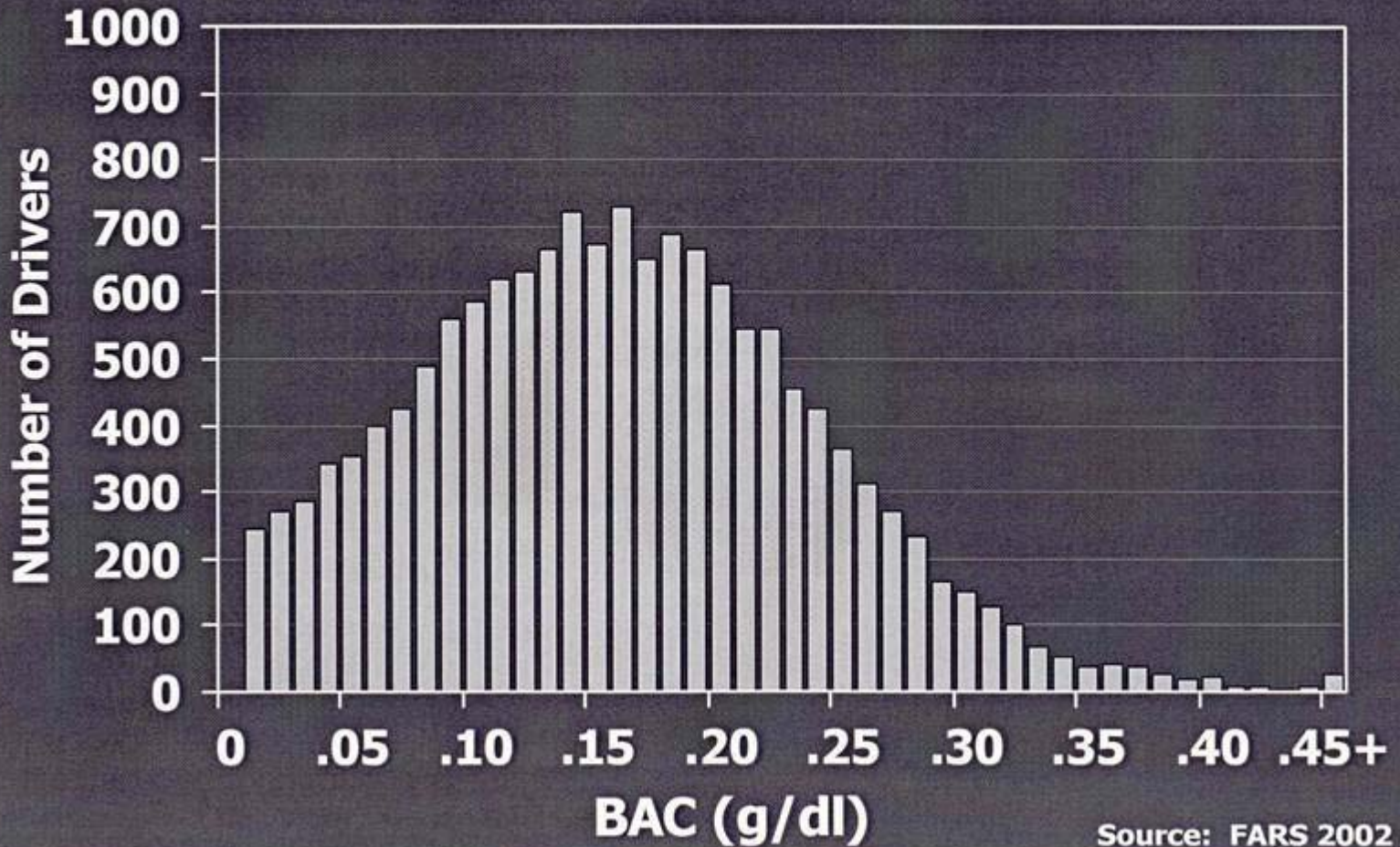


Source: 2002 FARS

Restraint Use Among Fatally Injured Passenger Vehicle Drivers in Alcohol-Related Crashes, 2002

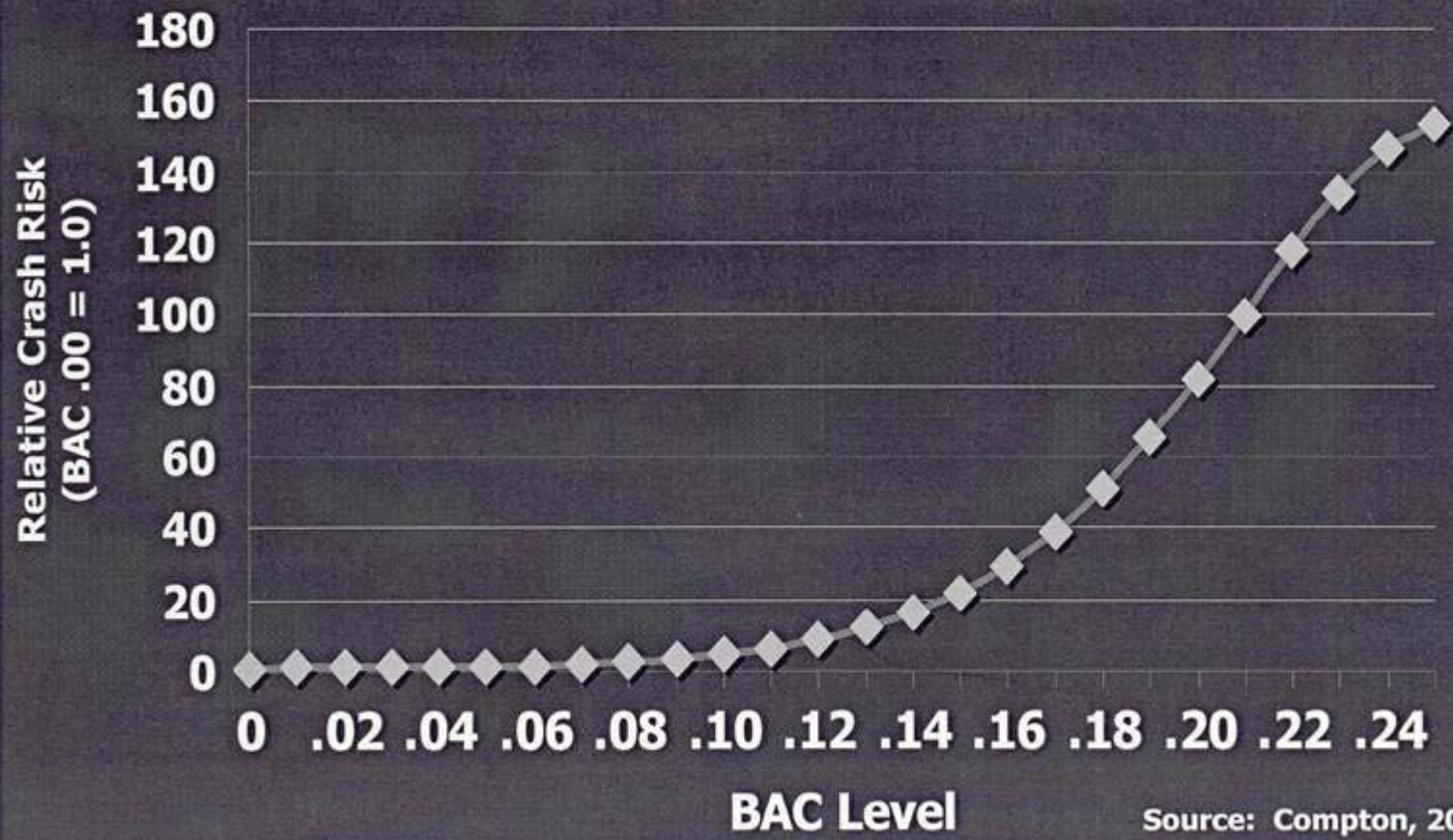


BAC Levels for Alcohol Positive Drivers in Alcohol-Related Fatal Crashes, 2002



Source: FARS 2002 ARF

Relative Crash Risk, 0-.24 BAC



Source: Compton, 2002

The points to be noted here under this particular example of risk are

- That alcohol related fatalities have fallen dramatically in all western countries.
- There tends to be a plateau in recent years.
- The picture now is that the median Blood Alcohol Levels (BAL) of those who die in car accidents is that their BAL is around .016.
- When this sub-population is examined it is found to be a recidivist population in terms of heavy drinking and recurring interactions with the police concerning hazardous driving under the influence.
- Nevertheless differences between different cultures e.g. USA compared to Australia, demonstrate that even “rational” planning methods such as compulsory seat belts are not universally accepted.

Young drinkers risks

The risks for young drinkers are diverse and are of particular concern and include:

- Introduction to alcohol in Australia and other “European” countries tends to occur around about the age of 14.
- In Australian culture there is no planned method of learning to drink sensibly and so binge drinking is a common early pattern particularly in those who move away from home.
- Binge drinking is associated with severe intoxication with proness to accidents including car accidents and sexual misadventure amongst other disadvantages including drowning.
- There are cultures that introduce alcohol into the normal diet and normal social behaviour of the young at a very early age, for example 7,8 or above. Southern Mediterranean countries are typical of this style. Binge drinking amongst the young in these countries is relatively unusual and drinking in any event is almost always associated with eating.

Chronic risk of excessive drinking

- Epidemiological studies are now well established and show that drinking in an immodest or immoderate chronic fashion for example greater than 4-6 drinks per day is associated with an increased risk of ill health over a lifetime.
- Included here are
 - Cirrhosis of the liver (but note that the metabolic syndrome may change the understanding of this problem).
 - Cardio myopathy and arrhythmia.
 - Alcohol induced chronic brain disorder (although preventative public health measures have made a difference in this area).

- Thus it is easy to see that alcohol consumption can be an important health issue
 - In excess in relation to skilled motor activities
 - In the young relation to binge drinking
 - All ages in relation to chronic heavy intake (hazardous drinking) .

At this point we can see ...

1. That drinking alcohol is a culturally normal, pleasurable activity which is highly regarded by Australians and is something which enhances the quality of life.
2. We can see that there are a good number of circumstances under which the use and misuse of alcohol can be hazardous both in terms of fatality untoward disability and handicap and chronic illness.

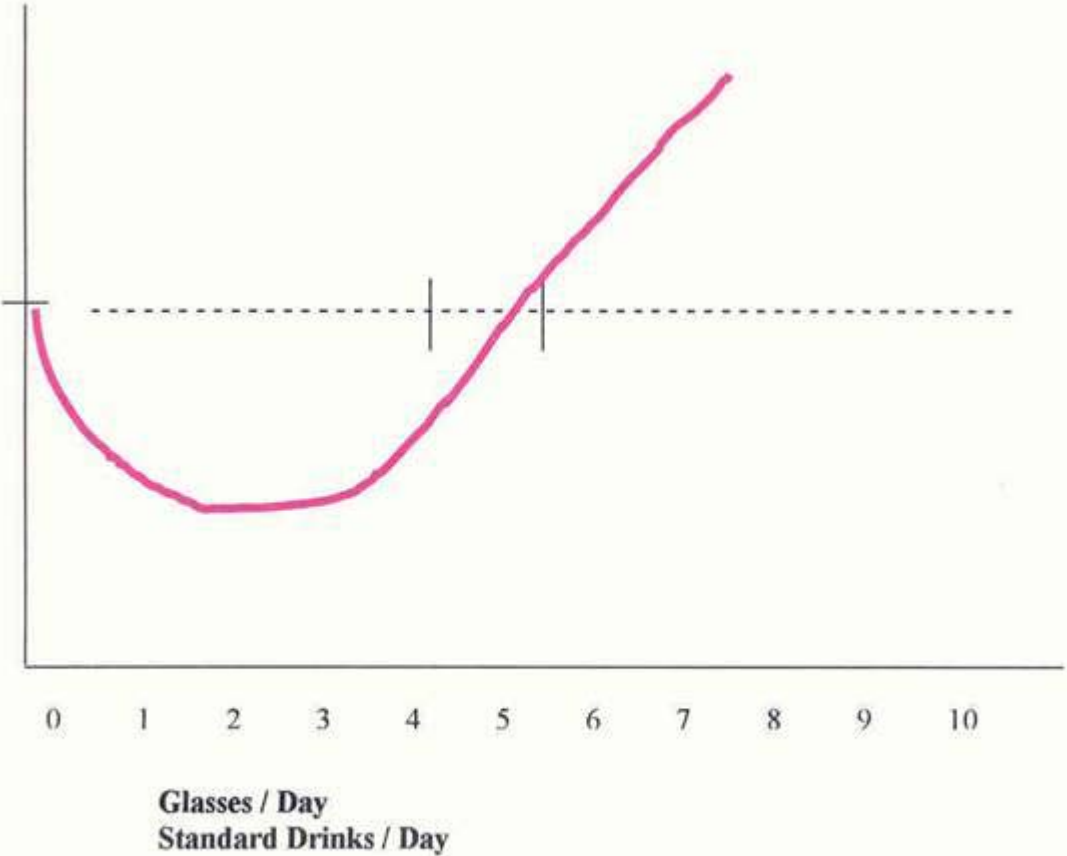
We now turn to the next part of the debate which helps us to understand why developing policies on alcohol intake are so complex.

That is the health benefits of alcohol.

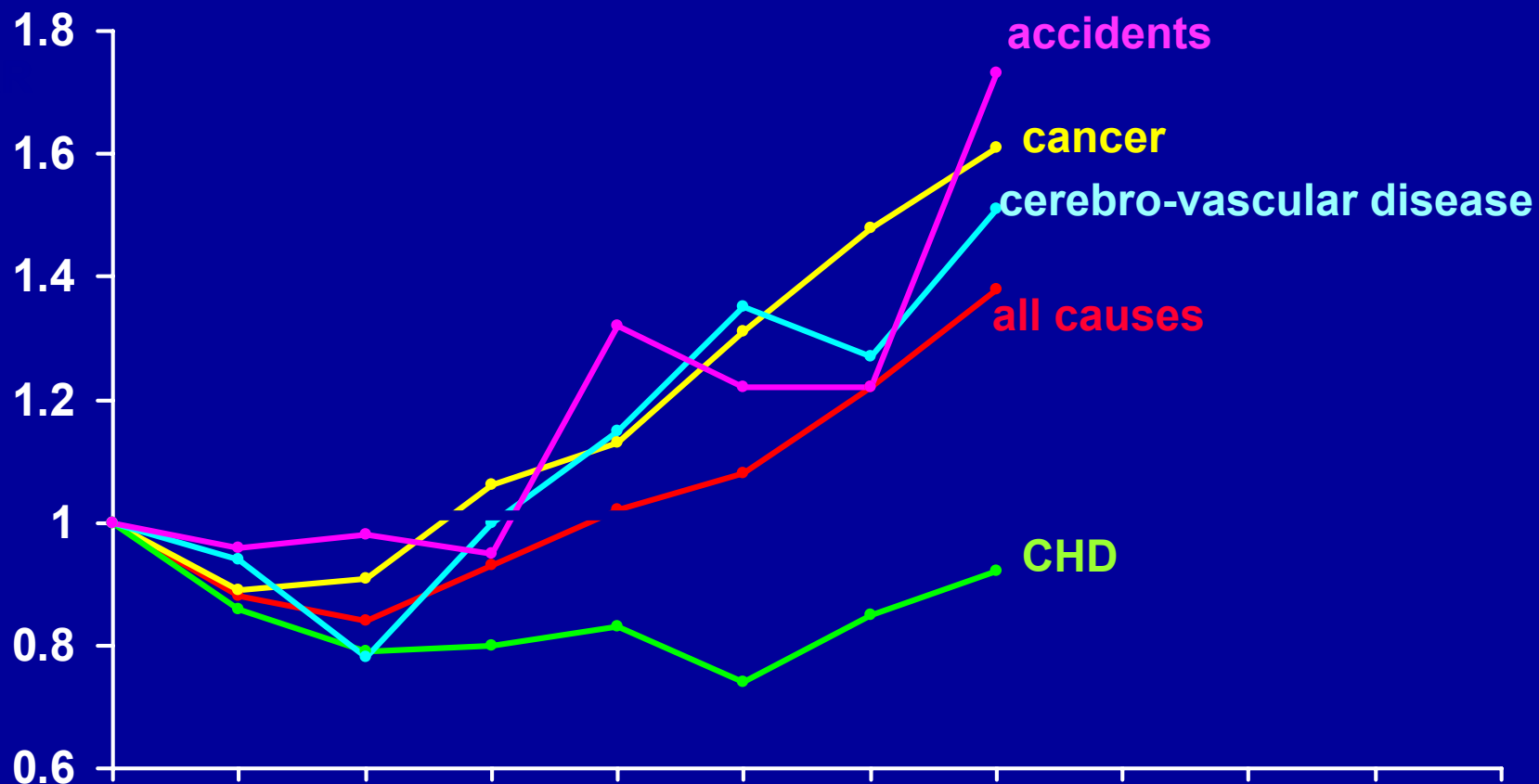
Health Benefits 1

- There have been a large number (15) of long-term prospective studies in many countries with very large populations over periods like ten years which have been controlled for confounding factors such as gender, smoking, weight, presence or absence of diabetes and age, which show that alcohol in moderation carries with it considerable health benefits.

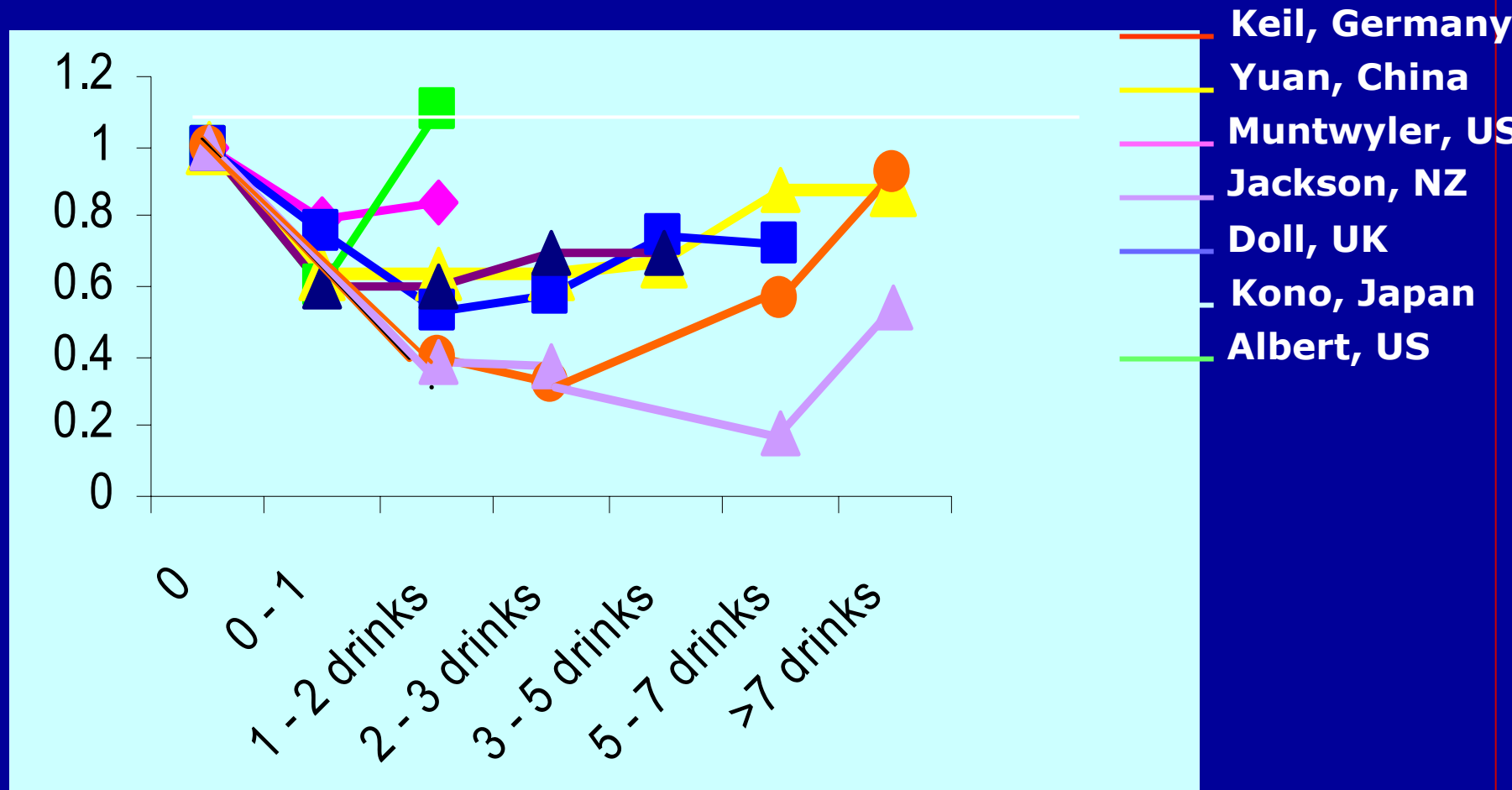
The U or J Shaped Curve (The “Science of Moderation”)



Alcohol consumption and mortality (ACS)



Alcohol and heart disease



U shaped Curve

The U shape curve shows

- That in a moderate range of daily alcohol intake the moderate drinker has considerable health advantages over the abstainer and the heavy or hazardous drinker. These advantages include
 - Considerable fall in all cause mortality
 - Considerable fall in coronary heart disease (the most common cause of death in our society)
 - A probable fall in ischemic stroke
 - A fall in peripheral vascular disease
 - A reduction in type II diabetes
 - Extra protection against osteoporosis
 - Protection against the development of gall stones.

The moderate drinker

The moderate drinker has many characteristics which need to be noted and these include:

- They tend to be moderate in other matters of their life including
 - That they exercise more than abstainers and heavy drinkers
 - That they tend to be less obese
 - That they tend to describe themselves as “healthy” which is a strong correlate with long term better outcomes.
 - They tend to smoke less
 - They tend to have more stable and satisfying social relationships

All of these are also associated with health advantages.

Health Benefits 2

- **When all these things are controlled for a moderate drinker alcohol intake has an independent positive effect in the manner described in the U shaped curve and all the evidence points to the fact that this is due to alcohol and not to any of the specific contents of one or other form of alcohol.**
- **It is true that wines, and perhaps particularly red wines, contain antioxidants but so does beer.**
- **It is possible the silicone content of beer is one of the protective factors in osteoporosis which is not true of other form of alcohol intake.**
- **What is clear is that drinkers, for example the elderly, drink socially and have a richer social environment.**
- **The biological mechanisms by which alcohol reduces the risk of vascular disease includes effects on the epithelium of the blood vessels reduced tendency for platelets to aggregate and changes in the thrombotic tendencies of the blood.**
- **A rise in “good cholesterol” versus “bad cholesterol” . These are direct biological effects.**

In Summary – to date

We have a situation where we have an important drug (alcohol) which is fully incorporated into our culture and more or less universally used by our citizens. The issue is that the drug is used because it is pleasant, enhances social ability, often enhances creativity and enjoyable conversation. Is intrinsically interesting.

It carries with it considerable risks which have to be met responsibly by society.

It carries with considerable health benefits which have to be accommodated into the kinds of responses we might make in attempting to attenuate or prevent risk.

How the guidelines were set out



Guidelines for the whole population

GUIDELINE 1

To minimise risks in the short and longer term, and gain any longer-term benefits

For men

- 1.1 an average of no more than 4 standard drinks a day, and no more than 28 standard drinks over a week;
- 1.2 not more than 6 standard drinks in any one day;
- 1.3 one or two alcohol-free days per week.

For women

- 1.4 an average of no more than 2 standard drinks a day, and no more than 14 standard drinks over a week;
- 1.5 not more than 4 standard drinks in any one day;
- 1.6 one or two alcohol-free days per week.

Note:

These drinks should be spread over several hours. It is assumed that the drinks are consumed at a moderate rate to minimise intoxication, eg for men no more than 2 drinks in the first hour and 1 per hour thereafter, and for women, no more than 1 drink per hour.

This guideline assumes that the drinker is not on medication, does not have a family history of alcohol-related problems or a condition that is made worse by drinking, is not pregnant and, is not about to undertake any activity involving risk or a degree of skill, including driving, flying, water sports, ski-ing, or using complex or heavy machinery or farm machinery, etc.

Rationale:

Drinking within the average drinking levels set in guidelines 1.1 for men and 1.4 for women minimises the longer-term risks of ill health and death related to alcohol, and maximises the potential longer-term health benefits. The levels are based on strong evidence, which continues to accumulate from many studies, on overall death rates in relation to different levels of drinking. The evidence takes into account the health risks and benefits of alcohol. It relates to both average levels of drinking over time, and the harm caused by occasional heavy drinking days (above 6 standard drinks for men or 4 for women).

Studies from several countries, including Australia, show that drinking above the daily limits set in guidelines 1.2 for men and 1.5 for women significantly increases the short-term risk of health and social problems, including risk of injury or death from accident, assault and self-harm.

A given amount of alcohol usually affects women more than men because of differences in the way their bodies process alcohol.

The evidence base for Guideline 1 is discussed on page 34. See also pages 23, 39, 41, 45 and 65.

Comment:

The levels set in this guideline may be too high for people of below-average body size (ie below about 60kg for men and 50kg for women).

The weekly levels of drinking set in guidelines 1.1 and 1.4 allow for some variation from day to day. Guidelines 1.2 and 1.5 set limits to this variation. While they specifically target the short-term risk from intoxication, they also contribute to reducing the long-term risk of harm.

The safety of drinking depends not only on how much a person drinks, but also on the rate of drinking, the environment, and what the person is doing during and after drinking. Eating while drinking helps to reduce intoxication and, therefore, the risk. The risk of injury or violence, depression and suicide attempt are all influenced by the setting in which people are drinking (see Guideline 3).

ALCOHOL-FREE DAYS- A Prudent Approach

Comment: While the evidence for alcohol-free days as a means of reducing health risk is limited, regular alcohol-free days may help drinkers to remain in control of their drinking and reduce its habit-forming potential. This is especially important for people drinking above the guideline limits. Research shows that to become dependent on something, a person must use it regularly. There is evidence that everyone who drinks over time, even at low levels, acquires some physiological tolerance to alcohol, but this occurs less in people who drink only intermittently, and they are also less likely to experience withdrawal symptoms. A mild degree of dependence is common in the Australian population. One early sign of this, for example, is finding it difficult to stop drinking after two or three glasses.

Dependence is further discussed on page 75

Guideline 1

To minimise risks in the short and longer term and gain any longer term benefits.

Guideline2

When undertaking activities that involve risks or a degree of skill.

Guideline 3

When responsible for private and public drinking environments.

Guideline 4

People with a health or social problem that is related to alcohol or made worse by alcohol (including alcohol dependence).

Guideline 5

People with a relative who has, or has had, a problem with alcohol.

Guideline 6

People with mental health problem (including anxiety or depression) and/or sleep disturbance.

Guideline 7

People taking medications or other drugs.

Guideline 8
Older people.

Guideline 9
Young adults (18-25 years).

Guideline 10
Young people (up to 18 years).

Guideline 11

Women who are pregnant or might soon become pregnant.

Guideline 12

People who choose not to drink alcohol.

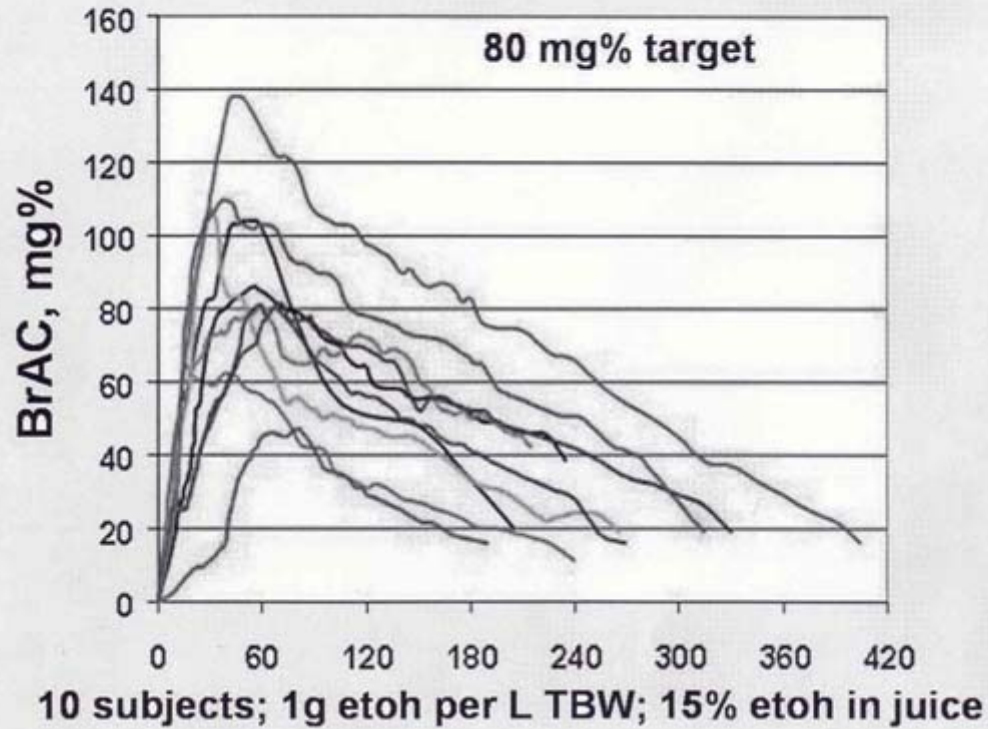
For those who wish to obtain this document it can be located at

www.health.gov.au/nhmrc/publications/synopses/ds9syn.htm

There is a comprehensive review of the the context and evidence based in the document.

A Cautionary Note

Variation in Brain Exposure to Alcohol



Ethanol Elimination Rates in Monozygotic (MZ) and Dizygotic (DZ) Twins: Evidence for Genetic Influence

Ethanol Elimination Rate (mg/kg/h)

Range (80 subjects)

59 - 148

Mean \pm SD

102 \pm 22

Intraclass Correlation Coefficient (r)

for MZ Twins (19 pairs)

0.76

for DZ Twins (21 pairs)

0.28

Heritability (h^2)

0.41

Summary

People most of time drink sensibly and safely and, as it happens, in a manner which enhances health for well understood biopsychosocial reasons.

Risk areas include

- Learning to drink
- Binge drinking and intoxication
- Immoderate drinking

Health benefits

- The general ambiance of the “moderate life style”.
- Specific biological effects of alcohol.