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**Submission to Food Labelling Law and Policy Review**

Dear Sir

I am making a submission to the Food Labelling Law and Policy Review on behalf of the Winemakers' Federation of Australia. I have attached a completed cover sheet as required. Our submission may be made public and contains no third party information.

A handwritten signature in black ink, appearing to read 'Tony Battaglione', with a long horizontal line extending to the right.

Tony Battaglione  
General Manager, Strategy & International Affairs  
Winemakers' Federation of Australia  
NFF House, Level 1 14-16 Brisbane Avenue

**Q1. To what extent should the food regulatory system be used to meet broader public health objectives?**

The food regulatory system is not the appropriate system to meet broader public health objectives. The food regulatory system should concentrate on the core objectives of ensuring that food is safe and meets consumer's expectations in terms of integrity. Other policy objectives are better achieved elsewhere.

**Q2. What is adequate information and to what extent does such information need to be physically present on the label or be provided through other means (e.g. education or website)?**

As regulators are requiring increased information on labels, consumers are finding it more difficult to assimilate such information. The mandatory information required for wine includes alcohol content; container size, source of the grapes/country of origin; allergen labeling and is appropriate to make sure the consumer knows what enough about the product to make an informed decision. We believe that with the advent of modern technology, additional information can be made available via websites. Informed consumers or consumers who wish to make purchase decisions based on wider information other, need to be able to access this information. The label is not the best place to provide much of this information due to limited space, information overload leading to label fatigue.

Putting information on a label is an easy option for regulators and policy makers but is not the best way to present large amounts of information to consumers.

**Q3. How can accurate and consistent labelling be ensured?**

One of the key problems faced by the food industry is the lack of ability by FSANZ to provide interpretations on the Food Standards Code (FSC). This means that producers are in a position where potentially each State and/or Territory will interpret the labelling requirements differently in the FSC. Allowing FSANZ to provide public rulings on questions asked by producers as is done for Tax related issues by the ATO would clarify areas on uncertainty in labelling for consumers, producers and regulators.

In addition, we find reluctance in FSANZ to make changes in the Food Standards Code to protect consumers. When the wine industry has proposed FSC changes to protect consumers they have been rejected. The problem appears to be reluctance by FSANZ to propose any changes that will involve regulatory changes by the States/Territories. Usually the industry is the best placed to identify potential problems with labelling regulations for consumers, but FSANZ don't appear to take this into account in their assessments. In the case of potential problems, the wine industry takes the position one complaint is evidence of a potential problem that needs to be investigated, but FSANZ appear to demand a detailed consumer study which is very expensive. In the case where we have commissioned an independent study, when the results don't appear to agree with the ideas of FSANZ, the results are ignored.

FSANZ often cite the TPA as the principle method of protecting consumers, but often misleading behaviour is inadvertent and has arrived by technological change. Consumers are unlikely to take issues up under the TPA.

If FSANZ could be more transparent in how its decisions are taken it might help, but it appears to be more a cultural issue. FSANZ does not have a culture of consumer service. We believe that views of industry organisations should be accepted as supporting evidence for problems.

**Q4. What principles should guide decisions about government intervention on food labelling?**

We agree that evidence-based assessment is important to justify regulatory change. However, we also caution that where FSANZ do not wish to make or recommend regulatory change as they believe it will involve too much work and/or be difficult to convince the State jurisdictions, FSANZ may use this requirement to ensure change does not happen.

We have had experience where they demand expensive consumer studies and then appear to selectively use the results.

A good example of this is where WFA submitted application A601 – Definition of Wine Based Beverage, seeking to amend Standard 2.7.4 - Wine and Wine Product of the Code to define the term 'wine based beverage', to declare 'wine based beverage' to be a prescribed name and to delete the current definition for wine product.

### **Box 1: Application A601 – Definition of Wine Based Beverage**

This application was submitted in response to consumer complaints that they were misled by the statement 'Wine Product of Australia into believing the product was 'wine'.

FSANZ responded to the application with a letter dated 11 April concerning Application A601 – Definition of 'Wine-based beverage'. In this letter it was stated 'that you believe that the information required in the application is insufficient and that further information is required before an assessment of the Application can proceed'. This was despite a number of complaints of consumer deception being supplied to FSANZ in support of the application.

Specifically, FSANZ required evidence regarding the nature and extent of the consumer deception that the application is seeking to remedy, over and above the consumer complaints provided to FSANZ.

As this issue is very important to the wine industry – a \$5 billion industry creating export earnings of \$2.7 billion and economic activity of the order of \$40 billion in regional Australia, the Board of the Winemakers Federation of Australia was very keen to see this application progress in order to help protect the reputation of Australian wine nationally and internationally.

Consequently we provided part funding to the University of Adelaide to investigate the question of whether Australian consumers were being misled by products labelled as 'Wine Product' as they purchased these in the belief that they were wine. I have enclosed the results of the study for your information. I note that the researchers discussed the methodology with Dr Trevor Webb from FSANZ.

A recent serious issue with regard to product designation for wine export provides further evidence of the need for the Code to be amended in accordance with our application

On 9th September 2008 the Australian Wine and Brandy Corporation was informed that a 4 litre cask of Australian "wine" had been rejected by Chinese authorities due to the presence of added artificial color. Subsequent communication with the exporter revealed that the product (see attached packaging) did contain added water and color (and a white version contained added flavors) but the producer claimed not to be marketing the product as "wine".

The designation on this cask could, arguably, be read in at least three ways;

(Full) (Flavored wine) (Product of Australia)  
(Full- flavored wine) (Product of Australia) or  
(Full flavored) (Wine product) (of Australia)

Alternatives 1 and 3 could be cited by the producer as evidence that they are not presenting the product as "wine".

Clearly the package, taken as a whole, is potentially misleading. The word 'wine' appears in isolation, elsewhere on the pack.

The producer has taken immediate action to discontinue marketing this product in this manner.

Nevertheless the producer appears to have sincerely believed they were complying with the requirements of the Code and has alerted the Corporation to several other examples of alleged non-compliance by other Australian producers. As a consequence the Corporation is now requiring the statement "wine based beverage" on all relevant products proposed for export. However, the Corporation has no jurisdiction over such products sold in the domestic market. A change to the Food Standards Code would provide consistency between export and domestic standards and underpin the integrity of our regulatory system.

## Annex 1 (cont)

A further issue arose in discussion with officials from the Department of Treasury. A number of ready-to-drink products produced from wine have appeared on the market. These have the appearance of spirit based products, and as they are not required to have a product designation, consumers are easily misled. The prescribed name 'Wine Based Beverage' would assist in preventing this consumer confusion.

Subsequently, FSANZ rejected our application. The Winemakers Federation of Australia did not believe that the reasons to reject the Application were reasonable or took into account the material provided by the applicant.

In our view FSANZ did not appear to believe that matters of consumer deception were important enough to be put on its work program, even when a large proportion of producers who are members of WFA support such an action.

FSANZ stated there was a lack of cogent evidence of the extent of the problem in the market place. They have been a number of complaints on this issue from consumers – a fact that is not disputed by FSANZ. This begs the questions of how many complaints are required before FSANZ considers there is a problem. It is a good thing that the same test is not applied to food safety.

FSANZ also notes that the extent of the problem in New Zealand is not quantified. This is correct, as the application was concerned with the reputation to Australia's wine and not New Zealand. I would however, note that the New Zealand Wine Growers are aware of and did not oppose this Application, even though any detrimental effects on Australia's reputation may well help their industry. Of course the other sector that may be negatively impacted by stronger labeling rules are the 'alcopops' producers of New Zealand. I would note as a matter of due process there are concerns that this decision came out of the New Zealand office of FSANZ.

FSANZ also claim that the regulatory intervention is unlikely to provide a net benefit. The independent research clearly states that this regulatory response will have an impact. However, like FSANZ, I acknowledge that labeling is rarely a solution to consumer issues, but it is a solution that is widely used by FSANZ. It also provides consistency with the Australian Wine and Brandy Corporation action to try and enhance the reputation of a very important Australian export industry. We remain concerned that FSANZ inaction may make the AWBC decision challengeable.

FSANZ also claim that legislation already exists to ensure that the food is labelled with a name that indicates the true nature of the food. This is true. Unfortunately, and perhaps it is due to the lack of corporate memory in FSANZ, as Wine Product was a prescribed name until the change of the Food Standards Code in around 2002 it is difficult to argue that this suddenly has become misleading since that requirement for prescription is dropped. Our advice is that current producers labelling as Wine Product of Australia are legal and that although some consumers are demonstrably confused there is no legal base to challenge this under legislation.

WFA also believes that any costs of labelling changes are minimal as these are short shelf life products and any amendments can be phased in. We would suggest that a twelve month phase in would be adequate. There will be no costs of labeling changes either to producers or passed on to consumers. This is a costless response to a problem that can only benefit consumers and producers and meets the test of minimum effective regulation.

Applicants are then constrained in their responses to FSANZ as they need to maintain relationships to seek unbiased assessments of future proposals. Consequently, we did not take this matter further.

**Q5. What criteria should determine the appropriate tools for intervention?**

The criteria and approach is already enshrined largely in the whole-of-government endorsed principles of Minimum Effective Regulation adopted by COAG and endorsed by the Food Regulation Ministerial Council.

[http://www.health.gov.au/internet/main/Publishing.nsf/Content/2087CDEAEE7C703CA256F190003AF4B/\\$File/anzfrmc\\_standards.pdf](http://www.health.gov.au/internet/main/Publishing.nsf/Content/2087CDEAEE7C703CA256F190003AF4B/$File/anzfrmc_standards.pdf)

Regulatory change should be a last resort. We have found codes of practice very effective in a number of instances. For example, WFA has developed codes of practices for the use of Wine Show Medals and for terminology to describe fortified wines. However, in some instances, WFA believes that regulatory change is required. The reputation of the Australian wine sector internationally depends on a strong and transparent regulatory system.

The Australian Wine and Brandy Corporation (the “Corporation”) is a statutory authority of the Australian Government. Its responsibilities include:

- (a) to promote and control the export of grape products from Australia and
- (b) to encourage and promote the consumption and sale of grape products both in Australia and overseas.

International wine reputations can be extremely fragile. After additives such as diethylene glycol were discovered in Austrian wine in the 1980’s the Austrian wine sector did not recover its former position in world markets for nearly 20 years. More recently suggestions that certain South African sauvignon blanc wines contained added flavourings resulted in a flurry of damaging publicity for wines from that country.

Wine is a unique product derived from fresh grapes. Wines are differentiated through variation in colour, aroma and flavour derived from the complex interactions between grape variety, geographical region of production, the harvest conditions in a particular year, the influence of yeasts and other micro-organisms, and the skill of the wine production personnel.

The Corporation is active in regulating Australian wine to maintain its reputation.

WFA supports both the activities of the Corporation and FSANZ. However, due to the interaction of international and national regulations, WFA believes that the Corporation is better placed to regulate on issues of consumer deception for wine. WFA strongly supports the removal of development of wine standards into the AWBC Act and away from FSANZ if possible.

**Q6. Is this a satisfactory spectrum for labelling requirements?**

Yes

**Health Safety**

**Q7. In what ways could these misunderstandings and disagreements be overcome?**

One of the key problems faced by the food industry is the lack of ability by FSANZ to provide interpretations on the Food Standards Code (FSC). This means that producers are in a position where potentially each State and/or Territory will interpret the labelling requirements differently in the FSC. Allowing FSANZ to provide public rulings on questions asked by producers as is done for Tax related issues by the ATO would clarify areas on uncertainty in labelling for consumers, producers and regulators.

### **Health Promotion**

#### **Q8. In what ways can food labelling be used to support health promotion initiatives?**

In general food labelling is not an appropriate method to support health promotion activities. Most research into such information from food labelling indicates that it has little effect on consumer behaviour and as more labelling information is required, its effectiveness will decrease more.

Health promotion activities are best met by targeted programs.

#### **Q9. In what ways can disclosure of ingredients be improved?**

In general consumers who are interested in understanding ingredients understand the use of code numbers and the like. One of the problems is that for illiterate consumers, consumers with an imperfect knowledge of the language and those with poor eyesight, the written word is more difficult than the use of symbols or pictograms or indeed a number.

In general, consumers who want to do details about ingredients understand the concept of INS numbers and/or have done their research into the issues of concern.

Two trends of major significance for the wine industry are an increased interest in the food safety and nutritional attributes of wine and an increased focus on the social consequences of the harmful use of alcohol. In terms of wine labelling, this has been reflected in a surge in regulatory proposals in a number of areas, notably: pregnancy health warnings; standard drinks; warnings against harmful use of alcohol and drinking by minors; nutritional information; allergen labelling; and, ingredient labelling.

Where regulation has been implemented for these a prescribed statement is usually required. This requirement has been further complicated in that a number of jurisdictions require multiple languages for the prescribed statement.

WFA recognises the right of Governments to regulate for the health and safety of their citizens in accordance with WTO rules. However, in line with TBT requirements, FIVS believes that there are some areas where trade could be facilitated and consumer information promoted alongside national rules.

One area in particular is the use of symbols, or combinations of symbols and words, (pictograms) to convey health information. Pictograms are an important tool for communicating either with illiterate members of the population or across a number of different languages. Pictograms, either voluntary or mandatory, are used in a number of jurisdictions to communicate information on alcohol use during pregnancy and underage drinking, and pictograms regarding the presence of allergenic substances are currently in development within the EU. The use of such pictograms is limited or

prohibited in other jurisdictions, or different pictograms may be required. This can produce unnecessary cost as it means additional changes to labels to convey essentially the same information.

#### *Impact on trade*

The harmonisation and simplification of labelling requirements translates to significant annual cost savings (for example in the APEC Region alone preliminary estimates indicate cost savings of US\$34.2 million a year). Both producers and consumers would benefit.

The harmonisation and simplification of labelling requirements would reduce the production, application, warehousing and waste of labels. Gains can be made from economies of scale, and savings achieved from label printing costs, and production line costs (because of fewer stoppages).

Consistent wine labelling across markets, will not only benefit established exporters, but also new smaller exporters. Anecdotal evidence suggests that small(er) wineries could save proportionately more, in particular, on costs associated with preparing label templates.

#### *Are symbols necessary?*

Symbols are a *key* element of today's safety labels. European standards recognize that symbols have the ability to communicate across language barriers. For food and beverage producers, three factors make it important to have the right symbols on their product safety labels:

1. The world has become a single marketplace for their products.
2. Legal ramifications often make it necessary to communicate safety messages to a diverse and sometimes illiterate population.

A good legal argument can be made that safety labels are more adequate if they contain well drawn symbols because such safety labels have the ability to communicate hazard information quickly and serve to remind persons of hazards with which they are already familiar. Where word messages can be ignored, symbols stand out and are *seen*, distinct from the "clutter" of text information we are confronted with on a daily basis

#### **Q10. To what extent should health claims that can be objectively supported by evidence be permitted?**

In general, we believe, positive health claims on the label should not be permitted for alcohol products. However, we would support the ability to refer consumer to websites that provide information of health affects of alcohol consumption.

#### **Q11. What are the practical implications and consequences of aligning the regulations relating to health claims on foods and complementary medicine products?**

Not applicable

#### **Q12. Should specific health warnings (e.g., high level of sodium or saturated fat per serve) and related health consequences be required?**

No. The related health consequences are only relevant in context the whole diet of an individual, and the way in which a product is consumed in context to that diet. Would all packets of sugar and jars of salt contain warning statement with regards to inappropriate consumption as a consequence?

I would draw your attention to how other jurisdictions have dealt with some of these issues. In the United States, after an extensive review, on Feb. 28, 2003, TTB issued final regulations providing new limitations on health-related statements appearing on labels of alcoholic beverages. The text of the final regulation was published in the Federal Register Mar. 3. It provides detailed rules on health-related claims in advertising and labeling of alcoholic beverages and addresses for the first time regulations on directional labels. Those labels refer consumers of wine, beer or spirits to third party scientific information.

Specifically, one directional statement refers consumers to talk to their family doctor "about the health effects of wine enjoyment." Another advises the consumer to send for the government's official [nutrition](#) policy, the U.S. Dietary Guidelines for Americans, "to learn the health effects of moderate wine consumption." The physician's statement was initially proposed in the early '90s by the Coalition for Balance and Truth and has been especially advocated by Laurel Glen Vineyard. In the late '90s, Wine Institute (WI) spearheaded the dietary guidelines directional label proposal.

It is important to note that the dietary guidelines, which are published by the departments of Agriculture (USDA) and Health and Human Services (DHHS), include the pros and cons of moderate alcohol consumption. The alcohol guideline clearly cautions against any abuse and outlines who may want to abstain. At the same time, however, the guideline acknowledges coronary heart disease benefits for certain individuals, but explains the limitations and emphasizes that these benefits can also be obtained through other dietary and lifestyle factors. In sum, the guidelines are significant because they acknowledge the potential positive role of moderate consumption by those adults who choose to drink as part of a balanced [diet](#). U.S. healthcare providers, including family physicians, often refer to this document when advising their patients on dietary issues.

## Consumer Information

### **Q13. To what extent should the labelling requirements of the Food Standards Code address additional consumer-related concerns, with no immediate public health and safety impact?**

Section 18 of the Act describes the objectives of the agency in 'developing or reviewing food regulatory measures and variations of food regulatory measures'. In descending order of priority, FSANZ's objectives are:

- the protection of public health and safety; and
- the provision of adequate information relating to food to enable consumers to make informed choices; and
- the prevention of misleading or deceptive conduct.

In addressing these objectives, they must also 'have regard' to a number of issues:

- the need for standards to be based on risk analysis using the best available scientific evidence;
- the promotion of consistency between domestic and international food standards;
- the desirability of an efficient and internationally competitive food industry;
- the promotion of fair trading in food;
- any written policy guidelines formulated by the Council for the purposes of this paragraph and notified to the Authority.

Our view is that labeling is not an effective mechanism to address additional consumer-related concerns and indeed some of these aspects fall within the remit of other organisations. Most studies appear to say that consumers are paying minimal amount of time to reading labels, which either means they are using alternative information sources to make decisions, or these issues are not a priority in purchasing behavior.

**In Australia, wine** labels must include the following information. Arguably these provide adequate information for consumers and more detailed information is obtainable from the contact point given on the label:

- Name
- Lot identification
- Name and address of supplier
  - Allergen information
  - Declaration of alcohol by volume:
    - If over 1.15% alcohol, this should be expressed in mL/100mL or X% alcohol by volume
    - If content is between 0.5 and 1.15%, label should state "contains not more than X% alcohol by volume"
    - Labeling must be accurate to within 0.3% for beer; 1.5% for wine (soon to be 0.8%); and 0.5% for spirits

- Number of standard drinks per container: where one standard drink is the amount of the beverage that contains 10 grams ethanol, measured at 20°C.
- Country of origin (for wine)
- Alcoholic beverages in the categories beer, wine, fruit wine, and spirits are exempt from including nutrition information panels, ingredient lists, and percentage labeling of characterizing ingredients.
- Allergens: The general food labeling provisions of the *Food Standards (Volume Two)* require a mandatory declaration of certain allergenic substances. Additives and processing aids containing eggs or egg products, casein and potassium caseinate, milk or milk products, (wine is exempt from the labeling provision for fish or fish products), nuts, added sulphites in concentrations of 10mg/kg or more, and some other substances must be declared if any traces could remain in the final product (see *Allergen Labeling, Mandatory Declaration*).
- Additives: Permitted additives and processing aids for wine, sparkling wine and fortified wine are prescribed by Standard 4.5.1. Any additives not listed in the Table to Clause 3 of Standard 4.5.1 are illegal to use in Australia. Caution: Where there is no added sulphur dioxide, care must be taken in any claim that the wine is "sulphur- or preservative-free," as sulphur dioxide can be produced by yeast. "Preservative-free" should only be claimed if there is less than 10mg/L of total sulphur dioxide in the wine<sup>1</sup>.

**Q14. What criteria should be used to determine the inclusion of specific types of information?**

Environmental sustainability and animal welfare are outside the remit of FSANZ and the labelling standard as they currently fall under Trade Practices and industry Codes of Practice. Methods of production are only relevant as the approval of novel food falls under FSANZ.

**Q15. What criteria should determine which, if any, foods are required to have country of origin labelling?**

We support wine being labelled according to the source of the grapes. However, we do not believe the Food Standards Code is an appropriate instrument for such a regulation. Under the *Australian Wine and Brandy Corporation Regulations 1981 Statutory Rules 1981 No. 156* as amended made under the *Australian Wine and Brandy Corporation Act 1980* wine is required to be labelled according to the origin of the grapes:

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<sup>1</sup> For more information, see: [Australia-New Zealand Food Standards Code](#), Standards 4.5.1, 1.3.1, and 1.2.3, Clause 4. Australia-New Zealand Food Standards Code: <http://www.foodstandards.gov.au>; Part 2.7 of the *Food Standards Code (ANZFSC)* lists the requirements for alcohol beverages ; *Australian Wine Law: Wine Law, Winemaking and Labelling* at: [http://www.awbc.com.au/library/WineLaw/Wine\\_law\\_making.pdf](http://www.awbc.com.au/library/WineLaw/Wine_law_making.pdf)

**Part 4**                    **Description and presentation of wine**

**18**                    **Interpretation**

*In this Part, **wine** means wine that is offered for sale in Australia, imported into Australia or exported from Australia.*

**19**                    **Grape blends produced in more than 1 country**

(1) *For subsection 40F (5A) of the Act, if wine is made from a blend of grapes that is produced in more than one country, the description and presentation of the wine must set out:*

- (a) the name of the blend produced in each country; and*
- (b) the proportion of the total blend that was produced in each of the countries; in a manner that mentions first the country in which the larger or largest proportion of the blend was produced.*

(2) *For subsection 40F (5A) of the Act, if wine is produced in Australia from a blend of grapes that includes grapes that did not originate in Australia, the description and presentation of the wine must set out:*

- (a) the name of the blend produced in each country; and*
- (b) the proportion of the total blend that was produced in each of the countries; in a manner that mentions first the country in which the larger or largest proportion of the blend was produced.*

**Q16. How can confusion over this terminology in relation to food be resolved?**

This issue is not relevant for the wine industry.

**Q17. Is there a need to establish agreed definitions of terms such as ‘natural’, ‘lite’, ‘organic’, ‘free range’, ‘virgin’ (as regards olive oil), ‘kosher’ or ‘halal’? If so, should these definitions be included or referenced in the Food Standards Code?**

Yes. Industry demands certainty and believes that definitions for such terms is essential for producer and consumer certainty. For the wine sector terms such as ‘carbonated’ and ‘wine based beverage’ would benefit by definition and prescription. We would also believe that some terms should be prescribed so that consumers should not be deceived by omission. However, I would note that it is against FSANZ policy to prescribe terms and they will reject any application that seeks this outcome.

As a principle, definitions for terms should only be included or referenced in the Food Code where a government recognition of particular industry codes exists (i.e. AQIS/ACCC recognition of Organic standards), or where recognition can be extended to an appropriate standard with international recognition.

**Q18. What criteria should be used to determine the legitimacy of such information claims for the food label?**

See previous answer. For most claims, records should be kept to justify any label claim.

However, the wine industry is currently considering how to deal with sustainability labelling and greenhouse gas emissions (GHG) labelling.

This is currently a matter for discussion in the World Wine Trade Group and again probably lies outside the ambit of the Food Standards Code. Sustainable production (of which GHG accounting can be considered an important sub-set) is one of the major trends affecting the global wine trade at present. Wine producers are increasingly finding that adherence to sustainability credentials is a pre-requisite to sell wine to retailers.

Producers and industry organisations in many WWTG member countries have made substantial investments in developing regional or national sustainability and/or GHG accounting programmes. Participation in these programmes may be indicated to the consumer via a label claim. Consequently, the way that such label claims are (or are not) regulated can have important impacts on the success of such programmes and their ability to be used in international trade.

At present, there are few national laws or regulations controlling the use of sustainability claims, other than general laws regarding consumer information. This means that there are few existing trade barriers at a Governmental level in respect of such claims. Nevertheless, there are a number of very significant risks to trade in relation to labelling of sustainable production and GHG accounting.

Because of their profusion and importance, regulation of sustainability claims in general, or of specific claims such as GHG accounting, is likely in major markets. Such regulation may include mandatory labelling requirements, as is currently being discussed in relation to GHG accounting for products sold in Japan.

Regulation is not necessarily unwelcome from an industry perspective. At present, industry investment in legitimate programmes can be undermined by the use of terms like “sustainably produced” on products that cannot substantiate the claim. Equally, there is the risk that retailers will develop a multiplicity of sustainability standards in the absence of clear guidelines (as happened with food safety programmes), which will in turn multiply compliance costs for producers.

At the same time, there are significant potential trade consequences to the creation of national regulatory controls, notably:

- requirements in one country could impose additional certification requirements on external producers;
- requirements in one country could make compliance very difficult or impossible for external producers;
- multiple regulatory requirements could impose multiple performance criteria, audit requirements and labelling requirements of global exporters.

The task for the WWTG is to find a basis upon which credible, bona fide sustainability and GHG labels applied in one member country can be reliably used in another member country.

Achievement of this task would:

- give producers the certainty they need to continue investment in sustainability and GHG programmes;
- avoid the creation of multiple requirements and labels;
- enhance consumer protection from unsubstantiated claims; and

- demonstrate leadership in an area of increasing global significance.

It is important to **emphasise that it is not the role of the regulatory authorities to create standards for sustainability or GHG accounting.**

### **Sustainability in practice**

The concept of sustainability is usually implemented in practice through regional or national sustainability programmes, which are generally specific to the wine industry. Producers in many WWTG member countries have made substantial investments in developing programmes for their wine industries. Examples include:

- Integrated Production of Wine, South Africa
- Sustainable Winegrowing Practices, California, USA
- Sustainable Winegrowing New Zealand
- EntWine Australia
- Chilean Code for Sustainable Wine Production

Sustainability credentials can also be demonstrated through international and country level standards eg (PAS 2050, ISO etc).

However, the emphasis placed on various issues in different countries programs vary according to the differing environmental and social conditions in each region or country. Therefore one program does not fit all markets.

Sustainability and GHG accounting programmes will generally incorporate some form of ongoing assessment or audit - ideally conducted by an independent third party. Without an effective assessment procedure, consumers are at risk from false or unsubstantiated claims

Sustainability/GHG labelling is currently voluntary in WWTG member countries. Most WWTG countries do not appear to have specific rules regulating claims that a product is “sustainable” or regarding the GHG “footprint” of a product. Instead, such claims are usually regulated under general laws regarding consumer information. However, a number of WWTG Governments have issued guidelines in relation to environmental marketing claims, as outlined below.

<b>Country</b>	<b>Permitted ‘sustainability’ claims</b>
Canada <sup>2</sup>	On the basis that sustainability is a process of continual improvement, not an endpoint, no claim of achieving sustainability shall be made. In addition:  “Sustainability can be measurable only over a very long period. It is therefore very difficult to make a verifiable claim of sustainability at one point in time. Claims that refer to specific, registered management systems are sometimes acceptable provided that they can be verified.”
South Africa	The national sustainability scheme, Integrated Production of Wine or IPW, was legislated in Regulation R1413 of 6 November 1998 under the Liquor Products Act, 1989 (Act 60 of 1989). Membership of IPW is

<sup>2</sup> <http://www.bureaudelaconcurrence.gc.ca/eic/site/cb-bc.nsf/eng/02701.html>

	voluntary, but members are legally obliged to comply with the scheme's requirements.
Australia <sup>3</sup>	Although sustainability claims are not specifically addressed, all claims using endorsement or certification should be used with caution. Providing consumers with details of further information on the scheme is encouraged. Broad claims such as 'green', 'recyclable' and 'carbon neutral' will raise concerns for the regulator.
New Zealand <sup>4</sup>	Follows Australian approach.
USA <sup>5</sup>	General claims are deemed most likely to mislead, therefore the US Guides for the Use of Environmental Marketing Claims state that unless a substantiation duty can be met, broad environmental claims should either be avoided or qualified, as necessary, to prevent deception about the specific nature of the environmental benefit being asserted. In addition, the FTC analyzes third-party certification claims to ensure that they are substantiated and not deceptive. Third-party certification does not insulate an advertiser from Commission scrutiny or eliminate an advertiser's obligation to ensure for itself that the claims communicated by the certification are substantiated.

An analysis of each reveals that the same baseline principles apply in each jurisdiction:

- Claims should be specific, substantiated and stated in plain language;
- General claims or claims suggesting that sustainability has been 'achieved' should be avoided;
- Certified claims should still be substantiated and best practice is to enable consumers to access further information on the scheme.

It is clear from a review of the legal status of sustainability claims that although there is a need for greater certainty and consistency in this area, the guidelines reviewed above indicate that there is at least a common basis for protecting consumers from misleading claims.

### **Principles for an agreement on sustainability/GHG labelling**

The WWTG's fundamental objective is to facilitate the international trade in wine. Underlying this objective is a commitment by WWTG members to act in accordance with their obligations under the WTO agreement. In line with these obligations, each member must remain free to protect the health and safety of their citizens and to ensure that consumers are not misled or deceived. Any agreement must reflect these core values.

The basic options are:

1. Accept all legal sustainability/GHG labels from a signatory country;
2. Accept only labels from sustainability/GHG programmes nominated by the Government of a signatory country;

<sup>3</sup> <http://www.accc.gov.au/content/index.phtml/itemId/815763>

<sup>4</sup> <http://www.comcom.govt.nz/FairTrading/GuidelinesforGreenMarketing/Overview.aspx>

<sup>5</sup> <http://www.ftc.gov/bcp/gmrule/guides980427.htm>

Option 1 may be characterised as “pure” mutual acceptance. This option has the great virtue of simplicity. However, it does raise the risk that wines with unsubstantiated label claims can be exported to other WWTG member countries. Because most WWTG members do not specifically regulate sustainability/GHG claims, an unsubstantiated sustainability/GHG claim would in effect only be considered “illegal” if it had been successfully challenged under consumer protection legislation. This raises the prospect that unchallenged unsubstantiated claims would be accepted along with legitimate claims on the basis that they are not illegal.

Option 2 introduces an extra step to help to avoid this problem. Mutual acceptance would apply only to sustainability/GHG schemes notified by WWTG member Governments. WWTG member Governments could notify any schemes that they consider able to substantiate their claims in terms of the laws applying in that country.

It should be emphasised that this approach does not require regulators to create specific standards for sustainability/GHG labels. Rather, operators of sustainability programmes should put sufficient information to the relevant Government authorities to demonstrate that label claims made under their programmes can be substantiated. Programmes that incorporate an independent audit component would be at an advantage in this scenario.

As with earlier agreements, there should be no additional certification or analysis required in respect of sustainability/GHG claims that qualify for mutual acceptance.

It is possible that, in the future, sustainability and/or GHG labelling may be made mandatory in a signatory country. In that case, it would be appropriate to specify for the sake of clarity that sustainability/GHG label claims that are accepted under the proposed agreement would be sufficient to satisfy the mandatory requirement.

The above discussion refers specifically to label claims relating to sustainable production or GHG accounting. However, it is inevitable that the question of whether this includes organic and/or biodynamic production programmes will arise in the course of discussions. Depending on one’s perspective, organics and biodynamics may be read as specific applications of the broader sustainability objectives, or at least as having complementary objectives.

On the face of it, the idea of including the whole suite of “green” labels in one agreement is appealing. However, there are two points of difference between organic and sustainable production that are of relevance to a possible mutual acceptance agreement. First, organic production and labelling are regulated in several WWTG member countries. Second, there are some differences in organic winemaking practices and philosophies between WWTG member countries which can be deeply entrenched. Both of these issues could raise the degree of difficulty involved in negotiating a successful outcome.

Ideally, we would like to see organic and biodynamic claims recognised in WWTG countries under the same conditions as sustainability and GHG claims.

The WWTG has the opportunity to create an agreement whereby credible, bona fide sustainability and GHG labels applied in one member country can be reliably used in another member country. In order to achieve this outcome, it is not necessary to get into the specifics of sustainability or GHG accounting. The question is not “what is sustainable?” The real question is far more simple and manageable from a

regulatory perspective: “can you justify what you say on your label?” The onus should therefore be on the industry to justify its claims, rather than on the Government to lay down chapter and verse regarding what is in essence an industry initiative. This approach aligns closely with the trade facilitating objectives of the WWTG.

**Q19 In what ways can information disclosure about the use of these technological developments in food production be improved given the available state of scientific knowledge, manufacturing processes involved and detection levels?**

The Australian wine industry's position on the application of gene technology in grape and wine production is: ....***that no genetically modified organisms be used in the production of Australian wine***<sup>1</sup>. The reason for this is not that the industry is anti-GM but rather that it acknowledges the importance of safety and public acceptance before adopting any new technology in wine production.

Before GMOs (and GMO-derived products) can be used in food production or processing in Australia they are subjected to prescribed risk assessments and there is considerable public consultation required during this process. To our knowledge there are no GM yeasts or grape vines approved for use in wine production in Australia and if such applications were sought, WFA would oppose them.

## **Alcohol**

### General

The Australian wine industry fully supports and is committed to the goal of reducing alcohol abuse in Australia, as exemplified by the joint initiatives between the Federal government and the industry, including standard drinks labelling and Drinkwise Australia.

The industry, however, believes that a requirement for mandatory health warning labels on alcoholic beverages represents a simplistic, indirect and ineffective blanket measure.

The wine sector, mindful of its responsibility as a producer of alcoholic beverages, is actively involved in education and research initiatives. For example, the industry sponsored and is sponsoring both independent and industry-collaborative research programs, and also sponsors the collection, analysis and dissemination of information on all aspects of alcohol consumption, which is available to the community, and actively encourages the inclusion of lectures on the pharmacology and physiology of alcohol in oenology, viticulture and wine-marketing courses, and in alcohol beverage retail/service courses, as well as discussions with, and talks to, community and school groups.

The research programs include gender differences in the metabolism of alcohol, the effects of wine on the human cardiovascular system and in the initiation and progression of certain cancers, and the potential allergenicity of wine and wine products.

Current and past collaborators include the CSIRO Division of Human Nutrition, Flinders University, Heart Research Institute, Royal Melbourne Hospital, St Vincent's

Hospital Melbourne, The Alfred and Monash University, and The University of Western Australia.

Conferences, seminars and symposia on alcohol-allied issues have also been sponsored by the Australian wine industry, the objective of which has been to facilitate discussion and debate between academia, government, health practitioners and industry, in order to give direction to future research, and to future political and social policies.

It is clear that the wine sector is an active and engaged in dealing with alcohol abuse.

### **Alcohol Policy Framework**

The Winemakers' Federation of Australia:

- *acknowledges that alcohol is a broadly accepted part of Australian life, and that the policy and regulatory framework should not discourage responsible consumption;*
- *ensures that decisions regarding alcohol policy and regulation are based on sound scientific fact, backed up by reliable evidence;*
- *ensures that there is a formal process of consultation with the Australian wine sector on policy and regulatory positions taken both in domestic and global forums that impact the operating environment of grape growers and winemakers;*
- *consults and actively engages the Australian wine sector on decisions made and positions taken regarding alcohol policy at the World Health Organisation and associated forums;*

This submission is made with these policy principles in mind: based on sound scientific fact backed by reliable evidence.

We are strongly opposed to the development of public policy based on the "Precautionary principle" that allows science to become corrupted towards achieving political ends.

To say that "we think this will work" or "we think it causes harm" is simply not good enough a reason for imposing harsh and restrictive regulations on industry or the public.

The Australian wine sector is a major contributor to the economic and social fabric of Australian life. Responsible for employing more than 60,000 Australians, generating more than \$3 billion in export earnings and fostering the prosperity of many regional communities, the Australian wine sector creates a product that is responsibly enjoyed by millions of people around the world every day. When consumed in moderation, in a manner consistent with the NHMRC Australian Alcohol Guidelines, wine is part of a healthy lifestyle.

The industry also recognises when wine or other alcohol products are consumed at risky consumption levels, either in the short- or long-term, they can contribute to a range of social and physical harms. Alcohol abuse is an unnecessary blight on an otherwise positive industry.

The Australian wine sector has a responsibility to continue working with the Australian Federal Government and the wider community to ensure the benefits of moderate wine consumption are maximised and excessive consumption and associated harms are minimised in every possible way. This includes consultation and partnership across regulatory and policy deliberations for both the domestic and international environment.

### **The fallacy of “factoid” social costs rather than “evidence”**

Collins and Lapsley have been responsible for calculating the “social costs” of alcohol.

Public health advocates have jumped on the aggregated figure of \$15 billion and have worked hard at making it a “factoid” in promulgating their policy mechanisms for solving alcohol abuse including bans on advertising and the introduction of mandatory warning labels.

This “selective” use of research information, tends to obscure the fact that Collins and Lapsley have calculated the impact of alcohol misuse on the federal government Budget as providing a Net revenue minus outlays of positive \$1,802.9million dollars a year.

The credibility of the high \$15 billion figure is further undone by the research of prominent and respected economists, Access Economics, who analysed<sup>6</sup> Collins and Lapsley figures and concluded ‘Alcohol taxes thus pay more than the social costs of alcohol abuse, by a considerable margin each year’.

Whilst not replicated in Australia, a similar report using Collins and Lapsley methodology done for the NZ Government into social costs faced much greater criticism<sup>7</sup> from respected economists. They took the social cost figure of \$4.8billion down to just \$146.3million before adding in any societal benefits.

The Henry Tax Review also looked at this area relevant to estimating spillover costs and concluded that “it is necessary to exclude private intangible costs (such as pain and suffering), and the loss of household production from premature death or sickness”.

Yet it was this startling high figure of \$15 billion that has driven health advocates and the Preventative Health Taskforce to recommend warning labels on alcohol that focus on a message to “promote safer drinking”.

The use of the “precautionary principle” to policy development has also contributed to the cherry-picking of favoured alcohol policy chestnuts.

Despite all evidence to the contrary and a number of FZANZ studies that disprove warning labels affect behavioural change, the health lobby through its collective action group the National Alliance for Action on Alcohol (NAAA) is determined to bring about warning labels as one of their 5 key priorities.

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<sup>6</sup> Access Economics, Collins and Lapsley Report Review: Social Costs, 28 Nov 2008

<sup>7</sup> The Price of Everything, The Value of Nothing: A (Truly) External Review Of BERL’s Study Of Harmful Alcohol and Drug Use. Eric Crampton and Matt Burgess

Looking at the Collins and Lapsley “social costs”, we find that the majority of the “costs” attributed to alcohol relate to road accidents – through loss of life, hospitalisations, (the pain and suffering of friends and family), police, insurance.

It is unclear the rationale or evidence used by health advocates who expect behavioural change to occur by placing a warning label promoting safer drinking on a bottle of alcohol. However, when policy is developed under the “precautionary principle”, this should be expected.

Considering that there wouldn't be an Australian who doesn't already realise the implications of driving whilst intoxicated as a result of highly successful public awareness campaigns, it is quite unclear how the addition of a warning label will somehow stop an idiot getting in their car and driving whilst intoxicated.

The wine industry would argue that most Australian are already fully aware that if they “drink and drive, they are a bloody idiot”.

Putting a warning label on an alcoholic beverage will not change these behaviours.

While awareness of consumers may increase with the exposure to health warning labels, the beliefs and behaviour of consumers, and in particular ‘at risk’ groups, will not be affected.

If a purpose of the labelling is to increase awareness of the label and risk, then data from the USA suggest that this purpose will be achieved, but it does not follow that beliefs and behaviour are effected or influenced.

#### **An example of awareness versus behavioural change – USA FAS**

If the primary purpose of the labelling is to decrease risky alcohol consumption during pregnancy then data from the USA suggest this purpose will not be met. Data collected and collated from the USA, where labelling was introduced in 1988, and that from cigarette smoking labelling in Australia and the USA, demonstrated that the labelling will not effect and decrease risky consumption, in particular that of the ‘at risk’ groups identified.

In the USA, risky alcohol consumption by these ‘at risk’ groups has remained static or increased. The incidence of FAS in the USA since the introduction of labelling in 1988 has also remained relatively static, although the awareness of the label and risk has increased.

#### **Effecting Behavioural Change**

Effective behavioural change has always been led by Government-funded community awareness programs.

Behavioural change towards safer sex practices were a combination of “grim-reaper” government advertisements and sex education in schools. The Australian Government didn't force people to have their genitalia tattooed with a warning label.

Behavioural change towards wearing seatbelts was a combination of government advertisement, and police enforcement. The Australian Government didn't force car manufacturers to put warning labels on the steering wheels of cars.

Behavioural change towards improved recycling was a result of the Government



educating consumers to look for the recycling symbol and working with local councils to collect materials that carry the logo.

It may be worth focussing on the success of recycling in Australia and the use of the symbol as it relates to “promoting safer drinking”.

The alcohol sector has already signed up to detailing the number standard drinks in the beverage container as a result of a co-operative approach with the Australian Government in 1995.

This was taken further by alcohol producers who now encourage their members to



display a graphic. For wine it looks like this:

Unfortunately, the Australian Government never fully delivered on its side of the agreement at the time to promote to the public what the “standard drink” was, and how the information was to “inform consumers in an easily understood way as to the alcohol content of beverages” and “deliver benefits in public health and safety”.

The industry was told that significant public education campaigns were proposed to be run alongside the introduction of the standard drink information based on the standard drink concept.

What the Government delivered was several thousand beer coasters and pamphlets to be distributed by industry.

Clearly, the public to this day has very little understanding on the concept of a standard drink.

Before taking industry down a path of high cost compliance, graphic warning labels that consume 25% of label and packaging and 25% of advertising space, it may be worth simply fulfilling the promise from 1995 and deliver the public education campaign.

This will then clearly link the standard drink concept to the promotion of safer drinking in the same way that the recycling symbol informs consumers that they can put the item in the recycle bin.

Warning labels also open up the paradoxical. If we are going to put in a warning about the negative health consequences of alcohol consumption, then does that then allow the alcohol sector an open door to promote the positive health aspects of moderate consumption?

“Live a longer and more fulfilled life – drink at least two glasses of wine a day”.

**What Policies Work**

Effective policies to address alcohol abuse are not resolved by re-interring old debates on tax, advertising and warning labels. Targeted measures towards abuse achieve better health outcomes without penalising responsible consumers.

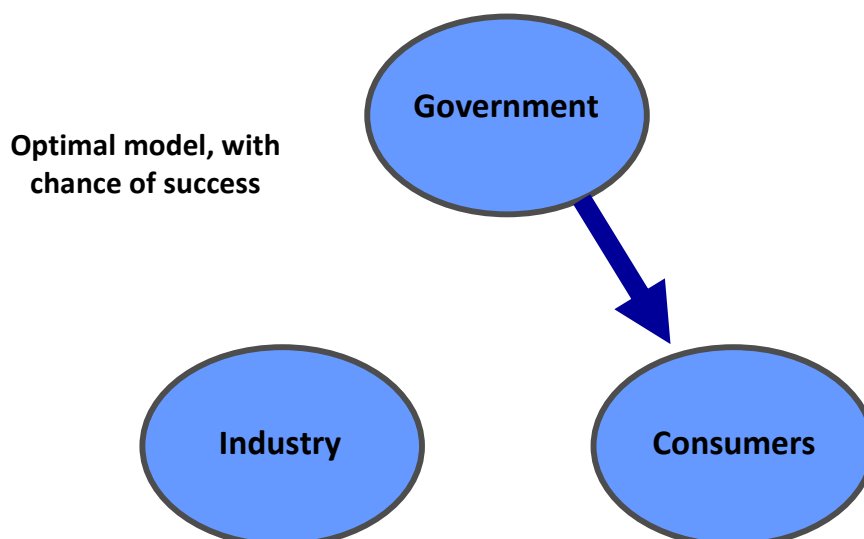
In our view, the Preventative Health Taskforce Report is a poorly researched paper with pre-determined outcomes. The Report focuses on mature policy debates aimed at industry, rather than 'greenfield' debates aimed at consumers.

<b>Focus on Industry Behaviour</b>	<b>Focus on Consumer Behaviour</b>
<i>Product integrity &amp; safety (inc. labelling)</i>	<i>Drink driving</i>
<i>Outlet density</i>	Primary health care (inc. GPs)
<i>Licensing restrictions</i>	Other brief interventions
<i>Advertising restrictions</i>	Targeting high-risk sub-groups: teenagers (and their parents), pregnant women, sports clubs, etc.
<i>Taxation</i>	Pharmacotherapies

The shaded areas of this table represent mature policy debates in Australia. The shaded areas on the left are the primary concerns of the Taskforce with a research focus.

The Taskforce Report rehashes mature policy debates, invoking the law of diminishing returns. In contrast, recent Government and industry initiatives seek to explore the unshaded areas targeting high-risk drinkers: and the original Taskforce discussion paper showed community support for the latter approach.

There are better 'bang for buck' investments in the Australian scene, which may actually produce fresh ideas for the future economy.



Approaches in which the Government seeks to go through industry to 'talk' with consumers will not work because they ignore the fact that drinking behaviour is determined by social expectations, and social expectations will take time to change.

We believe there is a more direct way to do so – in line with the Government's approach during the election and the binge-drinking initiatives. That is, speaking directly to consumers through the 'non-shaded' areas of the issues table (see previous page).

#### **An example of effective intervention - FAS**

A strategy that has shown to be effective in the USA, both in terms of cost and in decreasing risky alcohol consumption, including in 'at risk' groups, are brief interventions, that is, the screening and interviewing of pregnant women or those planning pregnancy, by primary health care providers.

Australian primary health care providers have already identified, as have the State and Federal governments and NGOs, that better and more education, training and tools are required to instigate these brief interventions and hence to prevent and reduce the occurrence of FAS/FASD.

This strategy is also included as a primary strategy for reducing risky alcohol consumption during pregnancy and the risk of the birth of an alcohol-affected child in both State and Federal governments', and NGO's plans and policies.

#### Health Activism

There are many academics and activists who make their living from the alcohol debate. So do industry associations. The difference is one of governance. Industry lobbyists do not get paid by government.

All too often, anti-alcohol activists are also grant-dependent researchers and formal or informal advisors. For example, VicHealth, which has considerable taxpayer funding, directly advises government and also publicly campaigns for policy changes, often funding research to bolster the campaigns. The advice/activism roles are often not sufficiently discrete in the field. Where the evidence strongly disagrees with a pre-determined view, i.e. on warning labels, the answer is always more research rather than accept it.

Conclusions that bias away from program delivery and towards research in fields which are mature policy debates, i.e. funding to prove past policy settlements wrong; ignoring the opportunities of 'greenfield' innovations, particularly in program delivery, which may see the Government augment Australia's already good reputation internationally.

#### Behavioural Influences

- Factors that influence consumption levels:
  - locus of control
  - level of risk aversion
  - forward planning
  - education level
  - financial planning horizon (Ayyagari P<sup>8</sup> et al)

#### Cultural Influences

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<sup>8</sup> Ayyagari P, Deb P, Fletcher J, Gallo, WT, Sindelar JL (2009), Sin Taxes: Do heterogeneous responses undercut their value, National Bureau of Economic Research, MA, USA

- There is a difference between patterns of drinking and patterns of problems (Heath, D B<sup>9</sup>)
- Non-problematic drinking is “normal” in both statistical and sociological terms (SIRC<sup>10</sup>)
- In “normal” drinking patterns culture influences behaviour. (SIRC)
- Problem drinking occurs when events interrupt or change the cultural influences (SIRC)
- People behave under the influence of alcohol as society expects and allows them to behave (MacAndrew & Edgerton<sup>11</sup>)

### Youth Binge Drinking

The Australian Government has rightly been concerned about youth binge drinking. Whilst wine is not the preferred beverage of choice for people aged 14-29, we nevertheless have maintained an interest in the reasons for youth binge drinking as health commentators continue to infer that cask wine is implicated despite all evidence to the contrary.

In one of the biggest studies ever undertaken into youth binge drinking (C. Raine, FRESH, 2009), the following were identified as the primary drivers:

- Identity
  - Self-reference culturally (Australian) and sub-culturally (street and youth)
  - *Solution: create sub-cultures that are not based on drinking norms; removal of social conditioning and realisation of own identity*
- Relationships
  - Biggest reason for youth binge drinking is to gain confidence
  - *Solution: Learning communication skills without crutch of alcohol*
- Direction
  - Lack of purpose in life
  - *Solution: Provide opportunities to remove social conditioning and empowerment*
- Emotional Intelligence
  - Society teachings to deal with emotions (celebrations, grief, sadness, connection) through alcoholic buffer
  - *Solution: Experience emotions without alcohol then provide a choice as to whether to drink or not*

It is clear that a warning label on an alcoholic product is not the solution to these factors and changing the youth binge drinking culture.

### **Conclusion**

While blanket recommendations such as warning labels on alcoholic beverages, and general campaigns and programs are effective in raising awareness for the 'not at risk'

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<sup>9</sup> Heath DB, (2000), Drinking Occasions: Comparative perspective on alcohol culture, International Centre for Alcohol Policies, Series on Alcohol in Society: Taylor & Francis, Philadelphia, USA

<sup>10</sup> Social Issues Research Centre (SIRC), (1998) Social & Cultural Aspects of Drinking: A report to the Amsterdam Group, Oxford, UK

<sup>11</sup> MacAndrew C, Edgerton RB, (2003), Drunken Comportment: A social explanation, Percheron Press, NY

group, the 'at risk' groups have specific problems, which are amplified and exemplified by their excessive consumption.

'At risk' groups in a population behave differently to the 'not at risk' groups (Hilton and Kaskutas 1991, Mayer *et al.* 1991, Hankin *et al.* 1996).

'At risk' groups have specific problems and, therefore, specific and targeted campaigns and programs which tackle the specificities rather than the generalities.

It is, therefore, recommended that the current effort and energies being expended by State and Federal governments and NGOs should be redirected to address specific and targeted education of the 'at risk' groups by intervention.

#### **An intervention example**

The Scottish Government is taking such steps towards combating alcohol abuse through intervention (based on strong evidence supporting intervention as assisting in a reduction of alcohol consumption among harmful and hazardous drinkers).

Initially introduced in 2008-09, the Scottish Government recently committed an additional £36 million to implement a range of measures designed to help people address their excessive drinking.

The Health Secretary Nicola Sturgeon said:

"Brief interventions are a key part of our strategy and they're not only clinically effective but also cost effective. By intervening early, we can maximise resources and - more importantly - save lives.

Professional intervention to alter drinking patterns and confounding problems rather than a 'social' intervention is required.

It is unfortunate that rehashing mature policy debates was the approach taken by the Preventative Health Taskforce, and simplistic "warning labels" were promoted ahead of practical methods to address alcohol abuse.

Annex 1 provides a detailed assessment of the research that underpins the responses to many of the alcohol related questions raised at the consultations.

#### **Q20. Should alcohol products be regulated as a food? If so, should alcohol products have the same labelling requirements as other foods (i.e., nutrition panels and list of ingredients)? If not, how should alcohol products be regulated?**

We remain unconvinced that the classification issue is part of the Terms of Reference for this Committee, although clearly labeling is appropriate to be considered.

However we believe that wine labeling should continue to be regulated as a food, although such regulation should reflect the different characteristics of wine as compared to other food products. This means that different labeling requirements should apply.

Wine is a product with a legal definition in Australia established in both the Food Standards Code and the AWBC Act. This definition is consistent with international legislation in major markets, the OIV (The International Standard Setting body for

wine established by Treaty to which Australia is a signatory); and several international agreements including the 2008 Australia - European Community Agreement on Trade in Wine (Wine Agreement); Agreement on Mutual Acceptance of Oenological Practices; and Agreement on the Requirements for Wine Labelling.

However wine is not a fixed recipe. It changes from one producer to another and from one year to the next. The majority of substances authorised in winemaking are already present in the product. Wine is a fermented product and its composition evolves with time and ageing, even after bottling.

To require the declaration of ingredients/additives in wine has the potential to be misleading. For example, due to climatic conditions in Australia winemakers often add naturally occurring organic acids, whereas in Europe, sugars are frequently added. Both these substances are naturally occurring, but if a bottle from each jurisdiction was put side by side, the consumer would believe that the bottle which says tartaric acid added was the only one to contain tartaric acid; and the bottle which states sugar added was the only one to contain sugar. Clearly this is a nonsense.

In Europe, when the issue of nutritional and ingredient labeling was under consideration, DG Sanco (General directorate for Consumers Health) published research on consumers behaviour. The research reports “that wine is regarded as a product close to nature and Terroir”, of “pleasure and taste” (...) with a strong cultural dimension which largely escapes the concerns expressed by consumers concerning other foods as regards health, dietary information etc”. The report also stated that nutritional value for wine “is an absolutely pointless criterion”.

I would also draw the attention of the panel to a number of documents prepared by the European Commission relating to the Proposal for the Regulation of the European Parliament and of the Council on the provision of food information to consumers. These documents provide a large amount of information in the European context relating to this issue.

With respect to nutritional panels, requiring analyses for nutrition values would create widespread production disruptions and add significantly to operational costs. Most wine is inherently variable in composition and is not made to a fixed recipe. Alcohol and residual sugar levels vary significantly among styles, from year to year, between regions and from lot to lot. Winemakers adjust wine blends to meet stylistic targets, often right up to time of bottling. Accordingly mandatory nutritional labeling has the potential to impose severe financial and logistical burdens on the industry.

Wineries would be required to analyse each lot of wine just prior to bottling to ensure the elements of the nutritional panel lay within the tolerances specified. Assuming a cost of \$250 per sample, a medium sized winery performing 500 pre-bottling analyses per year would incur an additional and ongoing cost of \$125,000.

Variability presents enormous challenges and potentially daunting costs to wineries, especially small wineries that might have to spend thousands of dollars to have nutritional testing done. Multiple label modifications will eliminate economies of scale in printing. The proposed serving facts panel will require significant space on the bottle, devouring precious real estate used by wineries to differentiate themselves from other wineries with similar products. Labels are important promotional tools for wineries.

Another problem is that consumers may be led to believe that the nutritional panel may mislead consumer choice, in so far that the use of mixers may significantly increase stated caloric and nutrient values.

On January 27, 2008 the Californian wine Institute submitted to the United States Taxation and Trade Bureau (TTB) on Notice No. 73, Labeling and Advertising of Wines, Distilled Spirits and Malt Beverages. They note that Nutrition Labeling and Education Act of 1990 (NLEA) has been in existence since 1990. 'Since NLEA took effect, consumers have been the recipients of a \$2 Billion revamping of food labels, yet "during the past 20 years there has been a dramatic increase in obesity in the United States." This is consistent with observations internationally and we would question the effectiveness in nutrition labeling in dealing with the obesity problem.

We do not believe that calorie and nutrient information may constitute a material factor in most consumers' decision to purchase wine.

However, we recognise that some producers think there is a marketing opportunity for nutritional claims on wine. We recognise that a number of producers do label for low calorie wine **for certain specific product lines**, and in that case we support that they need to put a full nutritional panel according to the horizontal regulations in the Food Standards Code.

For consumers who do wish to know the nutritional impacts of wine, the alcohol content provides a good general guide. We believe that concerned consumers can easily access this information on the web. FSANZ could give consideration to putting such guidelines on their website and become the point of first contact for consumer information on these issues. WFA and AWBC could also provide such information to assist consumers.

Mandatory label information concerning nutrition and additives should be of benefit to a substantial number of wine consumers, not just to a select group of consumers or to a select segment of an industry. We do not believe that consumers will be served by mandatory serving fact information and the advertising that is certain to follow.

In the United States some jurisdictions have required point of sale material on calories for alcohol:

In 2007, in the United States, the King County (Washington) Board of Health, in implementing its food nutrition labeling requirements for chain restaurants, adopted a "typical values" approach to nutrition declarations based on values for wine found in the USDA National Nutrient Database for Standard Reference. This requires chain food establishments with 10 or more national locations to display calorie, carbohydrate, trans fat, saturated fat, and sodium information on menus. Menu boards will be required to display calories in a size and typeface similar to other information about each menu item. Information for the other four nutrients must be available in a clear and visible format at the point of ordering. For alcoholic beverages, analysis is not required. As stated in its "Guidance for Nutritional Analysis of Standard Menu Items," the King County Board of Health states as follows:

"Providing alcoholic beverage nutrition information: Nutrition information for each individual beverage on the menu will not be required. To be in compliance with the rule, food establishments must list in a single location on the menu the following average nutrition values:

- red/white wine - 5 ounces : 122 calories; 4 grams carbohydrate; 7 milligrams of sodium

- regular beer – 12 ounces: 153 calories; 13 grams carbohydrate; 14 milligrams of sodium
- light beer – 12 ounces: 103 calories; 6 grams carbohydrate; 14 milligrams of sodium
- distilled spirits (80 proof gin, rum, vodka, or whiskey) – 1.5 ounces: 96 calories
- Include this disclaimer statement: Signature drinks or liqueurs with added ingredients may increase calorie content.”

Standard wines typically contain very little fat or protein.

## **PART 4: FOOD LABELLING PRESENTATION**

### **General**

I would note that Australia is a signatory to a number of international treaties concerning wine labeling and that any domestic labeling changes need to take these into account. These include:

- 2008 Australia - European Community Agreement on Trade in Wine (Wine Agreement)
- Agreement on Mutual Acceptance of Oenological Practices
- Agreement on the Requirements for Wine Labelling

I would also note any changes to labeling regulation should take into account international standards established by Codex Alimentarius Commission to minimise the risk of a dispute under the Technical Barriers to Trade Agreement of the World Trade Organisation rules.

If Australia does adopt new labeling regulations, supported by sound scientific evidence, then they should take this information forward to the Codex Alimentarius Commission and seek to amend the international labeling standards to minimise disruption to international trade.

Q21. Should minimum font sizes be specified for all wording?

Font size needs to relate to the size of the package and the label. The current regulations for wine appear to be appropriate and we are not aware of any consumer complaints.

**Q22. Are there ways of objectively testing legibility and readability? To what extent should objective testing be required?**

We do not have the expertise to answer this question.

### **Comprehensibility:**

**Q25. What is an appropriate role for government in relation to use of pictorial icons on food labels?**

See earlier answers

**Q26. What objectives should inform decisions relevant to the format of front-of-pack labelling?**

Front-of-pack labeling has been under consideration in a number of jurisdictions. The European Union has just rejected this concept, and Australia would do well to look at the reasons for this decision.

Australia must also pay heed to its international obligations, specifically (see Annex 2):

- 2008 Australia - European Community Agreement on Trade in Wine (Wine Agreement)
- Agreement on Mutual Acceptance of Oenological Practices
- Agreement on the Requirements for Wine Labelling

I would also note any changes to labeling regulation should take into account international standards established by Codex Alimentarius Commission to minimise the risk of a dispute under the Technical Barriers to Trade Agreement of the World Trade Organisation rules.

**Q27. What is the case for food label information to be provided on foods prepared and consumed in commercial (e.g., restaurants, take away shops) or institutional (schools, pre-schools, worksites) premises? If there is a case, what information would be considered essential?**

Not applicable

**Q28. To what degree should the Food Standards Code address food advertising?**

This is a complex question as brings into play the interface between labelling and advertising, and to what extent labelling may be regarded or treated as an extension of advertising. Product labelling and packaging presentation for alcohol products has recently been included by the Alcoholic Beverage Advertising Code as within their scope of consideration. The advertising of wine products must also be consistent with labelling rules for GI, vintage and variety under the *Australian Wine and Brandy Corporation Act 1980*.

These are examples within the alcohol industry but it may not be unreasonable to expect similar interface issues exist within other food sectors.

The question this raised, with regard to any future labelling regulation enforcement arrangement, is whether the scope of enforcement will be confined to those issues within the Food Standard Code, or also take into consideration any allied legislative or co-regulatory requirements?

## **PART 5: ADMINISTERING AND ENFORCING FOOD LABELLING STANDARDS**

**Q29. In what ways can consistency across Australia and New Zealand in the interpretation and administration of food labelling standards be improved?**

One of the key problems faced by the food industry is the lack of ability by FSANZ to provide interpretations on the Food Standards Code (FSC). This means that producers are in a position where potentially each State and/or Territory will interpret

the labelling requirements differently in the FSC. Allowing FSANZ to provide public rulings on questions asked by producers as is done for Tax related issues by the ATO would clarify areas on uncertainty in labelling for consumers, producers and regulators.

I would also note that the introduction of any new labeling change has the potential to introduce considerable cost to producers and consumers. I would note that when Australia introduced allergen labeling for wine they gave a two year phase-in period and grandfathered any product already labeled at the time of the legislative change in recognition of the long shelf-life of the product and the quantities that appear on the secondary market. I also understand that in the United States the Food and Drug administration have a guidance that labeling changes receive a 3-year lead time from the date of a regulation coming into force.

**Q30. In what ways can consistency, especially within Australia, in the enforcement of food labelling standards be improved?**

The wine industry believes that the appropriate place to regulate breaches of wine law lie within the Australian Wine and Brandy Corporation (AWBC). The AWBC has legislative powers to deal with exports and labeling provisions relating to vintage, varietal and geographic indication declarations. It has also shown itself to be diligent regulator and undertakes regular audits of industry and prosecutes when breaches are found. Health and safety breaches should remain the responsibility of the State enforcement agencies, but labeling issues could be ceded to the AWBC. This would also allow the responsive changes of labeling standards according to consumer complaints and ensure an appropriate consultation process with industry to maintain the right balance of regulation.

**Q31. What are the strengths and weaknesses of placing the responsibility for the interpretation, administration and enforcement of labelling standards in Australia with a national authority applying Commonwealth law and with compatible arrangements for New Zealand?**

There is little benefit in creating a new authority and increasing the bureaucracy. FSANZ does not have the correct culture or expertise to be an enforcement agency. Allowing central interpretation of standards would alleviate many of the existing problems. For wine, moving control over labeling and compositional requirements to a dedicated existing regulator in the AWBC makes sense.

**Q32. If such an approach was adopted, what are the strengths and weaknesses of such a national authority being an existing agency; or a specific food labelling agency; or a specific unit within an existing agency?**

**Q33. If such an approach was adopted, what are appropriate mechanisms to deal with the constitutional limits to the Commonwealth's powers?**

**Q34. What are the advantages and disadvantages of retaining governments' primary responsibility for administering food labelling regulations?**

Government needs to maintain primary control of food labeling activities that relate to health and safety.

**Q35. If a move to either: self regulation by industry of labelling requirements; or co-regulation involving industry, government and consumers were to be considered, how would such an arrangement work and what issues would need to be addressed?**

**Q36. In what ways does such split or shared responsibility strengthen or weaken the interpretation and enforcement of food labelling requirements?**

Responsibility for food labeling should be simplified as far as possible. Contents labeling for food should be removed from the National Measurement Institute and placed within the Food Standards Code, to avoid conflicting requirements. We also strongly believe that responsibility for enforcement and the development of wine specific labeling should fall under the Australian Wine and Brandy Corporation and that if required the AWBC Act and/or Regulations should be amended accordingly.

**Q37. What are the strengths and limitations of the current processes that define a product as a food or a complementary medicine?**

Not applicable

## **Annex 1: General Health issues arising from the consultations**

### **1. Diabetes and alcohol. Is there a need for labelling/nutrition panel?**

At the public consultation meeting that was held in Adelaide on 23 April 2010, one of the issues raised was a possible requirement for nutrition panel labelling for alcoholic beverages to provide information for diabetics.

The requirement to include a nutrition panel should be based on whether there is a need for such a panel, and that should be based on 1) whether there is adequate readily-available information for diabetics on alcoholic beverages as well as on 2) the effect of alcoholic beverages on diabetes.

#### **Is there adequate readily-available information for diabetics on alcoholic beverages?**

The websites of Diabetes Australia, the national federated body, and each of the state Diabetics Australia associations, reveals that each has a section specific to alcohol consumption and this is supported by similar print material disseminated to dietitians, medical practitioners, pharmacies and the general public on request. Indeed the State/Territory organisations of Diabetes Australia print material entitled *Alcohol & diabetes* (Talking diabetes No.01) is a simple 6-page pamphlet which clearly and concisely explains the following: How alcohol affects the body and that of a person with diabetes; How much is too much?; What is a standard drink?; What to choose?; Are there any tips for drinking less?; What about alcohol and hypos?; Alcohol and blood glucose monitoring; Bedtime snacks and Extra considerations. In the final *frequently asked question* section, one of the questions is "I have heard that a moderate amount of alcohol might be good for my heart. Is this true?" The response is as follows: "Studies have shown that a small amount of alcohol (no more than one standard drink a day) may decrease the risk of heart disease in people over the age of 40."

In the section *what to choose?* the text states, again clearly and concisely, that "It's best to limit very sweet drinks such as soft drinks mixers, sweet liqueurs and pre-mixed alcoholic beverages. Choose wine, low-alcohol beers or spirits mixed with diet mixers. Low-sugar beers offer no advantage to regular beers and in fact are often higher in alcohol which can be more of a problem for your diabetes management". Supplementary information on the website states that "Low alcohol or 'lite' beers are a better choice than regular or diet beers because they are lower in alcohol". It is mandatory that all alcoholic beverages contain on the label a statement of their alcohol content.

There is also information on diabetes and alcohol consumption in the 2009 National Health and Medical Research Council's (NHMRC) *Australian guidelines to reduce health risks from drinking alcohol*, in the section entitled *People with physical health problems that are made worse or affected by alcohol*.

#### **What is the effect of alcohol and alcoholic beverages on diabetes?**

The prevalence of diabetes mellitus is escalating worldwide and its incidence is projected to increase from about 135 million in 1995 to 300 million in 2025 (AusDiab Steering Committee 2001). Type 2 diabetes mellitus, which accounts for more than 85% of all incidences of diabetes mellitus, is a disorder characterized by resistance to the effects of circulating insulin. While more than moderate amount of alcohol by diabetics can increase the risk of developing complications by weight gain, increasing

triglycerides (a form of fat or lipid) and increasing blood pressure, which all increase, substantially, the risk of cardiovascular disease, a small or moderate amount of alcohol can actually reduce the risk of cardiovascular disease. Cardiovascular disease is the major cause of mortality, accounting for up to 80% of all deaths in individuals with type 2 diabetes mellitus (Feener and King 2001, Gu et al. 2003, Mooradian 2003); the age adjusted relative risk of death due to cardiovascular disease is approximately three-fold higher than in the general population. Approximately 30 to 60% of diabetic patients have hypertension (Nilsson et al. 2003, Vijan and Hayward 2003), and may have coexistent lipid disorders characterised by increased blood triglycerides and reduced HDL-cholesterol, as well as haemostatic and fibrinolytic abnormalities (Mooradian 2003).

Apart from obesity and physical inactivity there are few well-established modifiable risk factors for type 2 diabetes mellitus. Recent evidence suggests, however, that alcohol consumption may be a potentially modifiable risk factor for type 2 diabetes mellitus and a J-shaped relationship has been observed between level of alcohol consumption and risk of developing diabetics in both men and women (de Vegt et al. 2002, Wannamethee et al. 2002, Wannamethee et al. 2003). The risk of developing type 2 diabetes mellitus was observed to be most reduced for women when their daily consumption was between 15.0 to 29.9 g of alcohol (Wannamethee et al. 2003). Indeed, as in the general population, there is also a decrease in cardiovascular risk with mild-to-moderate alcohol consumption in type 2 diabetics (Ajani et al. 2000b, Hu et al. 2001). For example, in males, the risk only increases when approximately 210 g alcohol are consumed per week, however, a similar increased risk has not necessarily been observed for wine consumers (Carlsson et al. 2000, Kao et al. 2001). A J-shaped relationship has also been observed between insulin sensitivity and level of alcohol consumption, where the moderate consumption of alcohol has been observed to improve insulin sensitivity, possibly by reducing the concentration of free fatty acids in blood (Avogaro et al. 2002, Koppes et al. 2005). In turn, the improved insulin sensitivity lowers the concentration of insulin, glucose and triglycerides in the blood, and increases that of HDL, while LDL particles become less dense, less adherent and less easily oxidized. Altogether, this reduces the risk of developing type 2 diabetes mellitus, as well as improving control of blood glucose and reducing the risk of cardiovascular disease in type 2 diabetic (Ajani et al. 2000a, Solomon et al. 2000). Following the consumption of 120 to 240 mL wine daily for 30 days fasting serum insulin concentration was also lowered (Bantle et al. 2008).

Patients with diabetes mellitus have other risk factors for cardiovascular disease such as a decreased total antioxidant capacity of plasma and concomitant increased LDL oxidation post-prandially (Ceriello et al. 1999a, Diwadkar et al. 1999). Ceriello et al. (2001) observed, however, that the consumption of red wine with food in type 2 diabetic patients decreased LDL oxidation post-prandially (Ceriello et al. 1999b). Furthermore, the post-prandial hypoglycaemia experienced in diabetes mellitus, which activates coagulation (Ceriello et al. 1996), was decreased by the consumption of red wine. The consumption of red wine by fasting type 2 diabetic patients, however, did not decrease either LDL oxidation or coagulation. Landrault et al. (2001) also investigated whether wine-derived phenolic compounds increased the total plasma antioxidant capacity in an insulin-deficient diabetic rat model, as well as affecting glycaemia or blood sugar concentration, the biomarker of diabetes. Following the medium-term administration of both phenolic-enriched white wine and de-alcoholised phenolic-enriched white wine, the total plasma antioxidant capacity of the diabetic rats was increased to the level of non-diabetic rats and the level of glycemia reduced by 15 to 20%. This suggests that moderate wine consumption may also attenuate the debilitating hyper- and hypo-glycaemic symptoms of diabetes.

Furthermore, increased inflammation via an increase in circulating pro-inflammatory cytokines has been observed in both diabetic and non-diabetic patients and to be involved in the pathogenesis of cardiovascular complications such as endothelial dysfunction after a myocardial infarction (Nystrom et al. 2006). Wine-derived phenolic compounds have anti-inflammatory actions including inhibition of reaction oxygen species in neutrophils, monocytes and macrophages (Martinez et al. 2000, Feng et al. 2002). In subjects with diabetes, red wine consumption, taken with meals, significantly reduces oxidative stress and the circulating concentration of pro-inflammatory cytokines from lymphocytes and macrophages such as C-reactive protein, tissue necrosis factor-alpha and interleukin-6, as well as improving cardiac function after a myocardial infarction (Marfella et al. 2006).

Many studies have shown that individuals who consume alcohol moderately are at considerably lower risk of developing diabetes mellitus and that those who are diagnosed with diabetes who consume alcohol are less likely to develop the main causes of morbidity and mortality in diabetics: heart disease, peripheral vascular disease, and other cardiovascular diseases.

Recent studies have focused on effects of alcohol among diabetics. A study by Ahmed et al (2008) based on more than 38,000 diabetics followed by the Kaiser Permanente Group in California, showed that those who consumed alcohol had evidence of better control of their diabetes. The authors conclude that this finding "supports current clinical guidelines for moderate levels of alcohol consumption among diabetes patients." Indeed, there is now strong scientific data showing that moderate drinkers are much less likely to develop diabetes and that diabetics who drink moderately have fewer complications of the disease. You may recall that a recent clinical trial by Shai et al. (2007) showed that previously non-drinking diabetics advised to begin to consume a glass of wine daily had evidence over one year of lower fasting blood glucose levels than did subjects randomly assigned to continue abstinence. The present analysis based on more than 38,000 diabetics from the large Kaiser Permanente group shows that alcohol intake is associated with significantly lower levels of Hb A1C, a marker for prevailing level of blood glucose. A lower A1C level is a good indicator of better control of diabetes. The authors state that earlier research has shown that a 1% reduction in A1C is associated with a 21% reduction of the risk of any diabetes-related endpoint and a 37% reduction in the risk of microvascular complications. Thus, the magnitude of decrease in A1C levels associated with alcohol use (from 8.88 among lifetime abstainers to 8.39 for subjects reporting 2-2.9 drinks/day) may be an important factor in the reduction of cardiovascular disease among diabetics who are moderate drinkers.

Another recent significant study showing the effects of moderate drinking among diabetics was published by Beulens et al (2008). Their large follow-up study of subjects with early-onset (type 1) diabetes, the type generally not associated with obesity, showed a considerable reduction in the risk of common microvascular complications of diabetes -- retinopathy, neuropathy, and kidney abnormalities-- among those individuals who consumed alcohol moderately. The effect was especially among wine drinkers, and to some extent among beer drinkers, but not among those consuming spirits.

Crandall et al (2009) studied this association among pre-diabetics in the Diabetes Prevention Program (DPP). DPP participants (n = 3,175) had impaired glucose tolerance, elevated fasting glucose, and a BMI  $\geq 24$ . Participants were randomly assigned to placebo, metformin, or lifestyle modification and were followed for a mean of 3.2 years. Higher alcohol consumption was associated with lower insulin

secretion at any level of insulin sensitivity. During follow up, the investigators found lower incidence rates of diabetes with higher alcohol consumption in the metformin ( $P < 0.01$  for trend) and lifestyle modification ( $P = 0.02$  for trend) groups, which remained significant after adjustment for multiple baseline covariates. No similar association was observed in the placebo group. The authors conclude that despite overall low rates of alcohol consumption, there was a reduced risk of incident diabetes in those who reported modest daily alcohol intake and were assigned to metformin or lifestyle modification. They state that their finding of lower insulin secretion among moderate drinkers warrants further investigation. Thus, this large study among subjects with pre-diabetes, involving patients from 27 centers throughout the USA, shows that moderate alcohol intake may improve insulin secretion and prevent the progression of pre-diabetes to diabetes.

Alkerwi et al (2009) performed a meta-analysis of relevant publications on the relation between alcohol consumption and the prevalence of metabolic syndrome; it was based on based on 7 studies with 22,000 subjects. The results showed that moderate alcohol consumption significantly reduced the prevalence of metabolic syndrome. The authors conclude that "responsible" alcohol intake appears to be associated with a reduced prevalence of metabolic syndrome. Favorable metabolic effect seemed to be restricted to alcohol consumption of less than 20 g/day among women (about 1 1/2 typical drinks) and of less than 40 g/day among men (a little over 3 typical drinks).

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Alkerwi A, Boutsen M, Vaillant M, Barre J, Lair M-L, Albert A, Guillaume M, Dramaix M. Alcohol consumption and the prevalence of metabolic syndrome: A meta-analysis of observational studies. *Atherosclerosis* 2009;204:624–635.

Beulens JWW, Kruidhof JS, Grobbee DE, Chaturvedi N, Fuller JH, Soedamah-Muthu SS. Alcohol consumption and risk of microvascular complications in type 1 diabetes patients: the EURODIAB Prospective Complications Study. *Diabetologia* 2008;51:1631–1638.

Crandall JP, Polsky S, Howard AA, Perreault L, Bray GA, Barrett-Connor E, Brown-Friday J, Whittington T, Foo S, Ma Y, Edelstein SL, for the Diabetes Prevention Program Research Group. Alcohol consumption and diabetes risk in the Diabetes Prevention Program. *Am J Clin Nutr* 2009;90:595–601.

## 2. Energy or calorific content and alcohol. Is there a need for labelling/nutrition panel?

Alcohol does contribute to the total calorific intake of light to moderate consumers of alcohol and enhances the development of a positive energy balance. The significance of the contribution, depends on, for example, the composition of the diet of the consumer, the amount and pattern of alcohol consumed, and the level of physical activity or exercise of the consumer.

Indeed, the effect of alcohol on body weight and the development of obesity is complex. One standard drink (10 g alcohol) of a wine and sparkling wine contains between 220 and 285 kJ, which increases to approximately 345 for fortified wine.

### Wine beverage kJ per 10 g alcohol (1 standard drink)

Wine—cooler	220
Wine—red	283
Wine—rose	284
Wine—dry, white	283
Wine—medium dry, white	270
Wine—medium sweet, white	276
Sparkling wine	270
Fortified wine	343
Sherry—dry	129
Sherry—sweet	178

Alcoholic beverages, such as wine, may contribute up to 6% of the total foodstuff energy in the Australian diet for light to moderate consumers of alcohol, as from epidemiological data, light to moderate consumers of alcohol generally add alcohol to their normal diet. This figure is dependent, however, on factors, such as amount and pattern of alcohol consumption, concomitant food intake, diet (carbohydrate, fat and protein, which are the other major energy substrates), exercise and gender; this means that at least 94% of calories are derived from other sources. In contrast, for excessive consumers, such as those alcohol dependent or alcoholics, the contribution of alcohol to total foodstuff energy may increase to 50% as alcohol is often consumed instead of, or in preference to, other foodstuffs.

Approximately one third of epidemiological studies on alcohol and body weight suggest that there is a positive correlation between alcohol consumption and body weight, one third found a negative correlation and one third found no association at all (McDonald *et al.* 1993, Westerterp 1995). The discrepancies in data may result from methodological differences between the studies. Statistical analysis of the relationship between alcohol intake and body weight (body mass index), however, should not be used to determine whether the calories or energy from alcohol 'count' or 'do not count' towards body weight due to the limited contribution of alcohol to total energy intake.

Also, epidemiological studies, which suggest that alcohol-derived energy 'does not count' are not supported by the measurement of alcohol-induced thermogenesis, which indicates that the thermic effect of alcohol is intermediate between that of carbohydrate and fat (>5–10%), and that of protein (20–30%). The magnitude of the thermogenic effect is dependent, however, on the amount of alcohol consumed,

where approximately 80–85% of the alcohol-derived energy is utilised by the body for healthy non-alcoholic consumers. In addition, when alcohol is consumed, in conjunction with a meal, it becomes the priority substrate and temporarily displaces carbohydrate and fat from oxidative metabolism in the liver. Since there is a maximum oxidation rate for alcohol of approximately 0.1 g/kg (0.7 kcal/g) fat-free mass per hour, only approximately 50% of the resting energy expenditure can be covered by alcohol oxidation and substantially less if this is related to total energy expenditure, which includes physical activity. This implies that, potentially, alcohol can temporarily and transiently spare the oxidation of other substrates up to a maximum level of 50% the resting value. This contrasts with the effect of carbohydrate consumption on carbohydrate utilisation which can be highly modulated and which can contribute, even post-absorptive, approximately 100% of the energy expenditure following supra levels of glycogen stores consecutive to massive carbohydrate loading.

Alcohol consumed in addition to a normal diet is expected to lead to fat storage since it spares fat from oxidation, but this will be associated with a lower weight gain in bodyweight than when carbohydrate is stored as glycogen, such as excessive carbohydrate consumption, due to the significant difference in energy density of fat (9 kcal/g) versus the glycogen–water pool (1 kcal/g).

### Other nutritional content

According to the ANZFA Nutritional values of Australian foods (1997), wine contains minimal amounts of other nutrients as follows:

<b>Nutrient</b>	<b>range per 100 mL wine (mg)*</b>
Protein	0-0.2
Fat	0.0
Carbohydrate	0.0-7.8
Sugars	0.3-7.8
Dextrin	0.0
Cholesterol	0.0
Sodium	10-26
Potassium	35-88
Calcium	3-8
Magnesium	3-11
Iron	tr-0.3
Zinc	tr-0.1
Retinol equivalent	0.0
Thiamin	0.0
Riboflavin	0.0
Niacin equivalent	0.0-0.4
Niacin	0.0-0.4
<b>Vitamin C</b>	<b>0.0-3.0</b>

\*100 mL is approximately equivalent to 10 g alcohol or 1 standard drink

Alcohol and thus wine is referred to as 'empty' calories, as they do not contain appreciable amounts of any nutrients.

Wine products, that is, wine mixed with other foodstuffs, may however, have different nutritional values, and similarly fortified wine products such as port and sherry have a higher content of carbohydrate and sugars, related to the alcohol content.

Therefore, while alcoholic beverages such as wine do contain measurable amounts of certain constituents, such as carbohydrate and sugar, they can not be considered as nutritious beverages. Furthermore, while they have a positive impact on energy intake when consumed in moderation, this impact does not initiate a simple additive effect for body weight, where the extent of impact is dependent on other confounding factors. Therefore, including the energy value on the label of an alcoholic beverage, will not accurately inform the consumer of the impact of the alcoholic beverage on their body weight or general health.

Consequently, a nutritional panel does not carry much useful nutritional information for the consumer, but adds to label clutter.

### **Alcohol and weight gain and obesity**

Whether the increase in energy intake due to ingestion of alcohol is a risk factor for obesity is controversial. Despite widespread belief that alcohol intake contributes to the risk of obesity, the data emerging from a large number of epidemiological studies is contradictory, and on balance suggests that moderate alcohol intake may actually be associated with reduced risk of weight gain and consequent obesity unless the alcohol is consumed through binge-drinking; the key is the total amount of alcohol consumed. Evidence in support of an association between alcohol intake and body weight includes epidemiological data reporting a positive correlation between body mass index (BMI) or measures of obesity and alcohol consumption either overall (Kent and Worsley 2009, Schroder et al. 2007, Wannamethee and Shaper 2005) or specifically in men (Colditz et al. 1991). Other studies suggest that both abstinence and heavy alcohol consumption are associated with a higher BMI or waist-to-hip ratio but that light to moderate alcohol consumption is associated with decreased body-size, that is, there is a J-shaped relationship between alcohol and weight gain (Arif and Rohrer 2005, Lukasiewicz et al. 2005). A further complication is that opposite effects have been reported in some studies depending on the gender of participants, with an inverse relationship (that is, body-size decreases with increasing alcohol consumption) for various measures of body-size and alcohol consumption in women (Colditz et al. 1991, Wannamethee and Shaper 2003, Barry and Petry 2009), whereas either no relationship or increased body-size with alcohol consumption has been reported in men (Colditz et al. 1991). For example, in a Finnish study, women who did not consume any alcohol had the highest risk of obesity whereas for men it was those who consumed moderate to high amounts of alcohol who were most at risk (Lahti-Koski et al. 2002). Women with high alcohol consumption have also been found to have reduced subcutaneous adipose tissue (Molenaar et al. 2009). In contrast, other studies have reported an inverse relationship between alcohol consumption and body-size, irrespective of gender (Gearhardt and Corbin 2009).

Furthermore, in a study of 486 severely obese subjects (BMI >35 kg/m<sup>2</sup>) (Dixon et al. 2002), who underwent laparoscopic adjustable gastric band placed to help them lose weight, those patients consuming more than 100 g/week of alcohol, especially wine, had significantly better weight loss than those with nil or negligible consumption. Those consuming 20 to 100 g/week had an intermediate outcome.

The severely obese are at increased risk of type 2 diabetes, cardiovascular morbidity and mortality. Also in this study of 486 severely obese subjects, their pattern of alcohol consumption was monitored and their risk of cardiovascular disease determined.

Alcohol consumers showed a marked reduction in the prevalence of type 2 diabetes compared with non-consumers. A U-shaped relationship was observed between both the amount and frequency of alcohol consumption and the plasma concentration of fasting triglyceride, fasting glucose, glycosylated haemoglobin A1c and insulin measurements. In this group, comprising predominantly women consumers of less than 100 g/week had more favorable insulin measures, with insulin sensitivity best in those consuming 20 to 100 g of alcohol/week, that is, 2 to 10 standard drinks/week, which is considered to be light alcohol consumption. Of the alcohol consumers, 165 nominated wine and 111 spirits or beer as the alcoholic beverage most frequently drunk. Wine consumers had a significantly lower fasting insulin level and improved insulin sensitivity. These results, therefore, demonstrate that light to moderate alcohol consumption, especially wine consumption, is associated with a lower prevalence of type 2 diabetes, improved insulin sensitivity and more favorable cardiovascular risk profile in the severely obese (Dixon et al. 2002).

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Schroder H., Morales-Molina J.A., Bermejo S., Barral D., Mandoli E.S., Grau M. Relationship of abdominal obesity with alcohol consumption at population scale, *Eur J Nutr* 46 (2007), pp. 369–376.

Schutz, Y. The effect of alcohol on energy balance. International Monograph on O. M. & W.C. (Medicom Europe) pp 2-9; 1996.

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Wannamethee S.G., Shaper A.G. Alcohol, body weight, and weight gain in middle-aged men, *Am J Clin Nutr* 77 (2003), pp. 1312–1317.

Westerterp, K.R. Alcohol calories do not count the same as other calories. *Int. J. Obes.* 19(2): 14–15; 1995.

### **3. Breastfeeding/pregnancy and alcohol. Is there a need for health advisory/warning labels?**

At the public consultation meeting that was held in Adelaide on 23 April 2010, another of the issues raised was a possible requirement for health advisory or warning labels for alcohol beverages regarding the consumption of alcohol during pregnancy.

The requirement to include a health advisory or warning label should be based on the whether there is a need for such a panel, and that should be based on: 1) whether there is adequate readily-available information for women on alcoholic beverage consumption during pregnancy; 2) the effect of alcoholic beverages on pregnancy; 3) the level of awareness and knowledge about such effects; and 4) whether health advisory or warning labels actually change behaviour in the at risk group, that is, pregnant women.

#### **1) Is there adequate readily-available information for women on alcoholic beverage consumption during pregnancy?**

There is a myriad of print and website materials readily available for women, which have been produced by the Australian Federal and State governments, the New Zealand government, allied health organisations and other NGOs as follows:

##### **1.1 List of Australian policies and strategies**

The following is a list of Australian policies and strategies which include an aim to advise women of childbearing age and their general practitioners/obstetricians of the risk of consuming alcohol when pregnant or if planning a pregnancy.

1. National Health and Medical Research Council. Australian alcohol guidelines: health risks and benefits. Canberra: NHMRC, 2001.
2. National Health and Medical Research Council. Is there a safe level of daily consumption of alcohol for men and women? Canberra: NHMRC, 1992.
3. Ministerial Council on Drug Strategy. National clinical guidelines for the management of drug use during pregnancy, birth and the early development years of the newborn. Sydney: NSW Health and Commonwealth of Australia, 2006.
4. Australian National Council on Drugs. Fetal Alcohol Syndrome National Workshop 2002. Canberra: Commonwealth Department of Health and Ageing, 2002. Available from [http://www.ancd.org.au/publications/pdf/fas\\_workshop\\_report.pdf](http://www.ancd.org.au/publications/pdf/fas_workshop_report.pdf)

5. Australian Government Department of Health and Ageing. Alcohol and your health fact sheet: alcohol and women's health. Canberra: The Department, 2003. <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/publicat-alcohol.htm>.
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7. Australian Government Department of Health and Ageing. National alcohol strategy: a plan for action 2001–2003-04. Canberra: Commonwealth of Australia, 2001.
8. New South Wales Health. Pregnancy care. Sydney: NSW Health Department, 2001.
9. Centre for Drug and Alcohol, New South Wales Health. Women and alcohol. Sydney: NSW Government, 2006. <http://www.health.nsw.gov.au/public-health/dpb/publications/womenalc.htm>.
10. Queensland Health. Strategic policy for Aboriginal and Torres Strait Islander children and young people's health 2005–2010. Brisbane: Strategic Policy Branch, Queensland Health, 2005.
11. Queensland Health. A strategic policy for children and young people's health 2002–07. Brisbane: Strategic Policy Branch, Queensland Government, 2002.
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13. Tasmanian Government Department of Health and Human Services. Alcohol guidelines: health risks and benefits. Hobart: The Department, 2005. <http://www.dhhs.tas.gov.au/healthyliving/alcohol/alcoholguidelines.php>.
14. Victorian Government Health Information. Alcohol and parents. Melbourne: Department of Human Services, Victorian Government, 2005. <http://www.health.vic.gov.au/drugs/alcohol/parents/faq.htm>.
15. Western Australian Drug and Alcohol Office. Alcohol and your health — Australian alcohol guidelines. Perth: Government of Western Australia, 2006. <http://www.dao.health.wa.gov.au/tabid/176/Default.aspx>
16. Western Australian Department of Health. Alcohol and pregnancy. Perth: Alcohol and Other Drugs Program, Government of Western Australia, 1998.
17. Harris M, Bailey L, Bridges-Webb C, et al. Guidelines for preventive activity in general practice. Melbourne: Royal Australian College of General Practitioners, 2005
18. Royal Australasian College of Physicians, Royal Australian and New Zealand College of Psychiatrists. Alcohol policy: using evidence for better outcomes. Sydney: RACP, 2005.
19. Australian Medical Association. Alcohol consumption and alcohol related problems. AMA position statement. Canberra: AMA, 1998. <http://www.ama.com.au/web.nsf/doc/SHED-5F5GGA>
20. Australian Medical Association. AMA highlights dangers of alcohol during pregnancy [press release]. Canberra: AMA, 2005. <http://www.ama.com.au/web.nsf/doc/WEEN-6FSVM4>

The following tables are included to illustrate the range of policies and strategies and is adapted from: O'Leary, C.M., Heuzenroeder, L., Elliott, E.J., Bower, C. (2007). A review of policies on alcohol use during pregnancy in Australia and other English-speaking countries, 2006. *Medical Journal of Australia*. 186(9):466-71.

**Table 1 Policies on alcohol and pregnancy:**

**Australian Commonwealth and state and territory governments\***

Source	Abstinence	Occasional small amounts	Comments	Evidence base†
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## Commonwealth Government

National Health and Medical Research Council (2001)	May be considered	2 per day & < 7 per week is low risk	Should never become intoxicated Risk is highest in the early stages of pregnancy	2
Australian Government Department of Health and Ageing	May be considered	2 per day & < 7 per week is low risk	Should never become intoxicated, but the evidence about low to moderate alcohol consumption is less clear Risk is highest in the early stages of pregnancy	2
Ministerial Council on Drug Strategy National Clinical Guidelines	Safest	2 per day & < 7 per week is low risk, but no level can be assumed to be completely safe	Provide NHMRC recommendations State that no level of alcohol consumption has been determined as completely safe All pregnant women should be asked about their alcohol consumption and given information on the risk associated with drinking alcohol during pregnancy	Point 2, 4

## States and territories

ACT: no policy	—	—	The ACT Drug and Alcohol Office advised that the information provided to women varies across health service providers	—
NSW Health	Safest	Even a small amount may be harmful	Binge drinking, particularly during the first trimester, is harmful A safe level or safe time for drinking has not yet been determined	5
NSW Health, Centre for Drug and Alcohol	Safest	Moderate alcohol use may be harmful	Heavy drinking is known to be dangerous Moderate use of alcohol defined as 2 drinks per day, 3–4 times a week	5
Queensland Health		Reduction	Alcohol reduction or cessation advised, but no level of alcohol consumption specified	
South Australian Department of Health	Safest	Not advised	Reduce alcohol when planning pregnancy and abstain when pregnant The risks increase with increasing quantity, with harm occurring with high exposure, and a safe level has not yet been determined	5
Tasmanian Department of	Safest	2 per day & < 7 per week is low risk	Follow the NHMRC guidelines	2

Health and Human Services

Victorian Department of Health	Safest	2 per day & < 7 per week is low risk	There are varying opinions about the harm from drinking alcohol during pregnancy, but a safe level has not yet been determined  Present the NHMRC guidelines (2001) <sup>7</sup>	2
Western Australian Drug and Alcohol Office	Safest	2 per day & < 7 per week is low risk	Follow the NHMRC guidelines (2001)	2
Western Australian Department of Health	No specific advice	No specific advice	Drinking alcohol at hazardous or harmful levels during pregnancy increases the risk of low birthweight, intrauterine growth retardation and prematurity	2

\* Australian standard drink equals 10 g of alcohol. † Key to evidence base: 1 = systematic literature review; 2 = literature review (not systematic review); 3 = broad statement or indication that the policy is based on the evidence, but no specific references provided; 4 = consensus of authors; 5 = not mentioned.

‡ *National clinical guidelines for the management of drug use during pregnancy, birth and the early development years of the newborn.*<sup>9</sup> NHMRC = National Health and Medical Research Council.

**Table 2 Policies on alcohol and pregnancy:**

**Australian medical and nursing organisations\***

Source	Abstinence	Occasional small amounts	Comments	Evidence base†
Royal Australian College of General Practitioners	Preferable	Limit drinking	Pregnant women and those planning pregnancy should be assessed annually on their quantity and frequency of alcohol intake and the number of alcohol-free days each week  High-risk drinkers should receive brief interventions	5
Royal Australian and New Zealand College of Obstetricians and Gynaecologists	—	—	No policy or guidelines identified	—
Australian College of Midwives‡	Safest	2 per day & < 7 per week is low risk	Follows the recommendations set out in the National Clinical Guidelines (NCG)	As per NCG
Royal Australasian College of Physicians, Royal Australian and New Zealand College of	Safest	No level has been determined completely low	All pregnant women should be given information on the risk associated with drinking alcohol during pregnancy	5 “Usually based on NHMRC”

Psychiatrists		risk for the fetus	
Australian Medical Association	Desirable	Not advised	The position statement was written in 1998 and is based on the 1992 NHMRC recommendations  In 2005, the AMA President stated that the NHMRC should revise the guidelines on alcohol consumption during pregnancy, indicating that an abstinence message should be given

\* Australian standard drink equals 10 g of alcohol. † Key to evidence base: 1 = systematic literature review; 2 = literature review (not systematic review); 3 = broad statement or indication that the policy is based on the evidence, but no specific references provided; 4 = consensus of authors; 5 = not mentioned.

‡ Helen Cooke (former executive member of the Australian College of Midwives, Sydney, NSW), personal communication, 2006. NHMRC = National Health and Medical Research Council.

## 1.2 List of Australian and international information available

The following is a list of Australian as well as international information available to women planning a pregnancy or pregnant women, about the risk of consuming alcohol.

### Australian information

1. **The DrugInfo Clearinghouse, Australian Drug Foundation (ADF).** Facts sheets for women who are pregnant or planning pregnancy, which was reviewed by Women's Alcohol and Drug Advisory Service at the Royal Womens' Hospital in Melbourne. Available at [http://druginfo.adf.org.au/article.asp?ContentID=aod\\_pregnancy](http://druginfo.adf.org.au/article.asp?ContentID=aod_pregnancy)
2. Australasian Associated Brewers and **Australian General Practice Network.** Video and print resources for general practitioners. Available from [www.agpn.com.au](http://www.agpn.com.au)
3. **Australian Government Department of Health and Ageing.** Counselling hotline and wallet card for women and fact sheets, pamphlets and kits for general practitioners. Available at <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-publicat.htm>  
and <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/Publications+Statistic+s+&+Resources-1> Australian Women and Alcohol Consumption 1996 - 2003. Available at [http://www.health.gov.au/internet/wcms/publishing.nsf/Content/phd-pub-alcohol-women\\_report-cnt.htm](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/phd-pub-alcohol-women_report-cnt.htm)  
  
This report presents results for women in three age cohorts (Younger, Mid-age and Older) from 1996 to 2003 and provides important data on alcohol consumption among Australian women. Feb. 2005
4. **National Organisation for Fetal Alcohol Syndrome and Related Disorders. (NOFASARD)** Pamphlet for pregnant women or women planning pregnancy..

Available at  
[http://www.nofasard.org.au/media/pdfs/alcohol\\_pregnancy\\_brochure/brochure1.pdf](http://www.nofasard.org.au/media/pdfs/alcohol_pregnancy_brochure/brochure1.pdf)

5. **New South Wales Health.** Fact sheets and web-links to other web-based resources for pregnant women or women planning pregnancy. Available at [www.alcoholinfo.nsw.gov.au/family\\_wellbeing/pregnancy](http://www.alcoholinfo.nsw.gov.au/family_wellbeing/pregnancy) and <http://www.health.nsw.gov.au/public-health/dpb/publications/womenalc.htm>
6. **New South Wales Centre for Parenting and Research.** Website for pregnant women or those planning pregnancy. Available at <http://www.parenting.nsw.gov.au/uploads/0aac4e14-7cbe-422b-ad88-be5bf9b10aed4.doc>
7. **Northern Territory Department of Health and Community Services.** Alcohol and other drugs. In: Northern Territory Department of Health and Community Services, editor. The Public Health Bush Book. Darwin: Northern Territory Government, 2006.
8. **South Australian Department of Health.** Fact sheet for pregnant women or those planning pregnancy. Available at [www.health.sa.gov.au/PREGNANCY/DesktopDefault.aspx?tabid=187](http://www.health.sa.gov.au/PREGNANCY/DesktopDefault.aspx?tabid=187)
9. **South Australian Government Drug and Alcohol Services Association (DASA):** Assorted reference material including best practice clinical guidelines, daily diary, policies and standards for women, and clinical educators and general practitioners. Available at <http://www.dasc.sa.gov.au/site/page.cfm> and <http://www.dasc.sa.gov.au/site/page.cfm?u=123>
10. **Victorian Government Health Information.** Pamphlets for pregnant women or those planning pregnancy in both indigenous and non-indigenous communities. Available at [www.health.vic.gov.au/drugs/alcohol/youth/faq.htm](http://www.health.vic.gov.au/drugs/alcohol/youth/faq.htm) and [http://health.vic.gov.au/pdpc/downloads/kit\\_flipchart.pdf](http://health.vic.gov.au/pdpc/downloads/kit_flipchart.pdf)
11. **Victorian Government Health Information.** Web-site and fact sheets for pregnant women. Available at <http://www.health.vic.gov.au/maternity/yourpregnancy/thinking.htm>
12. **Queensland Health.** Strategic policy for Aboriginal and Torres Strait Islander children and young people's health 2005–2010. Brisbane: Strategic Policy Branch, Queensland Health, 2005.
13. **Royal Women's Hospital:** Diary, fact sheets, pamphlets and 7 pdf presentations about the effects of alcohol on women and on pregnant women for pregnant women and for general practitioners [Women's Alcohol & Drug Service](http://www.rch.org.au/rch/index.cfm?doc_id=3834). Available at [http://www.rch.org.au/rch/index.cfm?doc\\_id=3834](http://www.rch.org.au/rch/index.cfm?doc_id=3834) and [http://www.rch.org.au/emplibrary/ecconnections/PregnancyDiary.pdf#xml=http://www.rch.org.au/cgi-bin/taxis/webinator/search4/pdfhi.txt?query=alcohol+and+pregnancy&pr=rchmelb\\_ext&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&lead=500&sufs=2&order=r&cq=&id=479f2f4e1c](http://www.rch.org.au/emplibrary/ecconnections/PregnancyDiary.pdf#xml=http://www.rch.org.au/cgi-bin/taxis/webinator/search4/pdfhi.txt?query=alcohol+and+pregnancy&pr=rchmelb_ext&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&lead=500&sufs=2&order=r&cq=&id=479f2f4e1c) and [http://www.ichr.uwa.edu.au/files/user22/C\\_Bower\\_1.pdf](http://www.ichr.uwa.edu.au/files/user22/C_Bower_1.pdf)

14. **Rural Health Education Foundation.** Web-site and other material for pregnant women and for general practitioners. Available at <http://www.rhef.com.au/programs/614/614r.html>
15. **Telethon Institute for Child Health Research** The booklet, fact sheet and wallet card for general practitioners. Available at <http://www.ichr.uwa.edu.au/alcoholandpregnancy/resources>
16. **Drug and Alcohol Office, Western Australia/Western Australia Government.** Facts sheets and wallet card for pregnant women and those planning pregnancy. Available at <http://www.dao.health.wa.gov.au/Publications/tabid/99/DMXModule/427/Default.aspx?EntryId=93>

There are also 24 hour confidential telephone counselling services in Australia as follows:

#### **NSW**

Alcohol and Drug Information Service (ADIS) - 24hr hotline  
Ph: (02) 9361 8000 Toll free number: 1800 422 599

#### **Victoria**

Ph: (03) 9416 1818 Toll free number: 1800 136 385

#### **Western Australia**

Alcohol and Drug Information Service (ADIS) - 24hr hotline  
Ph: (08) 9442 5000 Toll free number: 1800 198 024

#### **Queensland**

Alcohol and Drug Information Service (ADIS) - 24hr hotline  
Ph: (07) 3236 2414 Toll free number: 1800 177 833

#### **South Australia**

Alcohol and Drug Information Service (ADIS) - 24hr hotline  
Toll free number: 1300 131 340

#### **Northern Territory**

Amity Community Service  
Ph: (08) 8981 8030 Toll free number: 1800 629 683

#### **Tasmania**

Alcohol and Drug Service South  
Toll free number: 1800 811 994

#### **ACT**

24 hour Alcohol and Drug Help line  
Ph: (02) 6205 4545

### **International information**

#### **1. Alcohol Concern (UK):**

##### [Alcohol and Teenage Pregnancy](#)

A briefing paper aimed at all those working with young people in schools and youth work settings. It contains personal, social and health information for people involved with alcohol education.

##### [Factsheet: Women and Alcohol](#)

#### **2. Alcohol Policies Project (USA): [Fact sheet: Women & Alcohol](#)**

3. **Department of Health England.** The pregnancy book. London: National Health System, Department of Health, 2001.
4. **Division of Birth Defects and Developmental Disabilities, National Center on Birth Defects and Developmental Disabilities, USA:** National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effect: defining the national agenda for fetal alcohol syndrome and other prenatal alcohol-related effects. [Weber MK, Floyd RL, Riley EP, Snider DE Jr; National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effect. MMWR Recomm Rep.](#) 2002 Sep 20;51(RR-14):9-12.
5. **Drinksense (UK):** [Factsheet: Alcohol and Women](#)
6. **Health Canada.** Nutrition for a healthy pregnancy – national guidelines for the childbearing years. Ottawa: Health Canada, 1999.
7. **Health Scotland (UK):**  
 Pamphlet for pregnant women or those planning to be. Available at [www.nhshealthquality.org/nhsqis/files/Pregnancy\\_Record\\_brochure.pdf](http://www.nhshealthquality.org/nhsqis/files/Pregnancy_Record_brochure.pdf)  
  
 Pamphlet for pregnant women or those planning to be:  
[www.glasgowpharmacyhealthpromotion.scot.nhs.uk/alcohol/alcohol\\_main.htm](http://www.glasgowpharmacyhealthpromotion.scot.nhs.uk/alcohol/alcohol_main.htm)  
  
 Government guidelines on alcohol consumption and pregnancy. Available at [www.shb.scot.nhs.uk/board/meetings/documents/2004/20040126-2004\\_01.pdf](http://www.shb.scot.nhs.uk/board/meetings/documents/2004/20040126-2004_01.pdf)
8. **Institute of Alcohol Studies (UK):** [Factsheet: Alcohol and Women](#)
9. **National Institute of Alcohol Abuse and Alcoholism (NIAAA) (USA):**  
[Alcohol—An Important Women's Health Issue](#)  
 A summary of some of the more practical implications for alcohol and women.  
[Alcohol: A Women's Health Issue](#)  
 A booklet on the unique effects of alcohol on women. August 2003  
[Assessing the Impact of Maternal Drinking During and After Pregnancy](#)  
 An article about the impacts of drinking during pregnancy.  
[Drinking and Your Pregnancy](#)  
 A short series of questions and answers about drinking during pregnancy.  
[Drinking Moderately and Pregnancy: Effects on Child Development](#)  
 Research findings that indicate “moderate” drinking has much more impact on child development when the mother consumes several drinks in a single day than when she drinks the same quantity in doses of one to two drinks per day over several days.
10. **Robert Wood Johnson Foundation (USA):** PowerPoint presentation for policymakers. [Substance Abuse During Pregnancy: Time for Policy to Catch up with Research](#)
11. **Scottish Executive (UK):** [Problem substance use in pregnancy and reproductive health](#)  
 Part of a series of guides on developing and implementing Integrated Care Pathways (ICPs), which can assist agencies to develop local ICPs for specific processes and procedures involved in the management of problem substance use during different

phases of the reproductive health cycle. It covers the risks of physical, psychological and social harm associated with drug and alcohol use during pregnancy.

12. **Scottish National Health Service (UK):** [Substance Misuse in Pregnancy](#) Resource pack for professionals that aims to establish a 'framework for care' so that all women who use drugs can be offered appropriate support before, during and after the birth of their child.
13. **The Royal College of Obstetricians and Gynaecologists (UK):** Alcohol consumption and the outcomes of pregnancy. London: The Royal College of Obstetricians and Gynaecologists, 2006.
14. **United States Dept of Justice (USA):** [The Special Needs of Women with Co-Occurring Disorders Diverted from the Criminal Justice System](#) This material is intended to provide diversion program and specialty court staff with an overview of the issues specific to women involved with diversion programs/specialty courts, as well as to provide key areas of modification to services to improve and enhance services for women. April 2004
15. **United States Surgeon General (USA).** Material and web-site material for general practitioners, policy makers and the general public. Available at [www.hhs.gov/surgeongeneral/pressreleases/sg02222005.html](http://www.hhs.gov/surgeongeneral/pressreleases/sg02222005.html)

## **2) What is the effect of alcoholic beverages on pregnancy?**

The evidence on the impact of low maternal alcohol consumption on the developing foetus is conflicting. While no threshold above which an alcohol-related adverse effect occurs to the developing foetus has been established, the available data to date suggests that no adverse effects occur when up to 83 g or ca. eight standard drinks of alcohol is consumed per week. A 1998 meta-analysis of approximately 20,000 exposed foetuses, also determined there was no evidence that light and moderate consumption increased the risk of foetal abnormalities, where moderate consumption was defined as greater than two standard drinks or ca. 20 g of alcohol per week but less than two standard drinks or ca. 20 g per day in the first trimester (Polygenis et al. 1998).

The consumption of heavy amounts of alcohol by pregnant women has unequivocally been associated with adverse effects on the developing foetus (Maier and West 2001). While a recent review found no consistent convincing evidence of greater harm to the foetus from prenatal binge drinking (Henderson et al. 2007), heavy episodic consumption may result in higher maternal and foetal maximum blood alcohol concentrations followed by withdrawal episodes compared with continuous heavy consumption. Harm to the foetus varies significantly with the quantity of alcohol consumed, and also with the frequency with which it is consumed and the timing of the consumption to the gestational age of the foetus (May 2005). However, "a high level of alcohol intake alone generally does not result in a diagnosis of FAS" (Day 1992). Indeed, the current and nutritional status of the mother and her body mass index, her gravity and parity, her ingestion of drugs including caffeine and nicotine, and her educational, ethnicity, genetic, marital, parity and socio-economic status contribute to the development of FAS (Aase 1981, Sokol et al. 1986, Michaelis and Michaelis 1994, Abel and Hannigan 1995, Jacobson et al. 1996, May et al. 2004). For example, pregnant women who binge drink are also more likely to use cigarettes and illicit psychotropic drugs such as marijuana, cocaine than non-binge drinking pregnant women (Gladstone et al. 1997). Furthermore, the level of risk of an FAS birth is influenced by behavioural and environmental conditions that vary between individual women and between populations (May et al. 2004), which may influence the inter-country variation observed in the incidence of FAS.

The risk and incidence of alcohol-related foetal abnormalities needs to be put into perspective for the Australian population.

Although data on the birth prevalence of FAS in Australia are limited, they suggest that population rates are substantially lower than in North America, France and Sweden (Sampson et al. 1997, Chambers et al. 20005) However, the prevalence of FAS in Indigenous Australian children is much higher than for non-indigenous children (Bower et al. 2000, Harris and Bucens 2003, Elliott et al. 2005) in keeping with findings from other Indigenous populations (May et al. 1991, Burd and Moffatt 1994, Stratton et al. 1996, Sampson et al. 1997, Chambers et al. 2005).

Concerning the West Australian data on the incidence of FAS, approximately three quarters of these diagnoses occurred in Aboriginal children; the birth prevalence was 1.1/1000 live births compared with 0.02/1000 live births for non-Aboriginal children (Bower et al. 1994). Indeed, in 1994, it was postulated that the incidence of FAS in Australia was 1 to 2/1000 live births (Lipson 1994); this estimate was from unpublished obstetric hospital data. In 1995, from data collected for the National Drug Strategy, there were no hospital admissions assigned to FAS and thus an incidence could not be determined (English et al. 1995); this was also observed in other epidemiological studies (Gibson et al. 1983, Lumley et al. 1985, Bell and Lumley 1989, Walpole 1990).

Furthermore, these data estimate that the incidence of low birth weight resulting from excessive and heavy consumption of alcohol was extremely small, 0.4/1,000. In 2000, the incidence of FAS from the Births Defects Registry in WA with additional data from the Rural Pediatric Service (RPS) database was still 0.02/1,000 for non-Aboriginal children but had increased to 2.76/1,000 for Aboriginal children in WA (Bower et al. 2000). These figures reflect the low prevalence of excessive or heavy consumption of alcohol by non-indigenous women during pregnancy in Australia. For example, as previously stated, a recent study of alcohol consumption during pregnancy in non-indigenous West Australian women, suggests that while 79.8% of women reported consuming alcohol in the three months before pregnancy, 58.7% drank alcohol in at least one trimester of pregnancy (Colvin et al. 2007) and only 4.3% of women consumed five or more standard drinks on a typical occasion in at least one trimester of pregnancy. The West Australian population of women can be considered to be representative of the population of women in the other Australian States and Territories.

Indeed, the overall incidence of FAS in Australia is low, which reflects the size of the readily identifiable 'at risk' group. These statistics have remained stable over the past decade, which reflects the size of the readily identifiable 'at risk' groups. The incidence of FAS is higher however, in children born to indigenous Australians (Aboriginal Australians, which is consistent with other countries data for indigenous groups. The 'at risk' groups identified include indigenous Australians, heavy alcohol consumers and young Australian women. This low incidence in comparison with certain other countries, may reflect other different alcohol consumption patterns, diet and lifestyle, which could reduce confounders.

The relationship between alcohol consumption and other pregnancy outcomes continues to be controversial, uncertain and confusing, and health advise or warning label will not accurately assist in reducing any real risk. For example, For every paper that claims that any alcohol negatively influences a birth outcome, another paper refutes it. For example, where Kesmodel et al. (2001) observed an increased risk of preterm delivery with consumption of five or more alcoholic drinks per week at 16 weeks gestation and with consumption of more than one to two drinks per week at 30

weeks gestation, Albertsen (2004) did not with four drinks per week over the gestation period. An increased risk of preterm birth was also not observed by Parazzini et al. 2003, however, until more than three drinks on average per day were consumed.

Concerning low birth rate, while Covington et al. (2002) observed that more than 14 alcoholic drinks/week decreased birth weight and length, and lower weight at age seven years, O'Callaghan et al. (2003) did not observe this. Furthermore, Mariscal et al. (2005) observed that alcohol consumption of less than 6 g/day, actually decreased the risk for low birth weight but the risk was increased when more than 12 g/day of alcohol was consumed. The risk was decreased again when the 12 g/day was confined to weekends for non-cigarette smoking women. This also shows the confounding of cigarette smoking and the importance of influence of patterns of alcohol consumption.

Concerning spontaneous abortion, while Kesmodel et al. (2002) observed an increased in risk of spontaneous abortion when five or more alcoholic drinks/week were consumed in the first trimester, which was corroborated by Henrikse et al. (2005) but at 10 or more alcoholic drinks/week, but not by Maconochie et al. (2006).

Concerning neurobehaviour and cognition, O'Callaghan et al. (2007) did not observe any adverse attention, learning or cognition outcomes when less than one alcoholic drink/day was consumed but drinking more than this in late pregnancy and indeed binge drinking, was associated with an increased risk of overall learning difficulties. D'Onofrio et al. (2007), however, that polydrug use during pregnancy was a better indicator of behavioural and learning difficulties.

### **3) What is the level of awareness and knowledge about such effects?**

The available data relating to the level of awareness amongst women of childbearing age of the risk of consuming alcohol when planning to become pregnant and during pregnancy in Australia suggests that the level of awareness is high.

From the recent Australian Longitudinal Study on Women's Health 1996–2003, 91% of young women aged between 18–23 years consumed alcohol. Of these, 71% consumed alcohol at an amount and pattern at an amount and pattern associated with short-term harm according to the 2001 NHMRC Australian Alcohol Guidelines. As this population group aged, their consumption changed and the percentage at risk of harms reduced (Clemens et al. 2007), which is consistent with observations from other longitudinal studies.

A recent study of alcohol consumption during pregnancy in non-indigenous West Australian women, suggests that while 79.8% of women reported consuming alcohol in the three months before pregnancy, 58.7% drank alcohol in at least one trimester of pregnancy (Colvin et al. 2007). This was despite receiving advice to abstain. Interestingly, the proportion of women consuming one to two drinks on a typical occasion did not change significantly during pregnancy, but the number of occasions declined. Although the proportion of women consuming more than two standard drinks on a typical occasion declined after the first trimester, 19.0% of women consumed this amount in at least one trimester of pregnancy and 4.3% of women consumed five or more standard drinks on a typical occasion in at least one trimester of pregnancy. In the first trimester of pregnancy, however, 14.8% of women drank outside the 2001 Australian guideline for alcohol consumption in pregnancy, although this percentage decreased to 10% in the second and third trimesters. It is the first trimester of pregnancy in particular, where there is highest risk of alcohol-related harm to the developing foetus, which is stated in the 2001 Guidelines. The West

Australian population of women can be considered to be representative of the population of women in the other Australian States and Territories.

Another similar study undertaken in Perth women suggests while 67.3% of women reported consuming alcohol before pregnancy, 32% of these women ceased consuming alcohol during pregnancy, although the remaining 48% of these women consumed alcohol during pregnancy, with 82.2% of these women consuming up to two standard drinks per week. At 4, 6 and 12 months postpartum, 46.7%, 47.4% and 42.3% of breastfeeding women were consuming alcohol, respectively, up to two standard drinks per week (Giglia and Binns 2007). Similarly, from data sourced from the 2004 National Drug Strategy Household Survey, the majority of women consuming alcohol during pregnancy and/or whilst breastfeeding, reported consuming infrequently, where only 1% consumed alcohol daily and only 10% 1–2 days per week (Wallace et al. 2007).

Interestingly, from a 1988 study of changes in alcohol usage during pregnancy in a sample of 112 pregnant South Australian women, 86 of whom drank alcohol before pregnancy, One hundred per cent of drinkers reported a reduced intake of alcohol. A reduction in drinking during pregnancy was related directly to an antenatal emotional attachment to the fetus and related inversely to feelings of irritability towards the fetus (Condon and Hilton 1988).

In summary, irrespective of advice or guidance to the contrary, approximately one half to two thirds of Australian women consume alcohol during their pregnancy.

#### **4) Do health advisory or warning labels actually change behaviour in the at risk group, that is, pregnant women?**

The available evidence clearly demonstrates that warning labels about alcohol use in pregnancy are not effective at reducing alcohol consumption during pregnancy. While there was an increase in awareness of, exposure to and recognition memory of the label in the USA, health warning labels on alcoholic beverages are ineffective at changing consumer behaviour (MacKinnon et al. 2000), there was no beneficial change in beliefs and alcohol consumption attributable to the warning in beliefs, particularly in 'at risk' groups. Awareness and knowledge of labels are not associated with behavioural change.

If a purpose of the labelling is to increase awareness of the label and risk, then data from the USA suggest that this purpose will be achieved, but it does not follow that beliefs and behaviour are effected or influenced. If, however, the primary purpose of the labelling is to decrease risky alcohol consumption during pregnancy then data from the USA suggest this purpose will not be met. Data collected and collated from the USA, where labelling was introduced in 1988, and that from cigarette smoking labelling in Australia and the USA, demonstrated that the labelling will not effect and decrease risky consumption, in particular that of the 'at risk' groups identified.

In the USA, risky alcohol consumption by these 'at risk' groups has remained static or increased. The incidence of FAS in the USA since the introduction of labelling in 1988 has also remained relatively static, although the awareness of the label and risk has increased.

A strategy that has shown to be effective in the USA, both in terms of cost and in decreasing risky alcohol consumption, including in 'at risk' groups, are brief interventions, that is, the screening and interviewing of pregnant women or those planning pregnancy, by primary health care providers. Australian primary health care providers have already identified, as have the State and Federal governments and NGOs, that better and more education, training and tools are required to instigate these brief interventions and hence

to prevent and reduce the occurrence of FAS/FASD. This strategy is also included as a primary strategy for reducing risky alcohol consumption during pregnancy and the risk of the birth of an alcohol-affected child in both State and Federal governments', and NGO's plans and policies.

Blanket warnings and recommendations for total abstinence by pregnant women serve little purpose other than to instill unnecessary anxiety, fear and guilt in those women at little or no risk.

It has been demonstrated in the literature, however, that there are readily identifiable 'at risk' groups in a population that behave differently to the 'not at risk' groups; this is reflected in their continuance of alcohol consumption during pregnancy and a consistency of the level of consumption (Hilton and Kaskutas, 1991; Mayer *et al.*, 1991; Hankin *et al.*, 1996; Gladstone *et al.*, 1997; Stutts *et al.*, 1997). Indeed, the 'at risk' groups do not generally perceive that they are significantly 'at risk' (Stutts *et al.*, 1997). While blanket recommendations such as warning labels on alcoholic beverages, and general campaigns and programs are effective for the 'not at risk' group, the 'at risk' groups have specific problems, which are amplified and exemplified by their excessive consumption.

'At risk' groups in a population behave differently to the 'not at risk' groups (Hilton and Kaskutas 1991, Mayer *et al.* 1991, Hankin *et al.* 1996). Blanket recommendations, such as health warning labels on alcoholic beverages, and general campaigns and programs are effective only for the 'not at risk' groups. 'At risk' groups have specific problems and, therefore, specific and targeted campaigns and programs which tackle the specificities rather than the generalities, will succeed only in reducing the incidence of FAS/FASD in these groups.

It is, therefore, recommended that the current effort and energies being expended by State and Federal governments and NGOs should be redirected to address specific and targeted education of the 'at risk' groups by their:

- community health centre(s);
- general practitioner(s); and
- obstetrician(s)/paediatrician(s).

Professional intervention to alter drinking patterns and confounding problems rather than a 'social' intervention is required.

Primary health care providers, that is, general practitioners, as well as obstetricians, midwives and nurses, and even dieticians and nutritionists, play a pivotal role in identifying both pregnant women and those planning pregnancy at high risk of giving birth to an alcohol-affected child, and providing them with advice, counseling, treatment and referral as appropriate. This strategy has unanimous support among the American College of Obstetricians and Gynecologists, the American Academy of Paediatrics, the US Office of the Surgeon General and the US Department of Health and Human Services.

Validated screening instruments are available for screening pregnant and non-pregnant women of reproductive age including T-ACE, TWEAK and AUDIT (Floyd *et al.* 2005; [www.nih.gov/publications/Assessing/Alcohol/Index.htm](http://www.nih.gov/publications/Assessing/Alcohol/Index.htm)).

Brief interventions involved one to three short (5-10 minute) sessions comprised of personal feedback on alcohol-related health problems and risk, as well as advice, options of treatment and self-help (Ockene et al. 1999, Chang et al. 1999, 2000, 2005, 2006, Reiff-Hekking et al. 2005). Several controlled studies have examined the effectiveness and impact of brief interventions with pregnant women, and all concur that pregnant women following the brief intervention were up to five-times more likely to abstain from alcohol completely or at least reduce their alcohol consumption from heavy to light, with improved birth outcomes (Hankin et al. 2000, Handmaker and Wilbourne 2001, Hankin 2002, Sokol et al. 2003, O'Connor and Whaley 2007, Chang 2004). Inclusion of the pregnant woman's partner in the brief intervention improved the outcome for heavy alcohol consumers (Chang et al. 2005). Thus brief interventions appear to be an appropriate effort to modify problematic and potentially problematic alcohol consumption and to avert its adverse consequences in at risk pregnant women or those planning pregnancy. Even for women who are not 'at risk', a routine screening provides an opportunity to discuss the health effects of alcohol consumption in a nonjudgemental, health-orientated setting to convey the message that these issues are important to the pregnancy and birth outcomes.

Motivational interviewing involves more comprehensive counseling and guides the recipients to explore their ambivalence about changing behaviour while focusing on the perceived discrepancy between current behaviours and overall goals (Miller and Rollnick 2002). It is particularly effective in reducing the consumption of heavy consumers. For example, in a pilot study of motivational interviewing, which was an empathic, participant-centred but directed session focusing on the health of the participant's unborn baby, all participants reduced their alcohol consumption and maximum blood alcohol concentrations throughout their pregnancy (Handmaker et al. 1999). Another pilot study entitled the Project CHOICES targeted non-pregnant women at high risk of an heavy alcohol-exposed pregnancy and hence giving birth to an alcohol-affected child (The Project CHOICES Intervention Research Group 2003). It consisted of four brief motivational interviews. At the six-month followup, 68.5% had reduced their risk.

The impediments to implementing the screenings, brief intervention and motivational interviewing include commitment, inadequate knowledge and skills among health care providers reinforced by limited education and training in medical school and in general practice, lack of time, and system barriers such as lack of intervention tools, protocol, referral or treatment resources (Nevin et al. 2002, Mengel et al. 2006). These impediments have been identified by both US and Australian primary health care providers.

In a survey of 1,143 primary health care providers in Western Australia, only 45% routinely ask about alcohol consumption during pregnancy and only 25% routinely provide information on the potential consequences of heavy alcohol consumption during pregnancy and only 13% provide advice consistent with the current NHMRC Australian Alcohol Guidelines. They identified the need for educational material for both their patients and themselves (Payne et al. 2005, Elliot et al. 2006, Peadon et al. 2007).

A Healthy Habits training program was effectively initiated in the USA to address clinician certainty and confidence in diagnosing problematic alcohol consumption (Seale et al. 2005).

#### **4.1 The example of health warning labels for alcoholic beverages in the USA**

The health warning label for alcoholic beverages "women should not drink alcoholic beverages during pregnancy because of the risk of birth defects", was legislated and enacted in the USA in November 1988 as the *Alcoholic Beverage Labelling Act 1988* under the *Omnibus Drug Act 1988*, approximately 20 years after it was first proposed. It

was primarily introduced in response to uncertainties of the state of knowledge in 1988. For example, while heavy maternal alcohol consumption was associated with foetal alcohol syndrome (FAS), the data on light to moderate maternal alcohol consumption were inconsistent and inconclusive. Thus it was considered prudent to recommend that the only 'safe' level of consumption during pregnancy was complete abstinence. It was also introduced along with another warning label because of the escalating economic and health 'costs' of alcohol-related problems in the USA.

Not every woman who consumes alcohol whilst pregnant, however, will give birth to a child with FAS or even an alcohol-affected child (foetal alcohol disorder spectrum). In 1995, Abel estimated that only 4.3% of heavy consumers give birth to a child with FAS. Therefore, there are other factors that predispose or place women at greater risk of giving birth to an alcohol-affected child. The factors and hence 'at risk' groups of women that have been identified include maternal age, gravidity and parity (Sokol et al. 1986, Jacobson et al. 1996), marital and socio-economic status (Abel 1995, Chambers et al. 2005), ethnicity (Abel and Hannigan 1995), genetics (Goodlett et al. 1989, Streissguth and Dehaene 1993, Rasheed et al. 1997, Su et al. 2001, Warren et al. 2001, May et al. 2004), nutritional status (May et al. 2004), polydrug use including cigarette smoking, and caffeine, cocaine and marijuana use (D'Onofrio et al. (2007) and maternal alcohol metabolism (Chernoff 1980, Warren et al. 2001), as well as length of alcohol drinking 'career' (May et al. 2004).

US legislators assumed that knowledge of specific health warnings on labels equates with a change in behaviour specific to that health warning, that is, for an 'intervention' to be effective, the label had to be observed and changes first needed to occur in knowledge of the risk associated with a behaviour. This is not the case.

#### **4.2 Effectiveness of health warning labels for alcoholic beverages re pregnancy**

One year following inclusion of the health warning labels for alcoholic beverages in the USA, there were increases in the awareness, exposure and recognition memory of the general public; this change was slow to grow (Mayer *et al.* 1991, Scammon *et al.* 1992). Exposure, however, was inconsistent across populations, where 6 and 18 months after their introduction, men, 18–29 year-olds, heavy consumers and the tertiary educated had more likely seen the labels than the other populations groups (Kaskutas and Greenfield 1992, Graves 1993, Greenfield et al. 1999). Even 50 months after their introduction, women older than 29 years were less likely to have seen the warning labels.

From these initial studies, however, there were no significant or substantial positive changes in actual or intended behaviour regarding the consumption of alcohol, or in the attitudes, beliefs and perceptions about the risks described on the warning labels (Mayer *et al.* 1991, Marzis *et al.* 1991, Kaskutas and Greenfield 1992, Greenfield *et al.* 1993, Hilton 1993, McKinnon *et al.* 1993, US Department of Health and Human Services 1993); significant funding for the studies has been provided by the National Institute on Alcohol Abuse and Alcoholism. Furthermore, the general public who consumed a chronic heavy amount of alcohol, that is, one of the groups 'at risk', believed that there was less risk associated with the consumption of alcohol than those who abstained, or consumed a light or moderate amount of alcohol (Andrew *et al.* 1991, Patterson *et al.* 1992, Hankin 1994).

In addition, data from a study of African Americans, that is, another 'at risk' group, showed also that while awareness changed, behaviour did not (Hankin *et al.* 1993a, 1993b, Hankin *et al.* 1995). Indeed, the decrease in maternal consumption was relatively minor (approximately a half to one drink per week, an amount which would not be expected to influence their pregnancy) and did not impact on the heavy consumers. A

subsequent study of pregnant urban Native and African Americans showed that although frequently exposed to the warning labels, only 20% knew that FAS was related to alcohol consumption and all were uncertain about the actual consequences of FAS, or about the value of reducing intake at any time during pregnancy (Kaskutas 2000).

The results from these subsequent studies are consistent with initial studies which suggested that women 'at risk' were less responsive to media/promotion campaigns (Little *et al.* 1981; Streissguth *et al.* 1982, Weiner *et al.* 1989, Kaskutas and Graves 1994, Kaskutas *et al.* 1998). This implies that targeted education efforts are required for the 'at risk' group.

While it may be argued that 18 to 24 months post implementation may be insufficient time to observe changes in the overall consumption of alcohol (Scammon *et al.* 1991), data from a six-year study of African Americans showed also that while awareness changed initially and then plateaued after approximately three years of warning labels, there was no change in the behaviour of a specific 'at risk' group of chronic and heavy consumers of alcohol (Hankin *et al.* 1993a, 1993b, Hankin *et al.* 1995). Yet another study observed that in an 'at risk' group, multiparae ignore the labelling and actually increase their consumption of alcohol whilst pregnant (Hankin *et al.* 1996). This is despite the increased risks for alcohol-related birth defects with increasing age. Indeed, warning labels, similar to other communication-only strategies or tools, are less effective in reducing alcohol consumption among pregnant women (Kaskutas *et al.* 1998).

Interestingly, while alcohol consumption among pregnant US women declined from 1988 to 1992, it subsequently increased from 1992 to 1995 (Ebrahim *et al.* 1998). Of more significance, however, was the initial decrease followed by subsequent increase in frequent alcohol consumption from 1998 to 1995, where 87% of frequent consumers 'binged' and were also cigarette smokers.

Furthermore, there is no evidence to suggest that there has been a decrease in the incidence of FAS since warning labels were introduced, and indeed the data available suggest that the incidence of FAS has remained relatively stable over the past decade in the USA (Ebrahim *et al.* 1998, Eustace *et al.* 2003, Sokol *et al.* 2003, Astley 2004).

#### **4.3 Other health warning labels for alcoholic beverages in the USA**

The other health warning label for alcoholic beverages that was introduced in 1988 was the "Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery, and may cause health problems". Research results indicate that the 'at risk' group of drink drivers recalled readily the warning label, however, recall had no significant effect or impact on the risk assessment of, for example, driving after consuming two or more alcoholic drinks. Additionally, this group considered that drink driving was less risky than the general, 'not-at-risk' public (Parker *et al.* 1994). Other research indicates that the perceived level of risk associated with drink driving decreased following the introduction of the warning label (Greenfield and Kaskutas 1993).

#### **4.4 The example of health warning labels for cigarettes in the USA and Australia**

In the USA, health warning labels on cigarette packages were introduced in 1966 and were subsequently revised in 1985). Studies on the awareness of these labels and their effectiveness in changing consumer behaviour have only shown a moderate awareness and knowledge of the labels among adults and adolescents. Little data has been documented, however, on cessation or otherwise of cigarette smoking, and limited effectiveness is this implied in that previously generated (Robinson and Killen 1997). Adolescent consumer behaviour is of particular importance as more than 90% of adult smokers began smoking when they were adolescents and in the USA (US Department of Health and Human Services 1994), smoking amongst this age group has increased by

approximately 30% from 1991 to 1995 (Johnston *et al.* 1996). In 1997, a study was undertaken by Robinson and Killen in 17047 adolescents of mean age 14.9 years, to determine whether they were aware, and had knowledge, of the labels and whether this had influenced, positively or negatively their cigarette smoking. The data generated indicated that awareness and knowledge did not influence behaviour amongst adolescents, and hence the health warning labels on cigarette packages were ineffective.

In Australia, health warnings on cigarette packages were introduced in 1987 and were subsequently reviewed and revised in 1995. The review indicated that although there was an increase in the awareness and knowledge of the labels in the first few months after their introduction, this increase was not sustained (Hill 1988, Borland and Hill 1997b). This results of this review also included adolescents (Centre for Behavioural Research in Cancer 1992). In addition, the hypothesised linkage between awareness, knowledge and effectiveness, that is, a change in consumer behaviour, was not observed (Borland and Hill 1997a,b). While the revised labels have moderately increased awareness and knowledge in the population per se, no effect on consumer behaviour, such as cessation of smoking has been observed (Borland 1997).

In conclusion, previously implemented health warning labels for either alcohol or cigarettes have been not been successful in changing consumer behaviour, where awareness and knowledge of a labels is not associated with behavioural change.

Indeed, specifically concerning health warning labels for alcoholic beverages, despite an increase in awareness of, and memory or recognition for, the alcohol warning labels, over the past two decades since its introduction in the USA, there has been no demonstrable effect of the warning on risk perception (Scammon *et al.* 1991, Hilton 1993, McKinnon *et al.* 1993, Edwards *et al.* 1994, Andrews 1995). Similarly, changes in alcohol consumption behaviour attributable to the health warning labels have not yet been observed (Hilton 1993, Hankin 1996). Indeed, although young (women) adults, Indigenous alcohol consumers and heavy alcohol consumers, which are identified as 'at risk' groups, are more aware disbelieve and discount such information, and are less likely to modify their pattern of alcohol consumption than 'not-at-risk' consumers (Andrews *et al.* 1991, Andrews 1995, Mazis *et al.* 1991, MacKinnon 1995, DeCarlo 1997, MacKinnon *et al.* 2001).

Thus, although the groups most 'at risk' and 'in need' of adopting the information of the alcohol warnings are aware of, and can recall, the information in warning labels, they are, however, the least likely to accept the warnings.

#### **4.6 Other considerations**

It is considered that product warnings can not readily and reliably be targeted to 'high risk' groups and individuals, such as excessive consumers of alcohol, whether regular consumer or 'binge drinkers'. The personal experiences affecting judgments of personal risk, motivations for high risk behaviour and the individual pharmacological and physiological properties of, and responses to, alcohol, all make the design of warnings that are effective with these individuals difficult. Young people, for example, who are an 'at risk' group, may have difficulty in judging or perceiving risks associated with alcohol consumption. This is because if an event has not occurred to an individual, and he/she cannot associate it with a certain risk, then the individual may perceive that the risk may not occur in the future—that is, the risk is not related or relevant to them personally (Patterson *et al.* 1992). Also, 'at risk' individuals apparently give greater weight to uneventful experiences with alcohol interpreted to indicate that it carries low risk (Cvetkovich and Earle 1994, 1995). Indeed, the possibility that there are different reasons and motivations for high-risk behaviour makes it difficult to target messages to

these individuals. Heavy alcohol consumers also perceive the risk of alcohol-related harm as low and less believable (Andrews et al. 1991, Andrews 1995) than do light alcohol consumers.

Results from a relatively recent ethnically diverse sample of US high school students involved in a multi-media, peer-reviewed educational presentation designed to reduce the incidence of FAS, demonstrates that while the presentation increased participant's knowledge regarding FAS, it had no effect on participants' attitudes, beliefs about the potential harms of consuming alcohol whilst pregnant or, importantly, their intention to consume alcohol whilst pregnant (LaChausse 2006).

Results from a study of both US and Australian college/university students, demonstrates that young Australian women perceive less risk associated with consuming alcohol whilst pregnant than young American women, and in particular for low levels of alcohol consumption (Creyer et al. 2002). Less risk is also perceived by both Australian and American young women binge drinkers. This statistic is particularly relevant as one of the 'at risk groups' for having an alcohol-affected child is heavy alcohol consumers in either continuous or binge pattern. In Australia, 18% of 18-23 year-old women binge drink once a week or more, that is, they consume five or more standard alcoholic drinks on one occasion, while 21% binge drink once a month, compared to 6% and 8% 45-50 year-old women, respectively, although only 0.6% of 18-23 year-old women currently consume heavy amounts of alcohol continuously (Carr-Gregg et al. 2003, Clemens et al. 2007). Among another 'at risk group', 14% of 18-24 year-old Indigenous Australian women binge once a week or more although 25-34 year-old Indigenous Australian women have the highest rate of binge drinking (<http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/4832.0.55.001/>). Heavy alcohol consumption is associated with an increased risk of other health-risk behaviours such as unsafe sex and correspondingly unplanned pregnancies (PHE 19. Canberra: Australian Institute of Health and Welfare, 1999). The average age of having a baby in Australia is currently 27-29 years (AIHW Cat. No. PER 29; Perinatal Statistics Series No. 16.).

Furthermore, health consciousness is also not related to either moderate or heavy alcohol consumption such that health conscious individuals are not more likely to accept health warning labels (De Carlo 1997).

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## **Risk of cardiovascular disease and alcohol. Resaearch on the need for health advisory/warning labels?**

The basic argument (Fillmore et al , 2006 and 2007) is that the protective effect of light to moderate alcohol consumption for cardiovascular disease has been over estimated due to potential confounding in certain studies. A protective effect, however, is still seen when the potential confounding is addressed, and there are many biological mechanisms that support the protective effect. It is also interesting to note that the new NHMRC guidelines for alcohol of 2009 still suggest that light to moderate alcohol consumption has a protective effect for cardiovascular disease despite the Fillmore et al study.

A subsequent paper from Klatsky and Udaltsova (2007) at the Kaiser Permanente, Oakland, California, after the publishment of the Fillmore et al papers in 2006 and 2007 that were based on a single epidemiological study, re-analysed several decades of their data according to how Fillmore et al. suggested it 'should' be categorized. The results show that there a reduced risk of, and death from, cardiovascular disease with light to moderate alcohol consumption remains. Klatsky and Udaltsova's (2007) recent re-analysis seems to take health benefit out to at least three US standard drinks/day or 42 g/day. Mukamal's (2006) meta-analysis of 34 studies shows a similar effect, as does Doll's (2005) meta-analysis.

The conclusions of Fillmore et al. (2006 and 2007) can be questioned in that there have been, especially in recent years, a number of prospective epidemiologic studies that have avoided the errors used by Fillmore et al. to exclude studies from their analyses. For example, these prospective epidemiologic studies have used 'lifetime abstainers' as the referent group, and have included occasional drinkers within specific 'low-intake' categories, and not mixed them into categories of abstainers or regular consumers of small amounts. One could use such studies to test the hypotheses the authors present and avoid the two types of errors that the authors have sought to evaluate. The first type of error is the former drinker misclassification error ("failure to separate former drinkers...from complete abstainers"), and the second is the occasional drinker misclassification error ("failure to separate occasional drinkers...from complete abstainers").

A review of all recent studies that have avoided the two errors described above, and accounted for the pattern of drinking as well, is needed to fully test the hypotheses proposed by Fillmore et al. 2006 and 2007. Only two studies for cardiovascular mortality and seven studies for total mortality were used as a basis for the final conclusions of Fillmore et al. (2006 and 2007) in this paper, and these can not be considered as 'representative' of the general population. The analysis also inappropriately used significance testing for inference, and has ignored quantification for possible biases, for example, from misclassification or residual confounding.

Indeed, Klatsky and Udaltsova (2007) reworked previously published data (Klatsky et al. 1992, Klatsky et al. 2003) to address the purported confounding and potential over-estimation of a health benefit from moderate alcohol consumption claimed by Fillmore et al (2006, 2007), and showed a shallower but still significant J-shaped relationship between alcohol consumption and all-cause mortality risk that is not discussed in the draft revised Guideline. The data was of 21,535 deaths through to 2002, where the follow-up included 2,618,523 person-years of observation with a mean follow-up of 20.6 years. Their re-analysis reconfirmed the relationship previously published with an increased risk for individuals consuming more than three (14 g) drinks per day and a reduced risk at three or less drinks per day, almost always due to a reduced risk of death from cardiovascular disease. Former

consumers were observed to be at increased risk of death from non-cardiovascular disease and occasional consumers were observed to have a risk similar to lifelong abstainers.

There are also other relatively recent studies where neither type of 'error' studied by Fillmore et al. (2006) was present. For example, a study by Mukamal et al. (2006) on a large group of older adults which separated lifetime abstainers from former drinkers, and occasional drinkers from regular light drinkers, demonstrated reductions in the risk of a variety of cardiovascular outcomes from moderate consumption. In another study on older people by Tolvanen et al. (2005) where ex-drinkers were separated from lifetime abstainers, total mortality was highest in the ex-drinkers and lifetime abstainers, and 30-40% lower in current consumers. In addition, another study by Klatsky et al. (2005) which identified lifetime abstainers and separated occasional drinkers from regular light drinkers showed that consumption of one to two drinks/day was associated with 40% less heart failure associated with coronary artery disease. Furthermore, the latest study by Mukamal et al (2010) of 9 iterations of the US National Health Interview Survey of adults between 1987 and 2000 again showed that light to moderate alcohol consumption was inversely associated with death from cardiovascular disease compared with lifelong abstainers, lifelong infrequent drinkers, former drinkers AND heavy drinkers, where risk was consistently higher for individuals consuming greater than or equal to three (14 g) drinks per day compared to two (14 g) drinks per day. The magnitude of the lower risk for consistent between age groups, gender or baseline health status. Klatsky provided an editorial commentary to this Mukamal paper which I have also attached, which that suggests that although studies using lifelong abstainers or infrequent drinkers as referents conferred cardioprotection, the absence of prospective randomised clinical trials with cardiovascular 'events' as the outcome, still leaves room for skeptics to doubt that there are any benefits to human health from alcohol consumption.

One of the salient points to come out of eight commentaries, which were published in the February 2007 edition of the journal *Addiction Research and Theory*, on the Fillmore et al. 2006 paper, as well as from commentaries in the May 2007 edition of *The Annals of Epidemiology*, is that there is evidence for plausible biological mechanisms for protection against coronary heart disease by moderate alcohol consumption which adds credence to a causal hypothesis. As previously mentioned, these mechanisms include effects via high density lipoprotein, improved haemostatic factors, improved endothelial function, and a lower risk of diabetes mellitus. I, or our library, will forward these commentaries to you.

An earlier meta-analysis of 42 experimental studies, which examined the effects of alcohol consumption on cardiovascular biomarkers, attributed the cardioprotective effect of light-to-moderate alcohol consumption 60% to effects on high density lipoprotein, 20-30% to fibrinogen, 5-10% to insulin and 0-5% to other haemostatic factors (Rimm et al. 1999). The meta-analysis also estimated that 30 g of alcohol per day would increase the plasma concentration of high density lipoprotein by approximately 4 mg/dL which would be associated with a 17% reduction in risk of coronary heart disease. It would also decrease the plasma concentration of fibrinogen by approximately 0.075 g/L, which would be associated with a 12.5% reduction in risk of coronary heart disease (Hines and Rimm 2001). This translated into an overall 24.7% reduction in the risk of coronary heart disease from the consumption of 30 g of alcohol per day. Klatsky et al. (2007) further translated this into a 10% reduction in risk of all-cause mortality.

Interestingly, in their reply to the eight commentaries on this point, Fillmore et al. (2007) do not dispute the evidence for plausible biological mechanisms and merely suggest that “the lot falls to epidemiology to establish whether human populations will benefit greatly from the use of alcohol and if they should be advised to use the substance for medicinal purposes”.

From the commentary by Rehm (2007), “All scientific knowledge is subject to revision, and there may be new evidence leading to changes in decision-making, but given the current level of knowledge, the convergence of experimental and observational knowledge supports the cardioprotective effects [of light to moderate alcohol consumption].”

Biomedical and epidemiological evidence generally suggest that a reduced risk of death from cardiovascular disease is associated with one to two standard drinks of alcohol per day for both men and women (Maclure 1993, Corrao et al. 2000, Rehm et al. 2001, Klatsky et al. 1992, Gmel et al. 2003, Klatsky 2003, Corrao et al. 2004, Di Castelnuovo et al. 2006, Klatsky and Udaltsova 2007, Rehm et al. 2007) and some of these studies have even been cited in the draft Guideline but dismissed without discussion. For example, in a meta-analysis by Rehm et al. (2007) it was observed that when heavy consumption (greater than 39 g alcohol/day for men and 19 g for women) was excluded from estimations of benefits and risks from alcohol consumption, the net effect was beneficial, where consistent with other observations, the net burden was higher for younger ages and the net benefit for older ages.

In addition, concerning the pattern or regularity of consumption necessary to confer cardiovascular benefits, the literature is consistent in that the pattern of alcohol consumption required for cardioprotection is regular consumption, which can be determined as daily consumption (McElduff and Dobson 1997). This regularity is related to short-term or acute effects on the dissolution of blood clots and on platelet aggregation, which are readily reversible (Renaud et al. 1984, Renaud et al. 1992, Hendriks et al. 1994), and to longer-term effects on plasma antioxidant capacity, on low density lipoprotein oxidation and on systolic blood pressure (Klatsky et al. 1977, Gillman et al. 1995, Klatsky 1995). Furthermore, any lowering effect of alcohol on systolic blood pressure is readily reversible, within seven to 14 days (Puddey et al. 1985), such that regular consumption is necessary to maintain this particular cardioprotective effect (Klatsky et al. 1990, Gillman et al. 1995, Klatsky 1995).

Conversely, binge drinking is seen to significantly increase systolic blood pressure, which significantly increases the risk of a heart attack or stroke (Hillbom and Kaste 1981, Hillbom et al. 1984, Donahue et al. 1986, Suhonen et al. 1987, Kozarevic et al. 1988, Renaud and Ruf 1996).

Indeed, essentially all epidemiological studies that have considered patterns of consumption have shown that regular moderate consumption is allied to lower risk of diseases rather than occasional consumption, while episodic heavy consumption, considered as binge drinking, negates any beneficial health effect.

Among papers reviewed during 2008 and 2009, Britton et al (2009) published an analysis of more than 5,000 hypertensive subjects in the Physicians' Health Study, with alcohol intake assessed at baseline. During 20 years of follow up, 623 cases of a heart attack or myocardial infarction (MI) occurred. The study confirms that alcohol consumption is associated with lower risk of MI, as well as a lower risk of angina pectoris and total coronary heart disease, among subjects who are hypertensive. Decreases in risk were noted for subjects reporting 5-7 and 8 or more drinks/week, with the latter showing about 40% lower risk of coronary heart disease than was

present among non-drinkers. Suzuki et al. 2009 performed a cross-sectional analysis of lifetime alcohol intake and brachial artery flow-mediated dilation (FMD) during reactive hyperemia using high-resolution B-mode ultrasound images among 884 stroke-free participants in Manhattan (mean age 66.8 years, women 56.6%, Hispanic 67.4%, black 17.4, and white 15.2%). Compared with non-drinkers, those who drank >1 drink/month to 2 drinks/day were 80% more likely to have FMD above the median FMD in multivariate analysis. No beneficial effect on FMD was seen for those who drank more than 2 drinks/day. Other investigators agreed with these conclusions that consumption of up to two drinks of an alcoholic beverage per day was independently associated with better FMD compared to no alcohol consumption in this multiethnic population. Higher indices of endothelial function are associated with less atherosclerosis, and the observed improvement in FMD found in this study may represent an important mechanism in explaining the protective effect of alcohol intake on cardiovascular disease.

There are also an increasing number of studies relating alcohol consumption over the lifespan with health and disease. A study by Powers et al (2008) showed that middle-aged Australian women in who were moderate drinkers (2 standard drinks /day) showed the best self-reported state of overall health. Those who remained moderate drinkers throughout the study continued to have the highest rating of health, while those who stopped drinking during follow up showed a decrease in their ratings of overall health. Indeed, this paper is based on a rather complex and extensive analysis of data from a study of approximately 10,000 women, initially aged 45-50 year at a baseline examination in 1996. The study was sufficiently large to have adequate numbers at baseline of both abstainers (> 2,000) and heavy drinkers (n=716), with the latter reporting > 40 g of alcohol/week. During follow up over eight years, four assessments of self-reported general health were obtained using a standard instrument. The analysis compared alcohol intake with health assessments of women, with separate analyses for stable drinkers (similar intakes over time) and those who changed their intake during follow up. Alcohol consumption prior to the baseline assessment (at age 45-50 years) was not known. The overall results show that stable moderate drinkers had better overall health than non-drinkers, occasional drinkers, or heavy drinkers. Further, moderate drinkers who decreased their alcohol intake showed a decrease in health status and the occasional drinkers who increased their intake tended to show improvement in health scores. These results were robust when adjustments were made for depression, having a chronic medical condition (such as cancer, heart disease, hypertension and/or diabetes), and other life-style factors. It is always difficult to know how to assess changes in alcohol consumption in observational studies, as the reason for a change in consumption is generally not known. In this study, the investigators state that such changes in alcohol consumption were apparently not related to the occurrence of a new chronic medical condition. Further, in this study at least, information on depression and many other factors were also adjusted for, and the results still show that subjects who stopped moderate drinking had poorer health outcomes.

## **Risk of cancer (breast cancer) and alcohol. Is there a need for health advisory/warning labels?**

The Cancer Institute of NSW Monograph entitled *Alcohol as a cause of cancer* (May 2008), states in its executive summary “according to published evidence from eight studies, moderate alcohol consumption corresponding to approximately two drinks of alcohol /day does not increase the risk of cancer in general”. This is the recommended maximum limit for daily alcohol consumption for both men and women in the NHMRC *Australian guidelines to reduce health risk from drinking alcohol* (2009).

Alcohol consumption per se has been associated with an increased risk of developing cancer of the mouth, pharynx, oesophagus, stomach, liver, colon and rectum (IARC 1988, 1998, Longnecker 1990, Lewis et al. 2008). The level of alcohol consumption that increases risk has not been determined and there are usually other risk factors for cancer, which confound determination (Longnecker 1995).

The risk of cancer of the mouth, tongue and larynx, however, is associated with the number of alcoholic drinks per day. While it is unlikely that alcohol itself causes cancer to develop, alcohol may act in conjunction with other cancer-inducing compounds or carcinogens. Indeed, both while alcohol consumption and smoking both independently increase the risk of these cancers, the risk is amplified if individuals both drink and smoke (Williams and Horn 1977, MacFarlane et al. 1996, Launoy et al. 1997).

In addition, alcohol consumption has been associated with an increased risk of breast cancer, particularly in women who have a family history of breast cancer (Gapstur et al. 1992, Rosenberg et al. 1993, Longnecker 1994, van den Brandt et al. 1995, Swanson et al. 1997, Vachon et al. 2001, Horn-Ross et al. 2004, Li et al. 2009, Newcomb et al. 2009). From a pooled analysis of data, the relative risk increases by 1.09 for each 10 g alcohol (equivalent to one standard drink) consumed per day up to 60 g. Consumption above 60 g per day is not associated with a further increased risk (Smith-Warner et al. 1998, Singletary and Gapstur 2002).

A relatively recent study based on approximately one million women, Allen et al (2009) reported on a total of 68,775 cases of cancer, including 28,380 breast cancers, 5,203 lung cancers, and 4,169 colon cancers. The key findings of this study support a positive relation between increasing alcohol consumption and upper aerodigestive tract cancers but only if the drinker is also a smoker. Lesser increases in risk with alcohol consumption were noted for cancers of the rectum and breast. Increasing alcohol intake was associated with lower risks of thyroid cancer, renal cell cancer, and non-Hodgkins lymphoma. It was not possible, however, from the data presented to determine a lower threshold of effect of alcohol on the different cancers, or to judge the net effects on health, considering not just cancer but effects of alcohol intake on cardiovascular disease, dementia, total mortality, for example.

It has been suggested that consumption patterns may modify risk (Morch et al. 2007), such that the consumption of 40 to 50 g alcohol per session may increase the risk by 50% compared to the consumption of only one 10 g alcohol per session. Paradoxically, alcohol dependence does not increase the risk of breast cancer (Kuper 2000).

Regular and moderate wine consumption has, however, also been associated with a decreased risk of mortality from certain cancers (Boffetta and Garfinkel 1990, Gronbaek et al. 2000), although the risk increases progressively with immoderate consumption. Briggs et al. (2002), for example, calculated that the moderate

consumption of wine decreased the risk of Non-Hodgkin's Lymphoma by approximately 20 to 40%, in particular in individuals who began consuming wine as young adults, and similar decreases in risk were observed for aero-digestive tract and lung cancers (Gronbaek et al. 1998, Prescott et al. 1999, Barstad et al. 2005). The light to moderate consumption wine decreased the risk of lung cancer in contrast to beer and spirits (Chao 2007) Also in contrast to beer and spirits, the moderate consumption of wine shows null associations with, or reduces the risk of colorectal cancer at three subsites [proximal colon, distal colon, and rectum] (Gronbaek et al. 2000, Pedersen et al. 2003). The risk of prostate cancer was observed only to increase above a threshold of 40 g of alcohol in the form of red wine per week (Sutcliffe et al. 2007). Renaud et al. (1998) suggested, however, that the risk of mortality from all cancers may be decreased by approximately 20% when 20 g alcohol in the form of wine are consumed daily.

Genetic damage is a risk factor for the formation and progression of cancer (Ames et al. 1995). Oxidative free radicals also cause mutation of DNA sequences and breakage of DNA strands (Ames et al. 1993). For example, when the genetic material or DNA of cells is damaged, the characteristics of the cell are altered causing it to malfunction or die. It is the excess occurrence of dead cells and mutant cells in the body that ultimately accelerates diseases of old age. A number of factors may contribute to this damage, including chemical genotoxins, lifestyle factors (diet, exercise and the environment), and medical therapies including radiotherapy and cytotoxic drugs. Oxidising agents such as hydrogen peroxide and ionising radiation cause chromosome breakage and loss, as well as cell death (Fenech et al. 1999a, Fenech et al. 1999b).

#### **Potential mechanism of action – role of wine-derived phenolic compounds on DNA and on cell cycle and apoptosis**

A diet high in fruit and vegetables has been associated with a reduced risk of cancer, and this has prompted researchers to investigate whether any of the wine-derived phenolic compounds might protect cells and DNA from damage leading to cancer by inhibiting the oxidizing agents (Ames et al. 1995, DeFlora et al. 1997, Andreassi et al. 2000, Izzotti et al. 2001). A link between cardiovascular disease and cancer is an elevated micronucleous frequency, which is a biomarker of DNA damage (Botto et al. 2002). The results from numerous *in vitro* and animal studies suggest that individual and collective wine-derived phenolic compounds may be protective against DNA damage. Fenech et al. (1997) showed that following the acute consumption of red or white wine there was a significant increase in the antioxidant capacity of plasma, which reduced the oxidative damage to DNA from hydrogen peroxide *in vitro* and *ex vivo*. This was the first evidence that moderate wine consumption could minimise the DNA-damaging effects of oxidizing agents. The observation that the duration of this protective effect was diminished by eight hours post-consumption, implied that the regular consumption of wine is important to maintain a protective effect. Leighton et al. (1999), using different biomarkers of DNA damage, has also recently shown that the short-term consumption of red or white wine, in particular in combination with a Mediterranean diet, could significantly reduce DNA damage in both elderly men and women. Interestingly, the women consumed half the amount of wine consumed by the men but showed a similar reduction in extent of DNA damage. No cellular mechanism of action has, however, been determined.

Greenrod and Fenech (2003) demonstrated that although ethanol exacerbated oxidative stress and hence DNA damage, the wine-derived phenolic compounds significantly countered the oxidative stress as well as the additive effects of ethanol; DNA damage was reduced by approximately 45% at approximately 2 hours post consumption when de-alcoholised wine was consumed in moderation. Whole red

wine also reduced DNA damage but to a lesser extent. Two studies were undertaken and the first was an *in vitro* study which tested human plasma or whole blood from four healthy male subjects ages 20–25 years that was spiked with different wine components for protection against hydrogen peroxide and ionizing radiation induced DNA damage. The components examined were ethanol, glycerol, tartaric acid, and caffeic acid/catechin mixture and compared to a Riesling wine stripped of phenolic compounds and a control salt solution, which was a diluent for the wine components. The components were added at 2.5% and 10% of the concentration observed in wine, where 2.5% corresponds to the concentration observed in the body fluids of a 60 kg volunteer after consuming 300 mL (approximately three glasses) of white wine. The cells were then analysed via the cytokinesis block micronucleus assay, which enables chromosome or DNA damage to be scored (Fenech 1993)

Greenrod and Fenech (2003) observed that the phenolic compounds, such as catechin and caffeic acid, and the mixture including these components, significantly decreased baseline DNA damage and DNA damage caused by ionising radiation *in vitro*. It was observed that the ethanol component significantly increased base-line DNA damage, but the mixture that included both ethanol and the phenolic compounds completely countered the DNA damaging effects of ethanol. These effects were observed for both the 2.5% and 10% concentration of the components, although the protective effect of the phenolic compounds was most significant for the 10% concentration. The component mixtures, also produced the strongest protective effects against DNA damage by hydrogen peroxide. The protective effects of the mixture did not account for the expected additive protective effects of the individual components, which suggests that the components may be exerting their effects through similar mechanisms, which are saturated at the concentration tested. These observations suggest that the primary phenolic components of wine can reduce the DNA damaging effects of two important oxidants, hydrogen peroxide and ionising radiation, in a physiologically relevant *in vitro* system.

The second study undertaken by Greenrod and Fenech (2001) was an *ex vivo* study in which blood from six healthy male subjects analysed for its resistance to DNA damage induced by hydrogen peroxide or ionising radiation, following the consumption of 300 mL red wine, dealcoholised red wine or a model wine (12% alcohol solution). The subjects were placed on a plant phenolic compound free diet for 48 hours prior to each study day. The results of this study showed a clear protective effect of the dealcoholised red wine, an aggravating or negative effect of ethanol and an intermediate but protective effect of whole red wine. The most significant protective effects were observed at two hours post consumption. These results were important in verifying that it is the phenolic component of wine that has DNA-protective properties in blood and body tissues.

A DNA-protective effect against the hepatic carcinogen or oxidising agent, 2-nitropropane, was also observed in a rat animal model administered with a mixture of wine of phenolic compounds (Casalini et al. 1999), but was not observed against 2-dimethylhydrazine, which is a colon carcinogen. These results imply that the phenolic component may not protect DNA against all oxidizing agents.

Other researchers have examined the effect of specific wine-derived phenolic compounds on cancer, in particular, resveratrol (stilbene), quercetin (flavonol), catechin (flavanols) and gallic acid (hydroxybenzoic acid). These wine-derived phenolic compounds appear capable of inhibiting cellular events at each of the three steps involved in the development of cancer—initiation, promotion and progression. Experimental approaches include cell lines, (whole) animal cancer models and human cancer patients. For example, quercetin has demonstrated

chemopreventative activity in azoxymethane-induced colorectal cancer in mice and male F344 rats (Dihal et al. 2006), while catechin protected against the heterocyclic amine 2-amino-3-methyl-imidazo[4,5-f] quinoline (IQ)-induced aberrant crypt formation in male F344 rats (Franke et al. 2003).

Other plausible mechanisms for the potential cancer-protective effects of the wine-derived phenolic compounds include: inhibition of the cell growth or proliferation resulting from arrestation at one or more phases of the cell cycle, which then activates apoptosis of cells; inhibition of DNA synthesis by inhibiting ribonucleotide reductase or DNA polymerase; and apoptosis by modulation of signal transduction pathways that regulate the cell cycle, by altered expression of primary enzymes such as cyclooxygenases and protein kinases, including modulation of tumor suppressor genes (Tsan et al. 2000, Ahmad et al. 2001, Stivala et al. 2001). These are in addition to the removal of reactive oxygen species.

Resveratrol appears to have been the most widely examined phenolic compound over the past decade. In 1997, Jang et al. observed that 1–25  $\mu\text{M}$  resveratrol inhibited the initiation and promotion of hydrocarbon-induced skin cancer in a mouse model as well as the progression of breast cancer in the same model. In human cancer cell lines, resveratrol has been observed to inhibit or suppress the growth and proliferation of, for example, breast, colon, prostate and oral squamous cancer cell lines (Elattar and Virji 1999a, Hsieh et al. 1999a,b,c, Damianaki et al. 2000, Kampa et al. 2000, Mutoh et al. 2000). These studies also suggest that the DNA-protective effect of resveratrol is dose-dependent. Latruffe et al. (2002) examined the effect of resveratrol on two different human tumor cell lines, and has shown that resveratrol is actually taken up by the cells, whereupon it is conjugated and released into the cell medium by the hepatic HepG2 cells and to a lesser extent by colorectal tumor SW480 cells<sup>21</sup>. Phenolic compounds may not be antiproliferative or active against all tumor cell lines, however, as no uptake and conjugation was observed with cells from the intestine. Elatter and Virji (1999a) examined the effect of quercetin alone and in combination with resveratrol on human oral squamous carcinoma cells (SCC-25), and showed that quercetin is an equipotent inhibitor of SCC-25 cell growth and DNA synthesis, but the combination of quercetin and resveratrol was most potent (Elatter and Virji 1999b).

Studies have shown that resveratrol also possesses chemopreventative activity against colorectal cancer (Schneider et al. 2001, Wolter et al. 2001). Schneider et al. (2001) showed that treatment of CaCo-2 human colon tumor cells with 25  $\mu\text{M}$  (5.7 mg) resveratrol inhibited cell growth by 70%. The cells accumulated at the S/G2 phase transition of the cell cycle. Furthermore, resveratrol significantly decreased the activity of the polyamine biosynthesis enzyme, ornithine decarboxylase, which is enhanced in tumor cell growth. Wolter et al. (2001) showed that inhibition of cell CaCo-2 human colon tumor cells with resveratrol was dose dependent (12.5–200  $\mu\text{M}$ ) (Wolter et al. 2001). A lower concentration of resveratrol (50  $\mu\text{M}$ ) perturbed cell cycle progression from the S to G2 phase whereas a higher concentration led to reversal of the S phase arrest. A similar activity was observed for HCT-116 human colon tumor cells, which indicates that cell cycle inhibition by resveratrol is independent of cyclooxygenase inhibition. Recent research, however, suggests that the chemopreventative activity of resveratrol at physiological doses is primarily linked to its ability to induce cell division cycle arrest and mitochondrial apoptosis, the latter through activation of pro-apoptotic proteins such as Bax, as well as independently of Bax (Pohland et al. 2006). This ability is also independent of the p53 tumor suppressor activation (Pohland et al. 2006).

## **Annex 2: International wine regulatory landscape**

### **1. Australia – European Community Agreement on Trade in Wine**

The *Australia – European Community Agreement on Trade in Wine* signed in Brussels on 1 December 2008 is a formal international agreement that regulates the trade in wine between Australia and the European Community. The agreement guarantees and improves access for Australian wine producers to our largest wine export market – Europe.

The new agreement replaces the *Australia - European Community Agreement on Trade in Wine* which came into force in 1994. The new agreement can be found at <http://www.daff.gov.au/agriculture-food/hort-wine/wine-policy> .

Under the EC/Australia Bilateral Wine Agreement, which came into effect on 1 March 1994, Australia gained improved access to the EC market through the lowering of technical barriers to Australia's wines in return for the Australian wine industry phasing out its use of European geographical indications. The use of some names such as Hock and White Bordeaux is being phased out and further negotiations will be held to establish phase-out arrangements for European names in widespread use in Australia such as Chablis and Champagne.

The Australian industry will in future use varietal, regional and brand names to market its wines. There will also be a need to develop replacement names where protected EC names have entered into common use, such as Sherry.

In effect, the Agreement is the finalisation of negotiations on outstanding issues from the initial Agreement, especially on GIs and traditional expressions (TEs). The main changes arising from the Agreement are:

- European recognition of an additional 16 Australian winemaking techniques
- simpler arrangements for approving winemaking techniques that may be developed in the future
- simplified labelling requirements
- protection within Europe for Australia's 112 registered GIs
- wholesalers will have five years to sell stock labelled with an EC GI and retailers will be able to sell all their stock and
- defined use of a number of quality terms used in the presentation and description of wine.
- Australian protection of more than 2,500 registered European GIs; including from member states who have joined the EC since 1994;
- Australian protection of 12 sensitive European GIs that have previously been used to describe Australian wines
- Prohibition on Australian producers from using a range of European TEs in the language specified in the agreement and to phase out the use of the term "Tokay" to describe Australian fortified wines within 10 years.

The Australian Wine and Brandy Corporation is the body responsible for implanting the Wine Agreement. The implementing legislation is scheduled to be introduced into the Australian parliament on 12 May. The Treaty will take effect around 28 days after the Bill receives Royal Assent. There is a threefold purpose to the *Australian Wine and Brandy Corporation Amendment Bill 2010* (the Bill):

1. to bring into force the Australia – European Community (EC) Agreement on Trade in Wine (the Agreement)
2. to further protect Australia's reputation for the production of wines of quality and integrity by strengthening the Australian Wine and Brandy Corporation's (AWBC) Label Integrity Program (LIP) and
3. to correct a number of weaknesses with the compliance provisions of the *Australian Wine and Brandy Corporation Act 1980* (the AWBC Act).

### **Australian Wine and Brandy Corporation**

The Australian Wine and Brandy Corporation (AWBC) is a statutory authority established under the *Australian Wine and Brandy Corporation Act 1980* (as amended) (the AWBC Act). It was formed in 1981, succeeding the Australian Wine Board which was originally set up in 1929.

The objectives of the Australian Wine and Brandy Corporation (AWBC) are set out in Section 3 of the *Australian Wine and Brandy Corporation Act 1980* (as amended).

(1) The objects of this Act are:

- a) to promote and control the export of grape products from Australia; and
- b) to promote and control the sale and distribution, after export, of Australian grape products; and
- c) to promote trade and commerce in grape products among the States, between States and Territories and within territories; and
- d) to improve the production of grape products and encourage the consumption of grape products, in the Territories; and
- e) to enable Australia to fulfil its obligations under prescribed wine-trading agreements; and
- f) for the purpose of achieving any of the objects set out in the preceding paragraphs:
  - to determine the boundaries of the various regions and localities in Australia in which wine is produced; and
  - to give identifying names to each of those regions and localities; and
  - to determine the varieties of grapes that may be used in the manufacture of wine in Australia.

The AWBC has a specific responsibility for controlling labeling (including presentation, description and advertising as related to label claims for vintage, variety and region). These include mandatory country of origin declarations for the origin of the grapes.

### **Label Integrity Program**

The wine industry LIP was introduced in the *Australian Wine and Brandy Corporation Amendment Act 1989*. The LIP has its origins in the first (1981–82) and second Annual General Meetings of the AWBC. At these forums, the wine industry gave the AWBC permission to recommend to the Minister that legislation be enacted for an industry wide system of record keeping to substantiate label claims in respect of vintage, variety and region of origin. The permission and subsequent recommendation stemmed from concerns within the industry over a number of

scandals in New South Wales involving wine additives and the potential effect that further scandals could have on wine exports.

The regulations covering the LIP require winemakers to keep records to substantiate label claims and are set out in the AWBC Act (Part VIA, sections 39A - 39ZL).

The LIP was introduced for the 1990 vintage and is now the basis of the Australian label-claim system in respect of vintage, variety and geographical indication. Winemakers are not required to make a label claim about the wine vintage, (grape) variety or region of origin of the grapes, but must keep an audit trail if they do. The LIP prescribes what events must be recorded, but not how records must be kept.

A "label claim" includes claims made on a wine label, in a commercial document or in an advertisement, about the vintage, variety or geographical indication of wine goods or of the wine goods from which they were manufactured. Generic name wines, such as Moselle, Claret, Dry Red, Dry White etc., which make no reference in a label statement as to vintage, variety or geographical indication, are not included.

The Corporation's auditors monitor the industry for compliance with the LIP provisions of the AWBC Act through an audit program. Under the *Australian Wine and Brandy Corporation Amendment Bill 2010*, the Government expects that the proposed changes will achieve that objective by requiring all those involved in the production, distribution and sale of wine and grapes used to make wine, to record the specified information to ensure a traceable trail throughout the wine production process.

## **2. World Wine Trade Group**

The WWTG is an informal grouping of wine sector representatives from wine producing countries. Founded in 1998, the group aims to share information, collaborates on a variety of international issues and endeavours to create an environment for the free trade in wine. Meetings are attended by both the Government and Industry sectors. The joint participation of government and industry representatives at meetings is designed to ensure a free exchange of information between sectors and a better understanding of issues being discussed.

The Group is an informal one with a rotating Chair. Membership of the group includes Australia, Argentina, Canada, Chile, New Zealand, South Africa, and the United States. Georgia is currently being considered for membership and observers from Brazil, Uruguay and Mexico have also participated in the group.

Amongst the major achievements of the World Wine Trade Group have been two treaty level agreements with implications and obligations relating to wine labelling:

### Mutual Acceptance Agreement on Oenological Practices

Early discussions at the World Wine Trade Group identified the possible threats to trade that arose from differing national rules on oenological practices. At the first Zurich meeting it was agreed that such differences should not be a basis for erecting technical barriers to trade.

From this point it was agreed to develop a Mutual Acceptance Agreement on Oenological Practices. The text of the Agreement was first discussed in Santiago, Chile in October 1999 and was further refined at the subsequent meetings.

The text of the Agreement, which has full treaty status, was signed in Toronto, Canada in December of 2001 by Australia, Canada, Chile, New Zealand, and the United States. Argentina became a signatory in December of 2002.

The text of the agreement is available in English, French and Spanish. The US Government is the repository for the Agreement which can be found on the following website: <http://www.ita.doc.gov/td/ocg/wwtg.htm>

The Agreement is a landmark in the development of international trade. It is the first plural-lateral Mutual Acceptance Agreement, in any field, fully compliant with the WTO's Technical Barriers to Trade Agreement.

In simple terms the Agreement accepts that there are historical differences in national rules governing oenological practices, but signatory countries accept that wine made in another signatory country should be allowed to be sold in its market, despite these differences in oenological practices. Market access is, however, conditional on compliance with the WTO obligations to protect the health and safety of consumers and to prevent deception of consumers. The Agreement is founded on WTO principles, and exceptions to the generally permitted access are WTO consistent.

#### Labelling Agreement

On January 23, 2007 the World Wine Trade Group (WWTG) participants welcomed the signing of their Agreement on the Requirements for Wine Labelling in Canberra, Australia.

This far-reaching Agreement enables wine exporters to sell wine into WWTG markets without having to redesign their labels for each individual market. It allows the placement of four items of mandatory information (country of origin, product name, net contents and alcohol content) anywhere on a wine bottle label provided they are presented in a single field of vision.

The Agreement reduces costs relating to the production, application and warehousing of labels. Savings achieved by this Agreement provide a competitive advantage and opportunities for further export growth to WWTG participants. The Agreement also brings benefits to consumers who are able to easily locate important items of information on the bottle in a single field of vision, allowing them better to compare between wines and brands.

The US Government is the repository for the Agreement which can be found on the following website: <http://www.ita.doc.gov/td/ocg/wwtg.htm> .

### **3. Codex Alimentarius Commission**

The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Program. The main purposes of this Program are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organizations.

**There is no specific wine standard within Codex, but horizontal standards are of course relevant. The OIV is an observer of CODEX.**

#### **4. OIML**

The International Organization of Legal Metrology (OIML) is a worldwide, intergovernmental organization whose primary aim is to harmonize the regulations and metrological controls applied by the national metrological services, or related organizations, of its Member States.

The two main categories of OIML publications are:

- 1) International Recommendations (OIML R)**, which are model regulations that establish the metrological characteristics required of certain measuring instruments and which specify methods and equipment for checking their conformity; the OIML Member States shall implement these Recommendations to the greatest possible extent;
- 2) International Documents (OIML D)**, which are informative in nature and intended to improve the work of the metrological services.

OIML Draft Recommendations and Documents are developed by technical committees or subcommittees which are formed by the Member States. Certain international and regional institutions also participate on a consultation basis.

Cooperative agreements are established between OIML and certain institutions, such as ISO and IEC, with the objective of avoiding contradictory requirements; consequently, manufacturers and users of measuring instruments, test laboratories, etc. may apply simultaneously OIML publications and those of other institutions.

International Recommendations and International Documents are published in French (F) and English (E) and are subject to periodic revision.

Labeling requirements for pre-packaged goods (including food) are developed by the OIML Technical Committee TC 6 Pre-packaged products and sanctioned by the International Conference of Legal Metrology. This publication – reference OIML R 79, LABELLING REQUIREMENTS FOR PREPACKAGED PRODUCTS makes recommendations on the size and placement of the 'volume' statement.

**The treaty to which Australia is a signatory does not making binding recommendations, and Australia currently exempts certain products from the requirements of R79.**

**The recommendations in R79 are inconsistent with the Codex Alimentarius Commission labeling standard and more trade restrictive. OIML has recognised this and in recent times has reviewed R79 and has placed the issues on the agenda of the Codex Alimentarius Commission food Labeling committee (CCFL). However, due to the internal review in OIML, this item was removed from the agenda of the CCFL meeting scheduled for May 2010.**

#### Trade measurement in Australia

The objectives of the OIML Convention, taken from Chapter 1 Article 1 *Purpose of the Organisation* from the Convention establishing OIML, do not oblige Australia to

automatically adopt OIML recommendations. The emphasis is on cooperation and coordination.

The National Measurement Act (NMA) clearly states the role of the OIML with respect to Australian law. The National Measurement Act No.64 of 1960 (as amended) states:

***The National Standards Commission must:***

*..... (d) Consult and cooperate with the International Organisation of Legal Metrology and other appropriate international organisations on matters relating to metrology.*

***However, its role is limited to examination and approval of patterns of measuring instruments.***

Australia is not required to and has not agreed to mandatory adoption of the OIML Standards, nor does the Convention state OIML standards must be adopted by signatory nations.

The National Measurement Act also goes on to state that:

*(7) Before the Governor-General makes a regulation for the purposes of subsection (1), the Minister must also either:*

*(a) Be satisfied that the regulation is not inconsistent with a specification published by the International Organisation of Legal Metrology regarding the examination and approval of patterns of measuring instrument; or*

*(b) If the regulation is inconsistent with a specification – be satisfied that:*

*(i) The inconsistency is in the national interest; or*

*(ii) It is not practicable to comply with the specification because of particular circumstances applying to Australia.*

The national interest argument would therefore suggest that, even if the regulation is inconsistent, the Minister still has the capacity to make the regulation.

On 13 April 2007 the Council of Australian Governments formally agreed that the Commonwealth should assume responsibility for trade measurement. The transition period for the transfer of responsibility from the states and territories to the Commonwealth will be three years, with the new system commencing on 1 July 2010. *We support wine being labelled according to the source of the grapes. However, we do not believe the Food Standards Code is an appropriate instrument for such a regulation. Under the Australian Wine and Brandy Corporation Regulations 1981 were passed on 7 September 2009 and under section 1.3 recognised the World Wine Trade Group Agreement on Requirements for Wine Labelling by exempting the position of a measurement marking for standard-sized wine containers.*

## **5. International Organisation of Vine and Wine (OIV)**

The International Organisation of Vine and Wine (OIV) replaced the International Vine and Wine Office was established by the Agreement of 3 April 2001.

The OIV is an intergovernmental scientific and technical organization with recognised competence for its works concerning vines, wine, wine-based beverages, table grapes, raisins and other vine-based products established in its current form in April 2001. It has a permanent secretariat located in Paris, and conducts its work through a structure co-ordinated by a scientific and technical committee and implemented by four commissions responsible for viticulture, oenology, and law and economy and health and safety.

The objectives of the OIV are:

- a) to inform its members of measures whereby the concerns of producers, consumers and other players in the vine and wine products sector may be taken into consideration;
- b) to assist other international organisations, both intergovernmental and non-governmental, especially those which carry out standardisation activities;
- c) to contribute to international harmonisation of existing practices and standards and, as necessary, to the preparation of new international standards in order to improve the conditions for producing and marketing vine and wine products, and to help ensure that the interests of consumers are taken into account.

These missions are laid out in a [triennial strategic plan](#)

To attain these objectives, the O.I.V's activities are:

- to promote and guide scientific and technical research and experimentation
- to draw up and frame recommendations and monitor implementation of such recommendations in liaison with its members, especially in the following areas: les conditions for grape production, oenological practices, definition and/or description of products, labelling and marketing conditions, methods for analysing and assessing vine products
- to submit to its members all proposals relating to: guaranteeing the authenticity of vine products, especially with regard to consumers, in particular in connection with the information provided on labels, protecting geographical indications, especially vine- and wine-growing areas and the

related appellations of origin, whether designated by geographical names or not, insofar as they do not call into question international agreements relating to trade and intellectual property, improving scientific and technical criteria for recognising and protecting new vitivincultural plant varieties

- to contribute to the harmonisation and adaptation of regulations by its members or, where relevant, to facilitate mutual recognition of practices within its field of activities
- to help protect the health of consumers and to contribute to food safety: by specialist scientific monitoring, making it possible to assess the specific characteristics of vine products, by promoting and guiding research into appropriate nutritional and health aspects, by extending the dissemination of information resulting from such research to the medical and healthcare profession.

There are currently 43 members including Australia and New Zealand.