衞生防護中心
Centre for Health Protection

Non-Communicable Diseases Watch

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Health Tips

Alcohol drinking is linked to an increased risk of developing certain cancers, and there is **NO** safe level for alcohol and cancer risk.

Drinkers are urged to recognise the harms associated with alcohol use and consider stopping drinking alcohol completely. For non-drinkers, they are advised not to start drinking at all.

In this Issue Page

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衞生署
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Alcohol :
The Cancer Causing Substance in Humans

Alcohol consumption, like smoking, is one of the most well-established causes of cancer in humans. But unlike the case with tobacco smoke, the fact that alcoholic beverages can cause cancer is not well-known among health professionals, and much less so by the public. In fact, "ethanol in alcoholic beverages" and "acetaldehyde associated with alcohol consumption" (acetaldehyde is the main metabolite of ethanol in the body) have both been classified as Group 1 carcinogens, belonging to the highest risk category just as tobacco smoke and asbestos, by the International Agency for Research on Cancer (IARC) of the World Health Organization.[1,2] IARC concluded that alcoholic beverages are carcinogenic in humans as supported by sufficient scientific evidence. Human and animal studies revealed several mechanisms through which alcohol may contribute to an increased risk of cancer. Ethanol and acetaldehyde can damage DNA, increase the level of oestrogen (which is important for breast carcinogenesis), act as solvents for tobacco carcinogenesis, produce reactive oxygen species and nitrogen species, and change folate metabolism.[1-4]

The importance of alcohol as a human carcinogen is underestimated, as evidenced by the fact that alcohol consumption is rising in many countries, as a result of both increasing numbers of alcohol drinkers and intake of alcohol, especially in women and in regions of rapid economic growth such as East Asia.[3] In 2002, an estimated 3.6% of all cancer cases worldwide (5.2% in men; 1.7% in women) and a similar proportion of cancer deaths (3.5%) could be attributed to alcohol use. Yet, this was likely to be a conservative estimate as only cancers with an established causal association with alcohol were factored in.[5,6]

Types of Cancer Linked to Alcohol Drinking

Epidemiologic studies have clearly indicated that alcohol drinking can cause cancers of oral cavity, pharynx (excluding nasopharynx), larynx, oesophagus, liver, colorectum, and female breasts. [1,2,7,8] The risks of these cancers also rise with increasing alcohol use (Box 1). For cancers of some other sites such as stomach and lung, an association with alcohol drinking is suspected.[2] Alcohol's carcinogenic effect is independent of the type of alcoholic beverages[9] i.e. the carcinogenic effect is the same for beer, wine or spirits.

Besides, alcohol and tobacco could enhance each other's carcinogenic effect.[9] For example, in never/ ex-smokers, drinking 1-2 drinks per day and drinking 4 drinks or more per day are associated with a respective 32% and 154% increased risk of oral and pharyngeal cancers, but in current smokers the corresponding risks are 1.9-fold and 5.3-fold higher respectively.[10]

Box 1: Cancers that alcohol drinking can cause

Oral and pharyngeal cancers (OPC) : OPC risk increases with increasing alcohol use. Compared to no drinking, light drinking (consuming ≤ 1 drink per day) was associated with a 21% increased risk of OPC, and heavy drinking (consuming ≥ 4 drinks per day) with 4.2-fold increased risk. By dose-risk analysis, consuming 10g, 50g, 100g and 125g of ethanol per day was associated with a 29%, 2.2-fold, 7.6-fold and 12-fold increased risk of OPC respectively.[11]

Laryngeal cancer : Compared to no drinking, moderate drinking (consuming > 1 to < 4 drinks per day) was associated with a 47% increased risk of laryngeal cancer, and heavy drinking (consuming ≥ 4 drinks per day) with 1.5-fold increased risk.[12]

Oesophageal cancer : Compared to no or occasional drinking, light drinking (consuming ≤ 1 drink , or ≤ 12.5g of ethanol per day), moderate drinking (> 1 to < 4 drinks, or > 12.5g to < 50g of ethanol per day), and heavy drinking (≥ 4 drinks, or ≥ 50g of ethanol per day) were associated with a 31%, 127%, and 389% increased risk of oesophageal cancer respectively.[13]

Liver cancer : Compared to no drinking, consuming 25g, 50g and 100g of alcohol per day was associated with a respective 20%, 41% and 83% increased risk in liver cancer.[14]

Colorectal cancer : Compared to no or occasional drinking, moderate drinking (consuming 2 to 3 drinks, or 12.6g - 49.9g of ethanol per day) was associated with a 21% increased risk of colorectal cancer, and heavy drinking (consuming ≥ 4 drinks, or ≥ 50g of ethanol per day) with a 52% increased risk .[15]

Female Breast cancer : Compared to no drinking, light drinking (consuming ≤ 1 drink or ≤ 12.5g of ethanol per day) was associated with a 4% increased risk of breast cancer, and heavy drinking (consuming ≥ 3 drinks per day) with a 40% - 50% increased risk.[16]

Alcohol-related Cancers and Alcohol Drinking in Hong Kong

In Hong Kong, the actual cancer incidence that can be attributed to alcohol is unknown, but a rough estimate can be made from the data collected by the Hong Kong Cancer Registry (HKCR). Of the 26 390 new cancer cases reported to the HKCR in 2010, cancers of the colorectum, breast liver, lip, oral cavity and pharynx (except naso-pharynx), oesophagus and larynx accounted for about 40% of the total, in which alcohol might have played a role in their development (Table 1).[17]

Table 1: Number and percentage of new cancer cases by selected sites in 2010

Site(s)	Number	Percentage
Colorectum	4 370	16.6%
Breast	3 025	11.5%
Liver	1 863	7.1%
Lip, oral cavity and pharynx (except nasopharynx)	541	2.1%
Oesophagus	446	1.7%
Larynx	187	0.7%
Other cancer sites	15 958	60.5%
All sites	26 390	100.0%

Source: Hong Kong Cancer Registry.

The alcohol-attributable cancer burden in Hong Kong can also be partly reflected by the current local prevalence of drinking. A household survey conducted by the Census and Statistics Department in 2009/10 on the health status among Hong Kong residents aged 15 and above revealed that over 594 000 people (or 10.2% of the population in the same age group) had a habit of consuming alcoholic drinks at the time of enumeration (irrespective of the frequency and amount of alcohol consumption).[18] A telephone survey conducted by the Department of Health (DH) on over 2 000 community-dwelling people aged 18-64 in 2012 found that 16.7% of respondents drank at least once a week during the past 30 days before enumeration. Among the respondents who drank at least one alcoholic drink during the 30 days prior to the survey, they consumed on average 2.5 drinks on each drinking day. In addition, 6.3% of all respondents had binge drinking (consuming at least 5 glasses or cans of alcoholic beverages on one occasion) during the past 30 days before enumeration (Table 2).[19]

Table 2: Patterns of drinking among community-dwelling people aged 18-64 during the past 30 days before enumeration, 2012

Number of drinking days per week	Percentage		Frequency of binge drinking	Percentage
No drinking	69.3%		No binge drinking	93.7%
Less than 1 day per week	13.6%		One time	1.6%
1-3 days within a week	13.1%		Twice	1.2%
4 days or more within a week	3.7%		Three times or more	3.3%
Unknown/Missing	0.4%		Frequency unknown	0.1%
Overall	100.0%		Overall	100.0%

Base: All respondents.
Source: Behavioural Risk Factor Survey, April 2012.

Stop Drinking to Reduce Cancer Risk

When it comes to cancer risk, there is **NO** safe level for alcohol consumption.[2,7] Regular alcohol use, even consumed in only small amounts, increases the risk of dying of cancer.[20,21] The sound advice is therefore not to start drinking at all. But for current drinkers, there is also good news: if they stop drinking now, their cancer risk will gradually return to that before they started drinking. For example, a meta-analysis reported that stopping drinking can lead to a 2% reduction per year on average in the risk of laryngeal and pharyngeal cancers.[22] There is also a progressive decrease in oesophageal, colon and rectal cancer risks with increasing duration of alcohol abstinence after drinking cessation.[23-25] In addition, stopping drinking can reduce the risk of many other non-communicable diseases, including alcoholic gastritis, pancreatitis, liver cirrhosis and fibrosis, depression, dementia as well as injuries. It is never too late to stop (or cut down on) drinking, and here are some tactics [26]:

Keep track of when, where, why and how much you drink with a drinking diary, drinking tracker card or mobile phone notepad to identify the 'triggers'. Avoid situations where or when the urge to drink is strong.

Set realistic goals. Start up with a slow course and cut down your drinking day by day.

Get all alcoholic drinks out of the house and place of work.

Use healthy activities to distract you from drinking, such as taking a walk, exercising, showering or listening to music.

Enlist support from family, friends and colleagues. Ask them not to offer you alcohol or use alcohol around you. **Join a peer-support group**, such as the Alcoholic Anonymous in Hong Kong (http://www.aa-hk.org/index2home.htm).

Develop your own refusal skills, such as practising saying 'No, thank you. I am not drinking now'.

Use prompts to remind yourself the reasons for not drinking, such as putting up signs or posters at home, setting up automated mobile phone messages or email alerts that deliver reminders.

Drink more water. Stock up and use non-alcoholic drinks (such as fruit or vegetable juices, sparkling water or green tea) or nutritious 'comfort foods' (such as low-fat yogurt or cheese) as substitutes. Avoid smoking, spicy foods and caffeine-containing drinks (such as coffee, strong tea or coke) that tend to provoke craving.

Take medications as prescribed to control withdrawal symptoms. Practising deep breathing or other stress-reducing techniques can also help.

Plan some rewards for efforts made to achieve small goals. With the money that would have been spent on drinking, think of a few small rewards (such as going to a movie, buying a sweatshirt or a pair of shoes) or plan for a major treat (e.g. a trip).

In addition to stopping or cutting down on drinking, there are also other ways to prevent cancer, for example: by being a non-smoker, keeping a healthy weight, eating a balanced diet, being physically active and enjoying the sun safely. For more information about healthy living, please visit the website of the Central Health Education Unit of DH at http://www.cheu.gov.hk, or call the 24-hour Health Education Hotline at 2833 0111.

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Updates on the Action Plan to reduce Alcohol-related Harm in Hong Kong

With a view to preventing and controlling alcohol-related harm, the Working Group on Alcohol and Health of the Hong Kong SAR Government drawn up an action plan entitled 'Action Plan to Reduce Alcohol -related Harm in Hong Kong' and officially launched it in October 2011.

This action plan outlines 5 priority areas, 10 recommendations and 17 specific actions that different government bureaux/departments and relevant parties will work together over the next few years.

Thanks to the support and active participation of different stakeholders, the implementation of the action plan is on track. So far, 9 actions have met their targets with ongoing activities and 7 other actions are in progress.

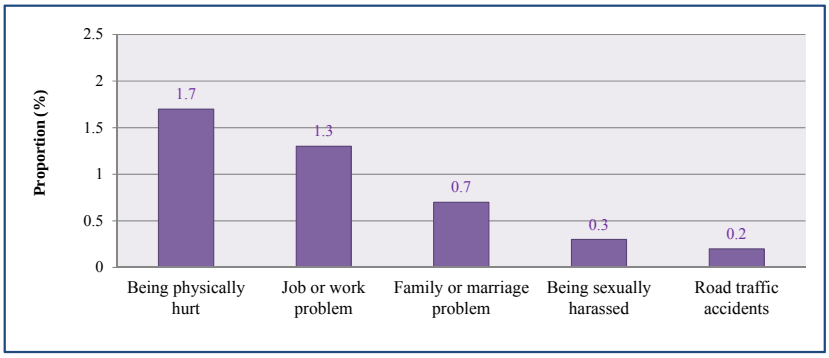
For details of the action plan, please visit: http://www.change4health.gov.hk/en/strategic_framework/structure/working_group_on_ah/action_plan/index.html.

Data Brief

A telephone-survey conducted by the Department of Health in April 2012 interviewed over 2 000 community-dwelling people aged 18–64 about the consequences of drinking alcohol. Results found that 3.7% of drinkers (the respondents who had drunk at least one alcoholic drink during the twelve months prior to the survey) had experienced at least one of the following five problems or conditions because of their own drinking: being physically hurt (1.7%), job or work problems (1.3%), family or marriage problem (0.7%), being sexually harassed (0.3%) and road traffic accidents (0.2%).

To reduce the risk of adverse health and social consequences associated with alcohol use, drinkers are urged to scrutinise their own drinking habits. They should recognise the harms associated with alcohol use and consider cutting down on or even stopping drinking completely. For non-drinkers, they are advised not to start drinking at all.

Proportion of drinkers who reported that they had experienced the selected problem or condition because of their own drinking



Base: Respondents who had at least one alcoholic drink during the twelve months prior to the survey.

Note: Multiple responses were allowed.

Source: Behavioural Risk Factor Survey, April 2012.

News Bites

A study found that the global burden of liver cirrhosis and liver cancer that can be attributed to alcohol is huge.

The analysis followed the Global Burden of Disease study methodology to estimate the burden of alcohol-attributable live cirrhosis and alcohol-attributable liver cancer in 2010. The estimation of alcohol-attributable fractions was based on the distribution of alcohol consumption and the risks associated with different levels of drinking. The burden is expressed in terms of deaths and disability adjusted life years (DALYs—is a measure of disease burden, expressed as the number of years of healthy life lost to ill-health, disability or early death due to a particular condition or disease.) Results showed that in 2010, alcohol-attributable liver cirrhosis was responsible for about half a million deaths (0.9% of all global deaths and 47.9% of all liver cirrhosis deaths; male to female [M:F] ratio ~ 2 to 1) and over 14.5 million DALYs globally (0.6% of all global DALYs and 46.9% of all liver cirrhosis DALYs; M:F ratio ~ 2.5 to 1). The corresponding figures for alcohol-attributable liver cancer were about 80 000 deaths (M:F ratio ~ 4.5 to 1) and over 2.1 million DALYs (M:F ratio ~ 5.4 to 1) respectively.

Apart from liver cirrhosis and liver cancer, alcohol is also the risk factor for earlier forms of alcoholic liver disease, including fatty liver and alcoholic hepatitis. All burden associated with alcoholic liver disease is in fact entirely preventable. The key to prevention is not to drink at all.

(Source: Rehm J, Samokhvalov AV and Shield KD. Global burden of alcoholic liver diseases. J Hepatol 2013 Mar 16; doi: 10.1016/j.jhep/2013/03/007.)

Non-Communicable Diseases (NCD) WATCH is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community.

The Editorial Board welcomes your views and comments. Please send all comments and/or questions to so_dp3@dh.gov.hk.