5 Alcohol and Health

Aims and learning outcomes

This chapter introduces the areas central to understanding the relationship between alcohol, health and well-being. It also explores in detail the harmful and beneficial outcomes associated with alcohol consumption and the adverse reactions of consuming alcohol with prescribed medications or illegal drugs plus the health benefits of individual alcohol beverages. After reading this chapter you should be able to:

- Describe the short (acute) and long term (chronic) risks associated with alcohol consumption as they relate to particular diseases and to general health and well-being.
- Demonstrate a knowledge of the adverse reactions which occurs in individuals who consume alcohol with prescribed medications or illegal drugs.
- Establish the general and more specific benefits from moderate alcohol consumption and how it plays a positive role in the life of many individuals.

5.0 Introduction

Research conducted over recent decades has highlighted a firm association between alcohol consumption patterns and a variety of health outcomes both harmful and beneficial. The more dangerous outcomes are traditionally linked with heavy consumption, but these are dependent on the inter-related elements of how people consume alcohol and the types, amount and frequency of their consumption. The outcomes are also influenced by the gender, age, general health, genetic makeup and other factors, for example alcohol triggers different physiological effects on men when compared to women. Consuming alcohol in moderation has many health benefits, which include extending and improving the quality of life, but for individuals with medical conditions and those who are taking prescribed medications it can lead to adverse reactions. Alcohol has known medicinal, antiseptic, and analgesic properties, and facilitates relaxation, but research studies have highlighted its role in the

development of a wide series of illnesses and harmful conditions, including cancer, type two diabetes, cognitive and neurological function, coronary and vascular diseases.

5.1 Alcohol – medicinal in moderation and poisonous in excess

The medicinal use of alcohol was mentioned in Sumerian and Egyptian texts dating from about 2100 BC. David J Hanson, Ph.D., Professor Emeritus of Sociology of the State University of New York at Potsdam, states that the Hindu ayurvedic texts also describe both the beneficial effects of alcoholic beverages and the consequences of intoxication and alcoholic diseases. He concludes that in these texts alcohol was a medicine if consumed in moderation, but a poison if consumed in excess, adding that Hippocrates (ca 460-370 BC) had identified numerous medicinal properties of wine (Hanson, 1995). Alcohol has had a traditional role in many forms of medicine in China where various remedies containing alcohol are over 2,000 years old. The *Compendium of Materia Medica* in the Ming Dynasty listed 79 different alcohol containing drinks (Xiao, 1995).

The world of medicine today still uses alcohol to treat kidney disorders, digestion problems, and gastroenteritis where it can reduce pathogenic intestinal flora. It is also used as an analgesic after injuries while resetting broken or fractured bones, and it forms part of modern medicinal mixtures, including iron supplements and cough syrups. Even though alcohol has many health benefits, it is also the third leading risk factor for disease and death in Europe, and currently is the cause of over sixty types of disease which include lung diseases, pre-natal harm, cancers, liver, cardiovascular skeletal and muscular diseases, gastrointestinal conditions, and immunological and reproductive disorders. The amounts and frequency of drinking alcohol are significant factors which increase the risk of alcohol related harm (Euro Care, 2014).

5.2 The associated risks of alcohol consumption

The risks associated with alcohol consumption usually relate to general health or to particular diseases, and can be categorised as long-term (chronic) or short-term (acute). The harmful risks are generally linked to heavy drinking patterns and, of course, alcohol abuse. Cunningham et al (2003) maintains that the results of these drinking patterns can cause long-term health problems and or serious accidents and injuries. Amongst the more chronic health consequences are liver cirrhosis and certain cancers. Houston (2002) reports

that the two main life threatening conditions that can be sparked by alcohol are cancer and heart disease. Although some medical studies have shown that moderate amounts of alcohol can reduce the risk of developing some types of cardiovascular disease, the long-term effects of excessive consumption can be devastating. In this section we will explore these risks in detail. Please also consult Chapter 4, *The Effects of Alcohol on the Body*.

- **Short term health risks include**: anxiety, impaired judgement leading to accidents and injuries, loss of consciousness, slowed breathing and heartbeat, potentially fatal poisoning, and sexual difficulties such as impotency.
- **Long term health risks include:** brain damage, liver disease, osteoporosis (thinning of the bones), pancreatitis, stomach ulcers, heart disease, raised blood pressure, stroke, dementia, infertility, and damage to unborn child.

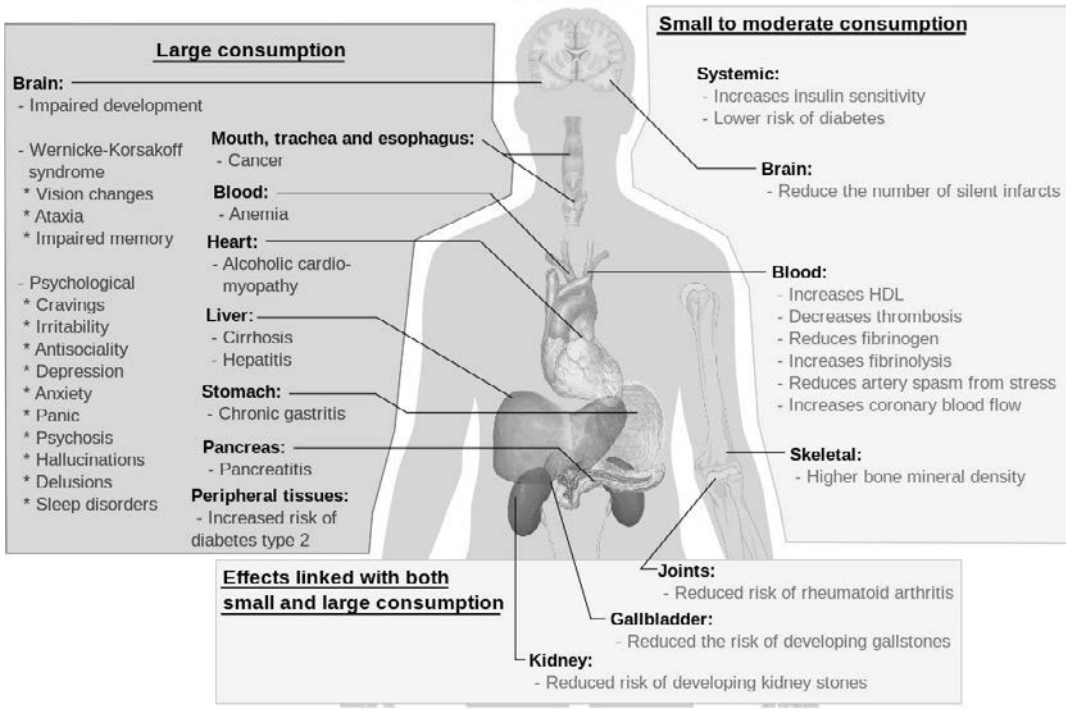

Figure 5.1: Potential long term effects of ethanol consumption (Häggström, 2009).

The impact of alcohol related diseases on health and well-being

Coronary and vascular diseases

Nicolas et al (2002) and Rotondo et al (2001) report that heavy consumption of alcohol is linked with vascular diseases, atrial fibrillation, haemorrhagic stroke and congestive heart failure. These conditions are brought about because of the strong link of alcohol consumption with high blood pressure, which is

in turn linked to coronary heart disease and stroke. Binge drinking is also associated with the development of an abnormal heart rhythm. A condition known as cardiomyopathy, in which the heart muscle is damaged, is linked to chronic heavy drinking. The affected muscle cannot pump as well as before and eventually the chambers of the heart enlarge to the point where the valves cannot function properly and heart failure occurs. Alcoholic myopathy (painful and swollen muscles) can also occur. Chronic drinking can also decrease the production of white blood cells, leading to an increased risk of infection.

Liver disease

Meister et al (2000) and Mann et al (2003) state that harmful drinking patterns are associated with cirrhosis of the liver, and Szabo (2007) contends that this risk increases with heavy consumption, especially in women who are more vulnerable at lower levels of consumption then men (Becker et al, 1996). Individuals who practice moderate alcohol consumption have also been affected with the early stages of cirrhosis (Kondili et al, 2005; Luca et al, 1997).

Type two diabetes and metabolic syndrome

Kao et al (2001) and Nakanishi et al (2003) state that modern research studies have indicated that moderate alcohol consumption can offer protection against metabolic disorders like type 2 diabetes (sometimes referred to as 'adult-onset' diabetes) and metabolic syndrome (Freiberg et al, 2004). Puddey et al (1985) add that moderate consumption delivers benefits for patients suffering with hypertension. These benefits are not experienced by everyone, and Emanuele et al (1998) maintain that moderate consumption by some individuals with type 2 diabetes can speed up low blood sugar levels and other related health consequences. A significant Dutch research study of 11,959 incident cases of type 2 diabetes in 369,862 participants, who on average were followed for 12 years, discovered that healthy adults who drink one to two glasses per day have a decreased chance of developing type 2 diabetes, compared to those who don't drink at all. 'The results of the investigation show that moderate alcohol consumption can play a part in a healthy lifestyle, to help reduce the risk of developing type 2 diabetes' (Kroppes et al, 2004).

Cancer

Certain cancers occur more often in people with problem drinking, with a cancer rate up to ten times higher than that of the general population. Harmful drinking patterns have been directly linked with the following cancers: oesophagus, larynx and pharynx (Ashley et al, 1997) breast cancer, renal cancers (Lee et al, 2007) and colorectal cancers (Moskal et al, 2007). Researchers