

# Social responsibilities, health and safety

## Learning outcomes

- Understanding of social responsibilities and effect of alcohol on the health when selling and serving alcoholic beverages

### 6.1 Cautions when selling or serving

National laws and regulations regarding the serving of sake to underage persons, pregnant women and persons driving vehicles must be observed when serving alcoholic beverages.

### 6.2 Alcohol metabolism and physical constitution

Alcohol is metabolized by the liver in a two-stage reaction. First, the alcohol is metabolized into acetaldehyde. Acetaldehyde is highly toxic and is the cause of facial flushing, headache and nausea. The acetaldehyde formed in the liver is then broken down into harmless acetic acid. An enzyme called ALDH2 is the main substance involved in this process.

ALDH2 activation varies by individual. People can be classified into three groups: ALDH2-active, ALDH2-inactive, and low-ALDH2-active. Many ALDH2-inactive and low-ALDH2-active people become sick after consuming a slight amount of alcohol. This is believed to result from mutation of the ALDH2 gene, a phenomenon that only occurs among people of Asian extraction. Between 30 and 50% of Japanese, Han Chinese and Korean people are either ALDH2-inactive or have low ALDH2 activity.

ALDH2-active people, on the other hand, are less likely to experience unpleasant feelings after drinking alcohol. However, this can lead to heavy alcohol consumption and the risk of developing alcohol dependence or various types of organ damage or neuropathies.

### 6.3 Drinking in moderation

Whether one type of alcoholic beverage is more beneficial or detrimental to the health than others at identical volumes of alcohol consumed is unknown. It has been demonstrated that the so-called French paradox, referring to the benefits of red wine in inhibiting heart disease, applies to all alcoholic beverages, not just red wine.

Research on drinking habits and mortality risk shows that there is no increase in mortality risk when the amount of alcohol consumed weekly is 150 g (equivalent to around two bottles of sake or wine). However, beyond 150 g, the risk increases in proportion to the amount of alcohol consumed. Heavy drinking involving consumption of more than 450 g of alcohol weekly sharply increases the risk of stroke, cancer and other diseases as well as the mortality risk.

Serving a moderate amount of sake to enjoy along with meals is the essence of good service.