

Chronic Conditions Manual

Prevention & Management of Chronic Conditions in Australia



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Section 1

Lifestyle modifications



Notes

Section 1: Lifestyle modifications

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Alcohol reduction

Recommendations¹

1. Reducing the risk of alcohol related harm over a lifetime

- For healthy men and women, drinking no more than 2 standard drinks on any day reduces the lifetime risk of harm from alcohol related disease or injury
- The lifetime risk of harm from drinking alcohol increases with the amount consumed

2. Reducing the risk of injury on a single occasion of drinking

- For healthy men and women, drinking no more than 4 standard drinks on a single occasion reduces the risk of alcohol related injury arising from that occasion
- On a single occasion of drinking, the risk of alcohol related injury increases with the amount consumed

3. Children and young people under 18 years of age^{1,2}

- For children and young people under 18 years of age, not drinking alcohol is the safest option
- Parents and carers should be advised that children under 15 years of age are at the greatest risk of harm from consuming alcohol

4. Pregnancy and breastfeeding

- Maternal alcohol consumption can harm the developing fetus or breastfeeding baby
- For women who are pregnant or planning a pregnancy, not drinking is the safest option
- For women who are breastfeeding, not drinking is the safest option

1. The facts¹

- Alcohol consumption accounts for 3.3% of the total burden of disease and injury in Australia including: motor vehicle and bicycle accidents, incidents involving pedestrians, falls, fires, drowning, sports and recreational injuries, alcohol poisoning, overdose, suffocation, inhalation of vomit, assault, violence and intentional self-harm
- In Australia, alcohol is second only to tobacco as a preventable cause of drug-related death and hospitalisation
- Alcohol accounts for 13% of all deaths among 14 - 17 year old Australians
- Alcohol is twice as likely to cause injury, disease and death in Aboriginal and Torres Strait Islander populations
- There is a strong association between alcohol use and suicide among some Aboriginal and Torres Strait Islander peoples
- Alcohol related community concerns include: noise, litter, offensive behaviour, vandalism, aggression, petty crime, assault and road safety issues
- Alcohol is associated with up to 50% of all violent crimes (including domestic violence) to family members (including children) and to friends and workmates, as well as to

bystanders and strangers

2. Response to alcohol¹

- Individual response to alcohol is determined by gender, body size and composition, age, experience of drinking, genetics, nutrition and general health (see Table 1)
- There is no amount of alcohol that can be said to be safe for everyone
- A person's perception of how much alcohol they can 'handle' can lead them to believe that they are able to drink more without harm

Table 1. Factors relating to response to alcohol²

Factor	Response
Gender	<ul style="list-style-type: none"> • The same amount of alcohol affects women more than men as women tend to have a smaller body size, a lower proportion of lean tissue and smaller livers than men • The higher level of risk-taking behaviour among men means male alcohol related risks exceed those of female
Age	<ul style="list-style-type: none"> • Younger people are less tolerant to alcohol and have less experience of drinking and its effects • Puberty is often accompanied by risk-taking behaviours • As people age, their tolerance for alcohol decreases and the risk of falls, driving accidents and adverse interactions with medications increases
Mental health	<ul style="list-style-type: none"> • People who have, or are prone to, mental health conditions (e.g. anxiety, depression and schizophrenia) can have worse symptoms after drinking • Alcohol can trigger a variety of mental health conditions in people who are already prone to these conditions
Medication and drug use	<ul style="list-style-type: none"> • Alcohol can interact with many prescribed and over-the-counter medications, herbal preparations and illicit drugs, which can alter the effect of either the alcohol or the medication
Family history	<ul style="list-style-type: none"> • Those with a family history of alcohol dependence (particularly among first-degree relatives) have an increased risk of developing dependence themselves
Other health conditions	<ul style="list-style-type: none"> • Those with health conditions caused or exacerbated by alcohol, such as epilepsy, alcohol dependence, cirrhosis of the liver, hepatitis or pancreatitis, risk the condition becoming worse
Tolerance	<ul style="list-style-type: none"> • Tolerance occurs because liver enzyme induction increases alcohol metabolism • A person learns to cope with, and compensate for, the deficits induced by alcohol

3. Physical effects of alcohol¹

3.1 Metabolism

- Alcohol starts to affect the brain within 5 minutes of being ingested
- Blood alcohol concentration (BAC) reaches its peak 30 - 45 minutes after the consumption of one standard drink
- Rapid consumption of multiple drinks results in a higher BAC because the liver has a

fixed rate of metabolising alcohol

- The rate of metabolism depends on liver size, body mass and composition, alcohol tolerance and individual variation in the genes that control expression of alcohol-metabolising enzymes in the liver
- In general it takes about 1 hour for the body to clear one standard drink, raising the BAC by 0.01%
- Eating when drinking alcohol slows BAC from increasing as food in the stomach reduces the speed at which alcohol is absorbed into the bloodstream
- Activities such as drinking coffee, having a cold shower, vomiting or exercising are myths that do not reduce BAC
- As it takes many hours for BAC to return to zero after a heavy night of drinking, a person may still have a BAC $> 0.05\%$ the following morning

3.2 Immediate effects

- The most immediate effects of alcohol are on the brain's arousal, motor and sensory centres, which reduces reactions to stimuli and affects coordination, speech, cognition and the senses, with feelings of relaxation, wellbeing and loss of inhibitions
- As BAC increases, drowsiness, loss of balance, nausea and vomiting begin to occur while physical performance, behaviour and memory (blackouts) deteriorate progressively
- When BAC reaches high levels, life-threatening events can occur, such as unconsciousness, inhibition of normal breathing and death, especially with aspirated vomitus
- Alcohol affects the pituitary gland, suppressing the production of anti-diuretic hormone, causing the kidneys to fail to reabsorb adequate amounts of water, resulting in diuresis and dehydration
- Alcohol reduces the cognitive or verbal capacity to resolve conflicts which can increase the likelihood and extent of aggressive behaviours and physical violence

3.3 Cumulative effects

- Alcohol consumption is associated with a range of diseases and conditions that cause death or reduce quality of life (see Table 2)

Table 2. Cumulative effects of alcohol¹

Condition	Effect
Cardiovascular disease	<ul style="list-style-type: none"> • Raised blood pressure • Increased risk of arrhythmias • Shortness of breath • Cardiac failure • Haemorrhagic stroke • Alcoholic cardiomyopathy • Raised high density lipoprotein cholesterol • Reduces plaque accumulation in arteries • Mild anti-coagulating effect
Cancer	<ul style="list-style-type: none"> • Alcohol is carcinogenic • Cancer of the oral cavity, pharynx, larynx, oesophagus, liver, colorectum and female breast • Related increased rates of tobacco use in drinkers further increases cancer risks
Diabetes	<ul style="list-style-type: none"> • Poor insulin sensitivity
Nutrition	<ul style="list-style-type: none"> • Undernutrition • Thiamine and vitamin B1 deficiency which can lead to Wernicke-Korsakoff syndrome • Folate deficiency • Vitamin A depletion • Pellagra
Overweight and obesity	<ul style="list-style-type: none"> • Adds kilojoules to the normal diet • Obesity and alcohol together promote liver disease morbidity and mortality
FASD	<ul style="list-style-type: none"> • See Developmental delay in children, page 184
Liver diseases	<ul style="list-style-type: none"> • Alcoholic hepatitis, cirrhosis, liver failure and hepatocellular carcinoma • In the presence of obesity and hepatitis B or C, the likelihood and rate of progression of cirrhosis increases
Mental health conditions	<ul style="list-style-type: none"> • Increases the risk of depression and anxiety in some people • May reduce the efficacy of antidepressant medication • Alcohol dependence increases the risk of developing major depression • The co-occurrence of major depression and alcohol use disorders increases the risks of violence and suicidal behaviour
Tolerance	<ul style="list-style-type: none"> • Drinkers who have greater tolerance for alcohol are likely to experience higher BAC levels more frequently and put themselves at higher risk of cumulative effects
Dependence	<ul style="list-style-type: none"> • Drinking is given priority over other behaviours that are much more important e.g. food, parenting • Anxiety and depression • Increased risk of violence and self-harm
Long-term cognitive impairment	<ul style="list-style-type: none"> • Negative structural and metabolic brain changes • Increased risk of dementia
Self-harm	<ul style="list-style-type: none"> • Major risk factor for suicide and suicidal behaviour in both males and females across the lifespan • Increased risk of head trauma and sequelae

4. The Australian standard drink⁴

- A standard Australian drink is defined as containing 10 g of alcohol (see Table 3). For a pictorial chart see Resource 1.
- A serving of alcohol frequently differs from a ‘standard drink’ because
 - there is no common glass sizes used across all public drinking environments
 - jugs, casks and flagons are often shared
 - glasses are topped up
 - pre-mixed drinks contain variable amounts of alcohol per bottle, can or glass
- In Australia, all bottles, cans and casks containing alcoholic beverages are required by law to state on the label the approximate number of standard drinks

5. Identifying an alcohol problem

5.1 Suspicion

- People who drink excessively rarely present directly for assistance with a drinking problem
- Often when the client has presented for another problem, a drinking history is omitted due to time restrictions or having to ask awkward questions about their drinking
- The clinician should be alerted to a suspicion of problem drinking if certain clinical indicators exist (see Table 4)

5.2 Problem drinking

- If a suspicion of problem drinking exists consider an alcohol consumption screening tool, such as the Audit-C questionnaire (see Resource 2)

5.3 Dependence⁵

- Alcohol dependence can be identified if 3 or more of the following are present
 - strong desire to drink alcohol
 - difficulties in controlling alcohol use
 - persisting in alcohol use despite harmful consequences
 - a higher priority given to alcohol use than to other activities and obligations
 - increased tolerance and
 - sometimes a physical withdrawal state

Blood alcohol concentrations for driving in Australia

0.00% for a holder of a learner or provisional license regardless of age and those holding a license to drive passenger vehicles (buses, taxis, planes) and trucks

Below **0.05%** for a holder of an open license

Table 3. Alcohol consumption rate calculator¹

Beverage and alcohol content	Size	Standard drink
Full strength beer 4.8% Alc./Vol	Midi or pot 285 mL	1.1
	Schooner 425 mL	1.6
	Can or stubbie 375 mL	1.4
	Carton, slab, case 24 x 375 mL	34
Mid strength beer 3.5% Alc./Vol	Midi or pot 285 mL	0.8
	Schooner 425 mL	1.2
	Can or stubbie 375 mL	1
	Carton, slab, case 24 x 375 mL	24
Light beer 2.7% Alc./Vol	Midi or pot 285 mL	0.6
	Schooner 425 mL	0.9
	Can or stubbie 375 mL	0.8
	Carton, slab, case 24 x 375 mL	19
Red wine 13% Alc./Vol	Glass 100 mL	1
	Average restaurant glass 150 mL	1.5
	Bottle 750 mL	7.7
	2 Litre cask	21
	4 Litre cask	41
White wine 11.5% Alc./Vol	Glass 100 mL	0.9
	Average restaurant glass 150 mL	1.4
	Bottle 750 mL	6.8
	2 Litre cask	18
	4 Litre cask	36
Champagne 12% Alc./Vol	Average restaurant glass 150 mL	1.4
	Bottle 750 mL	7.1
Port 17.5% Alc./Vol	Standard serve 60 mL glass	0.8
	2 Litre cask	28
Spirits high strength 40% Alc./Vol	30 mL nip with mix	1
	Bottle 700 mL	22
Pre-mix spirits 5% Alc./Vol	Can 250 mL	1
	Can 300 mL	1.2
	Can 375 mL	1.5
	Can 440 mL	1.7
Pre-mix spirits high strength 7% Alc./Vol	Can 300 mL	1.6
	Can 375 mL	2.1
	Can 440 mL	2.4

Table 4. Clinical indicators of problem drinking³

Context	Tips
Physical symptoms and signs	<ul style="list-style-type: none"> • Hypertension • Bloodshot eyes • Dilated facial capillaries • Hand tremor • Tongue tremor • Gastrointestinal disorders • Cognitive impairment • Frequent accidents
Psychiatric and social indicators	<ul style="list-style-type: none"> • Work, financial, marriage, legal or relationship problems • Insomnia • Anxiety • Depression • Domestic violence
Abnormal investigations	<ul style="list-style-type: none"> • Abnormal liver tests • Raised mean cell volume • Raised blood or breath alcohol concentration • Raised carbohydrate deficient transferrin

6. Engaging a client about their drinking⁵

6.1 Supportive communication

- Listen to the person
- Speak and interact with the person in a non-judgemental, compassionate, patient, open, honest, sincere and supportive way, rather than threatening, confronting or lecturing them
- Understand the person's own perception of their drinking
- Avoid accusing or labelling the person of being an alcoholic or an "addict"
- Be mindful that the person may not recognise they have a drinking problem
- Avoid coercing a client to admit they have a problem which can cause conflict and foster a lack of trust
- Identify and discuss the person's behaviour rather than criticise their character e.g. "Your drinking seems to be getting in the way of your friendships" rather than "You're a pathetic drunk"
- Avoid emotional coercion such as bribing, nagging, threatening or pleading
- Express a point of view by using "I" statements, for example, "I am concerned about how much you've been drinking lately"
- Providing advice rarely helps a person change their behaviour

6.2 Supporting change

- Outline what can be provided and how the client can be assisted

- Discuss professional confidentiality
- Acknowledge the difficult nature of changing alcohol consumption
- Encourage the person to set goals to either give up or reduce their intake
- Consider the person's readiness to talk about their drinking by asking about areas of their life that it may be affecting e.g. their mood, work performance and relationships
- Be mindful that the person may recall events differently or not at all while they were intoxicated
- Ask the person if they would like information to reduce risky drinking (see Table 4)
- Encourage the person to reach out to friends and family to support their efforts
- Refer to a professional ATODs counsellor, social worker, psychologist or an alcohol and drug information service (see Resource 3) if the person admits they
 - think a lot about alcohol and when they will drink next
 - become anxious when they don't drink
 - use alcohol to deal with certain situations
 - get violent, into arguments or have accidents when drinking
 - have difficulty performing at work or their day-to-day tasks as a result of drinking
 - are in debt because of alcohol

Table 5. Tips to reduce risky drinking⁵

Context	Tips
Knowledge	<ul style="list-style-type: none"> • Know how many standard drinks are in each beverage (see Table 3) • Count the number of standard drinks consumed • Keep a drink diary (there are smartphone applications that can do this) • Drink beverages with lower alcohol content
Social	<ul style="list-style-type: none"> • Do not let people top up a glass before it is finished, so as not to lose track of how much alcohol has been consumed • Avoid keeping up with friends drink for drink • Avoid drinking competitions and drinking games • Avoid feeling pressured into drinking. It is okay to refuse • Drink slowly • Take sips instead of gulps • Put the drink down between sips • Only have 1 drink at a time • Spend time in activities that don't involve drinking • Avoid situations where drinking is likely
Other intake	<ul style="list-style-type: none"> • Eat while drinking • Drink plenty of water when drinking alcohol to prevent dehydration • Switch to non-alcoholic drinks when starting to feel the effects of alcohol

- Clinicians can access locally available ATODs withdrawal management tools and guidelines to assist with alcohol reduction or cessation
- Seeking professional help is ultimately the person's decision

6.3 Changing drinking behaviour

- The only person that can reduce their alcohol intake is the person involved
- Many lifestyle changes are required to change drinking behaviours
- The person may attempt to change their drinking behaviour many times before success
- Choosing not to change a drinking behaviour is a choice

7. References

1. National Health and Medical Research Council (2009) Australian Guidelines to reduce health risks from Drinking Alcohol. Canberra: Commonwealth of Australia 2009
2. National Health and Medical Research Council (2013) Educator Guide. Canberra: National Health and Medical Research Council. Accessed on 21/10/14 at https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55b_educator_guide_140321.pdf
3. Demirkol, A. Haber, P. Conigrave, K. (2011) Problem drinking: Detection and assessment in general practice. Australian Family Physician Vol 40, No. 8, August 2011
4. WHO (2015) International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10)-2015-WHO Version for 2015. Chapter V. Mental and behavioural disorders: Mental and behavioural disorders due to psychoactive substance use
5. Mental Health First Aid (2013) Helping someone with alcohol use problems: Mental Health First Aid Guidelines. MHFA Australia

8. Resources

1. A pictorial chart of "The Australian standard drink" is available at <https://www.nhmrc.gov.au/health-topics/alcohol-guidelines>
2. The AUDIT Alcohol Consumption Questions (Audit – C): An effective brief screening test for problem drinkers <http://www.health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/64/44.pdf>
3. Alcohol and Drug Information Service is a 24 hour telephone service available on 1800 177 833 or Turning Point an online counselling service available at <http://www.turningpoint.org.au/>
4. The Queensland Alcohol and Drug Withdrawal Clinical Practice Guidelines have been developed to provide clinicians with a comprehensive manual that covers all aspects of withdrawal management available at http://www.dovetail.org.au/insight/modules/qh_detox_guide.pdf

Diet and nutrition

Recommendations¹

1. **Achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet an individual's energy needs**
 - Children and adolescents should eat sufficient nutritious foods to grow and develop normally
 - Children and adolescents should be physically active every day and their growth should be checked regularly
 - Older people should eat nutritious foods and keep physically active to help maintain muscle strength and a healthy weight
2. **Enjoy a wide variety of nutritious foods from all 5 groups every day**
 - Plenty of vegetables including different types and colours and legumes/beans
 - Fruit
 - Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley
 - Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans
 - Milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under the age of 2 years)
 - Drink plenty of water
3. **Limit intake of foods containing saturated fat, added salt, added sugars and alcohol**
 - Replace high fat foods which contain predominantly saturated fats such as butter, cream, cooking margarine, coconut and palm oil with foods which contain predominantly polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado
 - Low fat diets are not suitable for children under the age of 2 years
 - Limit intake of foods and drinks containing added salt by choosing lower sodium food options and avoiding adding salt to foods in cooking or at the table
 - Limit intake of foods and drinks containing added sugars such as confectionary, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks
 - Limit alcohol intake
 - For women who are pregnant, planning a pregnancy or breastfeeding, not drinking alcohol is the safest option
4. **Encourage, support and promote breastfeeding**
5. **Care for, prepare and store food safely**

1. The facts^{1,2,3}

- A healthy eating pattern and an active lifestyle are most beneficial to health and maintenance of healthy body weight
- 60% of Australian adults and around 25% of our children are now overweight or obese

- Being overweight reduces life expectancy and greatly increases the risk of high blood pressure, muscle, bone and respiratory disorders and chronic conditions including type 2 diabetes, heart disease, stroke
- 25% of all incidences of cancer are attributable to obesity and a sedentary lifestyle
- Overweight people, especially children and adolescents, can also face social discrimination, low self-esteem, poor body image and depression
- Children who are overweight tend to become overweight adults, especially if their parents are also overweight
- Being underweight in adulthood contributes to osteoporosis, decreases muscle strength and immunity, increasing susceptibility to some infectious diseases
- In older people, being underweight can be more harmful than being overweight
- In infancy and early childhood, underweight and poor growth is commonly a result of socioeconomic and/or physiological factors which can predispose the child to future chronic conditions (see [Poor growth in children, page 278](#))
- The best guide as to whether adults are eating appropriate amounts for their energy requirements is whether their weight is stable
- The best guide as to whether children are eating appropriate amounts for their energy requirements is whether their growth is normal

2. Nutritional components of food⁴

- Table 1. provides a general summary of nutrients found in food
- For further information regarding micronutrients see Resource 1.

2.1 Energy

- Energy is released from carbohydrates, proteins and fats. It is necessary for brain function, cell metabolism, synthesis and metabolism of enzymes and hormones, transport of substances around the body, maintenance of body temperature and ongoing functioning of muscles including the heart

2.2 Protein

- Protein occurs in all living cells and has both functional and structural properties
- The building blocks of protein, amino acids, can be made by the body while others are essential in the diet

2.3 Fat

- Fats are the most concentrated form of energy for the body. Fats aid in the absorption of vitamins, A, D, E and K
- Dietary fats include triglycerides, phospholipids, phytosterols and cholesterol

2.4 Carbohydrates

- Dietary carbohydrates provide energy to cells, particularly the brain that requires glucose for its metabolism
- Dietary carbohydrates are necessary to avoid ketoacidosis

2.5 Fibre

- Dietary fibre, a component of all plant materials, is essential for proper functioning of the gut and reduces the risk for a number of chronic conditions including heart disease,

certain cancers and diabetes

2.6 Water

- Water accounts for 50 - 80% of body weight and is an essential nutrient in which all bodily biochemical reactions occur
- Water fills the spaces in and between cells and helps form molecules such as protein and glycogen and is required for digestion, absorption, transportation, dissolving nutrients, elimination of waste products and thermoregulation

3. Breastfeeding⁵

- It is every health professional's responsibility to support, promote and educate parents of the benefits of breastfeeding⁵ (see Resource 2)
- It is recommended that infants be exclusively breastfed to 6 months
- Exclusive breastfeeding means that infants are given only breastmilk and no additional fluids, including water
- Breastfeeding should continue until the baby is 12 months old, or for as long as the mother and infant desire
- If breastfeeding is not possible, commercial infant formula should be used
- If formula fed, the infant should continue to drink formula until 12 months of age
- Formula fed infants may have cooled boiled tap water if additional fluids are needed
- From 6 months, small amounts of cooled boiled water can supplement breast milk or infant formula
- Consuming any other drinks in the first 12 months may interfere with an infant's nutritional intake and is not recommended
- Any breastfeeding is beneficial¹

4. First foods¹

- Introduction of first foods should begin around 6 months, starting with iron fortified infant cereal and/or iron rich foods such as puréed meat or tofu, followed by other foods from the Five Food Groups
- Introduce different tastes and textures as the baby grows
- Unmodified milk from animal sources or cow's milk should not be given as a main drink to infants under 12 months of age
- In the first 12 months soy (except soy follow-on formula) and other nutritionally incomplete plant-based milks (e.g. rice, oat, coconut or almond milk) are inappropriate alternatives to breast milk or formula
- Any fruit juice is not recommended for children
- Cow's milk may be served in small quantities in foods, with cereals and as plain custards without added sugars
- Pasteurised cow's milk can be introduced at 12 months of age
- Fortified soy drink or calcium-enriched rice and oat beverages can be used after 12 months under health professional supervision, as long as a full-fat variety is used and other sources of protein and vitamin B12 are included in the diet
- Due to high sodium/protein content, feeding goat's milk to infants is not recommended⁶
- To prevent botulism, do not feed honey to infants aged under 12 months

- By 12 months of age, infants should be consuming a wide variety of nutritious foods enjoyed by the rest of the family
- To reduce the risk of choking avoid giving whole nuts, cocktail franks and similar hard foods to young children aged less than 3 years
- Low-fat and reduced-fat milks are not recommended in the first 2 years of life
- Do not offer infants: tea, herbal teas, coffee or sugar-sweetened drinks such as soft drinks, cordials, sports drinks, energy drinks and flavoured milks

Table 1. Nutrients found in food²

Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties	
• Carbohydrate	• Energy
• Protein	• Magnesium
• Iron	• Zinc
• Dietary fibre	• Riboflavin
• Thiamine	• Niacin
• Folate	• Vitamin E
• Iodine	
Vegetables and legumes/beans	
• Beta-carotene and other carotenoids	• Magnesium
• Vitamin C	• Iron
• Folate	• Potassium
• Dietary fibre	• Carbohydrate
Fruit	
• Vitamin C	• Folate
• Dietary fibre	• Beta-carotene
• Carbohydrate	• Potassium
Milk, yoghurt, cheese and/or alternatives, mostly reduced fat	
• Calcium	• Fat
• Protein	• Carbohydrate
• Riboflavin	• Magnesium
• Vitamin B ₁₂	• Zinc
• Energy	• Potassium
Lean meat and poultry, fish, eggs, tofu, nuts and seeds, legumes/beans	
• Protein	• Dietary fibre (plant foods only)
• Iron	• Energy
• Zinc	• Essential fatty acids
• Vitamin B ₁₂ (animal foods only)	• Niacin
• Long chain omega 3 fatty acids	• Vitamin E (seeds, nuts)

5. How much to eat?

- For pictorial representations of food serve sizes see Resource 2.

5.1 What is a serve size?

- A serve size is a set amount that does not change
- Table 2. to Table 5. provide a guide to determine the total daily amount of food serves for individuals

5.2 What is a portion size?

- A portion size is the amount an individual eats
- Eating larger portions than the serve size will lead to weight gain
- Eating smaller portions than the serve size will lead to weight loss

5.3 A serve of vegetables

- A serve of vegetables or legumes/beans equates to 75 g by weight or 100 - 350 kJ in energy which is
 - ½ cup of cooked green or orange vegetables
 - ½ cup cooked, dried or canned beans, peas or lentils
 - 1 cup of green leafy or raw salad vegetables
 - ½ cup of sweetcorn
 - ½ medium potato or other starchy vegetables
 - 1 medium tomato

5.4 A serve of fruit

- A serve of fruit equates to 150 g by weight or 350 kJ in energy which is
 - 1 medium apple, banana, orange or pear
 - 2 small apricots, kiwi fruits or plums
 - 1 cup diced or canned fruit
 - or occasionally 30 g dried fruit (e.g. 4 dried apricot halves or 1½ tablespoons of sultanas) or 125 ml (½ cup) fruit juice with no added sugar

5.5 A serve of grain

- A serve of grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties equates to 500 kJ in energy which is
 - 1 slice of bread (40 g)
 - ½ medium roll or flat bread (40 g)
 - ½ cup cooked rice, pasta, noodles, barley, buckwheat, semolina, polenta, bulgur or quinoa (75 - 120 g)
 - ½ cup cooked porridge (about 120 g)
 - ⅔ cup wheat cereal flakes (30 g)
 - ¼ cup muesli (30 g)
 - 3 crispbreads (35 g)
 - 1 crumpet (60 g) or a small English muffin or plain scone (35 g)

5.6 A serve of meats or equivalent

- A serve of lean meat and poultry, fish, eggs, tofu, nuts and seeds, legumes/beans equates to 500 - 600 kJ in energy which is
 - 65 g cooked lean meat (about 90 - 100 g raw weight of beef, veal, lamb, pork, kangaroo or goat)
 - 80 g cooked poultry (about 100 g raw weight of skinless chicken or turkey)
 - 100 g cooked fish fillet (about 115 g raw weight)
 - 100 g (about ½ cup) almonds with skin
 - 75 - 80 g (about ⅓ cup) canned pink or Australian salmon with bones
 - 45 g sardines, canned in water (about 1 to 2 sardines)
 - 2 large eggs (120 g)
 - 1 cup (150 g) cooked or canned legumes/beans such as lentils, chick peas or split peas (preferably with no added salt)
 - 170 g tofu
 - 30 g nuts, seeds or peanut or almond butter or tahini or other nut or seed paste (no added salt)

5.7 A serve of dairy

- A serve of milk, yoghurt, cheese and alternatives equates to 500 - 600 kJ which is
 - 1 cup (250 ml) fresh, UHT long-life or reconstituted powdered milk or buttermilk
 - ½ cup (120 ml) evaporated milk
 - 2 slices, or a small cube (40 g) of hard cheese
 - ½ cup (120 g) ricotta cheese
 - ¾ cup (200 g tub) yoghurt
 - 1 cup (250 ml) soy beverage or beverages made from rice or other cereals which contain at least 100 mg of added calcium per 100 ml
 - 45 g sardines, canned in water (about 1 - 2 sardines provides about 200 - 250 mg calcium)
 - 100 g (about ½ cup) canned pink or Australian salmon with bones

5.8 A serve of water

- Water is constantly lost from the body and needs to be replaced according to age and life stages
 - breast milk or infant formula should be the main drink in the first 12 months
 - exclusively breastfed infants do not require additional fluids up to 6 months of age
 - 4 - 5 cups of water a day for children up to 8 years of age
 - 6 - 8 cups of water a day for adolescents
 - 8 cups of water a day for women (9 cups in pregnancy and lactation)
 - 10 cups of water a day for men

5.9 A serve of unsaturated spreads and oils

- A serve of polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado equates to 250 kJ which is
 - 10 g polyunsaturated spread

- 10 g monounsaturated spread
- 7 g monounsaturated or polyunsaturated oil, e.g. olive, canola or sunflower oil
- 10 g tree nuts or peanuts or nut pastes/butters

Table 2. Daily food patterns for infants 7 - 12 months of age¹

Food	Serve size	Serves/day	Serves/week
Vegetables and legumes/beans	20 g	1½ - 2	10 - 14
Fruit	20 g	½	3 - 4
Grain (cereal) foods	40 g bread equivalent	1½	10
Infant cereal (dried)	20 g	1	7
Lean meats, poultry, fish, tofu, eggs	30 g	1	7
Breast milk or formula	600 ml	1	7
Yoghurt, cheese or alternatives	20 ml yoghurt or 10 g cheese	½	3 - 4
Avoid whole nuts and seeds due to choking hazard			

Table 3. Daily food pattern for toddlers 1 - 2 years of age¹

Food	Serve size	Serves/day
Vegetables and legumes/beans	75 g	2 - 3
Fruit	150 g	½
Grain (cereal) foods	40 g bread equivalent	4
Lean meats, poultry, fish, tofu, eggs, legumes	65 g	1
Milk, yoghurt, cheese and/or alternatives	250 ml milk equivalent	1 - ½
Avoid whole nuts and seeds due to choking hazard		

Table 4. Recommended daily serves for children from the five food groups¹

		Vegetables and legumes/beans	Fruit	Grain (cereal) foods, mostly wholegrain and/or high fibre cereal varieties	Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans	Milk, yoghurt, cheese and/or alternatives, mostly reduced fat	Polysaturated and mono unsaturated fats such as oils, spreads, nut butters/pastes and avocado	*Approx. number of additional discretionary choice of serves from the five food groups
Boys	2 - 3 years	2½	1	4	1	1½	½	0 - 1
	4 - 8 years	4½	1½	4	1½	2	1	0 - 2½
	9 - 11 years	5	2	5	2½	2½	1	0 - 3
	12 - 13 years	5½	2	6	2½	3½	1½	0 - 3
	14 - 18 years	5½	2	7	2½	3½	2	0 - 5
Girls	2 - 3 years	2½	1	4	1	1½	½	0 - 1
	4 - 8 years	4½	1½	4	1½	1½	1	0 - 1
	9 - 11 years	5	2	4	2½	3	1	0 - 3
	12 - 13 years	5	2	5	2½	3½	1½	0 - 2½
	14 - 18 years	5	2	7	2½	3½	2	0 - 2½
	Pregnant	5	2	8	3½	3½	-	0 - 3
	Breastfeeding	5½	2	9	2½	4	-	0 - 3

* Additional serves for more active, taller or older children and adolescents
Important. Serving sizes shown on food labels are not the same as these recommendations

Table 5. Recommended daily serves for adults from the five food groups¹

		Vegetables and legumes/beans	Fruit	Grain (cereal) foods, mostly wholegrain and/or high fibre cereal varieties	Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans	Milk, yoghurt, cheese and/or alternatives, mostly reduced fat	Polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado	*Approx. number of additional discretionary choice of serves from the five food groups
Men	19 - 50 years	6	2	6	3	2½	4	0 - 3
	51 - 70 years	5½	2	6	2½	2½	4	0 - 2½
	70+ years	5	2	4½	2½	3½	2	0 - 2½
Women	19 - 50 years	5	2	6	2½	2½	2	0 - 2½
	51 - 70 years	5	2	4	2	4	2	0 - 2½
	70+ years	5	2	3	2	4	2	0 - 2
	Pregnant	5	2	8½	3½	2½	2	0 - 2½
	Breastfeeding	7½	2	9	2½	2½	2	0 - 2½

* Additional serves for more active, taller or older adults

Important. Serving sizes shown on food labels are not the same as these recommendations

6. Preparing and storing food safely¹

- Foodborne illnesses occur when micro-organisms in food multiply to harmful levels as a result of incorrect handling, particularly when temperature control is inadequate
- Correct handling of food during all stages of its preparation and storage is essential in reducing the risk of contamination and disease
- Most healthy people recover quickly from food poisoning but those at risk of serious illness include those with weakened immune systems, pregnant women, infants and older people
- The following foods are considered higher risk for contamination because pathogenic bacteria can be present and multiply if not stored and prepared safely
 - raw and cooked meat and poultry
 - dairy products
 - seafood
 - cooked rice and pasta
 - processed fruit and vegetables such as salads

- processed foods containing eggs or other protein-rich ingredients
- foods that contain any of the foods above

Best before vs Use by

Best before indicates the length of time a food should keep before it begins to deteriorate.

Use by indicates how long a food can remain safe provided it has been stored according to labelled storage conditions and the package is unopened when purchased

7. Food labels¹

- Food labels are useful to compare the nutritional content of packaged foods
- All packaged foods must display a nutrition information panel which should state the servings per pack and serving size and can be used to compare between different brands or types of similar foods
- A food label must show a list of ingredients, listed in descending order of their proportion by weight in the food

Serving sizes shown on food labels are not the same as nationally recommended serving sizes

7.1 Sugar

- Avoid large amounts of added sugars
- Sugar content of 15 g or higher per 100 g is considered high
- Other names for added sugar include: dextrose, fructose, glucose, golden syrup, honey, maple syrup, malt, maltose, lactose, brown sugar, caster sugar, raw sugar and sucrose

7.2 Sodium (salt)

- Choose low sodium option foods
- Foods with less than 400 mg per 100 g are good
- Foods with less than 120 mg per 100 g are best
- High salt ingredients include: baking powder, celery salt, garlic salt, meat/yeast extract, monosodium glutamate (MSG), onion salt, rock salt, sea salt, sodium, sodium ascorbate, sodium bicarbonate, sodium nitrate/nitrite, stock cubes and vegetable salt

7.3 Total fat

- Choose foods with less than 10 g per 100 g
- For milk, yoghurt and icecream, choose less than 2 g per 100 g
- For cheese, choose less than 15 g per 100 g

7.4 Saturated fat

- Aim for lowest saturated fat per 100 g
- Less than 3 g per 100 g is best

8. References

1. National Health and Medical Research Council (2013) Educator Guide. Canberra: National Health and Medical Research Council. Accessed on 21/10/14 at https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55b_educator_guide_140321.pdf
2. Brown WJ, Bauman AE, Bull FC, Burton NW. Development of Evidence-based Physical Activity Recommendations for Adults (18-64 years). Report prepared for the Australian Government Department of Health, August 2012
3. National Health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra: National Health and Medical Research Council
4. National Health and Medical Research Council, Australian Government Department of Health and Ageing, New Zealand Ministry of Health. Nutrient reference values for Australia and New Zealand including recommended dietary intakes. Canberra: Commonwealth of Australia; 2006
5. National Health and Medical Research Council (2012) Infant Feeding Guidelines. Canberra: National Health and Medical Research Council. Accessed on 22/10/14 at <https://www.nhmrc.gov.au/guidelines/publications/n56>
6. Fresh Goat's Milk for Infants: Myths and Realities: A Review (2010) Basnet, S. Schneider, M. Gazit, A. Mander, G and Doctor, A. Pediatrics 2010;125:e973; Accessed on 22/10/14 at <http://pediatrics.aappublications.org/content/125/4/e973.full.pdf+html>

9. Resources

1. Nutrient Reference Values for Australia and New Zealand including Recommended Dietary Intakes available at <https://www.nhmrc.gov.au/guidelines-publications/n35-n36-n37>
2. The Infant Feeding Guidelines offers detailed information on supporting and promoting breastfeeding. Available at <https://www.nhmrc.gov.au/guidelines/publications/n56>
3. Pictorial representations of food serving sizes are available at <https://www.eatforhealth.gov.au/food-essentials/how-much-do-we-need-each-day/serve-sizes>

Physical activity

Recommendations¹

1. Children aged 0 - 5 years¹

- Should not be sedentary, restrained, or kept inactive, for more than 1 hour at a time, with the exception of sleeping
- Infants aged 0 - 1 year should be encouraged to do floor-based play in a safe and supervised environment
- Toddlers and pre-schoolers aged 1 - 5 years should be physically active every day for at least 3 hours, spread throughout the day

2. Children aged 5 - 12 years and young people aged 13 - 17 years¹

- Should accumulate at least 60 minutes of moderate to vigorous intensity physical activity every day
- Should include a variety of aerobic activities, including vigorous intensity activity
- On at least 3 days per week, children should engage in activities that strengthen muscle and bone
- Additional health benefits in children can be achieved by engaging in several hours more activity per day

3. Adults aged 18 - 64²

- Doing any physical activity is better than doing none
- Each week accumulate
 - 150 - 300 minutes of moderate intensity physical activity or
 - 75 - 150 minutes of vigorous intensity physical activity or
 - an equivalent amount of combined moderate and vigorous activity
- Be active on most, preferably all, days every week
- Do muscle strengthening activities on at least 2 days each week

4. People over 65 years of age³

- Should accumulate at least 30 minutes of moderate intensity physical activity on most, preferably all, days
- Should do some form of physical activity, no matter what their age, weight, health problems or abilities
- Should be active daily in as many ways as possible, doing a range of physical activities that incorporate fitness, strength, balance and flexibility
- Those who have stopped physical activity, or who are starting a new physical activity, should start at a level that is easily manageable and gradually build up the amount, type and frequency of activity
- Those who have had a lifetime of vigorous physical activity should continue to participate at this level in a manner suited to their capability into later life

1. The facts¹

- Annually in Australia, at least \$400 million in health costs and around 8,000 deaths per year can be attributed to physical inactivity¹
- For men and women from different population groups, there is an overall 30% reduction in risk of death in active individuals compared with those who are least active²
- In children and young people, higher levels of physical activity are associated with multiple health benefits including cardiometabolic health, prevention of unhealthy weight gain, musculoskeletal health, mental health and cardiorespiratory fitness¹
- About 25% of all incidences of cancer in adults is attributable to obesity and a sedentary lifestyle
- In older people a combination of moderate aerobic, strength, balance and flexibility exercises can prevent the onset of chronic conditions and ameliorate the impact of chronic conditions³

2. Sedentary behaviour

2.1 Children aged 0 - 5 years¹

- For children 2 - 5 years of age, limit sitting, screen based activities and other electronic media to less than 60 minutes per day
- Children younger than 2 years of age should not spend any time with screen-based activities and other electronic media
- Children aged 2 - 4 years spend an average of 6 hours a day engaged in physical activity and 1½ hours engaged in sedentary activities

2.2 Children aged 5 - 12 years¹

- Children aged 5 - 12 years should limit sitting, screen-based activities and other electronic media to no more than 2 hours a day
 - Break up long periods of sitting as often as possible
 - Children and young people aged 5 - 17 years spend an average of 1½ hours a day on physical activity and 2 hours a day engaged in screen-based activity
- Nearly ½ of all children and young people have at least one type of screen-based item in their bedroom. This group spends 2 hours per week more engaged in screen-based activity compared with those who do not have any such item in their bedroom

2.3 Young people aged 13 - 17 years¹

- To reduce health risks, young people aged 13 - 17 years should limit sitting, screen-based activities and other electronic media to no more than 2 hours a day
- Break up long periods of sitting as often as possible
- Three quarters of young people have some kind of screen-based media in their bedroom
- 16 year olds who engage in physical activity less than 3 times a month are more likely to experience drug and alcohol use problems

2.4 Adults aged 18 - 64 years²

- Adults should minimise the amount of time spent in prolonged sitting positions and

break up long periods of sitting as often as possible

- People employed in sedentary occupations such as administrative workers and long distance vehicle drivers spend on average 22 hours a week sitting
- The most prevalent sedentary recreational activity is watching television, at nearly 13 hours a week

2.5 People over 65 years of age³

- Less than 1/2 of Australians aged 65 years and over do sufficient physical activity to produce health benefit
- In older Australians, mortality risk is 74% greater in sedentary older people compared to those who are active to some degree

3. Benefits of activity

For a description of the types of physical activity see Table 1.

3.1 Children and young people¹

- 40 - 70 minutes of moderate to vigorous aerobic activity for 3 times a week significantly improves cardiorespiratory fitness
- Any regular physical activity lowers rates of weight gain and obesity while improving cognitive ability, executive function and intelligence
- High impact activities (e.g. jumping) on at least 3 days per week improves skeletal health
- 30 minutes daily of moderate to vigorous activity improves muscular strength and flexibility
- At least 60 minutes of moderate to vigorous activity at least 3 days per week has positive mental health benefits e.g. improved self esteem and physical self perceptions and less anger and emotional problems and perceived stress

3.2 Adults²

- 60 - 90 minutes of moderate or 30 - 60 minutes of vigorous activity leads to a 20 - 30% reduction in the risk of coronary heart disease, chronic heart failure and stroke
- 60 minutes of low to moderate intensity activity reduces the risk of developing diabetes
- 180 minutes per week of moderate to vigorous activity improves prevention and management of glucose regulation, insulin resistance, hypertension, high blood lipids and central obesity in those with diabetes
- 60 - 90 minutes of moderate or 30 - 60 minutes of vigorous activity on most days of the week can reduce the risk of colon cancer by 30% and breast cancer by 20%
- Both weight bearing physical activity and resistance and muscle strengthening activities have protective factors for osteoarthritis, bone mineral density, functional status, and risk of falls and fractures

3.3 Older people³

- Physical activity offers an effective, non-pharmacological public health intervention for increasing and maintaining quality of life among older adults
- All the benefits of physical activity for those under 65 are extended to those over 65

years of age primarily in preventing heart disease and diabetes

- Physical activity is effective in reducing falls risk and improving balance
- Both strengthening and aerobic exercise can reduce pain and improve function and health status in those with oosteoarthritis

Table 1. Types of activity²

Activity	Meaning
Physical	<ul style="list-style-type: none"> • Any bodily movement produced by skeletal muscles that expends energy
Sedentary	<ul style="list-style-type: none"> • Activity that involves sitting or lying down, with little energy expenditure • Examples include: sitting at work, watching TV, reading, computer or computer games use, social networking or sitting in a vehicle
Light	<ul style="list-style-type: none"> • Day to day activity related to the home, workplace or community • Examples include: standing up, moving around, cleaning or cooking
Moderate	<ul style="list-style-type: none"> • An intensity which requires some effort • Allows a conversation to be held • Examples include: brisk walking, gentle swimming, lawn mowing or social tennis
Vigorous	<ul style="list-style-type: none"> • Makes you breathe hard or makes you breathless • Examples include: aerobics, jogging, cycling or competitive sports
Muscle strengthening	<ul style="list-style-type: none"> • Activities that improve strength, power, endurance and size of skeletal muscles • Examples include: resistance exercises that use either body weight (e.g. push-ups or chin-ups), free weights (e.g. dumbbells) or machines
Aerobic	<ul style="list-style-type: none"> • Activities that depend on adequate oxygen supply • Involves large muscle groups moving at pace for more than a few minutes • These activities improve the transport and uptake of oxygen by the cardiorespiratory and metabolic systems, to provide energy for working muscles • Examples include: walking, swimming, cycling, dancing or competitive ball games
Anaerobic	<ul style="list-style-type: none"> • Activity that does not depend on a regular supply of oxygen to working muscles • Can usually only be continued for a very short time before becoming aerobic activity • Examples include: sprinting or lifting heavy weights

4. Engaging a client about physical activity

4.1 Supportive communication

- Listen to the person
- Speak and interact with the person in a non-judgemental, compassionate, patient, open, honest, sincere and supportive way, rather than threatening, confronting or lecturing them
- Understand the person's own perception of physical activity

- Avoid expressing moral judgements of a client or of their thoughts of physical activity e.g. lazy or overweight
- Avoid forcing a client to admit they have a problem
- Avoid emotional coercion such as bribing, nagging, threatening or pleading
- Providing advice rarely helps a person change their behaviour
- Express a point of view by using “I” statements, for example, “I am concerned about your blood pressure”

4.2 Supporting change

- Outline what can be provided and how the client can be assisted
- Discuss professional confidentiality
- Consider the person’s readiness to change their exercise levels
- Acknowledge any difficulties a person may have with engaging in physical activity
- Encourage the person to set goals to overcome any barriers to activity and to begin low levels of activity
- Provide information as required including
 - types and levels of exercise
 - locations of exercise based facilities e.g. gyms or walking tracks
 - exercise support groups e.g. walking groups or Hash House Harriers
 - see Resource 1.
- Encourage the person to reach out to friends and family to support their efforts
- Refer to a professional counsellor, social worker, psychologist or a personal trainer
- Seeking professional help is ultimately the person’s decision

4.3 Changing physical activity levels

- The only person who can become more active is the person involved
- The person may attempt exercise and engage with a clinician many times before changing their behaviour
- Choosing to continue with a sedentary lifestyle is a choice

5. References

1. Okely AD, Salmon J, Vella SA, Cliff D, Timperio A, Tremblay M, Trost SG, Shilton T, Hinkley T, Ridgers N, Phillipson L, Hesketh K, Parrish AM, Janssen X, Brown M, Emmel J, Marino N. A Systematic Review to update the Australian Physical Activity Guidelines for Children and Young People. Report prepared for the Australian Government Department of Health, June 2012
2. Brown WJ, Bauman AE, Bull FC, Burton NW. Development of Evidence-based Physical Activity Recommendations for Adults (18-64 years). Report prepared for the Australian Government Department of Health, August 2012
3. Sims J, Hill K, Hunt S, Haralambous B, Brown A, Engel L, Huang N, Kerse N, and Ory M. 2006. National physical activity recommendations for older Australians: Discussion document. Canberra: Australian Government Department of Health and Ageing
4. Australian Bureau of Statistics (2013) Australian Health Survey: Physical Activity, 2011-12 (2013) Key findings. Accessed on 30/10/14 at <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4364.o.55.004Chapter1002011-12>
5. National Health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra: National Health and Medical Research Council

6. Resources

1. A variety of physical activity resources are available at <http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines#npa05> and <http://www.physicalactivityaustralia.org.au>

Sexual and reproductive health

Recommendations¹

1. Safe sexual practise

- To reduce person to person spread of many sexually transmitted infections (STIs), including HIV, always use condoms when having vaginal, oral or anal sex
- To avoid unintended pregnancy, arrange contraception prior to sexual encounters
- Stay emotionally healthy and in control by deciding
 - whether to have sex
 - when to start having sex
 - when to have sex
 - who to have sex with
 - how to have sex
 - to have safe sex every time
- Do not have sex with a person who has a visible sore, ulcer or lump on the genitals or around the anal area
- To avoid a STI infection of the throat always use protection (a condom) when having any form of oral sex (mouth to penis, vulva or anus)

2. Communication

- If having unprotected sex, people should talk with their partners about the risks involved
- Open discussion fosters better understanding of the need for protected sex in some cases

3. Other ways to have sex

- There are lots of ways to enjoy physical intimacy with a partner which do not put people at risk of STIs or unintended pregnancies
- If using sex toys, use condoms and change the condom for each person. Wash toys and hands after use

4. Avoiding alcohol

- Drinking alcohol and taking other drugs may affect people's ability to make safe decisions
- While drinking, stay in control to make safer and more rational choices about sexual contacts

5. Acting on unprotected sex

- After an unprotected sexual encounter a person may be at risk of a STI or pregnancy and should have a sexual health check-up and consider emergency contraception if required

For any acute STI presentations refer to the current edition of the PCCM

1. The facts^{1,2,3}

- STIs can cause significant long term health problems and are a major public health concern
- The most significant STIs in Australia are chlamydia, genital herpes, genital warts, trichomoniasis, gonorrhoea, hepatitis B, syphilis and HIV
- STIs can be passed from person to person through
 - vaginal sex
 - oral sex
 - anal sex
 - close sexual contact
 - sex toys
- More than half of all STI notifications in Australia are among 15 - 24 year olds, chlamydia accounting for about 90% of these notifications
- Some STIs can be transmitted from a mother to child during pregnancy or childbirth and from person to person by sharing injecting drug equipment
- Sometimes STIs cause symptoms but very often a person can have a STI without knowing it
- People are always at risk of a STI after an encounter of unprotected sex
- STIs are twice as prevalent among those who use illicit drugs and/or those who consume excessive amounts of alcohol
- The rate of new infection cases has risen fivefold for chlamydia and threefold for gonococcal infections since 1994 when national notification began
- The rate of new syphilis infections has risen from 9.6 per 100,000 people in 2004 to 12.6 in 2013
- Notification rates of hepatitis B and hepatitis C have fallen since 2001
- The rate of HIV diagnosis rose 25% between 2002 and 2012

2. Priority groups^{2,4,5}

- Be mindful that concerns about stigma and discrimination in some priority groups can lead to fears of disclosure and heightened secrecy

2.1 Young people^{4,5}

- Testing at least once a year is recommended for all asymptomatic young people (under 30 years of age) who are sexually active
- Consider preventative vaccinations including for human papillomavirus (HPV) and hepatitis B

2.2 Aboriginal and Torres Strait Islander people^{4,5}

- Several STIs occur in Aboriginal and Torres Strait Islander communities at significantly higher rates than the non-Aboriginal and Torres Strait Islander populations
- Testing is recommended for all Aboriginal and/or Torres Strait Islander people as part of

an annual health check or opportunistically if indicated

2.3 Gay men and other men who have sex with men (MSM)^{4,5}

- MSM in Australia are disproportionately and increasingly affected by STIs including HIV due in part to changes in sexual behaviour such as reduction in condom use
- All men who have had any type of sex with another man in the previous year should have a STI screen at least once a year
- All MSM who fall into one or more categories listed below should be tested up to four times a year (see Resource 1)
 - any unprotected anal sex
 - more than 10 sexual partners in 6 months
 - participate in group sex
 - use recreational drugs during sex
 - are HIV-positive

2.4 People in custodial settings^{4,5}

- All people should have a risk assessment for sexual health and blood borne virus (BBV) infection on admission to prison by appropriately trained staff
- Consider testing for herpes only if there are clinical signs and symptoms

2.5 Sex industry workers^{4,5}

- Regular screening recommendations exist for sex industry workers (see Resource 2)
- A sex industry worker cannot work, or a brothel licensee/manager cannot allow a sex industry worker to work, when known to be infected with a STI

2.6 Travellers and mobile workers^{4,5}

- People may behave differently when they travel and in ways that may put them at risk of exposure to STIs
- This group includes
 - people who engage in unsafe sex while travelling
 - fly in fly out (FIFO) seasonal workers and the communities they have contact with, particularly in regional, rural and remote areas
- Regular testing for gonorrhoea, chlamydia, syphilis and HIV is recommended
- Confirm hepatitis B status and vaccinate if not immune (see [Hepatitis B, page 220](#))

2.7 Culturally and linguistically diverse people (CALD)^{4,5}

- Language and culture, stigma, cost, low awareness and knowledge, unfamiliarity with the Australian health system, traditional beliefs, and fear put this rapidly growing population at high risk of STI infection
- Screening for chronic hepatitis B and syphilis should be offered to all
- Screening for HIV, chlamydia and gonorrhoea should be offered to newly arrived individuals considered at risk

3. STI prevention^{4,6}

- Every STI case or inquiry offers an opportunity for preventative sexual and reproductive health education, without judgement or moral stance
- The aim of preventative education is the same for all people; to encourage people to eliminate or reduce their risk of further infections
- The provision of education is tailored to an individual's lifestyle, belief, culture, sexual practises and risk behaviours e.g. speaking with a young Aboriginal man from a remote community will differ to speaking with an older urban lesbian woman
- Abstaining from sex and having a sexual health check prior to a new sexual relationship or if a partner or the client suspects they have an STI, is a safe preventative choice
- Provide written and/or verbal information and pamphlets relevant to the identified risk group (see Resource 3)

3.1 Vaccination

- Vaccination is the most effective means of reducing and preventing the transmission of hepatitis A and B and human papillomavirus (HPV)

3.2 Condoms

- If penetrative sexual intercourse does occur, condoms and water-soluble lubricant will reduce STI risk
- Clients should be instructed in condom use, and told where affordable or free condoms and lubricant can be obtained
- Discuss how to negotiate with partners to ensure that condoms are used
- Sexually active people should have easy access to condoms at all times
- Condoms should be made freely available in all health facilities
- Reinforce safe sex messages and provide condoms and lubricant
- If required demonstrate correct condom usage

3.3 Reducing sexual partners

- Reducing the number of sexual partners reduces the risk of coming in to contact with a STI
- Mutual monogomy eliminates the risk of STIs
- Encourage people to establish an honest sexual relationship by communicating their sexual needs with one another

3.4 Clean injecting equipment

- Blood borne infections and STIs are closely linked
- Injecting drug users should be alerted to the risks of sharing injecting equipment
- Clinicians should provide information about where clean injecting equipment can be obtained, and any programs or services available to support prevention of the practice

3.5 Safe sexual choices

- People should be encouraged to openly communicate and negotiate safe sexual practise with partners
- Young people in particular need to be aware that choosing to ‘take a break’ or saying ‘no’ are options available to them as individuals as part of a healthy emotional and sexual lifestyle
- Choosing to abstain from sex removes the risk of contracting or passing on STIs and should be discussed non-judgementally as an option

4. STI testing and treatment^{2,5,6,8}

- Refer to the current edition of the PCCM for more details of specific STI testing procedures and treatment options

4.1 Confidentiality

- Ensure the client is reassured of the confidentiality surrounding testing and treatment and how they can protect their own confidentiality by carefully considering who they discuss any health issues with
- Consider using a local health service endorsed coding system when requesting and receiving STI specimens and results

4.2 Informed consent

- Discuss why a STI is being screened for i.e. to treat infections, improve health outcomes and reduce risk of transmission
- Explain how the test is done i.e. urine, swab or blood test
- Explain what the test does, and does not, provide
- Advise if and when repeat testing will be necessary
- Inform the client of the legal requirements for a notifiable infection in the case of a positive result
- Advise that if testing for a STI is positive, any partners will also need to be offered testing and treatment (see 5. Contact tracing)

4.3 History

- A history may or may not be forthcoming however this should not prevent screening being undertaken
- A thorough history will determine which STI a client may have been exposed to and guide the specimen required
- A history should include
 - types of sexual behaviour
 - number of partners
 - when exposure occurred
 - previous STIs and treatment

4.4 Prior to the results

- Discuss how and when to obtain results
- Consider discussing implications of a negative result
 - preventative education to avoid future risk
 - safe sex practises
- Consider discussing implications of a positive result
 - need for professional support e.g. social worker or counsellor
 - discuss any family or friends available for support
 - options for medical treatment and follow up
 - any need for leave from employment

4.5 After the results

- For a negative result consider discussing
 - what the test does and does not provide
 - if and when repeat testing is necessary (STI window periods)
 - safe sexual practises
- For a positive result
 - allow for an open/relaxed discussion while listening and encouraging questions
 - be guided by the person's response to determine how much information to provide and avoid overloading them
 - offer ongoing social emotional support and management
 - referral to a local sexual health clinic or service for counselling (see Resource 4)
 - ensure the person has a support network
 - discuss preventative education to avoid future risk (see 3. STI prevention)
 - discuss contact tracing

5. Contact tracing^{7,8,9}

- Contact tracing is following up with sexual contacts of a person who has tested positive for a STI
- Ensuring sexual partners are tested and treated is an important way of controlling the spread of the infection
- Contact tracing is necessary but requires sensitivity and confidentiality

5.1 Procedure⁸

- Introduce the reasons for contact tracing
 - to ensure any partners are offered screening and treatment
 - most people with a STI don't know they have it and can continue to pass it onto others
- Assist clients to identify which partner(s) need to be informed using cues such as locations or events
- The client should be allowed the opportunity to inform any contacts who are to be tested for a STI. Table 1. provides some contact tracing tips

- provide STI specific information (see Resource 3)
- discuss how a partner might react to the news. If there is concern over a violent reaction or history of domestic violence then refer to the local sexual health clinic for social work support

It is the responsibility of the clinician to discuss the public health implications and health outcomes for untreated sexually transmitted infections and to support the client through the contact tracing process

- Schedule a follow up visit or phone call to determine if the client was able to inform their partner(s)
- If the client has not notified a partner, with client consent perform contact tracing as per client request
- In most cases, contact tracing can be undertaken immediately by the client with a clinician's support
- Contact tracing needn't be a complex or time consuming exercise

Table 1. Tips to let a sexual contact know to be tested^{8,9}

Some people may react badly to being told they are at risk of a STI. If a client thinks their partner could become abusive hearing this news, consider using an anonymous email, SMS, letter or ask their doctor instead

Method	Tips
Face to face	<ul style="list-style-type: none"> • Most people like to be told in person • Most people report that telling their partner(s) was easier than they thought it would be • Do it straight away • Delaying the discussion may result in it never happening • Plan the conversation (for sample conversations see http://www.letthemknow.org.au/talking.html) • Don't feel the need to provide a lot of details • Provide a fact sheet, a website or phone numbers to contact • Avoid phrases like "you've given me chlamydia" which may make a partner defensive
By letter	<ul style="list-style-type: none"> • If anyone else might read the letter, use another method • A letter should be direct, objective, factual and free of emotion • For templates see http://www.letthemknow.org.au/letter.html
By SMS	<ul style="list-style-type: none"> • If anyone else might read the SMS, use another method • An SMS should be direct, objective, factual and free of emotion • For templates see http://www.letthemknow.org.au/sms.html or http://www.thedramadownunder.info/notify/
By email	<ul style="list-style-type: none"> • If anyone else might read the email, use another method • An email should be direct, objective, factual and free of emotion • For templates see http://www.letthemknow.org.au/email.html or http://www.thedramadownunder.info/notify/

- In cases where a clinician finds the contact tracing process problematic refer to a specialist service (see Resource 4)

6. Contraception^{2,10}

- Contraceptive methods (see Table 2) may be influenced by
 - contraceptive efficacy
 - associated health risks or side effects
 - associated risks with pregnancy
 - reversibility
 - age
 - relationship status
 - personal beliefs
 - socioeconomic circumstances
 - user friendliness
 - protection against STIs
 - accessibility
 - cost
- Provide adequate information so clients can make an informed choice about their current and future fertility (see Resource 5)
- Once chosen, discuss and provide written information to the client about
 - how to use the method
 - clinical follow up requirements
 - what to do if the method is not used correctly or fails

Table 2. Contraception types^{2,10}**Interuterine devices (IUDs) and implants**

- Suitable for women of any age
- Can be removed easily at any time and are immediately reversible on removal
- Provides no protection against STIs
- The **hormonal IUD** is 99.8% effective while the copper IUD is 99.2% effective
- IUDs need to be replaced every 5 to 10 years
- The **contraceptive implant** is inserted directly under the skin, on the inner arm above the elbow, where it continuously releases a low dose of a progestogen hormone over a 3 year timeframe. Implants are 99.9% effective. They need to be replaced every 3 years or can be removed earlier if required
- **Contraceptive injections** (depot medroxyprogesterone acetate) are given by an injection into a muscle every 12 weeks and is 94 - 99.8% effective

Short acting hormonal methods

- The **contraceptive vaginal ring** is a soft plastic ring which slowly releases low doses of oestrogen and a progestogen, is self-inserted, and remains in the vagina for 3 weeks. It is then removed and replaced with the next ring a week later
- **Combined oral contraceptives** (or 'the pill') are preparations of synthetic oestrogen and progestogen which rely on consistent daily use to be effective
- The **progestogen only pill** (or 'mini-pill') is an oral hormone contraceptive containing only progestogen which rely on consistent daily use to be effective

Barrier methods

- The **male condom** is a sheath made of latex or polyurethane, rolled onto the erect penis before sex, which is 82 - 98% effective for pregnancy prevention
- The **female condom** is a polyurethane sheath, inserted into the vagina before sex, which is 79 - 95% effective
- **The diaphragm** is a soft, dome-shaped silicone cap with a flexible rim, placed in the vagina before sex to cover the cervix and stop sperm getting into the uterus, which is 88% - 94% effective. Usually fitted for size by a doctor or nurse along with instructions for use

Lactational amenorrhoea method (LAM)

- LAM is the use of breastfeeding as a contraceptive method which reduces the probability of ovulation (egg release) occurring. LAM is 98% effective when menstrual periods have not returned AND the mother gave birth less than 6 months ago AND the mother is exclusively breastfeeding

Fertility awareness based methods (FABMs)

- FABMs rely on specialist education to identify the fertile phase of the menstrual cycle to indicate when sex should be avoided to prevent pregnancy. FABMs are 75% - 99.6% effective

Withdrawal (coitus interruptus)

- Withdrawal is where the penis is withdrawn from the woman's vagina before ejaculation
- Withdrawal is 78% - 97% effective but is not recommended as a reliable form of contraception

Table 2. Contraception types (continued)^{2,10}**Abstinence**

- Abstinence, ‘taking a break’ or saying ‘no’ to penetrative sex is an option which is 100% effective in preventing pregnancy

Emergency contraception (EC)

- Reduces the risk of unintended pregnancy after unprotected sex
- EC is not a method of regular contraception; using a reliable form of contraception is the best ongoing protection against unplanned pregnancy
- The **emergency contraception pill** (ECP) can be taken up to 5 days after unprotected sex but it is most effective if taken in the first 24 hours. When taken in the first 72 hours (3 days), it prevents about 85% of expected pregnancies
- A **copper intrauterine contraceptive device** (Cu-IUD) is inserted in the first 120 hours (5 days) after sex, it prevents about 99% of expected pregnancies. A Cu-IUD then provides immediate and ongoing contraception

Permanent contraception (sterilisation)

- Sterilisation is permanent contraception which can't be reversed
- Sterilisation methods are 99.5% effective
- **Female sterilisation** (tubal ligation) involves an operation blocking the fallopian tubes to stop the passage of the ovum (egg)
- **Male sterilisation** (vasectomy) involves a simple operation performed under local anaesthetic on the vas deferens to prevent sperm from joining the ejaculate fluid

7. References

1. Queensland Government (2014) Safe sex. V2. Queensland Government. Accessed 26/3/15 at <http://conditions.health.qld.gov.au/HealthConditions/2/Infections-Parasites/150/Hiv/774/Safe-Sex>
2. Queensland Health (2012) Queensland Sexual Health Clinical Management Guidelines. Queensland Government
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5. ASHM Publications (2014) Australian Sexually Transmitted Infection and HIV Testing Guidelines 2014. Accessed on 7/3/15 at <http://www.sti.guidelines.org.au/>
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9. NSW STI Programs Unit (2011) STI Contact Tracing for General Practice (update September 2013). Accessed on 9/3/15 at <http://stipu.nsw.gov.au/general-practice-resources/sti-clinical-management/>
10. Sexual Health and Family Planning Australia (2013) Contraception choices. Accessed on 9/3/15 at <http://www.shfpact.org.au/index.php/sexual-health/contraception>

8. Resources

1. The Australian Sexually Transmitted Infection and HIV Testing Guidelines 2014 is available at <http://www.sti.guidelines.org.au/>
2. ASHM Publications (2013) Guide to Australian HIV Laws and Policies for Healthcare Professionals available at <http://www.ashm.org.au/HIVLegal/Default.asp?publicationID=2&SectionID=337>
3. A detailed list of sexually transmitted infections is available from the Australian STI Management Guidelines for use in primary care <http://www.sti.guidelines.org.au/#page>
4. National sexual health services are available at <http://ctm.ashm.org.au/Default.asp?PublicationID=6&SectionID=631>
5. For detailed contraception choices see resources available at http://www.fpq.com.au/publications/fsBrochures/menu_contraception.php

Smoking cessation

Recommendations^{1,2,3}

1. Cease smoking

- Smoking causes many respiratory and cardiac conditions as well as cancer and premature death
- All people who smoke should endeavour to quit smoking immediately

2. Prevent uptake of smoking

- Early exposure to modelled cigarette smoking behaviours increases the risk that children and young people will start smoking
- Smokers should avoid smoking in front of children
- Smokers should keep cigarette packets, lighters, ashtrays and all other cigarette smoking paraphernalia away from children and young people
- Parents should educate children from a young age about the dangers of smoking

3. Smokers should access support to quit smoking and prevent relapse

- Smokers who are motivated to quit should be assisted by a recognised smoking cessation service
- Smokers need to be made aware of their level of nicotine dependence
- Smokers should determine which modality would best suit them in their quit attempt, including pharmacotherapy and behavioural and information based support
- Smokers should have access to smoking cessation services such as QUIT (137848)

4. Eliminate harmful exposure to tobacco smoke among children and non smokers

- Children and non smokers who are exposed to cigarette smoke are at risk of developing acute respiratory illnesses and chronic conditions in later life
- Smokers should avoid smoking around children and non smokers, especially indoors and enclosed spaces such as motor vehicles
- Smokers must adhere to state and national legislation governing smoking restrictions e.g. within 10 metres of a building entrance and designated signed public areas

1. The facts^{1,2,3,4}

- Around 3.3 million Australians smoke
- Smoking remains the behavioural risk factor responsible for the highest levels of chronic conditions and premature deaths in the world^{1,2,3} (see Table 1)
- The financial burden on Australian taxpayers was estimated at \$31.5 billion in 2004-05¹
- Although falling, the incidence of smoking among Aboriginal and Torres Strait Islander populations continues to be higher than the non-Indigenous population²
- Reducing parental smoking rates is the intervention with the clearest effect on youth smoking uptake²
- Up to 2/3 of current smokers will die 10 years earlier than non-smokers from smoking related diseases⁴

- Health professionals play a key role in preventing cigarette uptake and supporting cessation²

1.1 High prevalence populations^{1,5}

- In 2010, populations that accounted for smoking rates higher than the general population included
 - low socioeconomic groups (24.6%)
 - those who are unemployed (27.6%)
 - the homeless
 - those who are imprisoned (74%)
 - those with a mental illness (66%)
 - those with drug or alcohol dependency
 - those living in remote areas (28.9%)

Table 1. Known health effects of smoking on organs^{2,7,8,9}

Organ	Effect
Eyes	• Macular degeneration and cataracts
Hair	• Hair loss
Skin	• Ageing, wrinkles and wound infections
Brain	• Stroke
Mouth and pharynx	• Cancer and gum disease
Lungs	• Cancer, chronic bronchitis, bronchiectasis, emphysema, tuberculosis and pneumonia
Heart	• Coronary heart disease and myocardial infarction
Stomach	• Cancer and ulcers
Pancreas	• Cancer
Bladder and kidney	• Cancer
Female reproductive system	• Cervical and ovarian cancer, early menopause and irregular and painful periods
Male reproductive system	• Erectile dysfunction
Arteries	• Peripheral vascular disease
Bones	• Osteoporosis, cancer
Liver	• Cancer
Hands and feet	• Pain, gangrene and amputation
Unborn fetus (smoking mother)	• Cardiovascular/heart defects, musculoskeletal defects, limb reduction defects, missing/extra digits, clubfoot, craniosynostosis, facial defects, eye defects, orofacial clefts, gastrointestinal defects, gastroschisis, anal atresia, hernia, leukaemia, behavioural problems (e.g. ADHD), nicotine dependence and undescended testes

1.2 During pregnancy

- Approximately 14.5% of women in Australia smoke during pregnancy²
- Maternal smoking is associated with significant fetal defect risks including cardiovascular, musculoskeletal and gastrointestinal systems, orofacial clefts and cryptorchidism (absence of one or both testes)⁶

1.3 Infants and children exposed to smoke

- Children are particularly susceptible to the effects of secondhand smoke due to their
 - higher breathing rates per body weight
 - greater lung surface area relative to adults
 - immature lungs
 - inability to control their environment
 - inability to take steps to avoid exposure⁶
- Children are 6 times more likely to be exposed to smoking if
 - they come from households with lower income
 - there is a lower parental (or head of house) education level
 - they live with multiple adult smokers⁵
- 23% of the most disadvantaged households do not ban smoking indoors⁵
- Postnatal exposure to secondhand smoke doubles the risk of SIDS due to⁷
 - thickening and inflammation of the airways
 - increased susceptibility to lung infections
 - the body's impaired control over respiration and heart rate
 - an impaired automatic response to start breathing again after an episode of apnoea
- Children exposed to secondhand smoke experience higher rates of
 - childhood asthma
 - respiratory tract infections
 - decreased lung function
 - middle ear disease
 - reduced sense of smell
 - longer term developmental effects and
 - childhood cancers

1.4 School students⁵

- The majority of smokers start smoking as teenagers
- In 2011, 15% of those aged 17 years smoked in the last week

1.5 Aboriginal and Torres Strait Islander populations^{1,5,6}

- In 2013, Aboriginal and/or Torres Strait Islander Australians aged 14 years and older were 2½ times more likely to smoke daily than non-Indigenous Australians
- Aboriginal and/or Torres Strait Islander women were more than 3 times more likely to

smoke during pregnancy (49.6%) than non-Indigenous women

2. Pathophysiology of smoking^{5,8,10,11}

- Many of the more than 4000 compounds found in tobacco smoke, have toxic, mutagenic or carcinogenic effects
- Carbon monoxide, fatal in large doses, displaces oxygen in blood, starving the lungs, heart, brain and other organs of the oxygen they need to function efficiently. These same risks transfer to the fetus of a smoking mother
- Tar, a sticky brown substance, coats and irritates the lungs, increasing the amount of mucus and restricting breathing
- Nicotine in tobacco, a lethal nerve toxin, is the most addictive of these compounds
- Cigarette smoke rapidly delivers nicotine to the brain as it is drawn into and absorbed by the large surface area of the lungs
- Nicotine affects specialised cell receptors in the brain and other organs and muscles to produce a wide range of physical reactions including
 - increase in heart rate and blood pressure
 - decrease blood flow in the skin, producing a subjective drop in temperature
 - increase blood flow in skeletal muscle
 - vasoconstriction (narrowing) of coronary arteries
 - altered brain waves
 - endocrine changes
 - relaxation of skeletal muscles
 - increase in metabolic rate and appetite suppression
- Smokers become accustomed to certain levels of nicotine in their blood, which is maintained by continued self-administration
- As the effects of nicotine diminish, smokers increase cigarette use, puff frequency and puff depth to maintain nicotine affects
- Nicotine levels rise quickly after smoking a cigarette then fall slowly over 6 - 8 hours, gradually accumulating in blood over the course of a day
- The primary sites for metabolism of nicotine are the liver, lungs and brain, while up to 1/3 of nicotine by-products are excreted in the urine⁵
- The chemicals in tobacco smoke increase the metabolism of certain drugs by human cytochromes CYP1A2 e.g. clozapine, theophylline, warfarin and caffeine and it may be necessary to adjust dosages soon after smoking is stopped

3. Intervention and support

- The first step to any intervention is determining a client's willingness to change their behaviour
- Listen to the person
- Speak and interact with the person in a non-judgemental, compassionate, patient, open, honest, sincere and supportive way, rather than threatening, confronting or lecturing

- Outline what can be provided and how the client can be assisted
- Acknowledge the difficult nature of tobacco addiction
- The only person who can reduce tobacco intake is the person involved
- Many lifestyle changes are required to change smoking behaviours
- Choosing not to quit smoking is a choice
- See the well resourced QUIT website at <http://www.quit.org.au>

3.1 Assessing nicotine dependence⁸

- Providing a clear smoking cessation pathway will assist the clinician to assess the client's nicotine dependence then advise and assist them to quit (see Resource 1)
- Figure 1. illustrates the pathway to provide effective intervention and support a client to cease smoking
- As nicotine in tobacco smoke reaches the brain's reward system, within seconds of inhalation activation of nicotine receptors triggers the release of pleasurable neurotransmitters
- The Fagerstrom Test for nicotine dependence can be used to assess the level of a client's nicotine dependence² (see Table 2)

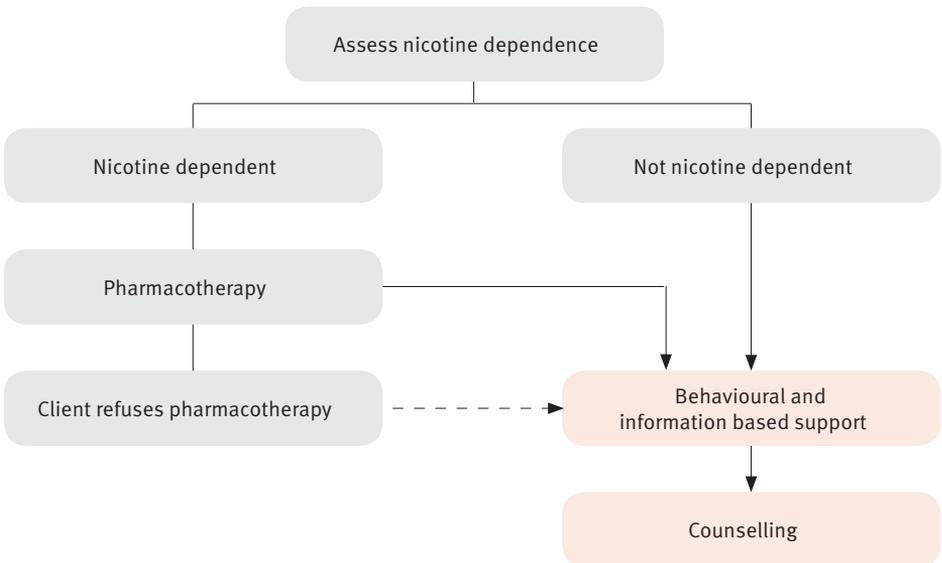


Figure 1. Intervention and support pathway for smoking cessation

3.2 Behavioural and information based support⁸

- Brief intervention from health professionals has been shown to be effective in encouraging smoking cessation¹

- Every smoker should be offered brief intervention for smoking cessation, including the following
 - suggestion or recommendation to consider quitting
 - an assessment of the smoker’s commitment to quit
 - offer of pharmacotherapy
 - offer of counselling behavioural support
 - self-help material
 - referral to Quitline (see Resource 2)

Table 2. The Fagerstrom Test for nicotine dependence^{2,5}

Questions	Answer	Score
How soon after you wake up do you smoke your first cigarette?	<ul style="list-style-type: none"> • Within 5 minutes • 6 - 30 minutes • 31 - 60 minutes • After 60 minutes 	<ul style="list-style-type: none"> • 3 • 2 • 1 • 0
Do you find it difficult to refrain from smoking in places where it is forbidden?	<ul style="list-style-type: none"> • Yes • No 	<ul style="list-style-type: none"> • 1 • 0
Which cigarette would you hate to give up most?	<ul style="list-style-type: none"> • The first one in the morning • All others 	<ul style="list-style-type: none"> • 1 • 0
How many cigarettes per day do you smoke?	<ul style="list-style-type: none"> • 10 or less • 11 - 20 • 21 - 30 • 31 or more 	<ul style="list-style-type: none"> • 0 • 1 • 2 • 3
Do you smoke more frequently during the first hours after waking than during the rest of the day?	<ul style="list-style-type: none"> • Yes • No 	<ul style="list-style-type: none"> • 1 • 0
Do you smoke if you are so ill that you are in bed most of the day?	<ul style="list-style-type: none"> • Yes • No 	<ul style="list-style-type: none"> • 1 • 0

Answers added to give a total score of 6 or more is seen as an indicator of high dependence

3.3 Counselling⁸

- Telephone, individual or group counselling have higher success rates of smoking cessation than approaches with minimal support
- Counselling involves scheduled phone or face-to-face meetings with a social worker or psychologist for at least 4 weeks after the last cigarette
- Group therapy involves scheduled meetings where clients receive information and encouragement in the form of behavioural intervention
- Counselling consists of mutual problem solving, skills training and social support as part of the treatment

3.4 Pharmacotherapy

- By reducing withdrawal symptoms and blunting the satisfying effects of smoking, medications can assist as an adjunct to smoking cessation

- Nicotine replacement therapy (NRT) agents (e.g. patches and chewing gum to aid cessation) facilitate nicotine absorption at lower doses and/or slower rates than cigarette smoke

4. Quit plan

- A quit plan involves a client⁸
 - setting goals and steps for quitting
 - quitting
 - maintaining tobacco abstinence, preferably with support

4.1 Identifying reasons to quit⁸

- The risks to health from smoking (see 1. The facts and 2. Pathophysiology of smoking)
- The health benefits of ceasing smoking (see Table 3)
- Cost of smoking e.g. 1 packet of 25 cigarettes at between \$17 and \$25 per day equates to between \$6200 and \$9100 per year (see Resource 3)
- Regaining control and being smoke free
- Clean breath, clothes and home
- Being a positive role model to children
- Protecting others from secondhand smoke

4.2 Preparing to quit⁸

- Understand a client's level of addiction
- Discuss common withdrawal symptoms including: cravings, irritability, trouble concentrating, restlessness, anxiety, low mood and poor concentration
- Discuss how to avoid triggering the urge to smoke by altering the learned smoking habits often tied to certain activities, places or people (see Table 4)

4.3 Choosing a method to quit⁸

- The likelihood of quitting tobacco increases when professional support or guidance is combined with nicotine replacement products or anti-craving pharmacotherapy (see Table 5)

4.4 Commencing

- Support the client to set a quit date and begin

4.5 Managing withdrawal⁸

- During the first 2 - 4 weeks post quitting most people will experience strong tobacco cravings and/or withdrawal symptoms. Besides changing routines (see Table 4) Table 6. offers practical tips to overcome withdrawal symptoms
- The withdrawal symptoms wane after the first few weeks post quitting as a person experiences whole days free of cravings and cigarettes
- As the months pass people may report cravings from time to time, especially when in

situations where they used to smoke or even in dreams

- During times of stress many people feel like the “quitting cigarettes” rules don’t apply e.g. sudden bad news, an argument, a relationship breakup or a car accident
- People will often recall how they used to have a cigarette to temporarily “manage” a situation. To prevent a relapse
 - be prepared to challenge and change invasive thoughts of wanting to smoke e.g. “I really need just one last cigarette”, “just one won’t hurt” or “I could get hit by a bus tomorrow”
 - use self-talk e.g. “I can do this”, “I’m a non-smoker now” or “I won’t let cigarettes rule my life”
 - accept but avoid dwelling on the smoking thought by focusing on a positive reason to quit such as children, a partner, money or simply a relaxing image
 - resist the temptation and the urges will pass
 - call the nominated coach or friend

Table 3. Timing of health effects from smoking cessation⁸

Time ceased	Health effect
Within 6 hours	<ul style="list-style-type: none"> • Heart rate slows and blood pressure decreases
Within a day	<ul style="list-style-type: none"> • Almost all of the nicotine leaves the bloodstream • Venous carbon monoxide levels fall • Oxygenation of muscles (including heart muscle) improves • Fingertips become warmer and hands steadier
Within a week	<ul style="list-style-type: none"> • Sense of taste and smell improves • The lungs’ ability to clear secretions, tar and dust begins to recover • Higher blood levels of antioxidants such as vitamin C
Within 2 months	<ul style="list-style-type: none"> • Reduced coughing and wheezing • The immune system begins to recover • Blood becomes less viscous and blood flow to hands and feet improves
Within 6 months	<ul style="list-style-type: none"> • Lung function improves, producing less phlegm • Stress levels decrease
After 1 year	<ul style="list-style-type: none"> • Lung function improves, breathing easier
Within 2 to 5 years	<ul style="list-style-type: none"> • A marked reduction in risk of heart attack and stroke • The risk of cervical cancer is the same as someone who has never smoked
After 10 years	<ul style="list-style-type: none"> • The risk of contracting lung cancer is lower than that of a continuing smoker
After 15 years	<ul style="list-style-type: none"> • The risk of heart attack, stroke and mortality is close to that of a person who has never smoked

Table 4. Smoking triggers and avoidance strategies⁸

Habit trigger	Suggested strategies to avoid smoking
First thing in the morning	<ul style="list-style-type: none"> • Have a shower first thing, exercise
With tea or coffee	<ul style="list-style-type: none"> • Explore non caffeinated drinks • Use a different cup or enjoy the drink somewhere different from usual
At morning or afternoon tea	<ul style="list-style-type: none"> • Read a magazine, get online or sit with different people
After lunch/dinner	<ul style="list-style-type: none"> • Go for a walk
Straight after work	<ul style="list-style-type: none"> • Listen to music, exercise, cooking or shopping
Before dinner	<ul style="list-style-type: none"> • Play with children, talk with friends
With alcohol	<ul style="list-style-type: none"> • Avoid or drink less alcohol for some time • Drink water every second drink • Change drink or hold drink in smoking hand • The more a person drinks, the more likely they will relapse due to losing sight of their goals
Stress	<ul style="list-style-type: none"> • Call a friend, go for a walk or play a game on the phone
When living with a smoker	<ul style="list-style-type: none"> • Make a smokefree house rule • Ask the person to help by not offering cigarettes and to smoke outside • Chew gum, bring a water bottle
At night in front of the TV	<ul style="list-style-type: none"> • Chew sugar free gum • Do a jigsaw puzzle
Just before bed	<ul style="list-style-type: none"> • Have a warm shower, read a book
Socialising	<ul style="list-style-type: none"> • Socialise with a non-smoking friend for support • Chew gum, drink bottled water, or play with a phone • Go to the bathroom, wash face, take some deep breaths • Step outside or leave and go somewhere else • Say “please don’t offer me a smoke, I’m quitting”, or “no thanks, I don’t smoke” • Go home early

Table 5. Options to quit smoking^{8,10,11}

Coaching		
<ul style="list-style-type: none"> Coaches can provide structure, motivation and support to <ul style="list-style-type: none"> – help organise and remind the person of what and when to do things – help develop reasons to quit – build confidence and encouragement – learn new skills to manage cravings, withdrawal, weight and/or stress Coaches can be a friend, health clinician or from a qualified service such as <ul style="list-style-type: none"> – Quitline or QuitCoach (see Resource 4) 		
Nicotine replacement therapy (NRT) (for > 8 week use)		
Patches	<ul style="list-style-type: none"> For those who smoke > 10 cigarettes/day and weigh > 45 kg <ul style="list-style-type: none"> – 25 mg/16 hour patch or – 21 mg/24 hour patch 	<ul style="list-style-type: none"> Nicotine is absorbed continuously when worn on the skin Can help to reduce withdrawal symptoms Available at a subsidised cost on a PBS prescription but not available at the same time as other PBS subsidised smoking cessation therapies (varenicline and bupropion) If a person is unsuccessful quitting using patches, they can access other PBS subsidised medicines in the same 12 month period
	<ul style="list-style-type: none"> For those who smoke < 10 cigarettes/day or weigh < 45 kg or have cardiovascular disease <ul style="list-style-type: none"> – 14 mg/24 hour patch or – 10 mg/16 hour patch 	
Gum	<ul style="list-style-type: none"> First cigarette > 30 minutes after waking <ul style="list-style-type: none"> – 2 mg (8 to 12/day) 	<ul style="list-style-type: none"> Chewed for a short while and parked in the side of the mouth as nicotine is released Taken at regular intervals to help prevent cravings or prior to situations where cravings are expected Not suitable with dentures or some types of dental work Can be used while cutting down on cigarettes prior to stopping
	<ul style="list-style-type: none"> First cigarette < 30 minutes after waking <ul style="list-style-type: none"> – 4 mg (6 to 10/day) 	
Lozenge	<ul style="list-style-type: none"> First cigarette > 30 minutes after waking <ul style="list-style-type: none"> – 1.5 mg or 2 mg (1 every 1 - 2 hours) 	<ul style="list-style-type: none"> Tablets that dissolve in the mouth Taken at regular intervals to help prevent cravings or prior to situations where cravings are expected Can be used while cutting down on cigarettes prior to stopping
	<ul style="list-style-type: none"> First cigarette < 30 minutes after waking <ul style="list-style-type: none"> – 4 mg (1 every 1 - 2 hours) 	
Oral spray and strips	<ul style="list-style-type: none"> If assessed as being nicotine dependent <ul style="list-style-type: none"> – up to 4 sprays per hour 	<ul style="list-style-type: none"> Sprayed or placed on the inside of the cheek or under the tongue Fast nicotine absorption compared to other oral nicotine products
	<ul style="list-style-type: none"> First cigarette > 30 minutes after waking <ul style="list-style-type: none"> – 2.5 mg (1 strip every 1 - 2 hours at least 9/day) 	

Table 5. Options to quit smoking (continued)^{8,10,11}

Nicotine replacement therapy (NRT) (for > 8 week use)	
Inhaler	<ul style="list-style-type: none"> • For those who smoke > 10 cigarettes/day • 6 - 12 cartridges per day • The inhaler is depressed during inhalation and the vapour is drawn into the lungs
Inhalator	<ul style="list-style-type: none"> • For those assessed as being nicotine dependent • 3 to 6 cartridges per day • The cartridge is inserted into the inhalator and the vapour is inhaled into the lungs • Can be puffed on as long as a client would a cigarette • The cartridge empties after around 80 puffs or 15 minutes
Anti-craving pharmacotherapy (doubles chance of quitting)	
Varenicline	<ul style="list-style-type: none"> • Smokers start varenicline and then set a quit date 1 - 2 weeks after starting (or later based on perceived effects of the drug) • As the medication reaches therapeutic levels, cigarettes become less desirable and thus easier to cut down prior to the quit date • Begin titration as follows <ul style="list-style-type: none"> – 0.5 mg once daily - days 1 to 3 – 0.5 mg b.d. - days 4 to 7 – Day 8 onwards - 1 mg b.d. until the end of week 4 • Continue with 1 mg b.d. for a further eight weeks • To reduce a relapse for those who successfully quit after 12 weeks continue with 1 mg b.d. for a final 12 weeks • May cause mild-to-moderate transient nausea requiring dose reduction
Bupropion	<ul style="list-style-type: none"> • An anti-craving medication that makes smoking less desirable • 150 mg daily for the first three days then increased to 150 mg b.d. • The client should stop smoking in the second week of treatment • May cause insomnia, rarely seizures (0.1% risk) and psychotic or manic symptoms, mainly with an existing psychiatric illness • Monitor BP if bupropion is used in combination with NRT
Cold turkey	
<ul style="list-style-type: none"> • Refers to quitting abruptly or suddenly (rather than gradually cutting down to no cigarettes) • Quitting cold turkey is most effective with coaching 	
Cutting down	
<ul style="list-style-type: none"> • Refers to reducing the number of cigarettes smoked each day over time, to a point of cessation • Some people decide to smoke only on the hour, for instance, then every 2 hours etc. until they are going all day without smoking • Research shows that quitting abruptly is more effective than cutting down 	
Others	
<p>Currently there is a lack of evidence that e-cigarettes (personal vapouriser) are safe to use, or that they help people to cease smoking. Likewise, hypnotherapy (alone), acupuncture or switching to lower strength cigarettes lack evidence to suggest they help to cease smoking</p>	

Table 6. Tips to overcome cigarette withdrawal symptoms⁸

Withdrawal symptom	Tips to overcome symptom
Cravings	<ul style="list-style-type: none"> • Usually last only a few minutes. Resist each one and they get less frequent until they're just memories • Exercise
Restlessness, difficulty concentrating and insomnia	<ul style="list-style-type: none"> • Deep breathing and relaxation exercises • Because smoking releases enzymes that metabolise caffeine, caffeine toxicity is common after quitting if intake remains the same • Reduce caffeine intake by 50% • Exercise • Do a jigsaw or crossword puzzle
Mood changes e.g. depression, sadness, crying, anger, anxiety or irritability	<ul style="list-style-type: none"> • Normal in the early phases of nicotine withdrawal • Within 6 months of quitting most people report that their overall mood is better and their stress levels lower • Exercise • Use a stress ball
Weight gain due to increase in appetite	<ul style="list-style-type: none"> • Have a piece of gum or fruit instead • Sip a glass of water slowly • Do some gardening
Cold symptoms, constipation, diarrhoea, stomach aches or nausea	<ul style="list-style-type: none"> • Vary diet with plenty of water • Refer to MO or NP for symptomatic relief

4.6 Managing weight gain⁸

- See [Physical activity, page 26](#) and [Diet and nutrition, page 14](#)
- Gaining weight is common in the months after quitting cigarettes due to
 - substituting the hand to mouth action of smoking with food rewards, snacks or treats
 - slowing of a person's metabolism in the absence of nicotine, to a healthier, more normal rate
 - an increased appetite
 - ability to better taste and enjoy food
- Prepare for changes to appetite and eating habits after quitting to prevent or minimise unwanted weight gain
 - plan meals and snacks ahead of time. Avoid opportunistic snacking
 - plan and cook tasty, healthier meals
 - avoid strict diets
 - avoid skipping meals
 - limit sugary snacks
 - increase exercise

4.7 Rewarding the ex-smoker⁸

- The client should learn to embrace being a non-smoker living a smokefree life with no need for cigarettes

- Encourage the client to celebrate the small early achievements and the long term achievement of being a healthier, happier and wealthier non-smoker
- By rewarding the persistence and dedication to their health and future, the client can continue to motivate themselves
- Calculate the savings from quitting (see Resource 3) and
 - save for a holiday
 - buy that much wanted something
 - start a new hobby

5. References

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11. Supporting smoking cessation: a guide for health professionals. Melbourne: The Royal Australian College of General Practitioners, 2011 [Updated July 2014]

6. Resources

1. An example of a smoking cessation clinical pathway tool to assist clinicians available at <http://www.health.qld.gov.au/caru/pathways/docs/smoking-pathway.pdf>
2. Quitline (137848) details and resources are available at <http://www.qld.gov.au/health/staying-healthy/atods/smoking/index.html>
3. Calculate the cost of smoking and/or the savings from quitting at <http://www.quit.org.au/reasons-to-quit/cost-of-smoking#CostCalculatorTool>
4. Quitline coaching available at <http://www.quit.org.au/preparing-to-quit/choosing-best-way-to-quit/quitline> and QuitCoach available at <http://www.quitcoach.org.au/>