Guidelines for preventive activities in general practice

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Prepared by the National Preventive and Community Medicine Committee of
The Royal Australian College of General Practitioners in conjunction with the
New Media Unit of the College

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The Royal Australian College of General Practitioners
College House
1 Palmerston Crescent
South Melbourne
Victoria
Australia

www.racgp.org.au

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Introduction

As the key providers of primary medical care, general practitioners (GPs) have a central role in the prevention of disease[1,2] and there is evidence that GPs in their practice can effectively provide preventive care that reaches the majority of the population.[3]

To be effective in this role, GPs need to be:

- opportunistic in offering preventive care when patients present with other problems or concerns
- anticipatory in routinely assessing the preventive care needs of their patients
- proactive in targeting preventive care most intensively to high risk individuals and reaching all of their patients especially those who are least likely to seek out assistance.

This involves looking beyond the individual consultation to the population of patients we serve. For example, we know that to be effective in immunisation or screening we must reach a large proportion of patients in our practice or community.

To do this effectively is difficult. Each preventive activity uses up some of the available time that GPs have to spend with their patients. Therefore it is important that each activity is based on sound research evidence of what is effective. This means that some things are not recommended in this preventive guide because the costs outweigh the benefits as demonstrated in carefully designed research studies. These guidelines only include activities of relevance to general practice where research has shown a demonstrated benefit.

Access to preventive care

One of the challenges for GPs is to ensure access to preventive care for all their patients. Some groups have increased risk of diseases because of social or other factors. The links between poor health and socioeconomic disadvantage have long being described in the Australian literature[4,5], including a relationship between mortality, social class and how connected people are to their communities.[6] 'The opportunities for health are affected by where people live, the skills they and their communities develop and the lifestyles they adopt'[7] and while poorer health makes disadvantaged groups major users of general practice, they are also the lowest users of preventive care services.[8]

Social and economic factors influencing health

- level of education
- occupational status
- employment status
- income
- place of residence
- migration

The poor health of indigenous Australians has many causes including these social and economic factors and the history of colonisation. It is also exacerbated by poor access to preventive treatment and late intervention, with many cases of chronic disease only diagnosed when complications are already present.

The implication of this in general practice is that GPs may need to have particular strategies to ensure that some groups of their patients receive the preventive care they need. This is dealt with more fully in the RACGP 'Green Book' *Putting Prevention into Practice – Guidelines for the Implementation of Prevention in General Practice*. However, the recommendations in this book also provide guidance about groups for which preventive actions may be taken at an earlier age (eg. influenza vaccination in indigenous Australian people over the age of 50 years). Additionally, in a number of areas particular disadvantaged groups who are 'at-risk' are identified for whom proactive effort is required to ensure that preventive care is available to them.

Development of the guidelines

The recommendations in this book are based on current evidence based guidelines for preventive activities. We have given precedence to those that are most relevant to Australian general practice. Usually this means that the recommendations are based on Australian guidelines such as those endorsed by the National Health and Medical Research Council (NHMRC) . In some cases, where these are not available or recent, we have looked to other Australian sources such as the National Heart Foundation or overseas to Canadian or US preventive guidelines. There is a list of references at the end of this book.

The recommendations in this book are consistent with the Medicare Benefits Schedule at the time of writing. Comprehensive periodic health assessment is currently only approved for patients over the age of 75 years or for indigenous people over the age of 55 years. However, preventive activities appropriate for their age and risk status, may be provided opportunistically to patients. For example, it is appropriate to check if a particular patient has been screened for cancer recently when they present for other conditions and screen at that or a subsequent visit. It is also appropriate to assess risk factors such as smoking, physical inactivity or obesity and offer interventions during the same or subsequent consultations if indicated.

Patient involvement

An explanation of the recommended preventive activity should always be provided to the patient. This is important even when advising a patient that a specific preventive activity is not recommended. For example, it is not recommended that asymptomatic male patients be screened with prostatic specific antigen (PSA). This is largely because of the poor specificity of the tests, the cost and morbidity associated with investigating false positives and the lack of evidence for reduced mortality and morbidity. Providing such an explanation to the patient reduces rather than increases the medico-legal risk to the doctor.

Structure

This book is designed for ease of use during the consultation. There is a section on what is new in this edition of the guide. There is also a 'how to use' section. The fold out life cycle chart provides an overview of what activities are recommended at each age. For each activity there is a paragraph summarising the key recommendations and a question and answer table outlining the details.

Scope and limitations

This guide has not included tertiary prevention or detailed information on the management of risk factors or early disease (eg. what medications to use in treating hypertension). Similarly it has not made recommendations about tertiary prevention (preventing complications in those with established disease) Also, information about prevention of infectious diseases has been limited largely to immunisation with limited advice about travel medicine. Information on travel medicine can be obtained from the Centres for Disease Control on www.cdc.gov/travel/index.htm or WHO International Travel and Health at www.who.int/ith/index.htm.

The information provided is based on the best available information at the time of writing. On past experience this means that the guide will remain current for no more than two years. Any updated information will be posted on the RACGP website. Australian readers can find other information and guidelines on the NHMRC website site www.health.gov.au/ and the Cochrane Collaboration at www.cochrane.org.au.

Acknowledgments

Task Force

Prof Charles Bridges-Webb
Dr James Chong
Prof Jim Dickinson
Dr Merelie Hall
Prof Mark Harris (Chairman)
Dr Pradeep Jayasuriya
Dr John Litt
Prof Brian McAvoy
Dr Sue Whicker

Project Officers

Ms Linda Bailey
Dr Douglas Cordell
Dr Suzanne McKenzie
Ms Sally Roach
Ms Elizabeth Seah
Dr Yvonne Zurynski

Other contributors

Elizabeth Harris and Julie McDonald (RACGP Health Equity Project)

Reviewers

Dr John Aloizos
Dr James Chong
Dr Jonathan Cohen
Prof Chris Del Mar
Dr Kristen Fitzgerald
Dr Merelie Hall
Dr Robert Hall
Assoc Prof Claire Jackson
Dr Beres Joyner
Dr Brian Kable
Dr Annette Kortlucke
Dr John Litt
Dr Carmel Martin
Dr Paul Mercer
Dr Benny Monheit
Prof Jenny Newstead
Dr Denise Ruth
Prof Debra Saltman
Dr Sue Whicker
Dr Ian Wilson

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How to use this book

This book is designed to be used in a number of ways, all of which can be useful in day-to-day general practice as:

- a refresher to check on the latest recommendations
- a reminder to check at a glance which preventive activities are to be performed in various age groups and how often
- a check list of preventive activities used according to an individual patient's health profile
- a check of current practice – compare your current practice to the most recent evidence based recommendations
- a study guide – a comprehensive list of references is provided with each section and links to further original sources are provided in the electronic version where appropriate, allowing you to gain more in-depth information on any particular topic
- a patient education tool – to demonstrate to patients the evidence that exists for preventive activities.

The information in this guide is organised into three levels of detail.

The first level is the life cycle chart, which highlights when preventive activities should be performed and the optimum frequency for each activity. The life cycle chart is organised by age rather than by clinical topic. This makes it easy to simply glance at the column under a particular age group to see which activities should be considered for the patient. The preventive activities that are recommended for everyone within a particular age range, and for which there is sound research evidence are shaded in a 'dark grey', while activities to be performed only in patients with risk factors or where the evidence is not as strong are shaded a 'light grey'.

A photocopy of this chart may be attached to the patient record as a systematic reminder for preventive activities. You may also use it as a wall chart or keep it handy on your desk.

The second level is more detailed and presents a summary of recommendations as well as tables that provide answers to commonly asked questions regarding a particular preventive activity.

Each recommendation in the tables is graded according to **levels of evidence** and the **strength of recommendation**. The levels of evidence are coded by Roman numerals I–V while the strength of recommendation is coded by letters of the alphabet A–E (Table 1).

The strength of recommendation is also included in the brief summary paragraph that accompanies each table, and is presented as a letter A–E in bold script and in brackets eg **(A)**.

The level and strength may not always match up. For example, there may be level I evidence for a particular procedure, therefore the strength of recommendation will be E. In some cases there is no evidence available so the column detailing level and strength of evidence will say 'no evidence'. On other topics the level of evidence may be low but the strength of recommendation is graded as high **(A)**. A good example of this is the recommendation that parents of babies and young children should avoid smoking – level of evidence is III since there are no randomised clinical trials on this but the strength of recommendation is A.

Only key references used to formulate the recommendations are included in the 'question and answer' tables. Where the evidence is available from the Internet, the Web page address is given to enable easy access to original materials.

Table 1. Coding scheme used for the levels of evidence and strength of recommendation

Levels of evidence*	
Level	**Explanation**
I	Evidence obtained from a systematic review of all relevant randomised controlled trials
II	Evidence obtained from at least one properly designed randomised controlled trial
III	Evidence obtained from any of the following: • well designed pseudo randomised controlled trials (alternate allocation or some other method) • comparative studies with concurrent controls and allocation not randomised (cohort studies), case-control studies, or interrupted time series with a control group • comparative studies with historical control, two or more single arm studies, or interrupted time series without a parallel control group
IV	Evidence obtained from case series, either post-test or pre-test and post-test
V	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees
no evidence	After thorough searching no evidence was found regarding recommendations in general practice for the target disease or condition
Strength of recommendation†	
Strength	**Explanation**
A	There is good evidence to support the recommendation
B	There is fair evidence to support the recommendation
C	There is poor evidence regarding the inclusion or exclusion of the recommendation but recommendations may be made on other grounds
D	There is fair evidence against the recommendation
E	There is good evidence against the recommendation

* The levels of evidence are an adaptation of those published in the NHMRC *A Guide to the Development Implementation and Evaluation of Clinical Practice Guidelines*, 1998.[9]

† The strength of recommendation coding scheme is adapted from the *Guide to Clinical Preventive Services*.[10]

Where possible, existing guidelines, particularly the most recent, and most relevant to the Australian general practice setting were evaluated. The tables include the levels of evidence for each recommendation in addition to a grading of benefit resulting from the recommendation. All appropriate references are cited here including those showing conflicting opinions and activities not recommended for screening. Where possible, electronic links to the original sources have been provided. This electronic version will be updated on a regular basis to include the most recent information available.

What's new – highlighting significant changes

Those who are familiar with the 1996 RACGP 'Red Book' *Preventive Guidelines for General Practice* will immediately notice several changes to this new edition. The material has been reorganised into clinical topics; various sections have been added and/or expanded; there is clear reference to level and strength of the evidence for each recommendation; and there are differing levels of information included to enable the reader to either take a brief look or a more considered in-depth view of the issues.

This edition now provides three levels of information. First, the comprehensive life cycle chart provides the GP with a quick overview of which preventive activities are relevant for each age group. The second level of information supplies brief recommendation(s) for each topic together with the level of evidence, strength of recommendation and key references for each suggested activity.

The material has been grouped into clinical topics and put together in themes, for example, blood pressure, cholesterol, smoking, alcohol, nutrition, weight and physical activity have been grouped together as risk factors for cardiovascular disease. The information on cardiovascular disease, genetic conditions, oral hygiene and oral cancer have been expanded and now provide a more comprehensive overview of these preventive activities. 'Preventive Activities for the Elderly' is a new section, detailing key issues to consider when caring for patients over 60 years of age.

Finally, there have been several important changes to the recommendations for preventive activities related to measuring cholesterol levels and screening for colorectal cancer, type 2 diabetes and osteoporosis. Clear recommendation has been provided about which age and high risk groups to screen for cholesterol and diabetes. Screening for colorectal cancer according to age and risk has also been clarified. Testing for osteoporosis has been advised again for certain high risk groups and includes recommendations for both men and women.

Glossary

Screening

Screening – detection of unrecognised disease or condition in the general population by using reliable tests, examinations or other procedures that can be applied rapidly.

Opportunistic screening – detection, or case finding of specific diseases that can be controlled better when detected early in their natural history, particularly in individuals or groups who may be predisposed to that disease, for example individuals with particular risk factors.

High risk individuals – those individuals who have risk factors that are likely to predispose them to a particular disease.

High index of suspicion – level of awareness of clusters of risk factors such as lifestyle, socioeconomic status, personal medical history and family medical history, which may predispose individuals to disease.

Evidence

Good evidence – there is good quality evidence obtained from randomised clinical trials to support or reject a recommendation.

Fair evidence – evidence obtained from studies such as well designed pseudo randomised controlled trials (alternate allocation or some other method), comparative studies with concurrent controls and allocation not randomised (cohort studies), case-control studies, or interrupted time series with a control group or comparative studies with historical control, two or more single arm studies, or interrupted time series without a parallel control group.

Poor evidence – evidence obtained from case series, either post-test or pre-test and post-test or opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

No evidence – exhaustive searches have revealed that there are no studies that address recommendations in general practice for the target disease or condition.

Prevention

Primary prevention – prevention of diseases or disorders in the general population by encouraging community-wide measures such as good nutritional status, physical fitness, immunisation, and a safe environment. Primary prevention maintains good health and reduces the likelihood of disease occurring.

Secondary prevention – detection of the early stages of disease before symptoms occur and the prompt and effective intervention to prevent disease progression.

Tertiary prevention – prevention or minimisation of complications or disability associated with established disease. Preventive measures are part of the treatment or management of the target disease or condition.

List of abbreviations

AF – atrial fibrillation
ADHD – attention deficit hyperactivity disorder
BMI – body mass index
BP – blood pressure
BRCA1 and BRCA2 – breast cancer 1, breast cancer 2
BSE – breast self examination
CF – cystic fibrosis
CIN – cervical intraepithelial neoplasia
CRC – colorectal cancer
CVD – cardiovascular disease
DRE – digital rectal examination
DTPa – diphtheria, tetanus, pertussis
FOBT – faecal occult blood test
HDL – high density lipid fraction
HepB – hepatitis B
HFE gene – hereditary haemochromatosis gene
Hib – *Haemophilus influenzae* type b
Hib PRP – OMP – specific vaccine for Hib
HNPCC – hereditary nonpolyposis colon cancer
HRT – hormone replacement therapy
IADL – instrumental activities of daily living
LDL – low density lipid fraction
MMR – measels, mumps, rubella
MMSE – Mini Mental State Exam
NHMRC – National Health and Medical Research Council
NTD – neural tube defects
OPV – oral poliovirus vaccine
PSA – prostate specific antigen
SES – socioeconomic status
STD – sexually transmitted disease
Td – tetanus vaccine
TIA – transient ischaemic attack
TSE – testicular self examination

Guidelines development process

These guidelines are based on the most recent evidence available (principally between 1996 and 2000). Thorough literature searches were performed, accessing sources such as the MedLine database, the Cochrane Reviews database as well as specific guidelines Web pages and the Web pages of peak bodies such as Diabetes Australia. All references were screened for relevance to Australian general practice.

Where possible, existing guidelines from Australia were used. If there were no Australian evidence based guidelines, guidelines from other countries, mainly United Kingdom, New Zealand and Canada were used.

The evidence level for each reference was determined according to the scheme outlined in Table 1, section III. The likely benefits and harms were also determined.

The evidence was collated into tables and assessed by members of the Task Force. Feedback from the Task Force members was then incorporated into the tables and further literature searches performed as required. Feedback was also sought from peak bodies and the final draft was reviewed by the National Preventive and Community Medicine Committee of the RACGP.

The guideline is current for May 2002. Update information can be obtained from the RACGP website www.racgp.org.au.

Preventive activities over the life cycle

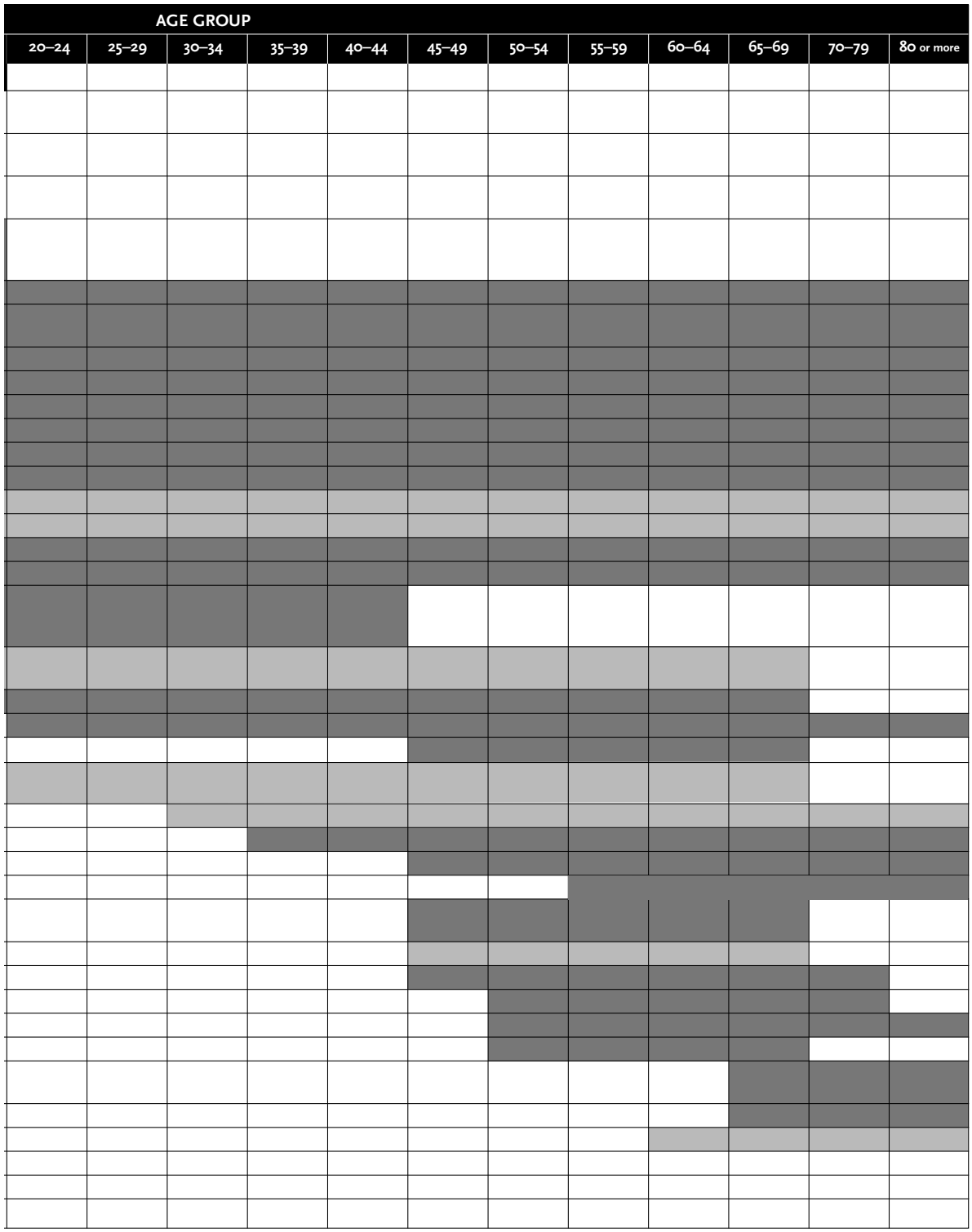
ACTIVITY/TOPIC	FREQUENCY	Page no	< 2	2–3	4–9	10–14	15–19
Parenting	All consultations						
Infants: Vitamin K, breastfeeding, SIDS prevention, injury prevention	See section 2.2						
Preschoolers: dental care, prevention of injury, sun protection	Annually						
School children: prevention of injury, sun protection, mental health	Opportunistically						
Adolescents: psychosocial, sexual development, depression and suicide, abuse, risk behaviours, education	Annually						
Immunisation	Please see Schedule						
Weight	Every 2 years in adults. Children – see section 2.4 and 2.5.						
Nutrition	History*						
Oral hygiene	Opportunistically						
Social support	Opportunistically						
Physical activity	History*						
Skin cancer	Annually/opportunistically						
Smoking	History*						
Depression	Opportunistically						
Suicide	Opportunistically						
Blood pressure	Every 2 years						
Alcohol consumption	History*						
Screening activities prior to pregnancy: Listeriosis, neural tube defects, rubella, smoking, alcohol and illicit drugs	Opportunistically						
Genetic screening – groups at risk (see section 4)	History*						
Cervical cancer	Every 2–3 years						
Family history of premature CVD	History*						
Cholesterol level	Every 5 years						
Cholesterol level in patients with major risk factors for CVD	Every 5 years						
Oral cancer	Case finding						
Diabetes – High risk groups 2†	Annually						
Diabetes – High risk groups 1‡	Every 3 years						
Diabetes	Every 3 years						
Specific stroke risk factors Screen for atrial fibrillation	Routinely while measuring BP						
TIA symptoms in high risk groups	Case finding§						
Osteoporosis – women	Case finding						
Osteoporosis – men	Case finding						
Colorectal cancer	Every 2 years						
Breast cancer	Every 2 years						
Elderly: including visual and hearing impairment, falls, urinary incontinence	Regular review						
Dementia	Case finding						
Glaucoma (identify high risk patients)	History*						
Testicular cancer			Not recommended as a preventive activity				
Prostate cancer			Not recommended as a preventive activity				
Scoliosis			Not recommended as a preventive activity				

* History to be taken for each patient once and updated as appropriate

† Diabetes high risk groups 2 – ATSI people, Pacific Islanders, people from the Indian sub-continent or China.

‡ Diabetes high risk groups 1 – people aged over 50 who have 1 or more of the following risk factors: BMI> 29; 1st degree relatives with type 2 diabetes; hypertension.

§ Case finding – patients at risk to be identified. The general practitioner should decide on frequency as needed in individual cases.



To be performed in the general population

To be performed in high risk groups only

Age	< 2	2–3	4–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	> 65

Immunisation is recommended for all children and adults at particular ages according to the Schedule **(A)**. General practitioners should advocate immunisation and counter the common misunderstandings and anti-vaccine campaigns.

The Australian Standard Vaccination Schedule shown here is that recommended by the NHMRC in the *Australian Immunisation Handbook*, 7th edition 2000.[11] For the immunisations at 2, 4, 6 and 12 months, two options for the use of combination vaccines, which meet these criteria, are recommended.

The Australian Standard Vaccination Schedule 2000–2002		
Birth	HepB[a]	
	Path 1[b]	Path 2[b]
2 months	DTPa-HepB and Hib and OPV	DTPa[c] and Hib (PRP-OMP)-HepB and OPV
4 months	DTPa-HepB and Hib and OPV	DTPa[c] and Hib (PRP-OMP)-HepB and OPV
6 months	DTPa-HepB and OPV	DTPa[c] and OPV
12 months	MMR and Hib	MMR and Hib (PRP-OMP)-HepB
18 months	DTPa	
4 years	DTPa and MMR and OPV	
10–13 years 1 month later 5 months after 2nd dose	HepB[d] HepB[d] HepB[d]	
15–19 years	Td	
Non-immune women who are post-partum or of child bearing age	MMR	
50 years	Td[e]	
50 years and over (indigenous Australian people)	Pneumococcal vaccine (every 5 years) Influenza vaccine (every year)	
65 years and over	Pneumococcal vaccine (every 5 years) Influenza vaccine (every year)	

Notes

a. Hepatitis B vaccine should be given to all infants at birth and should not be delayed beyond 7 days after birth. Infants whose mothers are hepatitis B surface antigen positive (HbsAg+ve) should be given hepatitis B immunoglobulin (HBIG) within 12 hours of birth.

b. Some states use Path 1 and others Path 2. When necessary, the two paths may be interchanged with regard to their hepatitis B and Hib components. For example, when a child moves interstate, they may change from one path to the other.

c. Wherever possible the same brand of DTPa should be used at 2, 4 and 6 months.

d. Adolescent hepatitis B vaccination is not necessary for those children who have previously received three doses of hepatitis B vaccine.

e. Td should be given at 50 years of age unless a Td booster dose has been documented in the previous 10 years.

National childhood pneumococcal schedule

Children eligible for the free pneumococcal vaccine are:

- All Aboriginal and Torres Strait Islander children (aged under 2 years)
- Aboriginal children in Central Australia and any region likely to have a similar very high incidence of pneumococcal infection (aged 24-59 months)
- Non-Aboriginal children in Central Australia (aged under 2 years)
- Children under 5 years of age with medical risk factors that predispose them to high rates or high severity of pneumococcal infection (see below)

Children with impaired immunity:

- congenital immune deficiency including symptomatic IgG subclass or isolated IgA deficiency but excluding children where monthly immunoglobulin infusion is required;
- diseases associated with immunosuppressive therapy or radiation therapy (including corticosteriod therapy equivalent to greater than 2mg/kg of prednisone for more than 4 weeks) where there is sufficient immune reconstitution for vaccine response to be expected;
- compromised splenic function due to sickle haemoglobinopathies or congenital or acquired asplenia;
- HIV infection;
- renal failure or relapsing or persistent nephrotic syndrome

Children with anatomical abnormalities:

- cardiac disease associated with cyanosis or cardiac failure;
- proven or presumptive cerebrospinal fluid leak.

Primary Vaccination Schedule

For all eligible children

Age	Vaccine	Product Name
2 months	7vPCV	Prevenar®
4 months	7vPCV	Prevenar®
6 months	7vPCV	Prevenar®

Booster Schedule

Aboriginal and Torres Strait Islander children in the Northern Territory (including Central Australia) and the desert or tropical regions of WA, Qld and SA. 18-24 months 23vPPS (Pneumovax 23®)	Children with impaired immunity 12 months 7vPCV (Prevenar®)

No booster is required for

Aboriginal and Torres Strait Islander children from other areas and Non-Aboriginal children in Central Australia	Children with anatomical abnormalities

See for recommended schedule for older children and 'Catch–Up'.

7vPCV: 7-valent pneumococcal conjugate vaccine (Prevenar®)

23vPPS: 23-valent polysaccharide vaccine (Pneumovax23®)

Transition from the old to the new schedule

All babies born on or after 1 May 2000 should commence the new Australian Standard Vaccination Schedule 2000–2002. Because of logistics, funding and vaccine interchangeability issues, all children born before this date should commence or continue with the previous schedule.

Administration

Almost all vaccines are given either by intramuscular (IM) or by deep subcutaneous (SC) injection. The major exceptions are OPV, oral typhoid and cholera vaccines, which are given orally, and bacillus calmetle-guerin, which is given by intradermal injection. Although IM or deep SC injection can be used for most vaccines, the IM route is generally recommended.

The anterolateral thigh is the preferred site for vaccination in infants under 12 months of age. The deltoid region is the preferred site for vaccination in older children (those who have commenced walking) and adults. The buttock should not be used as absorption of vaccine may be poor and sciatic nerve damage is possible especially in infants.

Vaccines in the routine childhood schedule can be given concurrently at the age appropriate time or with catch-up, however, each should be administered at a different body site in a separate syringe.

Interrupted vaccine doses and 'catch-up' vaccination

Minor illness, such as upper respiratory tract infection should not postpone administration. If the recommended intervals between doses are exceeded, there is no need to recommence the schedule or give additional doses, because the immune response is not impaired by such delay.

In some states or localities, immunisation is performed mostly or partially by public health authorities and immunisation clinics. However, even in those situations, GPs should check the child health record regularly to ensure that each child has had the correct immunisations, and administer any missed doses and those not provided by the public facilities. Any such doses should be recorded, and emphasis placed on the value of the record, for school entry and quarantine purposes.

Immunisations should also be checked for adults and any missing ones should be administered.

Issues to be considered when planning 'catch-up' vaccination:

- when commencing the recommended 'catch-up' vaccination schedule, the interval between doses may be reduced or extended and the number of doses will reduce with age
- as a child gets older the recommended vaccines change or they might need to be omitted from the schedule. For example, DTP-containing vaccines are used up to the eighth birthday and then Td is used
- never start the schedule again, regardless of the interval (unless there are no written vaccination records).

'Catch-up' for Hib vaccines (for children under 5 years of age)

Hib vaccines administered to children under 6 weeks of age are not effective. No Hib vaccines are recommended from 5 years onwards, except for patients with asplenia.

For immunisation to be effective there needs to be high rates of coverage of the relevant patient subgroups. Thus, GPs need to be aware of groups with lower levels of age appropriate immunisation including:[12]

- families with parents under 25 years[13,14]
- single parent families[13,15]
- families with more than one child[16]
- migrant families, particularly in the first years of their arrival in Australia or if a language other than English is spoken at home[13–17]
- families where the parents are unemployed[12,17] ,on low incomes[13,15] or with very high or very low education levels[14,16,18]
- families who move frequently[15]
- Aboriginal children in rural and urban areas.[19–21]

2. Health promotion and prevention in children and adolescents

Age< 2	2–3	4–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	> 65	

Parents and young children should be opportunistically assessed for the risk of child abuse **(A)**. Mothers should be supported to breastfeed and be assessed for the risk of postnatal depression **(B)**. Child health surveillance should be conducted opportunistically at the same time as other activities such as immunisation (2, 4, 6, 12 and 18 months and at school entry). Child surveillance should include assessment of growth using growth charts, age specific questions about development, speech, hearing and vision **(C)**.

There is clear evidence of poorer health among children and adolescents from socioeconomically disadvantaged families on many measures of physical emotional and social health[22] and from Aboriginal and Torres Strait communities.[23] Homeless young people reflect the most disadvantaged group and experience the worst physical, emotional and social health outcomes, including malnutrition, chronic infections, sexually transmitted infections, physical and sexual abuse and mental illness.[24]

2.1 Parenting

Topic/Activity	When?	Comments	Level of evidence and strength of recommendation	References
General interview(s) with parents	All consultations	Elicit and respond to parent concerns. Examine with parent(s) present to allow exchange of questions.	V–C	25–27
Child health record	All consultations	Maintain record for parents and encourage presentation at each consultation.	V–C	10
Postnatal depression	1–8 weeks	Maintain awareness. Depression impedes child care and may impair physical and emotional development with decreased IQ and increased behavioural problems of child.	V–C	28, 29
Contraception	6 weeks	Discuss with parents as early as possible.	V–C	10
Maltreatment and neglect	All consultations	Risk factors: low SES, young mother, little support, maternal history of abuse, large family, substance abuse, mental illness, child with special needs. Maintain awareness. Home visits by child health team for assessment/ prevention. There needs to be a close link between GPs and the home visiting service.	II–A	25, 30

2.2 Infants: 0–2 years

Topic/Activity	When?	Comments	Level of evidence and strength of recommendation	References
Vitamin K	1–8 weeks	If not given IM, give orally.	V–C	32
Biochemical screening tests	1–8 weeks	GP check that results are normal – phenylketonuria, thyroid function, cystic fibrosis.	II–A	30
General physical examination	1–8 weeks	Especially heart, testes, hips, squint. Ask questions in personal health record to identify hearing problems.	V–C	30
Breastfeeding: promote	All consultations		V–C	
SIDS prevention advice	Opportunistically	Sleep supine, do not overheat, and put at foot of cot. Avoid passive smoking.	IV–A	31, 33
Accident/injury: counsel	Opportunistically	Include home safety; stair guards, fire guards, smoke detectors, hot water < 54°C, safe poison storage; child safety, never leave in water, non-flammable wear, have charcoal.	II–A	30, 34, 35
Sun protection advice	Opportunistically	Avoiding sun exposure in the first 10–15 years of life is most important.	II–B	10, 30
Growth – height, weight, head circumference	6 times, every 3–6 months	Use growth charts in child health record.	III–B	30
Hearing Vision Speech Development	Opportunistically	Screening not recommended in general practice. Opportunistic case finding of problems reported by parents is essential.	IV–D	27

2.3 Preschool: 3–5 years

Topic/Activity	When?	Comments	Level of evidence and strength of recommendation	References
Growth – height, weight, body mass index	Annual	Use growth charts.	III–B	30
Dental care	Annual	Visit dentist/GP to check teeth and gums.	III–A	30
Accident/injury: counsel	Opportunistically	Include water safety, swimming, car restraints, bicycle helmets. Counselling has been shown to change behaviour.	II-B	30, 34, 36, 37
Sun protection: advice	Opportunistically	Most effective prevention through schools. Benefit of GP advice uncertain.	II–B	10, 30
Physical activity	Opportunistically	Advise participation in physical activity (see Section 5.6).		
Hearing Vision Speech Development	Opportunistically	Screening not recommended in general practice. Opportunistic case finding of problems reported by parents.	IV–D	27

2.4 School age: 6–14 years

Topic/Activity	When?	Comments	Level of evidence and strength of recommendation	References
Accident/injury: counsel	Opportunistically	Include water safety, swimming, car restraints, bicycle helmets. GP advice effective in changing behaviour and the environment, but no proven decrease in injuries.	II-B	30, 34, 35, 37
Sun protection: advice	Opportunistically	Most effective prevention through schools. Benefit of GP advice uncertain.	II–B	10, 30
Growth – height, weight, body mass index	Opportunistically	Use growth charts. Discuss activity and inactivity and diet.	III–B	30
Physical activity	Opportunistically	Advise participation in physical activity (see Section 5.6).		
Educational progress	Annual	Consider learning disability, ADHD or abuse if progress inadequate.		
Mental health programs	Opportunistically	School programs effective, but no evidence about GP. Parent training not effective. GPs should be aware of local resources.	III–B	33, 38

2.5 Adolescence: 13–19 years

There is no good evidence for effectiveness of any interventions by GPs.

Topic/Activity	When?	Comments	Level of evidence and strength of recommendation	References
Growth and development	Annual	Relate to expectations, any concerns, and norms. Ask about diet and fitness.	V–C	25, 30
Psychosocial development	Annual	Ask about home, family support, social life, feelings, and perceptions of progress.	V–C	38
Physical activity	Opportunistically	Advise participation in physical activity (see Section 5.6).		
Educational progress	Annual	Consider learning disability, ADHD or abuse if progress inadequate.	V–C	30
Sexual development	Annual	Ask about acne, physical sexual development, risk behaviours for infection or pregnancy.	V–C	30
Depression and suicide	Annual	Ask how things are going in general, optimise chances for expression of feelings.	V–C	38
Abuse – emotional, sexual or physical	Annual	Maintain awareness of possible problems.	V–C	30
Risk behaviours	Annual	Ask about smoking, alcohol, and drugs.	V–C	30

2.6 Scoliosis

Age	< 2	2–3	4–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	> 65
	Not recommended for screening														

Screening for scoliosis is not recommended in general practice. There is evidence that early detection does not lead to improved long-term outcomes **(D)**.[1]

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Should GPs routinely screen for scoliosis in children?	No. There is no evidence available on screening performed by GPs. Screening in the general practice setting is not feasible since the prevalence of curves requiring bracing in the general population is low (0.06–3.00% reported incidence) and it would be necessary to screen 450 children to detect one affected child.	None available III–D	39 39
Other countries have school screening programs. Are they effective?	Mass school screening programs have been inadequately evaluated. There is no evidence to indicate these programs are effective.	III–C	39
Is the screening test accurate?	No. The screening test (Adam's forward bend) is inaccurate resulting in a high number of false positives, which in turn leads to over referral for X-rays.	III–D	39, 40
Are the treatments for scoliosis effective?	The effectiveness of treatment of curves by bracing, local surface stimulation or exercise therapy has not been established. Bracing for 18 hours per day or more has been shown to prevent curve progression as long as bracing continues. Compliance with such treatment is low and therefore overall effectiveness is also low.	III–D III–C	39, 41, 42 41

3. Preventive activities prior to pregnancy

Age	< 2	2–3	4–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	> 65

Some women wishing to conceive, especially those in older age groups, may have medical conditions that will require specific advice and management, (eg. diabetes, hypertension, epilepsy). The following screening activities apply to all women regardless of other medical conditions.

The mortality rate due to Listeriosis infection in foetuses and neonates is 30–50%. Education should be provided regarding the risk of Listeriosis **(C)**.

Folic acid supplementation is recommended to reduce the risk of neural tube defects for all women planning to become pregnant **(A)**.

All women with a personal or extended family history of Fragile X syndrome should be offered genetic testing prior to conceiving **(A)**.

Screening for rubella immunology is recommended for all women planning to become pregnant **(B)**. All susceptible non-pregnant women should be offered vaccination.

The use of tobacco, alcohol and other drugs by pregnant women is associated with adverse outcomes for the child. All women should be informed that tobacco affects foetal growth and all women should be advised to stop smoking **(A)**. Women should be advised about the dangers of alcohol and illicit drug use for the developing foetus, and advised to stop using drugs, and to limit or preferably cease drinking during pregnancy **(B)**.

Question	Answer	Level of evidence and strength of recommendation	References
Listeriosis			
Why is this important?	Mortality rate in affected foetuses and neonates is 30–50%.	V–A	44
What advice to give?	Good personal and food hygiene, advise avoidance of unpasteurised dairy products, soft cheeses, cold meats and raw seafoods.	V–B	43, 44
Neural tube defects – folate supplementation			
Who is at high risk?	Women with a family or obstetric history of neural tube defects.	V–A	10, 45, 46
What advice to give?	High risk women: 5 mg/day supplementation ideally beginning 3 months before conception and for first trimester. Other women: 0.5 mg/day supplementation ideally beginning 3 months before conception and for first trimester.	I–A	46
Is increasing foods rich in folate enough?	Evidence suggests supplementation should be used as red cell folate may not be raised sufficiently from dietary sources to maximise the prevention of neural tube defects.	II–D	45, 46
Are other supplements warranted?	No. Supplementation with other vitamins is usually not necessary and produces potential risk of vitamin overdose. In particular high dose of vitamin A may predispose to birth defects.	I–D	46

Question	Answer	Level of evidence and strength of recommendation	References
Fragile X syndrome Who should be screened?	All women with a personal or extended family history of the features below should be offered genetic testing prior to conceiving: • any male or female with intellectual disability, developmental delay or learning disability of ***unknown cause*** • any male with autism-like characteristics • individuals with a family history of ***undiagnosed*** intellectual disability or Fragile X syndrome • individuals with a previous Fragile X cytogenetic test that was negative or inconclusive.	I–A	47
How should they be screened?	See Section 4. Genetic screening.		
Smoking Who to screen?	All women (see Section 5.2).	I–A	10, 30, 48
What advice should be given?	Women should be informed that tobacco affects foetal growth and all women should be advised to stop smoking.	I–A	
	Evidence exists to suggest improved cognitive ability in children of mothers who quit smoking during gestation.	III–A	
Alcohol and illicit drugs Who to screen?	All women (see Section 5.7). It is important to identify those women with high alcohol intake.	III–B	10, 30
What advice should be given?	Women should be informed of the potential harmful effects of alcohol to the foetus and should be advised to limit or preferably cease drinking during pregnancy. Women should be informed that illicit drugs may harm the foetus and advised to avoid use.	III–B	

4. Genetic screening

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

There is insufficient evidence to recommend screening the population utilising genetic testing **(C)**. Genetic tests are appropriate for certain conditions where the individual is considered to be at high risk, for example, breast cancer, cystic fibrosis, Down syndrome, and hereditary haemochromatosis, haemoglobinopathy and Fragile X syndrome **(A)**.

To identify patients who may potentially benefit from genetic testing, the GP must ensure that an adequate family history is taken from all patients **(A)** and regularly updated.

The presence of genetically determined disease may be suggested by the following: increased frequency and early onset of cancers in families, unexplained intellectual disability, birth defects, multiple pregnancy losses or still birth or early death, children with multiple congenital abnormalities. Also, patients of particular ethnic backgrounds may be at higher risk and benefit from genetic testing. General practitioners should refer to a genetic clinic for testing because test results that rely on sensitivity, specificity and positive predictive value are not straight forward. Also, testing often involves complex, ethical, social and legal issues.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Are there any conditions for which routine genetic screening is necessary in general practice?	No. Genetic screening should be undertaken when a patient is considered at risk of a genetic disorder suspected from the family history or a particular ethnic background. This recommendation may change in the future.	II–A	49
When should genetic testing be done?	Genetic testing should be undertaken after the family history has been established in detail. Genetic testing should be conducted under the supervision of a clinical geneticist, an appropriate specialist or ethically approved clinical research group, and it should be supported by appropriate counselling. Fragile X syndrome and haemochromatosis may be exceptions to this.	V–C	50
What information is necessary in taking a family history?	At the minimum, the following is required: • information from three generations of both maternal and paternal family line. • record if alive or dead • record age of onset of disease • identify affected 1° or 2° male or female relatives* on either side of the family.	V–C	49, 51

Question	Answer	Level of evidence and strength of recommendation	References
Breast cancer Who should be referred for genetic testing ?	High risk patients: • three or more 1° or 2° relatives on the same side of the family diagnosed with breast or ovarian cancer • two or more 1° or 2° relatives on the same side of the family with breast or ovarian cancer including any of the following high risk features: bilaterality, diagnosed at age 40 or younger, breast and ovarian cancer in one individual, or breast cancer in a male • one 1° or 2° relative diagnosed with breast cancer at age 45 or younger plus another 1° or 2° relative on the same side of the family with sarcoma (bone/soft tissue) at age 45 or younger. • member of a family in which the presence of a high risk breast cancer gene mutation has been established. Moderately high risk patients may also need to be referred for testing i.e: • one or two relatives diagnosed with breast cancer before 50 years (without potentially high risk features – see above) • two 1° or 2° relatives on the same side of the family diagnosed with breast cancer or ovarian cancer (without potentially high risk features – see above).	III–B	51
How should they be tested?	Women in high risk groups may carry BRCA1 or BRCA2 mutations. These women need testing through an accredited clinical genetic service.	V–C	51
Ovarian cancer	Women who carry BRCA1 and BRCA2 mutations are also at high risk of developing ovarian cancer. Such women will require ongoing surveillance.	III–B	51
Cystic fibrosis Who should be referred for testing?	• those with a family history of CF • those whose partner is affected or is a known carrier of CF • partners from northern European backgrounds who are consanguineous (i.e. cousins married to each other).	III–B	52, 53
Should testing be offered antenatally to all women?	No. There is no evidence that this should be done at present.	V–C	

Question	Answer	Level of evidence and strength of recommendation	References
Down syndrome Who is at higher risk?	• women who have had a previous Down syndrome pregnancy. • women of advanced maternal age. However, because of the higher absolute number of pregnancies among young women they also have the greatest number of affected pregnancies.	V–C	49, 54
Should prenatal screening be offered to all women?	Yes. Women of high maternal age should be encouraged to undergo screening. Younger women should also be offered a screening test for the reasons outlined above. Only high risk individuals identified by past history or the results of second trimester maternal serum screening (or other accepted prenatal tests performed in accredited centres) should be referred for foetal diagnostic genetic testing.		
What are prenatal screening tests?	Second trimester screening tests include the Triple and Quadruple tests depending on location combined with ultrasound. First trimester tests include nuchal translucency measured by ultrasound. The latter is only available from private laboratories in some capital cities at present.		
Hereditary haemochromatosis Who should be screened?	• patients with liver disease of unknown cause, including patients with suspected alcoholic liver disease • all 1° or 2° relatives of the haemochromatosis patients and those who have an altered HFE gene • other increased risk groups, such as, patients with conditions that could be a complication of haemochromatosis (i.e. diabetes mellitus, atypical arthritis, cardiomyopathy, impotence or chronic fatigue).	II–A	54, 55
How do I screen?	Test for transferrin saturation and serum ferritin concentration. If transferrin saturation > 45% or ferritin is raised on more than one occasion test by DNA typing.	V–B	
What about family members of a positive case?	DNA typing should test all 1° or 2° relatives of an index case. Children in affected families should be tested at 10 years. However, young children need not be tested if the spouse of an index case does not have the C282Y mutation.	V–B	

Question	Answer	Level of evidence and strength of recommendation	References
Colon cancer Who should be referred for testing ?	Consider genetic testing for those at potentially high risk (< 1% of population): • three or more 1° or 2° relatives on the same side of family diagnosed with colorectal cancer or suspected hereditary non-polyposis colon cancer (HNPCC) • two or more 1° or 2° relatives on the same side of the family diagnosed with colorectal cancer, including any of the high risk features: – multiple colorectal cancers in one person – colorectal cancer before the age of 50 years • at least one relative with endometrial or ovarian cancer (suspected HNPCC); • at least one 1° or 2° relative with CRC with a large number of adenomas throughout large bowel (suspected familial adenomatous polyposis; FAP) • somebody in the family in whom the presence of a high risk mutation in the adenomatous polyposis coli or one of the mismatch repair genes has been identified • members of families with either FAP or definite or suspected HNPCC.	III–B	50
Haemoglobinopathies and Thalassaemia Who should be tested?	Patients from southern Mediterranean and South East Asian backgrounds, who are contemplating pregnancy, particularly where there is a family history of haemoglobinopathy. In some states with higher prevalence of at-risk ethnic groups all pregnant women are screened by MCV.	III–B	56

Question	Answer	Level of evidence and strength of recommendation	References
Fragile X syndrome Who should be tested?	• any male or female with intellectual disability, developmental delay or learning disability of ***unknown cause*** • any male with autism-like characteristics • individuals with a family history of ***undiagnosed*** intellectual disability or Fragile X syndrome • individuals with a previous Fragile X cytogenetic test that was negative or inconclusive.	I–A	47
What about women contemplating pregnancy?	All women with a personal or extended family history of the above features should be offered genetic testing prior to conceiving.	V–B	
What about pregnant women?	Pregnant women or their partners with a family history of Fragile X syndrome or intellectual disability of unknown cause or women with a history of premature menopause should be offered genetic testing for Fragile X carrier status.	V–B	
How do I test?	Testing is for karyotyping (cytogenetic studies) and DNA studies using blood collected in a lithium heparin tube.		

* 1° relatives – parents/siblings. 2° relatives – aunts/uncles/nieces/nephews/grandparents.

5. Prevention of cardiovascular disease

Cardiovascular disease (CVD) is the leading cause of death and disability among Australians, accounting for 21.9% of the total disability-adjusted life years lost in 1996.[57] Cardiovascular events including myocardial infarction (MI), transient ischaemic attacks (TIA) and stroke are preventable and GPs are well placed to implement screening and prevention procedures that will reduce the human and economic burden of these diseases **(A)**.

An underlying principle for approaching the prevention of CVD in clinical practice should be from the perspective of an assessment and understanding of the absolute CVD risk in the individual patient. Sections 5.1-5.7 deal with activities relevant to the reduction of absolute CVD risk. Although each section has stand-alone recommendations, all must be considered to determine absolute CVD risk. Charts used to determine absolute CVD risk for individual patients are included in **Appendix III**.

Risk factors for heart, stroke and vascular diseases are far more prevalent in people from low socioeconomic status (SES) and in indigenous Australians.[4] There is evidence that the health risk status of lower socioeconomic groups is improving, probably related to improved diet, smoking rates and awareness of preventive care.[58,51] This suggests that targeting CVD preventive activities to low SES groups may be beneficial.

5.1 Blood pressure

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Blood pressure should be measured in all adults from age 18 years at least every 2 years **(A)**. The risk of myocardial infarction, stroke and renal dysfunction increases with elevated blood pressure – the higher the pressure the higher the risk, especially when other risk factors are present.[57,59–62] High blood pressure accounts for 5.4% of the total disease burden in Australia.[5] If elevated blood pressure is detected on at least two separate occasions, treatment should commence with lifestyle measures **(B)**.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
When to start screening?	At age 18.	I–A	63–65
When to stop screening?	No upper age limit for screening has been reported.	None available	
High risk groups?	Patients with elevated blood pressure and other risk factors for cardiovascular disease (eg. family history of premature CVD, diabetes, multiple lifestyle risk factors such as obesity, smoking or target organ damage such as renal disease). Populations at high risk include indigenous Australians and those from low socioeconomic groups.	III–A	63–65 59, 60
How often to screen?	Every 2 years if measured blood pressure normal, systolic < 130 mmHg **and** diastolic < 85 mmHg.	I–A	63–65
Should those in higher risk groups be screened/ assessed more often?	Yes. Those with diabetes or target organ damage should be screened every 6 months. Those with multiple risk factors every year. See table 5.2 for recommended frequency if the last measured blood pressure elevated.	I–A	63–65

Question	Answer	Level of evidence and strength of recommendation	References
Optimum method of screening/assessment?	Measure blood pressure preferably using a well-maintained and accurately calibrated sphygmomanometer with an appropriate cuff size. Blood pressure should be measured on at least two separate occasions with the patient relaxed and in a sitting position.	I–A	63–65
When should I determine the overall risk of CVD?	When hypertension has been confirmed, the level of absolute CVD risk should be determined (see Appendix III). The higher the overall risk the more urgent and the more vigorous the management.	III–B	62–65
Preventive actions to be taken/advice to be given as a result of screening?	When blood pressures of systolic > 130 mmHg and diastolic of > 85 are detected offer advice on modifiable risk factors: weight reduction, healthy eating in particular dietary sodium intake, alcohol consumption, regular moderate physical activity and smoking cessation (see sections 5.2–5.7).	I–A	63–66
When to consider drug treatment?	Lifestyle measures should be the first treatment option for hypertension. • For patients with low absolute CVD risk monitor for 6–12 months. If BP remains elevated SBP ≥ 150 and DBP ≥ 95 begin drug treatment. • For medium risk patients monitor for 3–6 months. If BP remains elevated SBP ≥ 140 and DBP ≥ 90 begin drug treatment. • When BP elevated above normal and CVD risk high or very high begin drug treatment.	III–B I–A I–A I–A	63-66
Benefits of screening?	Prevention of cardiovascular disease and stroke, reduction in CVD risk.	III–B	63–65

Table 5.1. How to grade blood pressure*

Systolic (mmHg)	Diastolic (mmHg)	Grade
less than 130	less than 85	normal
130–139	85–89	high-normal
140–159	90-99	mild hypertension
160-179	100-109	moderate hypertension
180 or more	110 or more	severe hypertension

If systolic and diastolic blood pressures fall into different categories, the higher category should apply.

Table 5.2. Suggested clinical management for untreated patients according to last measured blood pressure*

Systolic (mmHg)	Diastolic (mmHg)	Action
< 130	< 85	recheck in 2 years
130–139	85–89	recheck in 1 year; offer lifestyle advice
140–159	90–99	confirm within 2 months; offer lifestyle advice
160–179	100–109	evaluate and refer within 1 month; offer lifestyle advice
> 179	> 109	evaluate and refer within 1 week (or immediately depending on clinical situation)

If systolic and diastolic categories are different, allow recommendations for shorter follow up (eg. BP 160/86 — evaluate or refer within 1 month).

* Tables 5.1 and 5.2 modified with permission from: WHO ISH guidelines for the management of hypertension. Journal of Hypertension 1999; 17:151–183.

5.2 Smoking

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Smoking status should be assessed for every patient over the age of 10 years. **Patients** who smoke, regardless of the amount that they smoke, should be offered brief advice to stop smoking **(A)**.[63,67–69] In 1998 it was estimated almost 10% of the total burden of disease in Australia was attributable to tobacco smoking.[5]

Question	Answer	Level of evidence and strength of recommendation	References
When to start screening?	All people aged 10 years or more.	I–A	63, 67–69
When to stop screening?	No upper age limit for screening has been reported.	None available	
How often to screen?	Take every opportunity to ask about smoking of cigarettes, pipes or cigars.	III–A	63, 68, 69
Which groups are at higher risk of developing smoking related complications and would benefit most from quitting?	• pregnant women • parents of babies and young children • indigenous Australians • people with mental illness • people with other chemical dependencies • people with smoking related diseases • people with diabetes or other cardiovascular risk factors • people from low SES groups.	I–A III–A	67, 69, 70 70
What methods to use when screening?	Include smoking status as part of routine history taking. Consider implementing systems changes at practice or clinic level (eg. using stickers in patient records as these have been shown to be effective in helping GPs to identify smokers and track progress).	I–A III–B	63, 67–69 68, 72
Is counselling from a doctor effective in getting people to quit?	Yes. Brief advice given by doctors during a single routine consultation is more effective than no intervention at all. Interventions work best in people who are ready and motivated to quit and follow-up support is provided.	I–A I–A	68, 69, 73 63, 67–69
Who should be referred to a quit program?	Motivated heavy smokers who are physically or psychologically addicted.	III–B	63, 68, 69
Who should be prescribed nicotine replacement therapy?	Physically addicted smokers who are motivated to quit.	III–B	63, 68, 69, 73
How should I assess readiness to quit?	This must be done in a non-judgmental and non-threatening way (eg. How do you feel about giving up smoking?).	I–A	63, 68, 69

Question	Answer	Level of evidence and strength of recommendation	References
Should I counsel non-smokers about passive smoking?	Yes. Although there is no evidence regarding the effectiveness of counselling, the strong evidence on the harms of passive smoking justifies counselling non-smokers, especially parents of babies and young children and pregnant women, to limit exposure to tobacco smoke.	III–B I–A (for pregnant women)	67, 72, 74–76
Benefits and risks of preventive actions?	Quitting smoking has benefits in reducing the risk of cancers, coronary artery disease, chronic obstructive airways disease and stroke. There are no risks from preventive actions.	III–B	63, 68, 69

National QUIT Line: 131 848.

More information including contact details for QUIT in individual states is available on www.quitnow.info.au

5.3 Cholesterol

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80
*															
**															

* General population without risk factors. ** Patients with risk factors for CVD

At-risk patients should be screened from age 18 as part of absolute CVD risk assessment **(A)**. There is strong evidence that people with high serum cholesterol levels have a greater chance of developing heart disease than do people with lower levels.[63,65,77,78] However, individual serum cholesterol levels are a poor predictor of risk and a systematic review of randomised controlled trials found no evidence that cholesterol reduction lowers overall mortality in people who have no existing cardiovascular symptoms.[45] Therefore screening of healthy people without risk factors is recommended every five years starting at age 45 (**A** for men, **C** for women).

Question	Answer	Level of evidence and strength of recommendation	References
When to start screening?	At age 45 for men and women.	I–A (men) III–C (women)	63, 65, 79, 80
When to stop screening?	No upper limit.	III–C	45, 63, 175
How often to screen?	Every 5 years.	V–B	79, 81, 82
Which at-risk groups should be screened?	Healthy individuals with: • risk factors such as smoking, hypertension, overweight III–B • family history of premature CVD in 1st degree blood relatives (men < 55 years and women < 65 years) • Patients with 10–15% or greater absolute risk of cardiovascular event in next 5 years (see Appendix III) Patients with the following existing diagnoses: • diabetes mellitus (types I and II or impaired glucose tolerance (see section 7). • CVD, peripheral arterial disease or ischaemic cerebrovascular disease • familial hypercholesterolaemia or familial combined hyperlipidaemia.	I–A III–B I–A	45, 65, 77, 81 81, 82
How often should we screen patients identified as being at risk?	Every year in those with existing diagnoses as outlined above. Frequency for healthy patients with risk factors should be determined according to cholesterol level and level of absolute risk for CVD (appendix III). Those individuals whose absolute risk is low and their measured cholesterol level is also low may not need re-testing for 5 years.	I–A	79, 81, 82
What should be measured?	Total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides. If cholesterol is raised (> 6mmol/L) or the LDL > 4 mmol/L, a second confirmatory sample should be taken on a separate occasion.	III–B	63, 78,81, 175

	Question Answer	Level of evidence and strength of recommendation	References
What preventive action should be taken?	All people regardless of their cholesterol level should be given dietary advice (see section 5.5). In patients whose cholesterol is raised, absolute CVD risk should be determined (see Appendix III). Those at low to moderate risk of CVD should be given dietary and other lifestyle advice and monitored more closely over the next year.	I–A	45, 63, 65, 81
When to consider drug treatment?	• when there has been no response to lifestyle changes, especially in patients at higher absolute risk for CVD • when cholesterol level is > 6 mmol/L or the LDL is >4 plus any two of the following risk factors — HDL < 1.0 mmol/L, family history, hypertension, overweight, smoking, IFG or IGT, microalbuminuria and/or renal impairment, age 45 years or more • when cholesterol is elevated due to familial hypercholesterolaemia.[4] See also National Heart Foundation Guide[175]	III-B I–A I–A	1, 45, 63, 65 63, 65, 175 63, 65
Benefits of preventive 78actions	Reduced risk of cardiovascular disease.	III–C	1, 63, 65,

5.4 Weight

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Body mass index (BMI) and adult abdominal circumference should be measured every 2 years for those patients who appear overweight or underweight **(A)**.

People who are overweight have a higher risk of disease including coronary heart disease, diabetes, hypercholesterolaemia, hypertension, and bone and joint disorders. Abdominal obesity is a major reversible health risk for adults, which contributes to many diseases. The presence of excess fat in the abdomen is an independent predictor of morbidity.[83–85] All patients identified as higher risk should be advised to modify their energy intake and physical activity habits.

Question	Answer	Level of evidence and strength of recommendation	References
What is the optimum method of screening?	• patient observation • calculation of BMI * and adult abdominal circumference** for those with an appearance that suggests under or overweight over the age of 12 years.	III–B	30, 83–86
Who is at higher risk for CVD?	BMI ≥ 25 **Adult abdominal circumference** increased risk: > 80 cm (F); > 94 cm (M) high risk: > 88 cm (F); > 102 cm (M).	III–B III–B	83, 86 84, 85, 87
Frequency of screening?	Routine screening every 2 years if history of BMI ≥ 25 or if < 18.	V–C	85

* BMI – Body weight in kilograms divided by the square of height in metres.

** Adult abdominal circumference is measured half way between the inferior margin of the last rib and the crest of the ilium in the mid-axillary plane taken at the end of normal expiration.

*** The grading system for weight measures (eg. BMI, abdominal circumference) relating to risk and clinical action points are based on European population studies, and some caution should be applied in relation to these details in other ethnic groups.

Healthy weights: Body Mass Index (kg/m^2) NHMRC

BMI	Grade
below 20	underweight
20–25 inclusive	normal weight
above 25 and up to 30	overweight
above 30	obese

Suggested criteria for anorexia nervosa

	BMI (kg/m^2)
Adults	< 17.5
Adolescents	
13 years old	< 15.5
14 years old	< 16.0
16 years old	< 16.5

5.5 Nutrition

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

While there is evidence that nutritional counselling is effective in changing diet, the role of the GP has not been adequately evaluated.[10,30]

Question	Answer	Level of evidence and strength of recommendation	References
Is assessment recommended?	There is insufficient evidence to recommend for or against a routine search for malnutrition.*	V–C	30
Preventive action?	Patients should be encouraged and supported to follow Australian dietary recommendations.†	V–A	88–90
Should vitamin supplementation be recommended for asymptomatic individuals?	Vitamin supplementation is not of established value in asymptomatic individuals (with the exception of folate).‡	V–C	30
Should asymptomatic individuals take beta-carotene or other antioxidants?	There is insufficient information that for the general population this results in improved health outcomes.	V–C	10

* Prevalence of nutritional deficiency is high in certain groups such as alcoholics, elderly living alone and in institutions.

† Dietary recommendations:

For adults

- adults should eat a diet low in fat, in particular low in saturated fat
- adults and children over the age of 2 years should eat a diet low in fat, in particular low in saturated fat
- maintain a healthy body weight by balancing physical activity with food intake
- enjoy a wide variety of nutritious foods
- eat plenty of breads and cereals, vegetables, including legumes and fruits
- eat only a moderate amount of sugars and foods containing added sugars
- limit intake of alcohol and encourage water as a drink
- eat foods containing calcium
- encourage and support breastfeeding
- increase dietary intake of iron
- choose low salt foods and use salt sparingly.

For children and adolescents:

- encourage and support breast-feeding
- children need appropriate food and physical activity for normal growth and development. Growth should be checked regularly.
- enjoy a wide variety of nutritious foods
- eat plenty of breads and cereals, vegetables (including legumes) and fruits.
- low fat diets are not suitable for young children. For older children, a diet low in fat and in particular, low in saturated fat, is appropriate
- encourage water as a drink
- alcohol is not recommended for children
- eat only a moderate amount of sugars and foods containing added sugars
- choose low salt foods. Eat foods containing calcium. Eat foods containing iron.

For people 65 years and older:

- enjoy a wide variety of nutrition foods
- keep active to maintain muscle strength and body weight
- eat at least 3 meals every day
- care for your food — prepare and store it correctly
- eat plenty of vegetables (including legumes) and fruit
- eat plenty of cereals, breads and pasta
- eat a diet low in saturated fats
- drink moderate amounts of water and/or other fluids
- choose foods low in salt and use salt sparingly
- include foods high in calcium
- use added sugar in moderation.

‡ See Section 3 – Preventive activities for those intending to become pregnant.

5.6 Physical activity

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Regular moderate exercise reduces all cause mortality, incidence of cardiovascular disease type 2 diabetes, hypertension, obesity, osteoporosis, colon cancer, falling, anxiety and depression (Level III evidence). All adults should be advised to participate in 30 minutes of moderate activity on most, preferably all the days of the week **(A)**. This may be aided by the use of a physical activity prescription **(B)**.

Question	Answer	Level of evidence and strength of recommendation	References
Who should be counselled to exercise?	All adults and children should be encouraged to participate in physical activity tailored to their health status and personal lifestyles. The addition of exercise prescriptions may assist in promoting short-term change in activity levels. Adults from low SES backgrounds are less likely to be physically active or engage in regular exercise and are more likely to have multiple CVD risk factors.	III–A	30, 91–93 94–96 59, 60
How much exercise is enough?	Advise moderate physical activity on most, preferably all days of the week for an accumulated time of 30 min/day or more. This can be achieved in 10 min sessions. Brisk walking for 30 minutes most days of the week would be ideal.	III–A	45, 91, 92, 97
Are there benefits in more vigorous exercise?	The duration of exercise is more important than intensity. While moderate exercise is recommended for a health benefit, more vigorous exercise may confer additional cardiovascular health, if carried out for minimum of 30 minutes 3–4 times a week.	II–B	91, 92
Are there dangers in vigorous exercise?	Sedentary individuals should be discouraged from undertaking sudden vigorous exercise in favour of moderate activity.	V–B	10
What type of exercise should I advise?	Exercise that does not need attendance at special facilities and one that the patient enjoys is likely to be more successful (eg. walking, swimming, cycling).	V–B	10

Moderate exercise: exercise that will cause a slight, but noticeable, increase in breathing and heart rate and may cause light sweating in some people.[97]

Vigorous exercise: activity that leaves you huffing and puffing and it is difficult to talk in full sentences between breaths. That is exercise at a heart rate of 70–85% of maximum heart rate (MHR). MHR is calculated as 220 minus age.[97]

5.7 Early detection of problem drinking

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

All patients should be asked about the quantity and frequency of alcohol intake from 14 years of age **(B)**. Australian men should limit their consumption to no more than 6 standard drinks of alcohol per day or to 28 per week; women no more than 4 standard drinks per day or 14 per week. It is recommended that there are alcohol free days each week.Drinking at risk levels is most common for men and women aged 30–45 years. The proportion of men drinking at risk levels is one and a half to two times that of women at all ages, especially binge drinking.[97] Brief interventions to reduce alcohol consumption should be offered to all patients with potentially hazardous levels of drinking **(A)**.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
When to start screening?	14 to 15 years.	II–B	10, 30, 98, 99
When to stop screening?	Continue indefinitely.	II–A	10, 30, 98, 99
Optimum frequency of screening in asymptomatic persons?	At least every three years.	II–A	99
Should those in higher risk groups be screened more often?	Whenever they present.	V–C	99
Groups not requiring screening?	Children.	V–C	10, 30, 95, 99
Optimum method of screening?	Ask about quantity and frequency of alcohol use. Consider using the AUDIT questionnaire (see Appendix I).*	V–A	98, 99
Methods of screening not recommended?	Routine measurement of biochemical markers.	V–D	98
High risk groups for complications?	People with high blood pressure or liver disease (Section 5.1); Pregnant women (Section 3).	I–A	98, 99
High risk groups for drinking and complications?	People showing 'red-flag' risk factors†	IV–B	98, 99
Advice to be given as a result of screening?	• simple advice to reduce alcohol consumption should be given to all potential problem drinkers. • everybody who uses alcohol should be counselled about the dangers of operating a motor vehicle or performing other potentially dangerous activities after drinking. • pregnant women should abstain from alcohol.	I–A II–B V–A	10, 30, 98–100 10, 98 10

Question	Answer	Level of evidence and strength of recommendation	References
Benefits and risks of preventive actions?	Numerous studies in Australia and the UK have shown that GPs providing brief advice have resulted in a 25–30% reduction in alcohol consumption and a 45% reduction in the number of excessive drinkers.	I–A	98, 99

* Alcohol Use Disorders Identification Test (AUDIT) is a 10 item screening instrument, developed by a WHO collaborative study to help identify patients at risk from harmful and hazardous drinking. A copy is included in Appendix I.

† Red-flag risk factors: accidents/trauma; psychological/psychiatric problems; family/relationship problems; employment problems; involvement in crime; sexual dysfunction; sleep problems. Particular attention should be given to young people and indigenous Australians in assessing risk.

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

At-risk groups should be identified and offered lifestyle advice **(A)**. Stroke causes approximately 10% of all deaths and 25% of chronic disability in Australia and people from low SES experience higher mortality. Patients with atrial fibrillation (AF), those with symptoms of transient ischaemic attacks (TIA), patients post myocardial infarction (MI) and those with diabetes are at higher risk than the general population. Aspirin should be considered for those who have both AF and other major risk factors such as hypertension, thromboembolism, MI and diabetes **(A)**.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
When to start screening?	Age 45 for men and women.	I–A	101
When to stop screening?	Age 70 has been recommended, however, may continue indefinitely.	V–C	101
What to screen for?	Hypertension (see Section 5.1) Smoking (see Section 5.2) Alcohol consumption (see Section 5.7) Overweight and obesity (see Section 5.4 and 5.5) Level of physical activity (see Section 5.6) Atrial fibrillation (see below) TIA (see below).	I–A III–B III–B III–B III–B I–A	101–103
Which groups are at higher risk?	People with diabetes, previous ischaemic attack or stroke, myocardial infarction or other cardiac disease (impaired left ventricular function or large left atrium), peripheral vascular disease or multiple lifestyle risk factors, hypertension or diabetes. People from low SES are a particular group with multiple risk factors.	III–B	101–104
Optimum methods for screening?	Screen according to methods described in appropriate sections. Atrial fibrillation: check routinely while measuring BP and by checking for history of palpitations.	I–A	101–103
Should people with lone AF be treated with prophylactic anticoagulants or aspirin?	The underlying cause of AF should always be determined and treated appropriately.* Warfarin reduces the risk of stroke by about two-thirds, and aspirin by about one-fifth. All patients with AF should be considered unless there are contra-indications or poorly controlled hypertension. Consider warfarin in those at high risk – aged over 65 years, previous TIA or stroke, valvular heart disease, recent myocardial infarction, impaired left ventricular function or left atrial thrombus, or thyroid disease. Consider warfarin or aspirin in those at moderate risk – under 65 65 years with hypertension or diabetes.	III–B	101, 176 See reference Hankey MJA below

Who should be screened for transient ischaemic attacks (TIA)?	Patients with previous myocardial infarction or other cardiac disease, peripheral vascular disease or multiple lifestyle risk factors and history of hypertension. Symptoms of TIA increase the risk of stroke by approximately 17 times. Patients at risk and their carers should be educated on how to recognise symptoms of TIA.	III–B I–A	101–103 101
How to screen for TIA?	Question patient or carer regarding dizzy spells or 'funny turns', weakness or numbness of arms or legs, speech disturbance, double vision or vertigo.	III–B	101
Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Methods of screening not recommended?	Do not screen for neck bruits or asymptomatic carotid artery disease. Bruit detection is unspecific and population studies show that there is no increased incidence of ipsilateral stroke among people with neck bruits. The risk of stroke in people with asymptomatic carotid artery disease is approximately equal to 1% – the same as for the general population.	III–D	101–103, 105
Preventive actions to be taken?	• Advise lifestyle risk factor modification in those with risk factors. • Treatment with anticoagulants should be considered for those who have both AF and other major risk factors or with anticoagulants or aspirin if there is AF and moderate risk factors (see above). • Anticoagulation should be considered in patients with documented TIAs due to AF. Antiplatelet therapy should be used if the TIAs are due to arterial disease.*	I–A I–A I–A	101–103 101, 104 101
Benefits and risks of preventive actions?	Prevention of stroke and other CVD. There are no risks associated with primary prevention measures. Be vigilant of risks due to anticoagulation therapies if used for secondary prevention.	III III	101, 102 101

* See also National Heart Foundation position statement on non-vascular atrial fibrillation and stroke prevention. MJA, 174: 234–348, 2001. www.mja.com.au/public/issues/174_05_050301/hankey/hankey/html

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80
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* Diabetes high risk groups 1 – people aged over 50 who have one or more of the following risk factors: BMI > 29; 1° relatives with type 2 diabetes; hypertension.

** Diabetes high risk groups 2 – ATSI people, Pacific Islanders, people from the Indian sub-continent and or China.

All patients should be screened every 3 years from age 55 years. This should commence from age 45 years in those with other risk factors or from age 35 years in indigenous Australians, Pacific Islanders or those from the Indian subcontinent or China **(B)**. High risk groups should be screened every year **(A)**.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Who to screen?	Patients aged 55 or more. Those with impaired fasting glucose or impaired glucose intolerance. Patients who are obese, having hypertension or have diabetes or who have had ischaemic heart disease or stroke. Aboriginal or Torres Strait islander people, Pacific Islanders and people from the Indian sub-continent or China. Women with previous gestational daibetes or polycystic ovary disease who are obese.	III–B	106–108, 109, 177
When to start screening?	At age 55 in the general population. At age 45 in people who have one or more of the following: • obesity (BMI >30) • 1° relative with type 2 diabetes • hypertension At age 35 in indigenous Australian people, Pacific Islanders, Chinese and people from the Indian subcontinent or women who have a previous history of gestational diabetes.	III–B	106, 109, 110, 177
When to stop screening?	No upper age limit reported.		
Optimum frequency of screening?	Every 3 years.	V–B	106
Have higher risk groups been identified?	Yes: • people with impaired glucose tolerance or impaired fasting glycaemia • people with cardiovascular disease or with multiple cardiovascular risk factors (see Section 5) • women with a history of gestational diabetes • women with polycystic ovary syndrome who are obese • people with a positive screening test not confirmed on subsequent testing.	 I–A I–A III–B III–B III–B III–B	 106, 107, 109, 110 106, 107 106 106, 109 106
Should those in higher risk groups be screened more often?	Yes. Screen every year.	V–B	106

Question	Answer	Level of evidence and strength of recommendation	References
Optimum method of screening?	Measure plasma glucose levels preferably on a fasting sample although a 'random' sample is acceptable for screening purposes. The test should be performed by a laboratory rather than by desktop glucometers since these are less accurate. To confirm the diagnosis of diabetes the oral glucose tolerance test should be used.	I–A I–A	106, 111 106, 111
How to interpret plasma glucose results?	• < 5.5 mmol/L – diabetes unlikely • 7.0 mmol/L or more fasting or 11.1 mmol/L or more random – diabetes likely, perform oral glucose test • 5.5–6.9 mmol/L fasting or 5.5–11.0 mmol/L random – perform oral glucose test.	III–B	106, 111
Preventive action to be taken?	Give advice on risk factor reduction – counsel patients on healthy low fat diet, weight loss and increased physical activity (see Sections 5.4, 5.5 and 5.6). Provide lifestyle interventions to patients with IGT or IFG. Provide pre-conception advice to women with a history of gestational diabetes.	III–B III–B	106–108 106–108
Benefits of screening?	Prevention of complications due to type 2 diabetes. Reduction in risk factors for type 2 diabetes.	III–B	106–109

8.1 Skin cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Screening for skin cancer is appropriate for high risk individuals **(B)**. Skin self examination should be encouraged for high risk individuals **(B)**. All patients, including children, should be advised to adopt protective measures when in the sun **(C)**.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Who should be screened?	High risk individuals.	III–C	30, 63, 112
Who is at high risk for skin cancer?	Those with multiple banal or dysplastic (atypical) naevi who have a history of melanoma and/or dysplastic naevi in 1° relatives. Other risk factors include a family history of melanoma, fair complexion, a tendency to burn rather than tan, the presence of freckles, the presence of solar lentigines, light eye colour, light or red hair colour or a past history of non-melanoma skin cancer. People with high levels of exposure such outdoor workers are at higher risk.	III–C	63, 112
When to start?	From early teenage years. Education regarding protection from sun should begin from birth (Sections 2.2–2.5).	V–B	10, 112
How often to screen?	When screening occurs it should be done at least annually. However, when examining patients for other reasons, GPs should remain alert for skin lesions with malignant features.	V–B	63
What advice should be given to the patient?	All patients (including children) should be advised to adopt protective measures when in the sun, especially between the hours of 10am–4pm. These measures include use of hats, sunscreens, protective clothing and sunglasses.	V–C	112
Should I advise skin self examination?	Yes. Those at high risk should be advised on the specific changes that suggest melanoma, and encouraged to perform self examination.	III–B	112

8.2 Cervical cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Pap smears are recommended for all women aged 18 to 70 years who have ever had vaginal intercourse and still have an intact uterus **(A)**. Pap smears should be performed every 2–3 years **(B)**. GP reminder and recall systems can be helpful in prompting women to have Pap smears.[113] Opportunistic screening of women who present for other reasons can increase uptake **(C)**. Using oestrogen pessaries prior to Pap smears in postmenopausal women can increase comfort and improve the smear quality **(D)**.

There is evidence to suggest that women from low socioeconomic status are less likely to have attended health services for a Pap smear[114, 115] and this is accentuated in the 50-69 year age group,[116] and that women living in low socioeconomic areas have a higher incidence of cervical cancer.[117]

Question	Answer	Level of evidence and strength of recommendation	References
When to start screening?	Screening by Pap smear to commence at 18 years if have ever had vaginal sexual intercourse.	II–A	30, 63
When to stop screening?	Screening to cease at 70 years if two normal smears in preceding 5 years.	III–B	30
Optimum frequency of routine screening?	Every 2–3 years.	II–B	63
Should those never having a Pap smear and aged over 70 be screened?	Screening to cease for this group only after two successive negative tests.	III–B	10, 118
Who does not require screening?	Women who have had a hysterectomy for a benign condition with complete removal of the cervix, or if never had sexual intercourse.	V–D	118
Who is at high risk for cervical cancer?	High risk groups – early age of first intercourse (< 16), multiple partners, genital Human Papilloma Virus (HPV) or other STD, and prior cervical intraepithelial neoplasia (CIN).		30, 118
Should high risk groups be screened more often?	No. There is no evidence to suggest that high risk groups should be screened more often, with the exception of recent diagnosis and treatment of CIN.	–C	30, 63, 118

8.3 Breast cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Screening every 2 years for women aged 50–69 years by mammogram is recommended **(A)**. Clinical breast examination (CBE) is not recommended as a routine screening test. Mammographic screening is not recommended for women under 40 years.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Who should be screened?	All women between the ages of 50–70 years should have a mammogram every 2 years. See also Section 4 *Genetic Screening* for screening of high risk women.	I–A	119, 120
Who is at high risk for breast cancer?	High risk patients: • three or more 1° or 2° relatives on the same side of the family diagnosed with breast or ovarian cancer • two or more 1° or 2° relatives on the same side of the family with breast or ovarian cancer including any of the following high risk features: bilaterality, diagnosed at age 40 years or younger, breast and ovarian cancer in one individual, or breast cancer in a male • one 1° or 2° relative diagnosed with breast cancer at age 45 years or younger plus another 1° or 2° relative on the same side of the family with sarcoma (bone/soft tissue) at age 45 years or younger • member of a family in which the presence of a high risk breast cancer gene mutation has been established. Moderately high risk: • one or two relatives diagnosed with breast cancer before 50 years (without potentially high risk features – see above) • two 1° or 2° relatives on the same side of the family diagnosed with breast cancer or ovarian cancer (without potentially high risk features – see above).	III–C	51, 120
Should women aged 40–49 years be screened?	The evidence to date shows a modest benefit of commencing screening from 40 years.*	I–C	120
Should women aged over 70 years be offered a mammogram?	There is no evidence on which to judge whether or not women over 70 years should be offered mammographic screening.	No evidence available–C	63

Question	Answer	Level of evidence and strength of recommendation	References
Should women under 40 years be screened?	Mammographic screening is not recommended for women under 40 years in the absence of significantly heightened risk*	III–D	10, 63, 121
Should clinical breast examination (CBE) be utilised for screening?	Clinical breast examination has not been shown to reduce mortality from breast cancer and is not recommended as a screening test for women at average or slightly increased risk. However, CBE remains an important clinical adjunct to mammography for the surveillance of women deemed to be of moderate to high risk.	III–C	63 51
Should breast self examination (BSE) be utilised for screening?	Recent randomised trials have shown that breast self examination (BSE) has little impact on mortality. However, the evidence against monthly BSE is not strong, suggesting that BSE should be neither promoted or discouraged. There is evidence that women are capable of detecting tumours without necessarily performing monthly BSE. Women should be encouraged to know their breasts ie. what is normal for them, and to have any changes in their breasts investigated. **BSE should not be promoted as a replacement for regular mammography.**	III–C II–A	63, 120,122-124, 174
Should those women with a family history of breast cancer be screened differently?	There is insufficient evidence to suggest the necessity for additional screening. An individualised surveillance program may be warranted depending on risk factors.	I–C	63, 120

* Women in 40–49 years age group should be advised that while there is a small benefit in mammogram screening, it needs to be weighed against factors such as their age (the benefits of screening may increase through the decade), family history, and their own personal concerns and their assessment of possible risks, which include anxiety, inconvenience, cost and discomfort.

NB. Breast Screen provides free screening mammography for asymptomatic women, phone 13 20 50.

8.4 Oral cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

There is insufficient evidence to recommend screening for oral cancer in general practice.

Question	Answer	Level of evidence and strength of recommendation	References
Who should be opportunistically assessed?	High risk patients: smokers, heavy drinkers, family members of patients with oral cancer.	V–C	10, 125
How often?	Annually.	V–C	125
Optimal method of assessment?	Inspection of the oral cavity – particularly floor of mouth, ventro-lateral aspect of the tongue and the soft palate.	V–C	125
Screening?	Screening not recommended.	V–D	30, 125

8.5 Colorectal cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Screening by faecal occult blood testing (FOBT) is recommended for all those over 50 years by the NHMRC National Cancer Control Initiative **(A)**. However opportunistic case finding only is recommended for general practice until current trials to determine the optimal type of tests are completed. The optimal frequency of routine screening in asymptomatic patients is every 2 years **(A)**. Digital rectal examination (DRE) is not recommended **(D)**. Colonoscopy is recommended every 1–2 years over the age of 25 for those at high risk **(A)**.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
When to start screening with FOBT?	All those over 50 years.	I–A	30, 126
When to stop screening?	Cease at 80 years.	A	126
Optimum frequency of routine screening in asymptomatic person?	Every 2 years.	I–A	50, 126, 127
Optimum method of screening?	Faecal occult blood test (FOBT).* Consider sigmoidoscopy 5 yearly.	III–B III–B	50, 126, 127 127
Is DRE recommended?	Not recommended as a screening activity.	III–D	10
Who is at increased risk for colorectal cancer (CRC)?	Slightly higher risk: 98% of population. No personal history of CRC or one relative with CRC diagnosed at 55 years or older. Moderately higher risk: 1–2% of population. One 1° relative with CRC diagnosed < 55 years or two 1° or 2° relatives on the same side of the family with CRC diagnosed at any age. Significantly higher risk: < 1% of population Three or more 1° or 2° relatives on the same side of the family with CRC diagnosed at any age. Two or more 1° or 2° relatives on the same side of the family diagnosed with colorectal cancer, including any of the high risk factors: • multiple colorectal cancers in the one person • colorectal cancer before the age of 50 years • at least one relative with endometrial or ovarian cancer. At least one 1° or 2° relative with CRC, with a large number of adenomas throughout the large bowel. Somebody in the family in whom the presence of a high risk mutation in the adenomatous polyposis coli or one of the mismatch repair genes has been identified.	III–C	50
Should those at significantly higher risk be screened differently?	Colonoscopy is recommended for high risk groups yearly or two yearly commencing at 25 years. See also Section 4 Genetic Screening for screening of high risk individuals.	III–A	30, 127

*Preferred type is still pending based on outcomes of clinical trials.

8.6 Testicular cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80
Not recommended as a preventive activity															

There is insufficient evidence to routinely screen for testicular cancer. General practitioners may screen those at high risk **(C)**. There is little evidence to show that those performing testicular self examination (TSE) are more likely to detect early stage tumours or have better survival than those who do not **(C)**.

Question	Answer	Level of evidence and strength of recommendation	References
Is it necessary to screen for testicular cancer?	There is insufficient evidence to routinely screen for testicular cancer in asymptomatic patients.	V–C	30, 63, 120
Who is at high risk for testicular cancer?	Those with history of cryptorchidism, orchidopexy, testicular atrophy, or previous testicular cancer.		63, 128
Should those in higher risk groups be screened?	Recommended by some groups for those at high risk (listed above).	V–C	63
Should I recommend testicular self examination?	To date there is little evidence to show that those performing TSE are more likely to detect early stage tumours or have better survival than those who do not.	V–D	30

8.7 Prostate cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80
Not recommended as a preventive activity															

Routine screening for prostate cancer with digital rectal examination (DRE), serum tumour markers or transabdominal ultrasound is not recommended **(D)**.

Question	Answer	Level of evidence and strength of recommendation	References
Should there be screening?	Currently no evidence that mass screening reduces mortality.	V–D	30, 63, 129
Is there any benefit in using a case finding (opportunistic medical screening) approach?	There is no demonstrable benefit.	III–D	30, 63, 129
Are PSA or DRE suitable for screening for prostate cancer?	PSA is unsuitable for screening because of low positive predictive value and known risks or adverse effects of therapies that have unknown effectiveness. DRE is not recommended.	V–D	30, 63, 129

9. Preventive activities in the elderly

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

Patients should be screened for risk factors for falls from the age of 65 years **(A)**.

Inactivity in older people makes them more likely to suffer from the effects of illness. For the older person, exercise provides the usual benefits, as well as minimising some of the limitations of later life (eg. reduced mobility, tendency to fall and reduced interaction with their environment).[130] Advice about moderate physical activity is recommended for all elderly patients **(A)**. There is insufficient evidence to support screening the elderly for depression or dementia **(C)**.

9.1 Falls, physical activity and depression

Question	Answer	Level of evidence and strength of recommendation	References
Should I screen for the risk factors for falls?	Yes – falls are preventable. Interventions result in reduced rates of falls in elderly people.	I–A III–1 (GP role in falls prevention)	131–133
What are the risk factors for falls?	High risk for falls: reduced muscle strength, impaired balance and gait, the use of psychotropic drugs, neurological disorders, near vision loss, foot problems, depression, lack of social support, poor home safety, environmental factors, such as, stairs, slippery surfaces, ramps, rails.	I	131–133
Should I screen the elderly for level of physical activity?	Yes. Evidence suggests that there is a decreased incidence of falls in the elderly who engage in regular physical activity (Section 5.6). The relationship between low SES and less physical activity persists into older age groups, and suggests that this group be a priority group for screening and preventive activities.	I–A II	130, 133, 134 36
Should I screen for depression?	There is insufficient evidence to routinely screen for depression but a high level of clinical sensitivity to the symptoms of depression should be maintained. NB. The presentation of depression in older adults may be atypical; low mood may be masked, and anxiety or memory impairment may be the main presenting symptoms. There is some evidence that elderly people from low SES backgrounds have significantly lower levels of social interaction compared with other SES groups. This may place them at higher risk for depression.	II–C	10, 30 45 36

9.2 Visual and hearing impairment

Vision impairment is a common and potentially serious problem among older people. In persons over 75 years, 5% have exudative macular degeneration, and 5% have glaucoma.[45] There is some evidence for screening for visual acuity using the Snellen chart **(B)**. Hearing loss is a common problem among older individuals, and is associated with significant physical, functional and mental health consequences. Annual questioning about hearing impairment is recommended for people aged 65 years and over **(B)**.

Question	Answer	Level of evidence and strength of recommendation	References
Should I screen for vision impairment?	For those over 65 years, annual vision screening is recommended.*	III–B	10, 30
What is the optimum method to screen for vision impairment?	A Snellen chart to screen for visual impairment in the elderly. Optimum frequency is not known, and is up to clinical discretion.	III–B	45, 131
When should I screen for hearing impairment?	For those over 65 years routine screening for hearing loss is recommended.	III–B	10, 45
What is the optimum method to screen for hearing impairment?	A whispered voice out of field of vision has a high sensitivity for hearing loss, as does a single question about hearing difficulty.	III–B	10, 45

* Note legal requirements for annual screening eg driving over age 70 years.

9.3 Glaucoma

There is insufficient evidence to recommend routine screening for glaucoma using tonometry or visual fields testing **(C)**. However, GPs have an essential role in identifying patients at higher risk for glaucoma, and referring them to an ophthalmologist for testing.

Question	Answer	Level of evidence and strength of recommendation	References
Who should be referred to an ophthalmologist?	Patients with high risk factors.	V–B	10, 135, 136
Who is at high risk for glaucoma?	Patients with: • family history of glaucoma • old age (≥ 60 years) • high myopia • diabetes • history of long-term steroid use.		10, 30, 136
Can I use tonometry to screen patients?	Not recommended. Schiotz tonometry has poor sensitivity and specificity for early detection of glaucoma. Tonometry in general is an inadequate screening tool as it grossly overestimates glaucoma prevalence.	III–D	30
Is screening visual fields (perimetry) advisable in general practice?	No. Only automated perimetry is sensitive for detecting glaucoma.	III–D	10, 30, 136

9.4 Urinary incontinence

Question	Answer	Level of evidence and strength of recommendation	References
Should I screen for urinary incontinence?	Yes. Urinary incontinence occurs in 10–30% of ambulatory elderly patients.	IV–B	137, 138
What is the recommended method of screening for incontinence?	Question patients about the occurrence of urinary incontinence (eg. "Do you have trouble with your bladder?" "Do you ever lose your urine or get wet?").	IV–B	137

9.5 Dementia

Patients over the age of 65 years may be opportunistically assessed using questions addressed to the patient and/or their carer **(C)**. Routine screening is not recommended because there is no evidence of benefit. There is insufficient evidence to recommend early treatment if dementia is detected, but patient and family support is helpful.

Question	Answer	Level of evidence and strength of recommendation	References
Should I screen for dementia?	No evidence of benefit.	V-C	10, 139
Case find?	Yes, if suspected, as early intervention, comprehensive assessment and support helps.	IV–C	140
When to suspect dementia?	Reduced functioning: poor compliance with medication, reduced ability to use phone, keep appointments, to remember to take medications, to budget or to use transport. Risk factors: age, family history, low education, repeated head trauma.	II–B	141, 142
How to start?	Ask "How is your memory?" plus information from others who know the patient.	V–C	143
How to confirm?	• Mini-Mental State Examination (MMSE) • Clock drawing test • Instrumental Activities of Daily Living (IADL).	III–B	141, 143, 144
What else to consider?	Patients who complain of memory loss are more likely to have depression than dementia (Section 11.1).	II–B	141
What preventive action to take if early dementia is detected?	Comprehensive assessment over time – months or years.	V–C	143

10. Osteoporosis

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80
Women															
Men															

Screening for the risk factors leading to osteoporosis and fracture is recommended in high risk groups **(C)**. There is less evidence on screening in men. Screening should consist of an assessment of risk factors. Screening bone mineral densitometry should only be conducted in patients over 45 years who sustain a low trauma fracture or in postmenopausal women with suspected vertebral fracture or major risk factors? (**A** for women; **C** for men).

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
When to start screening?	At age 45 years for women; 50 years for men.	I–A (women) V–C (men)	145–147 145–147
When to stop screening?	No upper limit reported.		
What to screen for and how to screen?	Take a thorough history paying particular attention to: increasing age, menopause (especially premature), family history of hip fracture, previous low trauma fracture, low calcium intake, low body weight (BMI < 20), immobilisation, certain medical conditions (eg. current or past history of glucocorticoid therapy, eating disorders associated with low body weight, chronic liver or renal disease, malabsorption). Lifestyle factors: poor diet, smoking, excessive alcohol, lack of exercise or excessive exercise (see Sections 5.2, 5.4–5.7). See Appendix II	III–B	145–150
Who should undergo bone mineral densitometry?	All patients over 45 years who sustain a low trauma fracture. Postmenopausal women with suspected vertebral fracture or major risk factors.	I–A	145, 147, 149
Which people are most at risk?	Those with major risk factors which include: osteopenia/vertebral deformity, loss of height, thoracic kyphosis, fragility fracture, corticosteroid therapy, premature menopause (< 45 years), secondary amenorrhoea > 1 year, maternal history of hip fracture, BMI < 20, age over 65 years, primary hypogonadism. Patients with poor diet and limited sun exposure including the housebound, the institutionalised and Muslims.	III–B	145–151
Groups not requiring screening?	Healthy women under the age of 45 years; healthy men under the age of 50 years.	III–B	145–151

Question	Answer	Level of evidence and strength of recommendation	References
Preventive actions to be taken?	Provide advice about risk factor modification especially good general diet high in calcium, adequate levels of physical activity, smoking cessation and limited alcohol intake.	II–A	145–151
	Counsel patients about falls prevention – involving family and community agencies may be appropriate.	III–B	145–148
	Offer hormone replacement therapy to postmenopausal women.	I–A	145, 147–149
	Offer calcium and vitamin D supplements to those with poor diet and limited sun exposure.	I–A	145, 146, 149
What about osteoporosis in men?	Risk factors that apply particularly to men are: hypogonadism, glucocorticoid use, excess alcohol, multiple myeloma, conditions associated with thyroxine excess, primary hyperparathyroidism. Preventive measures (except HRT) used for women apply to men.	IV–B	145, 147
Benefits and risks of preventive actions?	Prevention of bone loss and fracture. The use of HRT for more than 10 years should be considered only after reviewing associated risks such as breast and endometrial cancer and thrombosis.	I–A for bone loss III–B for fracture	145–151

11. Psychosocial

11.1 Depression

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

The incidence of major depression in a lifetime is estimated to be as high as 30%. The prevalence in the community of major depression is 3–5%. There is insufficient evidence for routine screening for depression in asymptomatic patients **(C)**. Clinicians should maintain a high level of awareness for depressive symptoms in patients at high risk for depression.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Should I screen everyone for depression?	No. There is insufficient evidence of benefit of routinely screening for depression.	I–C II–C	10, 30, 152
Which people have increased prevalence of depression?	• adolescents, young adults • those with a personal and family history of depression • those who have experienced a recent loss • those with chronic illness/pain • women, especially younger women • young men living in rural areas • post partum women • people abusing alcohol or other drugs • those with poor social supports • un/underemployed people • mothers from low SES groups • people suffering from life stress including refugees, recent migrants • people with multiple somatic complaints.	II-C	30, 121, 152–154
Should I maintain high clinical awareness?	Yes. Current evidence supports maintaining a high level of clinical awareness of those at high risk of depression.	V–C	10, 30, 152, 155
Should I be aware of selected groups?	Yes: • adolescents. It is recommended that GPs ask "How is life going for you" or something similar • elderly. Doctors should inquire about the functional state of the elderly keeping in mind risk factors.	V–B V–B	152, 155 10

11.2 Suicide

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

There is a lack of evidence for the routine screening of patients using a screening instrument **(C)**. However, GPs should be alert for higher risk individuals and the possibility of suicide in patients who are depressed. Epidemiological studies have consistently shown a link between suicide and social disadvantage [156, 157] including low socioeconomic status, limited educational achievement and homelessness.[158]

Question	Answer	Level of evidence and strength of recommendation	References
Should all patients be screened routinely?	No. There is a lack of evidence for routine screening using a screening instrument (eg. questionnaire).	IV–B	30, 121, 152
What are the risk factors for suicide?	When multiple risk factors are present, suicide should be considered. These include: • mental (psychiatric) illness especially depression, schizophrenia, alcohol and drug abuse, personality disorder and antisocial behaviour • previous suicide attempt • male • youth • homelessness • indigenous Australian • those with social, educational and employment disadvantage • those with a recent loss • isolated individuals • patients with a family history of suicide • young men of low SES.	III	121, 152, 158
Should those considered high risk be screened?	GPs should be alert to the presence of risk factors. When present evaluate the risk of suicide by using specific questions: • how is life going for you? • is this unhappy feeling so strong that you ever wished you were dead? • have you ever thought about how you might kill yourself? Patients with suicidal ideation should be questioned regarding preparatory actions (eg. obtaining a weapon, making a plan, putting affairs in order, giving away prized possessions, preparing a suicide note).	V–C	10, 30, 121, 152
What about youth?	With the high increase of suicide in the young (14–24 years of age) GPs should consider screening for psychological distress in all consultations with young people. The following questions might be asked: • how are you going generally? • do you ever feel miserable? • how are things at home (or where you live)? • lots of people use alcohol and drugs, how about you?	V–B V–B	121, 152 121, 152

11.3 Social support

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	> 80

The relationship between increasing mortality and morbidity with decreasing economic status has been well demonstrated.[159] Socioeconomically disadvantaged people make greater use of primary and secondary health services such as doctors, hospitals and outpatient clinics, but are less likely to use preventive health services such as dentists, immunisation and cancer screening tests.[160]

People of a low SES are at risk of experiencing higher levels of stress, both in terms of life events and subjective distress[161] and of forming poor social networks through their social isolation, transience, family problems, insecurity, and the high crime rates in the areas they live.[162] Family relations and tensions can also have an adverse impact on the health of family members.[163] A lack of social support may compound these stressors and affect people's ability to reduce their stress and hence reduce their immunity from illness.[7]

Question	Answer	Level of evidence and strength of recommendation	References
What should be recorded?	Employment status, occupation, level of education, housing and social support.	V–A	159, 164
Does social support provide a benefit?	Access to support services such as, early childhood development and home visiting as part of a holistic approach to family support, minimises the risks of child abuse and neglect.	III–B	165
What other risk factors can compound lack of social support?	Depression, alcohol or drug abuse, other psychiatric disorder, prior attempt of suicide, recent divorce, separation, unemployment, and recent bereavement.	V–C	10

12. Oral hygiene

Age	< 2	2–3	4–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	> 65

Good oral hygiene helps to prevent dental caries, gingivitis and improves oral health. Particular population groups at risk of poor oral health include indigenous Australians, rural and remote populations and migrant groups from non-English speaking backgrounds, particularly refugees. Clinician counselling to encourage good oral hygiene behaviours has not been adequately evaluated. General practitioners may provide the brief advice opportunistically.

Question	**Answer**	**Level of evidence and strength of recommendation**	**References**
Who should visit a dentist?	All children and adults.	IV–B	10, 166
How often?	Regularly, but the optimal frequency should be determined on an individual basis.	IV–B	10, 166
Who should take regular fluoride supplements?	Children living in areas with inadequate water fluoridation.*	I–A	10, 30, 167, 168
Who should have professionally applied fluorides?	All patients at high risk.†	I–A	30
How often should teeth be brushed and flossed?	All adults and children should brush teeth with a fluoride toothpaste at least twice a day; teeth should be flossed daily.	I–A	10, 30, 166, 167
Should children be allowed to go bed with a bottle?	No. This often causes decay.	IV–C	10, 30, 169
Who should receive professionally applied fissure sealants?	High risk children on permanent molar teeth soon after their eruption.†	I–A	30

* Approximately two-thirds of Australians now drink fluoridated water. Details regarding fluoride levels in Australian water supplies and recommended dosages of fluoride are provided in the report at http://www.health.gov.au:80/nhmrc/advice/pdf/fluoride.pdf

† High risk patients include those with active decay, head and neck radiation therapy, older adults with root caries.

Fill in box for your area

Location:
Fluoride concentration (ppm):

13. Patient education

Age	< 2	2–3	4–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	> 65

Patient education and counselling contribute to behaviour change for primary prevention of disease.[1] The use of behavioural techniques, especially for self-monitoring is recommended, as well as the use of personal communication and written or other audiovisual materials (A).[170]

Patients view the GP as a key, first contact and credible source of preventive advice. Health education messages have a large impact when delivered by the GP. When patients present with symptoms and concerns, they are more receptive to advice about how to minimise or avoid illness.

General practitioners can encourage their patients to participate in protecting their own health through better knowledge, increased skills and better access to services and programs. GPs can support their patients to do this, through simple counselling or more structured interventions in their practice or by referral to others.

Approaches to patient education

Patients need to develop their own understanding of the problem and what can be done about it. For simple behaviour changes such as having a Pap smear, patients weigh up the perceived benefits and costs.[171] These benefits and costs may include answers to the following questions:

- how big the problem is to the individual?
- what are the consequences of not doing it?
- what are the benefits?
- what are the barriers?

A recall notice should specifically address the above issues in order to be effective. For Pap smears this may include information about the number of cases of cervical cancer in the state, the impact of early detection in preventing advanced cancer and recognition of the barriers (such as information about when a woman doctor is available if patients prefer).

Some health education may require more complex actions over a period of time, such as, changing diet, stopping smoking or increasing physical activity. The Stages of Change model identifies five basic stages of change, which are viewed as a cyclical, ongoing process, during which the person has differing levels of motivation or readiness to change, and the ability to relapse or repeat a stage.[172] Each time a stage is repeated, the person learns from the experience and gains skills to help them move onto the next stage.

Pre-contemplation (not thinking about change)	**Stage during which a person does not consider the need to change** • have not had sufficient experience with negative consequences
Contemplation (thinking of change)	**In this stage, a person considers changing a specific behaviour** • beginning to seek relevant information • re-evaluating behaviour • obtaining help from others to support future attempts • still weighing up options and is not ready to take action
Determination (ready for change)	**The stage where a person makes a serious commitment to change** • ready to take action in the next 30 days • need to set goals and develop priorities to manage their illness
Action (changing behaviour)	**Change begins (these can be large or small changes)** • efforts made to modify habits and environment • increased use of behavioural processes of change (eg. stimulus control and counter conditioning)

Maintenance (maintaining change)	**Change is sustained over a period of time** • counter conditioning and self liberation peak • take responsibility for actions • susceptible to relapse so remain aware of environmental and internal stimuli that may trigger problem behaviours

Motivational interviewing is dealt with in more detail in the RACGP – *Putting Prevention into Practice* (the 'Green Book').

Many of the motivators and barriers to behaviour change lie outside the patient and their immediate family. Advertising, availability of resources (such as fresh food) and social and economic forces all exert a strong influence on patients. These need to be addressed at the community, state and national levels.

The complex needs and health problems of disadvantaged groups, and interactions between social, psychological, environmental as well as physical determinants of health mean that special effort is required for patient education to be effective. In particular, GPs need to employ a range of strategies and work in collaboration with other services.[7] To be effective in patient education for indigenous communities, GPs need an understanding of the Aboriginal view of health, culture and history and an ability to provide services within a culturally appropriate framework. This also requires GPs to collaborate with other agencies and providers to ensure the provision of high quality preventive health care for indigenous Australians.[173]

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Appendix I. Alcohol Use Disorders Identification Test (AUDIT)

AUDIT is a 10-item screening instrument developed by a WHO Collaborative study to help identify patients at risk from harmful and hazardous drinking. The version presented here is base on the version available from the Centre for Drug and Alcohol Studies, Department of Psychological Medicine, Sydney University.

The questionnaire may be completed either during the consultation or given to the patient to fill in while in the waiting room.

AUDIT is designed to screen for hazardous and harmful consumption of alcohol. A score of more than 7 is associated with harmful or hazardous drinking. A score of 13 or more is likely to indicate alcohol dependence.

What is a standard drink?

One standard drink:	1 middy of normal beer (285ml) OR	2 cans of normal beer =
	1 glass of table wine (100ml) OR	3 standard drinks
	1 glass of fortified wine (60ml) OR	1 schooner of light beer (425ml) =
	1 single nip of spirits (30ml)	1 standard drink

Scoring template

After the patient has completed the questionnaire, add up the score using the template below.

Questions 1–8	0	1	2	3	4
Questions 9 & 10	0		2		4

How to interpret the score

Score	Interpretation
7 or more but less than 13 for males 6 or more but less than 13 for females	The patient is drinking too much or the patient has or previously had problems with drinking eg. injury or binge drinking (Item 3) **BUT** the patient is unlikely to be physically dependent on alcohol
13 or more for males or females	The patient has problems with drinking **AND** the patient is likely to be physically dependent on alcohol

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Centre for Drug and Alcohol Studies, Department of Psychological Medicine, Sydney University.

AUDIT Questionnaire

Your doctor has asked you to complete this questionnaire in order to determine how some aspects of your lifestyle may be impacting on your health. For confidentiality reasons, if you are completing this form outside of your doctor's surgery, please return it directly to your doctor on your next visit. Details will remain confidential and will not be shared with anyone without your consent.

Name:	**Date:**

Please tick the box next to your answer.

One standard drink:	1 middy of normal beer (285ml) OR	2 cans of normal beer =
	1 glass of table wine (100ml) OR	3 standard drinks
	1 glass of fortified wine (60ml) OR	1 schooner of light beer (425ml) =
	1 single nip of spirits (30ml)	1 standard drink

1. How often do you have a drink containing alcohol?

☐ Never ☐ Monthly or less ☐ Once a week or less ☐ 2–4 times a week ☐ 5 or more times a week

2. How many standard drinks do you have on a typical day when you are drinking?

☐ 1 ☐ 2 ☐ 3 or 4 ☐ 5 or 6 ☐ 7 or more

3. How often do you have 6 or more standard drinks on one occasion?

☐ Never ☐ Less than monthly ☐ Monthly ☐ Weekly ☐ Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you started?

☐ Never ☐ Less than monthly ☐ Monthly ☐ Weekly ☐ Daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of your drinking?

☐ Never ☐ Less than monthly ☐ Monthly ☐ Weekly ☐ Daily or almost daily

6. How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?

☐ Never ☐ Less than monthly ☐ Monthly ☐ Weekly ☐ Daily or almost daily

7. How often during the last year have you had a feeling of guilt or regret after drinking?

☐ Never ☐ Less than monthly ☐ Monthly ☐ Weekly ☐ Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

☐ Never ☐ Less than monthly ☐ Monthly ☐ Weekly ☐ Daily or almost daily

9. Have you or someone else ben injured as result of your drinking?

☐ No ☐ Yes, but not in the last year ☐ Yes, during the last year

10. Has a friend, doctor or other health worker been concerned about your drinking or suggested you cut down?

☐ No ☐ Yes, but not in the last year ☐ Yes, during the last year

Appendix II. Osteoporosis Australia – One minute risk test.

Developed by the International Osteoporosis Foundation and medical and scientific advisers.

Are you at risk?

1. Have either of your patients broken a hip after a minor bump or fall?
2. Have you broken a bone after a minor bump or a fall?
3. For women: Did you undergo menopause before the age of 45?
4. For women: Have your periods stopped for 12 months or more (other than pregnancy)?
5. For men: Have you ever suffered from impotence, lack of libido or other symptoms related to low testosterone levels?
6. Have you taken corticosteroid tablets (cortisone, prednisone etc) for more than 6 months?
7. Have you lost more than 5cm (2 inches) in height?
8. Do you regularly drink heavily (in excess of safe drinking limits)?
9. Do you suffer frequently from diarrhoea (caused by problems such as Crohn's disease or coeliac disease)?

If you answered yes to any of these questions you may be at risk of getting osteoporosis and we recommend that you consult your doctor who will advise whether further tests are necessary.