

- A patient-centred approach
- Eliciting all of the patient's concerns
- Exploring the patient's ideas, beliefs and expectations
- Listening
- Showing empathy and respect
- Summarising
- Avoiding jargon
- Collaborative decision making
- Good closure

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4 Counselling skills

The doctor should have a kind disposition, great patience, self-possession, meticulous freedom from prejudice, an understanding of human nature resulting from an abundant knowledge of the world, adroitness in conversation and a special love of his calling.

G GRIESINGER 1840

The term counselling refers to the giving of advice to help direct or influence the decisions or actions of another. In the clinical context counselling can be defined as the therapeutic process of helping a patient to explore the nature of his or her problem in such a way that he or she determines his or her decisions about what to do, without direct advice or reassurance from the counsellor.

The counselling process in general practice is based on the therapeutic effect of the doctor. There is an enormous and ever-increasing need for people in the community to have many of their emotional and social problems addressed by the health profession. Modern medicine has acquired a much more scientific face over recent years at the expense of its once respected humanistic one. Medicine is primarily a humanitarian pursuit, not an economic or scientific one, and uses science as a tool. Many feel that medicine is losing sight of this, at the considerable expense of its standing in the community.¹

The public perceives that GPs can and do counsel people because more people go to their GP for counselling than to any other group of health workers, including psychologists, psychiatrists, social workers, marriage guidance counsellors and clergy.¹ People do not generally tell the doctor or even realise that counselling is exactly what led them to come to the doctor in the first place. The GP is, therefore, ideally placed in the community to make the most significant contribution to fill the community's needs in this area.

The GP as an effective counsellor

GPs can be effective counsellors for the following reasons:²

- They have the opportunity to observe and understand patients and their environment.
- They are ideally placed to treat the whole patient.

- Their generalist skills and holistic approach permit GPs to have a broad grasp of a patient's problems and a multifaceted approach to treatment.
- They can provide treatment in comfortable and familiar surroundings, including the doctor's rooms and the patient's home.
- They are skilled at working as a member of a professional team and directing patients to more expert members of the team as necessary.
- They can readily organise 'contracts' with the patient.
- They often have an intimate knowledge of the family and the family dynamics.
- They fit comfortably into continuing patient care with appropriate follow-up treatment programs.

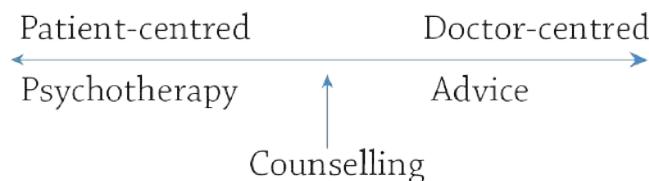
To be an effective counsellor the GP must prepare for this role, first by making a commitment to its importance, then by acquiring the knowledge and skills for basic counselling by reading, attending workshops and discussing cases with colleagues who are skilled in counselling.² Appropriate workshops are those based on the seminal model of therapy by Balint,³ which aim to teach the patient new coping skills and so alleviate symptoms and improve the patient's functioning in social and occupational roles. Well-developed interviewing skills are essential, as is self-discipline to appreciate one's strengths and limitations.

Features of counselling

Doctors can respond to patients' problems and distress by a spectrum of behaviours from doctor-centred, directive behaviour (directed psychotherapy) or advice at one end, to patient-centred, non-directive behaviour at the other, where the patient does most of the talking (expressive psychotherapy).² In handling psychosocial problems, advice-giving is at one end of the spectrum and psychotherapy at the other.

Counselling, as an activity in general practice, can be represented by a moving point between these two extremes.¹

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Counselling can be seen as having the following features:¹

- It is a clear-cut treatment option, like a course of antibiotics.
- It is a cooperative problem-solving process.

- It is an educational venture where patients learn new information and new activities.
- It is a developmental process for patients.
- It is a change process—often moving a patient from a ‘stuck state’.
- It is a goal-directed activity.
- It is a process of energising patients and lifting their morale.
- It is a sensitive response to problems within a caring relationship.

A problem-solving approach

Defining the problem (what the matter really is) is the most important step in the process of patient care. The following outline is one approach to counselling that is applicable to a general practice context.¹

1. Listen to the problem of first presentation: this involves listening not only to issues, events and experiences, but also to the patient’s feelings and distress. The emphasis here is more on the communication skills of facilitation, silence, clarification, reflection, paraphrasing, confrontation and summary, than on questioning. In many cases this phase of the counselling constitutes the major part of the therapy; for example, in grief or bereavement counselling, the doctor supports the patient through a natural but distressing process.
2. Define the problem, if possible, in behavioural terms:
Beneath the feeling is the experience, beneath the experience is the event, the event is related to a problem.⁴
3. Establish a contract for counselling, with an agreed number of visits initially (e.g. weekly half-hour or hour appointments for 4 to 6 weeks).
4. Define short-term and long-term goals for action.
5. Decide on one option—‘experimental action’.
6. Build an action program with the patient—negotiate ‘homework’ for the patient between visits.
7. Evaluate progress.
8. Continue action or select another option.
9. Evaluate progress.
10. Terminate or refer.

Counselling models

The PLISSIT model

The PLISSIT model, developed by Annon (1974)⁵ as an aid in therapy for sexual problems, is a very useful model for problems presented as feelings where there is limited scope for intervention by the therapist.

The mnemonic PLISSIT stands for the following:

- P is for permission giving
- LI is for limited information
- SS is for specific suggestion
- IT is for intensive therapy

Annon emphasises that every primary care practitioner should be competent to offer ‘permission giving’ and ‘limited information’.

The Colagiuri and Craig model

The medical counselling model was developed by Colagiuri and Craig (see FIG. 4.1⁶) as a useful tool for teaching contraceptive, abortion and sterilisation counselling. It can be applied in most situations as it empowers the patients to make their own decisions through facilitation, as opposed to the directive and advisory learning model.

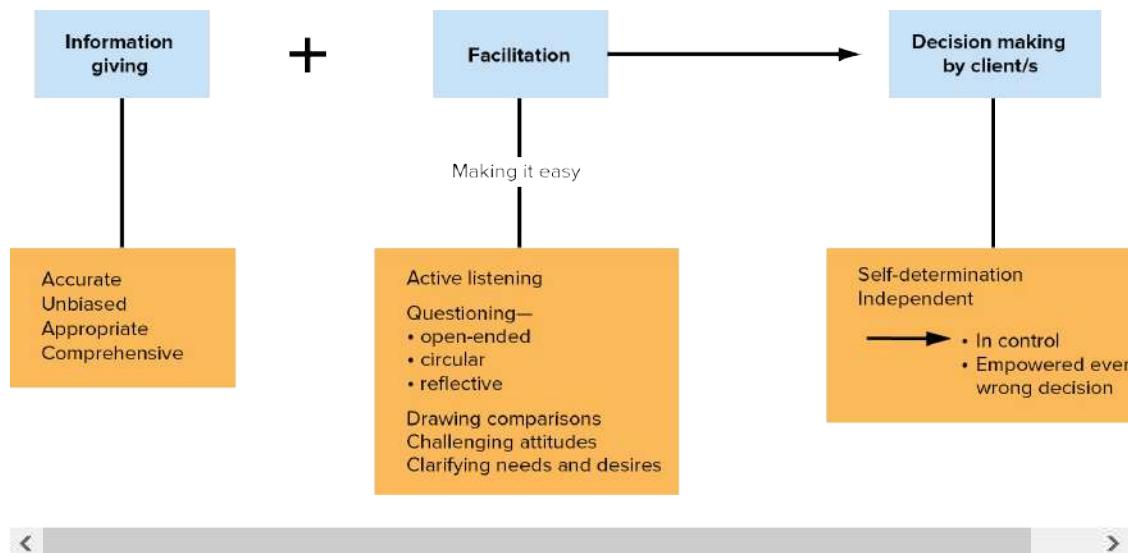


FIGURE 4.1 Medical counselling model

The value of patient-centred counselling

There is evidence that the use of non-directive counselling techniques leads to more accurate diagnosis and therefore to more appropriate management and an improved outcome.⁷

Jerome Frank wrote in 1967: 'The field of counselling and psychotherapy has for years presented the puzzling spectacle of unabating enthusiasm for forms of treatment where effectiveness could not be objectively demonstrated'.⁸ Traux and Carkhuff⁹ measured important aspects of the psychotherapeutic relationship and demonstrated what had long been recognised: the outcome was enhanced if practitioners had such qualities as accurate and sensitive awareness of the patient's feelings, deep concern for the patient's welfare (without attempting to dominate) and openness about their own reactions.

The essential feature of the patient-centred approach is that the counsellor is more like a facilitator; that is, by the asking of well-directed questions it is hoped that patients can realise their own solutions for their problems.¹ This encourages patients to attain understanding and personal growth themselves rather than just put their personal affairs in the hands of someone else. This does not mean to say that the facilitator is passive in the process of assessing the relative merit of various solutions produced by the patient. The doctor-centred approach is most applicable for patients who are so confused or distraught that their ability to reflect usefully is temporarily or permanently inaccessible. Here, taking a more active and authoritarian role may be just what is required. It is therefore important to be flexible and move between the two ends of the spectrum as needed.

Basics of counselling and psychotherapy

- Listening and empathy are the beginning of counselling.
- Good communication is the basis of counselling.
- The therapist must really care about the patient.
- Always be aware of the family context.
- It is important for therapists to handle and monitor their own feelings and emotions.
- Maintain eye contact.
- The therapist must tolerate and be comfortable with what the patient says.
- Confidentiality is essential.
- Counselling is easier if there is a good rapport with the patient, especially if a long-standing relationship exists.

- Counselling is difficult if a social relationship is present.
- Don't say to the patient 'I'm counselling you' or 'I'm giving you psychotherapy'—make it a natural communication process.
- The therapist must be versatile and adapt a counselling style to the clinical occasion.
- Characteristics of the effective counsellor have been demonstrated to be genuineness, non-possessive warmth for the patient, and accurate and empathetic understanding.

A fundamental feature of counselling is reflective listening to direct patients to think about and then resolve their problems.

Some useful interviewing skills used in counselling are summarised in [TABLE 4.1](#) .

Table 4.1 Interview skills used in counselling

- Use reflective statements.
- Use silence.
- Allow expressions of emotion.
- Offer supportive comments.
- Paraphrase and summarise.
- Allow patients to correct your interpretations of their feelings.
- Observe lack of congruence.
- Try to understand what the patient is feeling:
 - anger
 - hostility
 - fear
 - manipulation
 - seduction
 - insecurity
- Make intelligent guesses to prompt patient to continue.
- Don't reassure too soon.

Counselling strategies^{4,7}

- The therapy should be patient-centred.

- Use gentle, clever, probing questions.
- Facilitate the discussion to draw out relevant areas.
- It is important to be non-judgmental.
- Counsel through intuition and base it on common sense.
- Do not tell the patient what to do.
- Do not try to rush patients into achieving a happy ending.
- Provide guidance to allow the patient to gain insight.
- Wherever possible, make therapy non-authoritarian and non-directional.
- Use appropriate ‘gentle’ confrontation to allow self-examination.
- Help patients to explore their own situation and express emotions, such as anxiety, guilt, fear, anger, hope, sadness, self-hate, hostility to others and hurt feelings.
- Explore possible feelings of insecurity and allow free expression of such feelings.
- Explore patients’ belief systems and consider and respect their spiritual aspirations and conflicts.
- Ask key searching questions, such as:
 - ‘What would be different in your life if you were well?’
 - ‘Who are you mad at?’
 - ‘If I understand you correctly you are telling me that ...’
 - ‘You seem to be telling me that ...’
 - ‘Correct me if I’m on the wrong track, but you are saying that ...’
 - ‘What do you think deep down is the cause of your problem?’
 - ‘What does your illness do to you?’
 - ‘Do you really worry about any things in particular?’
 - ‘How do you think your problem should be treated?’
 - ‘If you could change anything in your life, what would it be?’
- Empower your patient. Better outcomes are likely if your patients are active participants in

their care and take responsibility for change.

Avoid:

- telling patients what they must do/offering solutions
- giving advice based on your own personal experiences and beliefs
- bringing up problems that the patient does not produce voluntarily

What counselling is not

- Giving information
- Giving advice
- Being judgmental
- Imposing one's own values, behaviour and practices
- The same as interviewing
- Handing out patient education material

Cautions¹

- Individual doctors cannot be useful to all patients, so be selective.
- We cannot solve patients' problems for them.
- Patients' problems belong to them and not to their counsellors.
- Patients often have to change by only an inch in order to move a mile.
- If a counselling relationship is no longer productive, then terminate and refer.
- Most patients in primary care need information, support and a lift in morale, not long-term psychotherapy.

Patients unlikely to benefit

The following groups of patients are not likely to benefit from counselling therapy¹ (i.e. relative contraindications):

- psychotic patients
- patients who have had an unrewarding experience with psychiatrists and other

psychotherapists

- people who are antagonistic to the notion of a psychosocial diagnosis, subsequently found to be organic
- patients with little awareness or language to express emotional difficulty
- patients who do not believe doctors can treat psychosocial problems
- patients with a vested interest in remaining unwell who are therefore resistant to change (e.g. patients with work-related disabilities awaiting legal settlement)
- patients with chronic psychosomatic tendencies who are willing to do almost anything to maintain the relationship
- those in an intractable life situation who are unable or unwilling to change

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Types of psychotherapy^{2,10}

- Interpersonal psychotherapy/counselling, ideal for primary care and the treatment of depression, is therapy for interpersonal problems.
- Mindfulness based on intervention therapy.
- Behaviour therapy (BT) is where the patient is directed to do something.
- Cognitive therapy (CT) is based on the identification of automatic thoughts that are invariably negative. Cognitions are thoughts, beliefs and perceptions.
- Cognitive behaviour therapy (CBT), which combines BT and CT.

The psychotherapy continuum is illustrated in FIGURE 4.2 .²

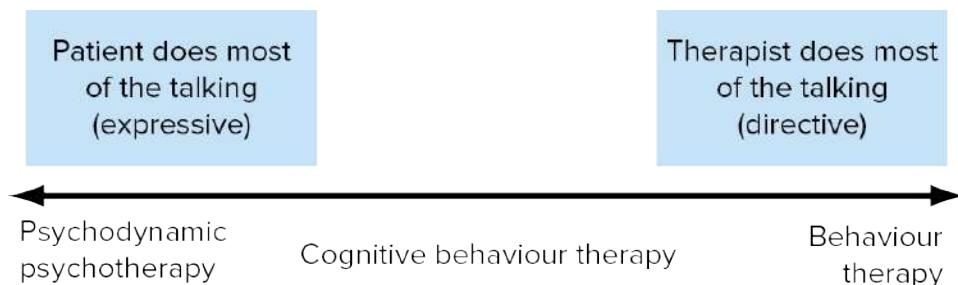


FIGURE 4.2 Psychotherapy continuum

Source: Selzer R, Ellen S. *Psych-lite: Psychiatry That's Easy to Read*. Sydney: McGraw Hill, 2010: 70–3

Cognitive behaviour therapy

CBT is a form of non-pharmacologic treatment emphasising self-help and aiming to change perceptions and behaviour that may perpetuate symptoms and disability. It is basically a system of graded exposure (systematic desensitisation). It can be applied in any area of medical practice as a form of psychotherapy and is suitable in general practice for the treatment of depression, insomnia, eating disorders, delusions and hallucinations in psychotic disorders and anxiety in all forms, especially social anxiety disorder and phobias—in all of which CBT has proved to be better than a placebo.¹¹

It is a relatively brief, active, directive and practical form of therapy. However, not all therapists or patients are suited to CBT.

The basic processes of CBT are to:

- define specific and concrete goals for functional activities and moods, e.g. pain control
- educate the patient
- teach basic skills for symptom control, relaxation and breathing control (especially for hyperventilation)
- identify, challenge and change maladaptive thoughts, feelings, perceptions and behaviour

Some basic principles and objectives of CBT are to:

- aim to bring about a desired change in patients' lives, i.e. aim to achieve desired goals
- assess, monitor and attempt to modify thoughts and behaviour
- reinforce positive behaviour and discourage negative behaviour
- educate about any misconceptions about a patient's illness
- encourage the patient to be an active participant (not a passive recipient)
- get patients to establish a problem list and hierarchy of problems
- aim for more realistic thinking and more adaptive responses

Mindfulness

Mindfulness, which is based on meditation, is the process about raising awareness and a special way of paying attention to help the person cope with the daily events in their life.

The basic processes of mindfulness are to:

- train people to focus on the positive aspects of their lives and shut out distraction and negativity, i.e. attention training
- learn to concentrate in a restful way and cope with stress

- emphasise attentiveness to the present moment
- voluntarily reign in a wandering attention time and again

Specific areas of counselling

Opportunities for basic counselling by the GP are ubiquitous in medical practice. Complex problems require referral but, even then, the GP still has an important role in continuing management.

Areas demanding counselling include:

- any crisis situation—breaking bad news
- bereavement or grief
- terminal illness/palliative care ([CHAPTER 126](#))
- marital problems ([CHAPTER 1](#))
- family problems ([CHAPTER 1](#))
- sexual dysfunction ([CHAPTER 108](#))
- chronic pain
- anxiety and stress ([CHAPTER 70](#))
- depression ([CHAPTER 10](#))
- intellectual handicap in a child
- infertility ([CHAPTER 107](#))
- any disease or illness, especially severe illness
- sexual abuse/child abuse ([CHAPTER 88](#))
- intimate partner violence ([CHAPTER 110](#))
- insomnia and other sleep disturbances ([CHAPTER 63](#))

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Crisis management

Crisis situations are not uncommon in general practice and people in crisis are usually highly aroused and demanding. Examples include tragic deaths, such as children drowning or sudden infant death syndrome (SIDS), unexpected marital break-up and breaking bad news.



FIGURE 4.3 Counselling skills: these skills include good eye contact, listening, empathy and appropriate communication skills

Aims of crisis intervention

- Resolve the crisis and restore psychological equilibrium as quickly and constructively as possible.
- Encourage the person in crisis to regain control and take appropriate action.

Principles of management

- Intervene early—actively and directly.
- Establish an empathetic alliance.
- Be accessible.
- Attend to family and social supports.
- Be prepared for the difficult phase of 24–48 hours.
- Do not carry the burden of crisis.
- Aim for brief, time-limited intervention (no more than six interviews over 6 weeks).
- When necessary, be prepared to provide short-term use of psychotropic drugs (e.g. a hypnotic) for two or three nights of good sleep.

Ten rules to help those in distress

The following rules are given to those in crisis (personal explanation followed by a take-home hand-out):

1. *Give expression to your emotions.* You need to accept your reactions as normal and not be afraid to cry or call out. Try not to bottle up feelings.
2. *Talk things over with your friends.* Try not to overburden them but seek their advice and listen to them. Do not avoid talking about what has happened.
3. *Focus on things as they are now—at this moment.* Aim not to brood on the past and your misfortune. Concentrate on the future in a positive way.
4. *Consider your problems one at a time.* Try not to allow your mind to race wildly over a wide range of problems. You can cope with one problem at a time.
5. *Act firmly and promptly to solve a problem.* Once you have worked out a way to tackle a problem, go for it. Taking positive action is a step in allowing you to get on with life.
6. *Occupy yourself and your mind as much as possible.* Any social activity—sports, theatre, cards, discussion groups, club activity—is better than sitting around alone. Many people find benefit from a holiday visit to an understanding friend or relative. Religious people usually find their faith and prayer life a great source of strength at this time.
7. *Try not to nurse grudges or blame other people.* This is not easy but you need to avoid getting hostile. In particular, endeavour not to get angry with yourself and your family, especially your spouse.
8. *Set aside some time every day for physical relaxation.* Make a point of doing something physical, such as going for a walk, swimming or enjoying an easy exercise routine.
9. *Stick to your daily routine as much as possible.* At times of crisis a familiar pattern of regular meals and chores can bring a sense of order and security. Avoid taking your problems to bed and thus ensuring sleepless nights. Try to ‘switch off’ after 8 pm. Taking sleeping tablets for those few bad nights will help.
10. *Consult your family doctor when you need help.* Your doctor will clearly understand your problem because stress and crisis problems are probably the commonest he or she handles. Consult your doctor sooner rather than later.
 - Remember that there are many community resources to help you cope (e.g. your religious leader, social workers, community nurses, crisis centres and organisers within churches and other religious centres).
 - Take care: do drive carefully and avoid accidents, which are more common at this time.

Bereavement

Bereavement or grief may be defined as deep or intense sorrow or distress following loss.¹² Raphael uses the term to connote ‘the emotional response to loss: the complex amalgam of painful affects including sadness, anger, helplessness, guilt, despair’.¹³

The GP will see grief in all its forms over a wide variety of losses. Although the nature of loss and patient reaction to it varies enormously, the principles of management are similar.

Stages of normal bereavement

1. *Shock or disbelief.* Feelings include numbness and emptiness, searching, anxiety, disbelief ('I don't believe it'), fear and suicidal ideation. Concentration is difficult and spontaneous emotions, such as crying, screaming or laughing, tend to occur. There may be a sense of the deceased's presence, and hallucinations (visual and auditory) may occur.
2. *Grief and despair.* Feelings include anger, 'Why me?', guilt and self-blame, and yearning. Social withdrawal and memory impairment may occur. The feeling of intense grief usually lasts about 6 weeks and the overall stage of grief and despair for about 6 months, but it can resurface occasionally for a few years. The last few months involve feelings of sadness and helplessness.
3. *Adaptation and acceptance.* Features of the third stage include significant feelings of apathy and depression. This phase takes a year or more. Physical illness is common and includes problems such as insomnia, asthma, bowel dysfunction, headache and appetite disturbances.

Pathological bereavement

Pathological bereavement can occur and may manifest as intense emotion, particularly anger, and multiple visits with somatic complaints; the patient often gets around to long dissertations about the deceased and the circumstances surrounding death. Extreme anger is likely when the sense of rejection is great, as with divorce or sudden death. Guilt can also be intense.¹²

Raphael's classification of the patterns of pathological grief and its various resolutions are presented in TABLE 4.2 .¹³

Table 4.2 Patterns and resolution of pathological grief

Morbid or pathological patterns

Absence, inhibition or delay of bereavement

Distorted bereavement

Chronic grief (intense anguish continues unabated)

Outcomes

- Normal resolution, satisfactory adjustment; reintegration in life, satisfying attachments
 - General symptomatology (leading to increased care-eliciting behaviour)
 - Depression, suicidal behaviour
 - Other psychiatric disorders (anxiety state; phobia; mania; alcoholism; criminal activity, such as shoplifting)
 - Altered relationship patterns
 - Vulnerability to loss
 - Anniversary phenomenon
 - Death (more likely in the first 12 months)
-

The GP as counsellor¹

Important rules to bear in mind:

- The bereaved may be feeling very guilty.
- They may be angry towards their doctor or the medical profession in general.
- They need a clear explanation as to the exact cause and manner of death. Autopsy reports should be obtained and discussed.
- The bereaved tend to view an apparent lack of concern and support as disinterest or guilt.¹²
- Early intervention averts pathological grief.

The GP probably had a close relationship with the deceased and the family. The GP will have a special awareness of those at risk and the nature of the relationships within the family. The family is likely to maintain the relationship with the GP, expressing the physical and psychological effects of grief and consulting about intercurrent problems.¹²

Working through the stages of grief with patients will allow GPs to reach some acceptance of their own emotions, as well as ensure that patients feel supported and cared for, rather than distanced by embarrassment.

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Help from religious sources is highly valued as it can meet both spiritual and personal needs. Other resources include funeral directors, hospice (and other) counsellors and support groups, such as those for SIDS.¹²

At least 30 minutes should be allowed for consultations.

Long-term counselling

Normal bereavement can persist for years. Ongoing counselling is indicated if it continues unabated, or psychiatric referral sought if grief is extreme. Regular enquiries during routine consultations or meetings are important if the patient appears to be coping.

Breaking bad news

Good communication skills are fundamental to giving bad news appropriately. When bad news is broken insensitively or inadequately the impact can be distressing for both giver and recipient, leaving lasting scars for the latter. For the doctor it may represent professional failure, fear of people's reaction and feelings of guilt. Doctors should have a plan for this difficult process and learn how to cope with the recipient's reaction. Most of the circumstances described apply to unexpected death or anticipated death.¹⁴

Sharing bad news with a patient

This difficult task is based on sound communication skills and good dialogue. The meeting should be face to face, not over the phone or internet.

Basic guidelines

- Plan the consultation, review clinical data, set aside ample time.
- Meet in an appropriate room with privacy and no interruption.
- Ask the patient if they would like company (e.g. a relative or friend).
- Make good eye contact and be alert for non-verbal responses.
- Use simple, understandable language; avoid medical jargon, speak clearly and sensitively.
- Be honest and diplomatically to the point (don't cover up the issue).
- Allow time, silence, tears or anger.
- Avoid inappropriate methods (refer to 'avoid' in TABLE 4.4) and don't give precise predictions about life expectancy.
- Write down significant points and use sketches or diagrams as appropriate.

Management

Follow the 10 basic steps of the management interview (see CHAPTER 2) with the emphasis on the patient's understanding of the message and his/her feelings about it (see TABLE 4.3). Offer ongoing support and arrangements for continuing involvement, including allied health professionals.

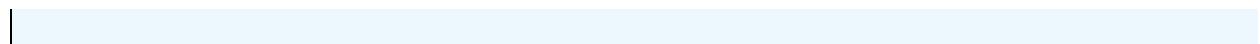


Table 4.3 Seven-step protocol for breaking bad news

1. Assess the patient's interest in, and capacity for, detailed information.
2. Establish the patient's beliefs about the illness, and what he or she wants to know.
3. Provide accurate information in small doses, checking regularly what has been understood.
4. Monitor how the patient feels about the problem and what has been said.
5. Repeat the messages as the illness progresses, especially after each new step of management and/or deterioration.
6. Involve family members as much as the patient wants.
7. Plan for continued involvement. An assurance of continuing contact between doctor and patient is important.

Source: Buchanan¹⁵

Coping with patient responses

- The responses cover a wide range—stunned silence, disbelief, acute distress, anger, extreme guilt.
- Be prepared for any of these responses.
- Appropriate training using simulated patients, video replays and skilled feedback improves communication skills.
- Give permission and encouragement for reactions, such as crying and screaming.
- Have a box of tissues available.
- A comforting hand on the shoulder or arm or holding a hand is an acceptable comfort zone.
- Offer a cup of tea or a cool drink if available.
- Ask the patients or relatives how they feel, what they would like to do and if they want you to contact anyone.
- Arrange follow-up.
- Give appropriate patient education material.
- Provide information about support services.

Children

Remember that there are two ‘patients’—child and family. The same ‘bad news’ principles apply. Talk in age-appropriate terms to the child with the aim of establishing their understanding of their illness and feelings.

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Unexpected death

Some basic initial rules:¹⁶

- If relatives have to be contacted it is preferable for the doctor (if at all possible) or a sympathetic police officer to make the contact personally, rather than a relatively matter-of-fact telephone call from the hospital or elsewhere.
- If a telephone message is necessary, it should be given by an experienced person.
- The relatives or close friends should not drive to the clinic alone.

The setting for the interview:

- Use a suitable quiet private room if possible.
- See the recipients of the news alone in the room.
- Advise that the meeting should be undisturbed.

Guidelines for the doctor

- Be well prepared: check the facts and plan your approach.
- Always ask those involved if they have heard any news or know the reasons for the consultation.
- Always assess their understanding.
- Give information in an unhurried, honest, balanced, empathetic manner.¹⁷
- Look directly at the person you are talking to, be honest and direct, and keep information simple (avoid technical language).
- The sad news must be accompanied by positive support, understanding and encouragement.
- Give recipients time to react (offer time and moments of silence to allow the facts to sink in) and opportunities to ask questions.
- Avoid false reassurance.
- Remember that relatives appreciate the truth and genuine empathy.
- In the event of death, relatives should be given a clear explanation of the cause of death.

A list of guidelines for the interview is summarised in TABLE 4.4 .¹⁶

Table 4.4 Breaking bad news for unexpected death:
recommended actions during the interview

Allow

- Time
- Opportunities to react
- Silence
- Touching
- Free expression of emotions
- Questions
- Viewing of a dead or injured body

Avoid

- Rushing
- Bluntness
- Withholding the truth
- Platitudes
- Protecting own inadequacies
- Euphemisms
- The notion 'nothing more can be done'
- Using medical jargon
- Meeting anger with anger
- Leaving the patient or loved one without a follow-on contact

Source: McLaughlan¹⁶

The depressed patient

Studies have emphasised the importance and therapeutic efficacy of counselling in the management of the depressed patient.¹⁸ The most practical approach by the GP to the depressed patient is empathy, support and a logical explanation of their malaise. The author gives the following explanation to the patient.

Depression is a very real illness that affects the entire mind and body. It seriously dampens the five basic activities of humans, namely their energy for activity, sex drive, sleep, appetite and ability to cope with life. They cannot seem to lift themselves out of their misery or fight it themselves. Superficial advice to 'snap out of it' is unhelpful because the person has no control over it.

The cause is somewhat mysterious but it has been found that an important chemical is present in smaller

amounts than usual in the nervous system. It is rather like a person low in iron becoming anaemic.

Depression can follow a severe loss such as the death of a loved one, a marital separation or financial loss. On the other hand, it can develop for no apparent reason, although it may follow an illness such as glandular fever or influenza, an operation or childbirth.

Emphasising the ‘missing chemical’ theory really helps patients and family come to terms with an illness that tends to have socially embarrassing connotations. It also helps compliance with therapy when antidepressant medication is prescribed.

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Ongoing contact, support and availability are an important component of counselling, with appropriate referral to someone with more expertise, should that be required. CBT is a most effective and important approach to the management of depressive illness.

Chronic pain

Patients suffering from long-term pain are a special problem, especially those with back pain who seem to be on a merry-go-round of failed multiple treatments and complex psychosocial problems. These patients are frequently treated in pain clinics. As family doctors, we often observe an apparently normal, pleasant person transformed into a person who seems neurotic, pain-driven and doctor-dependent. The problem is very frustrating to the practitioner, often provoking feelings of suspicion, uncertainty and discomfort.

De Vaul and colleagues¹⁹ list five subgroups of patients where perplexing pain presents as the major symptom:

1. pain as a symptom of depression
2. pain as a delusional symptom of psychosis
3. pain as a conversion symptom of hysterical neurosis
4. pain as a symptom of an unresolved bereavement reaction
5. pain as a symptom of a ‘need to suffer’

Patients who somatise their symptoms present one of the most difficult challenges to our skills and usually require a multidisciplinary team approach.

Management involves:

- thorough medical assessment
- psychological assessment
- detailed explanations to the patient and family about treatment
- rational explanations about the cause of the pain

- management of associated problems (e.g. depression, sexual dysfunction)
- behavioural modification to encourage increased activity and a gradual return to normality

Problem gambling

Problem or pathological gambling is a persistent and recurrent behaviour despite its detrimental effect (disruption of personal, family or work life). It is undoubtedly a dependence disorder similar to alcohol and other drugs, with a similar approach to management. Refer to DSM-5 criteria for pathological gambling. Prevalence: 0.5–1.5% adult population.

Dangers

- Suicide risk (high)
- Major depression (up to 75%)
- Stress-related problems
- Domestic violence

Key warning

- Gambling >\$200 week
- Chasing losses

Other telltale signs

- Spending many hours gambling
- Placing larger, more frequent bets
- Lying about behaviour
- Being secretive
- Promising cutting back, but not doing it
- Impulsive activity
- Mood swings
- Gambling at the expense of other pleasant social activities
- Growing debts

- Excessive drinking

First-line management

- Ask (as part of social history).
- Consider South Oaks Gambling screen to support provisional diagnosis.²⁰
- Confront firmly if suspected.
- Consider using the Prochaska and DiClemente model of change ([CHAPTER 12](#)).
- Provide education material.
- Look into the family (domestic violence?) and provide support.
- Advise the family not to provide ‘rescue money’.
- There is no recommended pharmacological treatment.

Counselling approach

Problem gambling is a treatable condition and GPs can provide a central role in management. As for smoking and alcohol dependence, a brief intervention and education consultation session about the impact of excessive behaviour can be most effective. CBT is a very effective treatment for gambling. It combines systematic discussion and carefully structured behavioural assignments to help patients modify problematic thinking patterns and behaviours. ‘CBT directed towards correcting erroneous perceptions, irrational beliefs and misunderstanding of concepts of randomness and independence of chance events is a fundamental element of any therapeutic approach.’²¹

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It is appropriate to use specialist gambling counsellors when one’s intervention is not proving effective or where there is evidence of disturbing gambling problems. (Refer to: www.gaaustralia.org.au)

Family counselling

Relationship disharmony

Family doctors often have to provide counselling for one or both partners in a relationship. The problems may be resolved quite simply or be so complex that relationship breakdown is inevitable despite optimal opportunities for counselling.

Opportunities for prevention, including anticipatory guidance about relationship problems, do exist and the wise practitioner will offer appropriate advice and counselling. Examples include an accident to a child attributable to neglect by a parent, or similar situation in which that parent

may be the focus of blame, leading to resentment and tension. The practitioner could intervene from the outset to alleviate possible feelings of guilt and anger in that relationship.

Some common causes of relationship disharmony are:

- selfishness, jealousy
- unrealistic expectations
- financial problems/meanness
- poor communication, not listening to each other
- sickness (e.g. depression)
- drug or alcohol excess
- fault finding, ‘playing games’ with each other
- driving ambition
- immaturity

Basic counselling of couples/families

The following text on basic counselling of couples²² can also be regarded as a patient education sheet:

The two big secrets of relationship success are caring and responsibility.

Some important aspects

- Research has shown that we tend to choose partners who are similar to our parents and that we may take our childish and selfish attitudes into our relationships.
- We often expect our partner to change and meet our needs.
- If we take proper care and responsibility, we can keep these problems to a minimum.
- Physical passion is not enough to hold a relationship together—‘when it burns out, only ashes will be left’.
- While a good sexual relationship is great, most experts agree that what goes on *out* of bed counts for more.
- When we do something wrong, it is most important that we feel forgiven by our partner.

Positive guidelines for success (summary)²²

1. Know yourself.
2. Share interests and goals.
3. Make love, not war.
4. Cherish your partner.
5. Prepare yourself for parenthood, where relevant.
6. Seek proper help when necessary.
7. Do unto your partner as you would have your partner do unto you.

The BE attitudes (virtues to help achieve success)

BE honest	BE loyal
BE loving	BE desiring
BE patient	BE fun to live with
BE forgiving	BE one
BE generous	BE caring

Making lists—a practical task

Make lists for each other to compare and discuss.

- List qualities (desirable and undesirable) of your parents.
- List qualities of each other.
- List examples of behaviour each would like the other to change.
- List things you would like the other to do for you.

Put aside special quiet times each week to share these things.

Pitfalls²³

The GP who is too closely attached to one member of a couple can easily become trapped in the role of the ‘rescuer’ or ‘saviour’ of that person. The best defence against this trap is to respect the couple’s autonomy and work with them to achieve the goals they set for themselves, thus avoiding three major pitfalls for the GP in treating couples or families:

1. assuming personal responsibility for changing the family
2. working alone, neglecting the assistance of the family
3. becoming a ‘rescuer’ or ‘saviour’

Other pitfalls

- Conducting family therapy in the absence of a significant family member
- Breaching confidentiality of individuals within a relationship or family
- Failing to recognise the ‘ganging-up effect’
- Taking sides
- Failing to use available resources
- Overrelating to your own experiences

Possible solutions to avoid pitfalls²³

- Let the couple do the work.
- Ensure that the goals for therapy are realistic.
- Point out that all family members have to work together and that therapy works best when there is openness on all sides.
- Identify any tendency to look for scapegoats within the family.
- Look out for vulnerable family members—the ‘hidden patient’.
- Avoid trying to achieve quick solutions.
- Obtain clear-cut agreements on confidential matters and record this in the history.
- Keep an open mind and avoid forcing your own values on to the family.
- Share the burden with a colleague or other resources.

Summary: counselling skills strategies

- Provide guidance and facilitation to allow the patient to gain insight.
- Use appropriate ‘gentle’ confrontation to allow self-examination.
- Help patients to explore their own situation and express emotions such as anxiety,

guilt, fear, anger, hostility and hurt feelings.

- Explore possible feelings of insecurity and allow free expression of such feelings.
- Ask key searching questions, such as:

What do you think deep down is the cause of your problem?

How do you think your problem should be treated?

- Provide 'okay' specific suggestions, such as:

I wonder if your basic problem is that you are a perfectionist?

Many people in your situation feel guilty about something that may be trivial and need to feel forgiven.

Effective counselling comes from commitment, experience and a genuine caring and compassionate feeling for patients and their ethos.

Key rules to counselling

- The patient must leave feeling better.
- Provide *insight* into their illness and/or behaviour.
- Address any feelings of *guilt* (people must feel okay or forgiven about any perceived transgression).

If one feels out of one's depth, then immediate referral to an expert is important. CBT is an appropriate therapy for most conditions.

Patient education resources

Hand-out sheets from *Murtagh's Patient Education* 8th edition:

- Depression
- Coping with a crisis
- Bereavement
- Gambling: problem gambling

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5 Health promotion and patient education

Whoever is to acquire a competent knowledge of medicine, ought to be possessed of the advantage of instruction.

HIPPOCRATES (460–370 BC)

Health promotion

Health promotion is the motivation and encouragement of individuals and the community to see good health as a desirable state that should be maintained by the adoption of healthy practices. It is also the process of helping people to increase control over and improve their health (WHO definition 2009).

For those who feel healthy, the message may have little meaning, but it is reinforced by contact with others who become ill, particularly within the family.

The Lalonde report¹ highlighted the notion that all causes of death and disease had four contributing elements:

- inadequacies of the existing health care system
- environmental hazards
- behavioural factors and unhealthy lifestyles
- human biological factors

Health education

Health education is the provision of information about how to maintain or attain good health.

There are many methods, including the advertising of health practices, the provision of written information (e.g. about diet and exercise, immunisation, accident prevention and the symptoms

of disease) and information about methods to avoid disease (e.g. sexually transmitted infection).

Illness education

A lot of so-called ‘health’ education is, in reality, information about the cause of particular illnesses. Clearly, the medical practitioner is in a pre-eminent position to provide his or her patients with specific information about the cause of an illness at the time, either individually or to the family. This educative strategy has a preventive objective that is often the modification of help-seeking behaviour.

Every consultation is an opportunity to provide information about the condition under care and this can be reinforced in written, diagrammatic or printed form. Patients’ own X-rays can be similarly used to illustrate the nature of the problem.

Health promotion in general practice

GPs are ideally placed to undertake health promotion and prevention, mainly due to opportunity.

There are several reasons for this health promotion role:

- Population access: over 80% of the population visits a GP at least once a year.²
- On average, people visit a GP about five times each year.
- GPs have a knowledge of the patient’s personal and family health history.
- The GP can act as leader or coordinator of preventive health services in his or her local area.
- The GP can participate in community education programs.
- GPs should undertake opportunistic health promotion—the ordinary consultation can be used not just to treat the presenting problem, but also to manage ongoing problems, coordinate care with other health professionals, check whether health services are being used appropriately and undertake preventive health activities.²

Opportunistic health promotion

The classic model by Stott and Davis (see TABLE 2.1 in CHAPTER 2) highlights the opportunities for health promotion in each consultation.³ Since the consultation is patient-initiated, it is the doctor who needs to be the initiator of preventive health care. The potential in the consultation involves reactive and proactive behaviour by the doctor (see FIG. 5.1).⁴

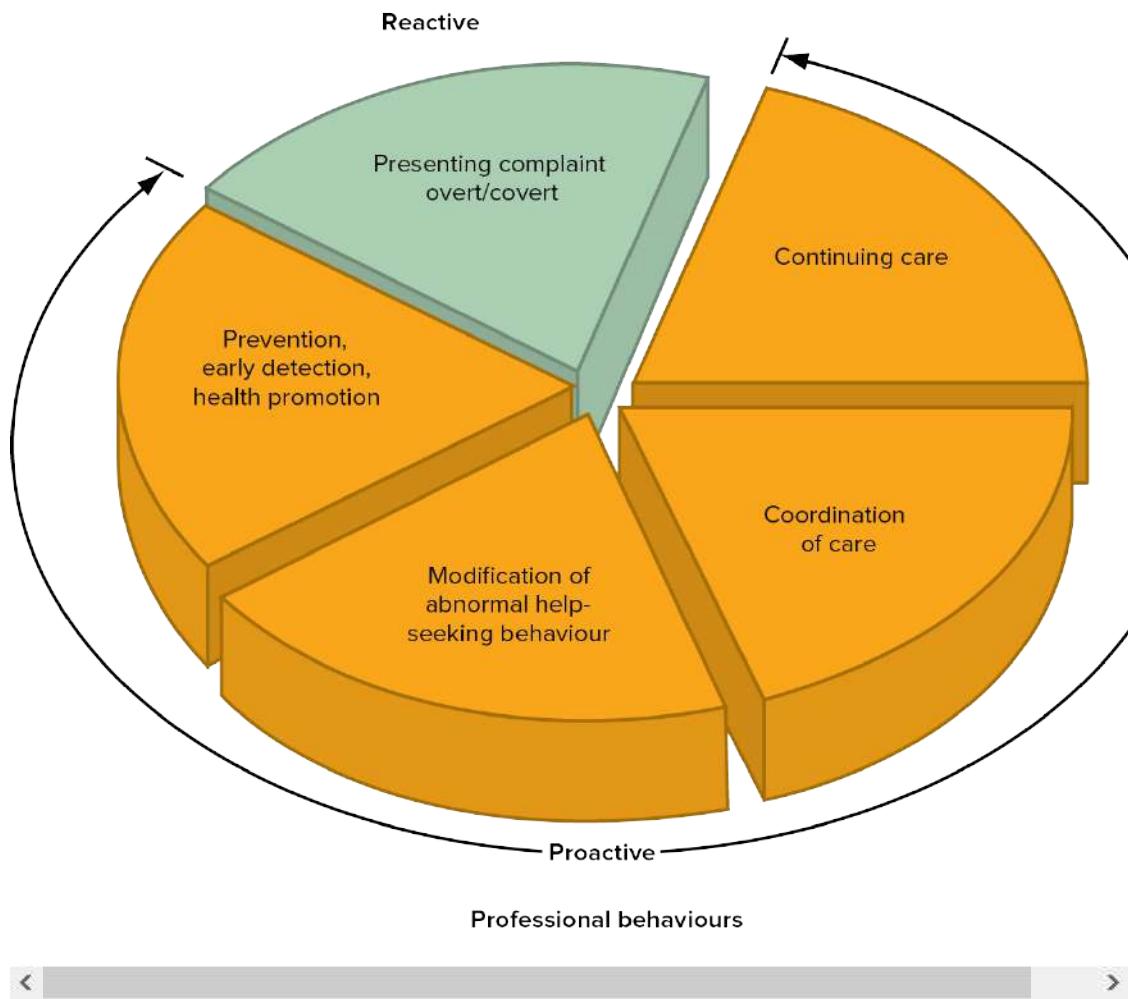


FIGURE 5.1 The potential in every general practice consultation

Source: Reproduced with permission from M Sales⁴

Reactive professional behaviour deals only with the presenting complaint. It may be performed with skill but if the practitioner is only trained to perform reactively then the opportunity for preventive and promotive health care will be lost.

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Proactive behaviour is defined as professional behaviour that is necessary for the patient's well-being, but it is performed not merely as a response to the presenting problem and it is initiated by the doctor.⁴ It includes health promotion, preventive care and screening and the early detection of disease, before it becomes symptomatic. Other aspects of proactive care are seen in FIGURE 5.1 .

Proactive behaviour also includes:⁴

- continuing care of a previously treated problem (e.g. rechecking blood pressure, checking diabetic control, follow-up bereavement counselling)

- coordination of care by organising referral to appropriate agencies or specialists and maintaining adequate medical records
- the modification of abnormal or inappropriate help-seeking behaviour (e.g. the person who never attends is at risk from ‘silent disease’; the too-frequent attender wastes resources and serious illness may be overlooked)

This mix of reactive and proactive behaviour is not appropriate in every consultation. It requires counselling skills and training in the delivery of quality general practice.

Methods

- Being informed and updated by maintaining continuing medical education, especially in preventive roles.
- Using health promotional material for patient education:
 - hand-outs
 - waiting room posters
 - waiting room video systems
- Having an efficient medical record system.
- Operating a patient register and recall system.
- Encouraging regular health checks for at-risk groups.
- Providing regular advice on:
 - nutrition
 - exercise
 - stress management
 - weight control
- Providing personal health records to the parents of newborn babies.

Health goals and targets

Health goals and targets as determined by the Health Targets and Implementation Committee⁵ were set in three areas—population groups, major causes of illness and death, and risk factors (see TABLE 5.1).

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Table 5.1 Established health promotion goals and targets⁵

Population groups

- Socioeconomically disadvantaged
- Indigenous Australians
- International arrivals—migrants, refugees
- Older people
- Children and adolescents
- Vulnerable women and men

Major causes of morbidity and mortality

- Cardiovascular and cerebrovascular disease
- Cancer esp. lung, breast, cervical, prostate, skin
- Diabetes mellitus
- Respiratory disease esp. asthma, COPD
- Communicable diseases
- Mental illness
- Musculoskeletal disease
- Disability
- Accidents and injury

Risk factors

- Hypertension, high blood lipids, obesity
- Drugs—smoking, alcohol, illicit drugs and substance abuse, pharmaceutical misuse/abuse
- Physical inactivity
- Occupational and environmental health hazards
- Inappropriate nutrition
- Unprotected and unsafe sexual activity

The seven priority health areas leading to reduction of morbidity and mortality rates for Australians are:⁵

- asthma
- cancer control
- cardiovascular health
- obesity control

- diabetes mellitus
- injury prevention and control
- mental health

Promoting healthy lifestyle in general practice

GPs can provide a simple framework to encourage patients to adopt a healthy lifestyle whether they have a particular disorder or not. The acronyms act as a good aide-mémoire for practitioners for opportunistic health promotion.

The SNAP guide⁶

The SNAP guide was developed by the Royal Australian College of General Practitioners to address important risk factors with patients with a view to encouraging change if appropriate. The guide comes as a comprehensive booklet and includes the ‘Estimation of absolute 5-year risk of cardiovascular events’ tables.

The SNAP guide can be summarised by the following risk factors.

S = Smoking

N = Nutrition

A = Alcohol

P = Physical activity

The guide emphasises that there are *health inequalities* in the community because the risk factors are far more prevalent in people from low-socioeconomic-status backgrounds and Indigenous Australians.

The guide focuses on the ‘5 As’ as stages of change theory to promote change of lifestyle where appropriate (see TABLE 5.2).

Table 5.2 The ‘5 As’

1 Ask	Identify patients with risk factors
2 Assess	Level of risk factor and its relevance to the individual in terms of health Readiness to change/motivation
3 Advise	Provide written information Provide a lifestyle prescription
4 Assist	Pharmacotherapies Support for self-monitoring

5 Arrange	Referral to special services Social support groups Phone information/counselling services Follow-up with the GP
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This information can be accessed at: <http://www.racgp.org.au/guidelines/snap>.

The NEAT guide

The NEAT guide (see TABLE 5.3) is similar to the SNAP guide, but with a greater emphasis on counselling the patient about lifestyle and the importance of stress management.

Table 5.3 The NEAT guide

N	= Nutrition: optimal diet
E	= Exercise/physical activity
A	= Avoidance or moderation of potential harmful substances (CATS): <ul style="list-style-type: none">• caffeine• alcohol• tobacco• sugar, salt and social drugs
T	= Tranquillity and promotion of recreation, relaxation techniques, meditation

Psychosocial health promotion

There is a tendency for health goals and targets to focus mainly on physical illness and not emphasise mental health. However, this area represents an enormous opportunity for anticipatory guidance. It includes the important problems of stress and anxiety, chronic pain, depression, crisis and bereavement, sexual problems, adolescent problems, bullying, domestic abuse, child behavioural problems, psychotic disorders and several other psychosocial problems.

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Time spent in counselling, giving advice and stressing ways of coping with potential problems such as suicide and deterioration in relationships is rewarding. GPs need to pay more attention to promoting health in this area, which at times can be quite complex.

Nutrition for health

Good nutrition is fundamental to good health. It influences management in all branches of medicine. Modern people's health varies from the excesses of inappropriate nutrition, resulting in obesity and various degenerative disorders, to malnutrition and other deficiency states seen in those unfortunates deprived of nutrients.

The essential components of nutrition¹⁰ can be classified as:

- macronutrients—proteins, fats and carbohydrates, which are interchangeable sources of energy and also water
- macrominerals—sodium, chloride, potassium, calcium, phosphate and magnesium
- micronutrients—water-soluble vitamins (e.g. C, B); fat-soluble vitamins (e.g. A, E, K); essential trace elements (e.g. copper, iodine, iron, zinc)

Nutritional factors may play a vital role in the causation of several of the major diseases, such as coronary artery disease, hypertension, diabetes and cancer. Where weight loss is a goal, see [CHAPTER 80](#).

Special diets are important in the management of many hereditary metabolic disorders, such as phenylketonuria and galactosaemia, and several other disorders such as coeliac disease.

Protein¹¹

Proteins are composed of carbon, hydrogen, oxygen, nitrogen, phosphorus, sulphur and iron. They make up the greater part of plant and animal tissue and provide the amino acids essential for the growth and repair of tissue. Protein in the body in muscle, connective tissue and enzymes is constantly being broken down, while dietary protein is hydrolysed to amino acids that are both essential and non-essential. A complete protein is one that contains all the nine indispensable amino acids, namely, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine.

Protein in animal products (fish, meat and milk) is of high quality and that in vegetable products is lower because of a limited supply of lysine (in cereals) and methionine and cysteine (in legumes).¹² Vegetarian diets are usually adequate in protein, especially if the combining vegetable groups complement each other in basic amino acid groups. Diets that exclude all animal products may be inadequate, especially in children. Infants and children require 2–2.2 g protein/kg/day.

- High protein content foods—lean beef and lamb, chicken, fish, eggs, milk, cheese, soy beans
- Medium protein content foods—bread, spaghetti, corn, potatoes (cooked), rice (cooked), cabbage, cauliflower

Energy malnutrition

This is a deficiency syndrome with a reduction in all macronutrients, energy (kilojoules) and many micronutrients due to an inadequate intake of protein and energy foodstuffs.

It is commonly found in infants and children in developing countries but can occur in persons of any age in any country.

Clinically, protein-energy malnutrition has three forms:

1. dry (thin, desiccated)—*marasmus*
2. wet (oedematous, swollen)—*kwashiorkor*
3. combined—*marasmic kwashiorkor*

Marasmus

Clinical features:

- grossly underweight
- gross muscle wasting
- abdominal distension
- no fat
- hungry
- ‘old man’s’ face
- no oedema
- normal hair

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Caused by a diet low in protein and calories.

Kwashiorkor

Clinical features:

- oedema (feet first, then generalised)
- ‘moon’ face
- anorexia
- hair pale and thinned
- apathetic

- skin changes

Caused by a diet low in protein with some carbohydrate, leading to hypoalbuminaemia.

Carbohydrates

Dietary carbohydrates include simple sugars, complex carbohydrates (starches) and indigestible carbohydrate (dietary fibre). Carbohydrates are the main source of dietary energy. The two most important crops feeding the world are rice and wheat, which are rich in starch. Starch and sucrose account for the majority of carbohydrates consumed in all diets. Carbohydrates that are available in food are:

- sugars—sucrose, lactose, maltose, glucose, fructose
- polyols—sorbitol, xylitol, maltitol, lactitol
- starch—amylose, amylopectin
- dextrose

As long as adequate energy and protein are provided in the diet, there is no specific requirement for dietary carbohydrate. A small amount—100 g/day—is necessary to prevent ketosis.¹²

The glycaemic index (GI)

The GI, which applies to carbohydrate foods, is a numerical index based on a reference point of 100. It is a measure of the capacity to increase postprandial glucose levels compared to a glucose load. The standard food is glucose, which is given an arbitrary level of 100.

The higher the GI, then the higher the rise in blood glucose level and thus the greater the insulin response. Low-GI foods may improve glycaemic control.

Low-GI foods (<55) include dense wholegrain breads, porridge, most fresh fruits, yoghurt and low-fat milk. High-GI foods (>70) include sweet breakfast cereals, potatoes, white bread, watermelon, ripe bananas, dates, white rice and biscuits.

Fat

Dietary fat, which is composed mainly of fatty acids and dietary cholesterol, is the most concentrated source of food energy.¹¹

Fatty acids are classified according to the number of unsaturated double bonds:

- nil—saturated (e.g. butyric and stearic acids)
- one—monounsaturated (e.g. oleic acid)

- more than one—polyunsaturated (e.g. linoleic acid, eicosapentanoic acid [EPA], docosahexanoic acid [DHA])

Polyunsaturated fatty acids (two or more unsaturated bonds) can be subdivided into:

- n-6 (e.g. linoleic acid, 2 unsaturated bonds; arachidonic acid, 4 unsaturated bonds)
- n-3—omega-3 fatty acids (e.g. alpha-linolenic acid, 3 unsaturated bonds; EPA, 5 unsaturated bonds; DHA, 6 unsaturated bonds)

The n-3 and n-6 polyunsaturated fatty acids with chain lengths of 18 or more are called essential fatty acids because they are required for vital body functions and animals, including humans, are unable to synthesise them.¹¹

The proportions of saturated, monounsaturated and polyunsaturated fatty acids in the diet are important determinants of health and disease.¹¹ The current strategy is to reduce total fat intake and reduce saturated fats and increase unsaturated fats, especially n-3 polyunsaturated fats.

Fish oil contains omega-3 fatty acids (EPA and DHA), which are considered more potent than the omega-3 fatty acids found in plants. The value of omega-3 fatty acids in preventing cardiovascular mortality has been well proven. They have no effect on cholesterol levels but have a well-documented potent hypotriglyceridaemic effect.¹³

Omega-3 rich foods include salmon, trout, halibut and tuna. Suitable plants include avocado, walnuts, other nuts and seeds, and legumes (beans and lentils). Our diet should include these fats.

Trans fats, which are unsaturated fats usually generated industrially by a hydrogenation process, should be avoided.

Cholesterol, which is a major constituent of cell membranes, is synthesised by the body and is not an essential nutrient. The plasma cholesterol level, and hence the amount of cholesterol in the diet, has been related to the development of atherosclerosis.

Nutritional assessment

The first step in nutritional assessment is to identify the high-risk patient.¹⁴ Those at high risk of nutritional insufficiency include those with a history of obesity, eating disorders, chronic illness, psychological disorders, the elderly, the institutionalised, trauma victims and those with long periods of hospitalisation, including major surgery. Of particular interest is the rate of growth and development in infants and children and the body composition in children and adults.

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When taking the history it is appropriate to include a 24-hour recall of foods eaten and ideally get the patient to complete a symptom questionnaire that can then be linked to a computerised nutritional evaluation program, such as Nutricheck.¹⁴ Evaluate sunlight exposure.

A nutritionally focused physical examination should be performed on each patient at risk, with

the emphasis on body weight, waist size, muscle wasting, fat stores and signs of micronutrient deficiencies. Examples of the latter include zinc deficiency, which affects taste, smell and the skin. Deficiencies of vitamins B6 and B12 cause neurological disorders, such as peripheral neuropathy.¹¹ Alcoholism and malnutrition affect many systems, including the gastrointestinal system. The oral cavity, especially the gums, teeth and buccal mucosa, are affected by vitamin B complex and vitamin C deficiencies. Bones and joints are affected in scurvy, rickets, osteomalacia and osteoporosis. The important anthropometric measurements include height and weight, skinfold thickness and waist:hip circumference ratio (refer to [CHAPTER 67](#)). Laboratory investigations depend on the clinical examination and should be selective.

The general principles of optimal nutrition

In order to help people make healthy choices, the health foundations of several countries have developed recommendations for eating a healthy diet.

The heart-healthy eating pyramid of the Australian Nutrition Foundation (2012)¹¹ has a simplified system, namely:

- Eat most—vegetables, dried peas, beans and lentils, cereals, bread, fruit and nuts
- Eat moderately—healthy protein foods such as lean meat, eggs, fish, chicken (without skin), milk, yoghurt, cheese
- Eat in small amounts—oil, margarine, reduced-fat spreads, butter, sugar and salt, and avoid trans fats

The RACGP in its red book¹⁵ outlines dietary recommendations based on national guidelines. For adults this is summarised as follows.

Enjoy a wide variety of foods each day:

- five serves of vegetables and two serves of fruit
- lean meat, fish, poultry, eggs, tofu, nuts and seeds and/or alternatives
- grains and cereals, mostly wholegrain or high-fibre varieties such as bread, rice, pasta, oats and couscous
- drink plenty of water

Take care to:

- limit saturated fat
- limit salt intake
- limit alcohol intake

- limit sugars and foods containing added sugars, including soft drinks and commercial juice
- limit red meat to 3–4 serves per week and limit or avoid processed meat
- care for food: prepare and store it safely
- encourage and support breastfeeding

See [CHAPTER 80](#) for further detail on the dietary management of a person who wants to lose weight.

Antioxidants

The antioxidant issue is still controversial and unclear. Empirical observation of healthy communities over the years indicates good health outcomes, especially with cardiovascular status, in people having an optimal diet containing high levels of vitamins and minerals (especially from fruit and vegetables).

Food antioxidants (see [TABLE 5.4](#)) appear to protect against free radicals, which can suppress immunity.¹⁶

Table 5.4 Food antioxidants

- | |
|-----------------------------------------------------------|
| Vitamin A, especially beta-carotene |
| Vitamin C |
| Vitamin E |
| Ubidecarenone (co-enzyme Q10) |
| Selenium, zinc, manganese and copper (nutrient cofactors) |

Source: Sali¹⁶

Prime sources of antioxidants in food¹⁷

- Vitamin C—citrus fruits, berries, papaya, green leafy vegetables
- Vitamin E—seed-like cereal grains, nuts and oils (plants), eggs
- Beta-carotene—orange-coloured and dark-green leafy vegetables
- Selenium—grains, meats, Brazil nuts, fish
- Copper—cocoa, wheat bran, yeast

- Ubiquinone—meats, fish, peanuts
- Phytochemicals—soy, tea, green tea, herbs, apples, onions, cocoa

Folate-containing foods

- Green leafy vegetables—broccoli, spinach
- Wheat grain
- Wholegrain cereals
- Starchy beans—kidney and butter
- Peas, corn, cauliflower
- Nuts
- Avocado
- Liver
- Folic acid fortified foods (e.g. breakfast cereals)

Vitamin deficiency disorders¹⁸

These are rare in our society but can occur sporadically and are not rare in children in some third world countries or in refugees from these countries. Deficiencies tend to be seen as a specific disorder or as a multivitamin effect.

- *Vitamin A (beta-carotene/retinol)* deficiency causes night blindness and eye disease, as well as dryness with keratinisation of the conjunctivae and cornea. It causes growth retardation in children. Toxicity from overdosage of vitamin A is a serious problem.
- *Vitamin B complex*

Vitamin B1 (thiamine) deficiency causes **beriberi** (dry or wet), heart failure, neuropathy and also Wernicke–Korsakoff syndrome (typically in alcoholics).

Vitamin B2 (riboflavin) deficiency causes growth retardation, dry scaly skin and angular cheilitis.

Vitamin B3 (niacin, nicotinic acid) deficiency causes **pellagra**, the classic ‘d’ triad—diarrhoea, dementia, dermatitis ± neuropathy.

Vitamin B6 (pyridoxine) deficiency may cause oral soreness, anaemia and CNS dysfunction.

Vitamin B12 (cobalamin) deficiency causes **pernicious anaemia**, neuropathy, glossitis and memory dysfunction.

- *Vitamin C (ascorbic acid)* deficiency is responsible for **scurvy**. Clinical features: muscle weakness, malaise, fatigue, bleeding swollen inflamed gums, atraumatic haemarthrosis, cachexia, oedema, impaired wound healing, impaired bone growth. One sign is the hyperkeratotic hair follicle with surrounding hyperaemia. Diagnosis by decreased plasma ascorbic acid and X-rays of bones and joints.
- *Vitamin D (calciferol)* deficiency causes **rickets** in children and **osteomalacia** in adults. Clinical features (rickets): impaired growth, skeletal deformities (bow legs, pelvis, ‘rachitic rosary’), inability to walk, bone pain (arms, legs, spine, pelvis), dental deformities, muscle weakness. In adults: muscle weakness, bone pain, bowing of long bones. Diagnosis: low plasma 25(OH)D₃ and phosphate; elevated PTH and alkaline phosphatase; X-rays of joints and long bones of leg.
- *Vitamin E (tocopherol)* deficiency causes no specific disease but may result in vague, undifferentiated symptoms and anaemia.
- *Vitamin K (phylloquinone)* deficiency is rare and can lead to an increased bleeding tendency.
- *Folic acid* deficiency is responsible for pernicious anaemia and neural tube defects in the fetus.

Anaemia and iron

Iron-deficiency anaemia is a common problem in our society, particularly in children from 6 months to 2 years who have been given a lot of cow’s milk. In such cases it is important to educate people about iron-rich foods and the quantities they need (see [CHAPTER 13](#)).

Guidelines for safe consumption of alcohol (current NHMRC recommendations)¹⁹

Healthy males and females

- No more than ten standard drinks per week
- No more than four standard drinks on any single occasion, then don’t drink at all for 2–3 other days

Young people

- People aged under 18 years should not drink alcohol

Pregnancy and breastfeeding

- No alcohol is the safest option

Refer to [CHAPTERS 12](#) and [100](#) for alcohol guidelines.

Iodine deficiency

The body needs small amounts of iodine to maintain normal function of the thyroid gland—crucial for normal growth and development. In iodine-deficient areas (in soil and water) there is a high rate of stillbirths, congenital hypothyroidism and cretinism. In adults, deficiency causes goitre and hypothyroidism. The usual intake of iodine in healthy persons is 100–200 mcg/day, mostly from iodised salt. An adequate intake is 150 mcg/day with higher requirements for pregnancy (220 mcg) and breastfeeding (290 mcg).²⁰

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Australian dietary guidelines¹⁹

(See: www.nhmrc.gov.au)

1. To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet your energy needs
2. Enjoy a wide variety of nutritious foods from these five groups every day
 - plenty of vegetables, including different types and colours, and legumes/beans
 - fruits
 - grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, oats, quinoa and barley
 - lean meat and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans
 - milk, yoghurt, cheese and/or alternatives, mostly reduced fat (reduced fat and milk not suitable for children <2 years)
 - drink plenty of water
3. Limit intake of foods containing saturated fat, added salt, added sugars and alcohol
 - limit intake of foods high in saturated fat, such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and other savoury fats (e.g. butter, cream, cooking margarine, coconut and palm oil) with foods that contain predominantly polyunsaturated and monounsaturated fats, e.g. oils, nut butters/pastes and avocado (low fat diets are unsuitable for children <2 years)
 - limit intake of food and drinks containing added salt; do not add salt to foods in cooking or at

the table

- limit intake of food and drinks containing added sugar, such as confectionery, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, and energy and sports drinks
- if you choose to drink alcohol, limit intake and follow NHMRC guidelines
 - i. Encourage, support and promote breastfeeding
 - j. Care for your food, and prepare and store it safely

Summary of general dietary guidelines for good health

- Keep to an ideal weight (BMI: adults 20–25).
- Eat a high-fibre diet.
- Eat more fruits and vegetables, least-processed breads and cereals, preferably wholegrain.
- Eat fish at least twice a week (daily if possible).
- Choose a nutritious diet.
- Eat less saturated fat, refined sugar and salt.
- Use low-fat dairy products—milk and yoghurt.
- Avoid fast foods and deep-fried foods.
- Do not eat animal meat every day, and then only in small portions. Note that processed meats, such as sausages, have a very high fat content.
- Use monounsaturated (olive) oils and perhaps margarine instead of butter.
- Use olive oil for cooking rather than polyunsaturated oils.
- Always trim fat off meat.
- Limit alcohol intake to 10 standard drinks per week.
- Drink more water.
- Limit salt intake; pepper is okay.
- Limit caffeine intake (0–3 drinks a day maximum).
- Check plasma cholesterol level and, if it is elevated, aim to reduce it with diet.

- The appropriate diet is a low-carbohydrate, healthy-fat, Mediterranean-based diet.

Patient education resources

Evidence has shown that intervention by GPs can have a significant effect on patients' attitudes to a change to a healthier lifestyle. If we are to have an impact on improving the health of the community, we must encourage our patients to take responsibility for their own health and thus change to a healthier lifestyle. They must be supported, however, by a caring doctor who follows the same guidelines and maintains a continuing interest. Examples include modifying diet, nutrition, cessation of smoking, reduction of alcohol intake, undertaking exercise, depression and anxiety.

Patient education materials have been shown to have a beneficial effect. Giving patients Page 44 a hand-out about tetanus increased the rate of immunisation against tetanus among adults threefold.⁷ An education booklet on back pain for patients reduced the number of consultations made by patients over the following year and 84% said that they found it useful.⁸ Providing systematic patient education on cough significantly changed the behaviour of patients to follow practice guidelines and did not result in patients delaying consultation when they had a cough lasting longer than 3 weeks or one with 'serious' symptoms.⁹

One form of patient education is giving hand-outs (either prepared or printed from a computer at the time of the consultation) to the patient as an adjunct to the verbal explanation which, it must be emphasised, is more important than the printed hand-out.

Murtagh's Patient Education 8th edition:

- Diet guidelines for good health

Resource

American Society for Nutrition. Available from: <https://nutrition.org>.

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6 Prevention in general practice

When meditating over a disease, I never think of finding a remedy for it, but, instead, a means of preventing it.

LOUIS PASTEUR 1884

Definitions¹

Prevention may be defined as the means of promoting and maintaining health or averting illness.

It is concerned with removal or reduction of risks; early diagnosis; early treatment; limitation of complications, including those of iatrogenic origin; and maximum adaptation to disability.

The promotion of health concerns helping well people to learn healthy behaviours and to accept responsibility for their own well-being.

A preventive attitude implies that the doctor understands and can utilise the preventive potential in each primary care consultation by an ‘opportunistic approach’. In addition to the traditional management of both presenting and continuing problems, the doctor takes the opportunity to modify the patient’s health-seeking behaviour, to provide education about the illness and to promote health by relating the patient’s present condition to previous unhealthy behaviour.

A general reference for prevention is the RACGP red book—*Guidelines for Preventive Activities in General Practice* (9th edn). See: <https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/>.

Primary prevention

Primary prevention includes action taken to avert the occurrence of disease. As a result there is no disease. Primary preventive strategies include:

- 1. education to bring about changes in lifestyle factors known to be associated with diseases (e.g. smoking cessation, healthy balanced diets, reduction in alcohol intake, exercise)
- 2. sterilisation of surgical instruments and other medical equipment

- 3. eradication, as with vector control of mosquitoes to prevent malaria
- 4. immunisation against infective diseases
- 5. sanitation, keeping our water supplies clean and disposing efficiently of sewage and industrial wastes
- 6. legislation to ensure that some of these primary preventive measures are carried out

Secondary prevention

Secondary prevention includes actions taken to stop or delay the progression of disease.

The term is usually applied to measures for the detection of disease at its earliest stage, i.e. in the presymptomatic phase, so that treatment can be started before irreversible pathology is present. The early recognition of hypertension through routine testing (screening) of patients allows treatment during the presymptomatic phase of the illness process. Screening for cervical cancer allows the treatment of cervical dysplasia, a premalignant condition. Other examples include mammography and endoscopy for polyps of the large bowel.

Tertiary prevention

Tertiary prevention includes the management of established disease so as to minimise disability.

The term is usually applied to the rehabilitation process necessary to restore the patient to the best level of adaptation possible when there has been damage of an irreversible nature. A patient who has suffered a stroke because of hypertension may be restored to a useful lifestyle with appropriate rehabilitation.

Relationship between types of prevention

It can be seen that there is a clearer demarcation between primary and secondary prevention than between secondary and tertiary prevention, although the latter term is particularly useful in dealing with the elderly and the handicapped. Conceptually, curative medicine falls within the definitions of secondary and tertiary prevention while public health measures are mainly concerned with primary prevention. Prevention is really wider than medical practice but because of the success of public health practices in the past, more attention is now being focused on prevention by doctors (see FIG. 6.1).²

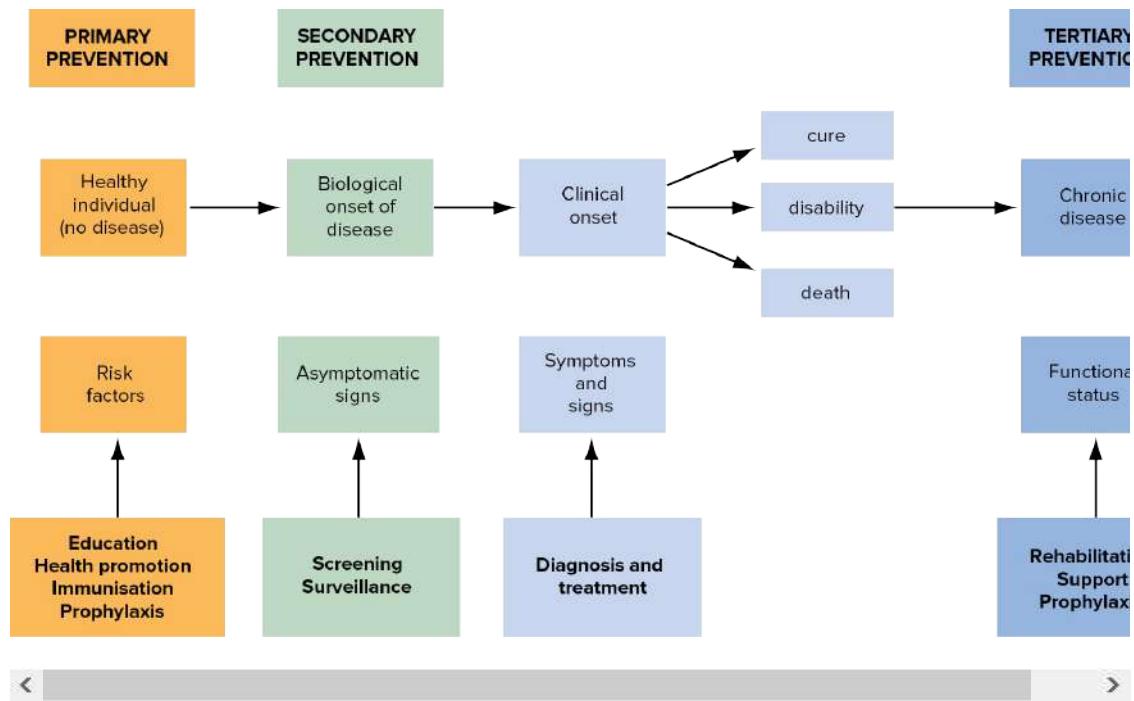


FIGURE 6.1 The phases of prevention in relation to the natural history of disease

As GPs our role in prevention is twofold.

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- First, we can recognise the preventable factors that are involved in an illness process and determine appropriate interventions.
- Second, we can act to implement the preventive measure. In cases where the responsibility rests with the individual or the community, doctors can support prevention through education, applying political pressure or working with community agencies.

The practice of preventive medicine

What is preventable?

The first step in the implementation of prevention is to define which specific diseases can be prevented and to what extent, given certain restraints such as human resources, technology and the cost to the community. All diseases have a potential preventability but it may be unrealistic to try to achieve this.

Diseases that can be prevented can be grouped according to their aetiology. They fall into the following broad categories:

- genetic disorders

- conditions occurring during pregnancy and the puerperium
- developmental disorders
- accidents
- infections
- addictions
- behavioural disorders
- occupational disorders
- premature vascular disease
- neoplasms
- handicap in the disabled
- certain ‘other’ diseases (e.g. diverticular disease)

Mortality is the only reliable index by which the outcome of preventive activities can be judged. Conditions can be ranked in importance as causes of premature death according to the ‘years of potential life lost before 78 years [of age]’ as follows:¹

- Accidents, poisoning, suicide and violence
- Neoplasms
- Circulatory diseases
- Perinatal conditions
- Congenital conditions
- Alzheimer disease

This gives quite a different perspective to prevention and explains why the efforts of public health authorities and practising doctors do not always coincide.

The interventions available to us in medical practice are as follows:

1. educational—health promotion, health education and illness education
2. screening
3. surveillance

- i. interventional care—immunisation, behaviour modification and drug prophylaxis
- j. rehabilitation

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Optimal opportunities for prevention

Primary prevention par excellence can be practised in general practice under the opportunities provided by the following clinical circumstances:

- antenatal care
- postnatal care
- advising people travelling overseas
- visits by infants with their parents
- times of crisis or potential crisis
- pregnancy planning

The Royal College of General Practitioners (UK) has identified the seven most important opportunities for prevention as:

1. family planning
2. antenatal care
3. immunisation
4. fostering the bonds between mother and child
5. discouragement of smoking
6. detection and management of raised blood pressure
7. helping the bereaved

Mortality and morbidity considerations

An understanding of the mortality and morbidity patterns in the modern human being is essential to the planning of preventive programs. The great infectious diseases of the past, such as tuberculosis, syphilis, smallpox, influenza, diphtheria and streptococcal infections, have been largely contained but other diseases have become prominent as life expectancy increases. The great modern diseases are atherosclerosis (hardening of the arteries), malignant disease (cancer), HIV infection and iatrogenesis (doctor-induced illness). The two most common causes of death in Australia are cancer and cardiovascular disease, each accounting for approximately 20% of all

deaths.³

By comparison, the 10 leading causes of death in the world are (in order): ischaemic heart disease; stroke; COPD; lower respiratory tract infection; neonatal conditions; trachea, bronchus and lung cancers; Alzheimer disease and dementia; diarrhoeal diseases; diabetes mellitus; and kidney disease (WHO: Fact sheet: The top 10 causes of death; December 2020).

These diseases and the common causes of mortality (see TABLE 6.1) act as a focus for our energies in addressing preventive programs.

Table 6.1 Common causes of deaths in Australia in 2019 (in rank order)

- 1 Ischaemic heart disease
- 2 Dementia/Alzheimer disease
- 3 Cerebrovascular disease
- 4 Tracheal, bronchial and lung cancer
- 5 Chronic lower respiratory disease
- 6 Colorectal cancer
- 7 Diabetes mellitus
- 8 Blood and lymph cancer
- 9 Influenza and pneumonia
- 10 Diseases of the urinary system
- 11 Heart failure
- 12 Prostate cancer
- 13 Suicide, intentional self-harm

*Cancer is the no. 1 cause if grouped together

Source: Australia's leading causes of death. Causes of death, Australia, 2019. Australian Bureau of Statistics. Available from: <https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/latest-release#australia-s-leading-causes-of-death-2019>

It is worth focusing on the changes in disease indices during the past generation in order to evaluate the effect of preventive and health promotion programs during this period (see TABLE 6.2).³ The messages are to harness and promote with renewed vigour those strategies that are working, such as prevention of death from coronary artery disease and motor vehicle accidents, and to re-evaluate those important areas, such as Aboriginal mortality, HIV infection, cancer, suicide and asthma, which are bad news! On the positive side, the overall life expectancy in Australia has risen to 82.5 years.

Table 6.2 Major changes in public health in Australia, with trends in the

two decades up to 2012[†]

Improvements	Deterioration
Overall mortality	Alcohol-related diseases
Heart disease	Drug abuse
Stroke	Dementia
Smoking	Depression, mental health
Road safety	Health inequalities
Diseases controlled by immunisation	Obesity
Dental health	Diabetes
Cancer, overall especially	Arthritis/musculoskeletal problems
• cervix	Fall injuries
• stomach	Environmental pollution problems
• breast	
• testis	
• colorectal	
Pregnancy complications	
Congenital abnormalities	
HIV/AIDS	

A global strategy for good health

The World Health Organization (WHO) defines good health as ‘a state of dynamic harmony between the body, mind and spirit of a person and the social and cultural influences which make up his or her environment’.

A considerable amount of epidemiological information has emerged to support what GPs have known for a long time—that a commonsense, healthy lifestyle not only promotes good health but also reduces the risk of the main causes of mortality and morbidity in this country, including cardiovascular disease and cancer.

The common theme for virtually all disease is to follow the nutrition and lifestyle guidelines presented in [CHAPTER 5](#).

Behaviour modification

Lifestyle habits that have developed over many years can be very difficult to change even when the individual is well motivated to change. A variety of instructional, motivational and behavioural techniques can be used to initiate a lifestyle change program; GPs should be aware of these and use the resources of a multidisciplinary team to give support to motivated people who as a rule find behaviour modification difficult.

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Vascular disease

Risk factors for vascular disease (atherosclerosis) are:

- hypertension
- smoking
- high cholesterol
- diabetes
- obesity
- sedentary lifestyle
- stress
- alcohol excess
- poor diet
- family history

The guidelines for good health given in [CHAPTER 5](#), if followed, will help prevent the development of cardiovascular and cerebrovascular disease.

It is worth noting that the death rate from coronary heart disease is about 70% higher for smokers than for non-smokers, and for very heavy smokers the risk is almost 200% higher. It has been shown that the incidence of heart disease falls in those who have ceased smoking.

GPs can estimate the absolute 5-year risks of cardiovascular events in their patients by referring to the Absolute CVD risk clinical guidelines set out by the Heart Foundation (www.heartfoundation.org.au); see [CHAPTER 75](#).

The parameters used are:

- gender and age
- smoking status
- diabetes status

- blood pressure
- total cholesterol/HDL ratio

Malignant disease

Primary prevention of cancer is an important objective and there is a need to focus on this vital factor as much as on secondary prevention.

Updated important facts about cancer in Australia* (current and immediate future)

- It continues to be more common in men than women overall; in 2019 more than half (54%) of all diagnosed cases were expected to be in men.
- Breast cancer (in women) is expected to be the most common type of cancer diagnosed, followed by colorectal cancer and prostate cancer.*
- The death rate from all cancers has fallen from 209 deaths per 100 000 people in 1982 to an estimated 161 per 100 000.
- Survival rates from all cancers have improved substantially, with 5-year survival increasing from 48% in 1984–1988 to 69% in 2011–2015.
- Survival varied by cancer type, with the largest survival improvements seen in prostate cancer, non-Hodgkin lymphoma, kidney cancer and multiple myeloma.
- Pancreatic cancer and lung cancer showed only small improvements, while bladder cancer and cancer of the larynx actually had lower survival rates.
- Lung cancer is likely to be the leading cause of cancer death, followed by colorectal cancer, prostate cancer, breast cancer in women and pancreatic cancer.

**Excluding basal and squamous cell carcinoma*

Source: Cancer Council of Australia (www.cancer.org.au/cancer-information); and Australian Institute of Health and Welfare (AIHW), Cancer in Australia, Cancer series no 101. Cat no. CAN 100. 2019. Canberra.

That environmental factors are involved in the aetiology of colorectal cancer and other cancers is indicated by wide variations in incidence between different countries.

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Suspicion falls on diet and there is epidemiological evidence implicating diets high in animal fats and low in insoluble fibre, fruits and vegetables, and also high alcohol consumption. It is noted that there are higher incidence rates in people migrating from low- to high-risk countries, such as Japanese to Hawaii and Greeks and Italians to Australia.⁵

Studies in the US indicate that at least 35% of all cancer deaths are related to diet. Obese

individuals have an increased risk of colon, breast and uterine cancers. High-fat diets are a risk factor for prostate, breast and colon cancers. Salt-cured, smoked and nitrate-cured foods increase the risk of upper GIT cancers. Foods rich in vitamin A and folate (dark green and deep yellow vegetables and fruits) and vitamin C and cruciferous vegetables (cabbage, Brussels sprouts, broccoli and cauliflower) are all considered to have protective effects for various cancers.^{6,7} Phytochemicals (plant chemicals) exist in these foods and in other vegetables and fruit that have a cancer-protective effect.⁸

Overall, diet, smoking, alcohol and occupational exposures (5%) appear to account for over 73% of all cancer mortality.⁷

Doll and Peto⁹ considered that environmental factors were responsible for 80–90% of cancers and estimated that diet was a major factor in the cause of cancer in 40% of men and 60% of women.

The role of immunity in cancer

The development of a number of cancers appears to be related to a depression of the individual's immune system, particularly in relation to cellular immunity, in a similar way (albeit on a different scale) to the effect of HIV infection. Studies have shown that the immune system is adversely influenced by:¹⁰

- stress, especially bereavement
- depression
- ageing
- drugs
- pollutants
- cigarette smoke
- inappropriate diet
- alcohol
- radiation

On the other hand, a protective effect on the immune system may be provided by:

- food antioxidants (see TABLE 5.4 in CHAPTER 5)
- tranquillity
- meditation

In some instances malignancies appear to undergo unpredictable remissions with patients following an optimal diet, taking antioxidants, changing their lifestyle and practising meditation. However, an Australian study indicated that the enthusiasm for the value of antioxidants may be unjustified.¹¹

Diet certainly appears to be a most important factor in the primary prevention of disease. If immune-deficient diseases can respond in such a way, imagine what a powerful primary preventive force such a lifestyle represents for all disease.

Asthma and other respiratory diseases

The death rate and morbidity rate for asthma and other respiratory diseases is unacceptable and much of it can be prevented.¹² A report on the cost of asthma claimed that there is evidence that a significant proportion of diagnosed asthmatics are currently receiving treatment that does not provide the best possible control of the disease.¹²

Prevention means being better informed and treating such an ‘irritable’ disease as bronchial asthma aggressively. It means focusing on better assessment and monitoring (e.g. home use of the mini peak flow meter), better delivery of medication to the airways (e.g. use of spacers attached to inhalers and/or use of pumps and nebulisers) and appropriate management of the cause (inflammation of the bronchial tree) by the use of inhaled corticosteroids or sodium cromoglycate as the first-line treatment for significant asthma. An appropriate strategy is to follow the six-step asthma management plan (see TABLE 6.3) of the National Asthma Campaign.

Table 6.3 The six-step asthma management plan

1. Establish the severity of the asthma.
 2. Achieve best lung function.
 3. Maintain best lung function—identify and avoid trigger factors.
 4. Maintain best lung function—follow an optimal medication program.
 5. Develop a written, accessible action plan.
 6. Educate and review regularly.
-

Source: National Asthma Campaign: Australia, 2008

The protective effect for asthma and COPD of vitamin C, fish oils, a low-salt diet and other natural antioxidants is highlighted by Sridhar.¹³

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Periodic health examination

Since 86% of the population visit a GP at some stage of the year,³ and these people visit about five times each year (on average), GPs are in an ideal position to develop strategies for a periodic health examination. An emphasis should be placed on the history in addition to the physical examination and related basic investigations.

As for any smooth-running quality professional program, it is important to be organised with prepared practice staff, checklists and record systems. The Royal Australian College of General Practitioners (RACGP) has developed a College Record System, which has several leaflets covering all approaches to the patient ‘check-up’.¹⁴

The following guidelines for the periodic health examination are adapted from those recommended by the Preventive and Community Medicine Committee of the RACGP.¹⁴ This represents appropriate screening at the front line of primary health care.

Aims of screening

In practice, screening is not only to detect disease in asymptomatic people at its earliest stage in order to classify them as likely or unlikely to have a disease, but also to find individuals at risk or those with established disease who are not receiving adequate care. There are three levels at which screening practice can be applied in general practice:

- 1. ‘well’ individuals with risk factors that predispose to disease (e.g. obesity, uncomplicated essential hypertension, hyperlipidaemia)
- 2. asymptomatic individuals with signs of early disease or illness (e.g. developmental dysplasia of the hip, ectopic testis, glaucoma, bacteriuria of pregnancy, carcinoma in situ of cervix)
- 3. symptomatic individuals whose irreversible abnormalities are unreported but the effects can be controlled or assisted (e.g. visual defects, deafness, mental handicap)

The history¹⁴

An appropriate history will allow the recognition of certain risk factors that may foreshadow future disease. Though established patients will have a previously acquired database, their history should be reviewed and updated. It is recommended that the following items be included in history taking in the appropriate age groups.

Family history. In particular, cardiovascular disease, some cancers (breast, bowel, melanoma with dysplastic naevi), diabetes, asthma, genetic disorders and bowel disease will alert the doctor to specific risk factors (and psychological factors) for these patients.

Suicide and accidents. Consider the risk factors predisposing to suicide and accidents, which are the major preventable causes of death in children and young adults.

Substance abuse. Tobacco and alcohol are the major causes of preventable death in adults, although other drugs contribute to a lesser extent. Counselling by GPs, about smoking in

particular, has been shown to be effective.

Exercise and nutrition. These factors have a role to play in preventing cardiovascular disease and to a lesser extent in blood pressure control, cancer, diabetes and constipation. They have an even greater role to play in improving general well-being and preventing morbidity.

Occupational health hazards. Consider these in working adults, as occupational health hazards can significantly contribute to morbidity and mortality (e.g. exposure to toxic substances, unsafe work practices). Specific examples include:

- coal miners—pneumoconiosis
- gold, copper and tin miners—silicosis
- asbestos workers and builders—asbestosis, mesothelioma
- veterinarians, farmers, abattoir workers—zoonoses
- aniline dye workers—bladder cancer
- health care providers—hepatitis B

Physical functioning, home conditions and social supports. Consider these in elderly people, as physical function and social supports are of crucial importance in determining whether they can care for themselves—intervention can prevent accidents and death.

Sexuality/contraception. Sexually transmitted infections are all preventable, as are unwanted pregnancies. Opportunities should be sought to ask young people, in particular, about their sexuality, and to counsel them. The question ‘Do you have any concerns about sex?’ is very useful in this context.

Osteoporosis. Osteoporosis affects nearly a third of all postmenopausal women, most of whom suffer osteoporotic fractures. Fractures of the femoral neck have a particularly poor prognosis, with up to a third of these women dying within 6 months, and many more requiring continuing nursing home care. Bone loss accelerates at the time of the menopause, and can be reduced by hormone replacement therapy.

Women at risk of osteoporosis are short, slim, Caucasian; they drink coffee and alcohol, smoke, eat a high-protein and high-salt diet, and don’t exercise.

Masquerades in general practice. It is worth considering the ‘masquerades’ (see [CHAPTER 9](#), [TABLES 9.4](#) and [9.5](#)), which may present as undifferentiated illness, as a means of following the important medical principle of early detection of disease: engendering a certain awareness.

Primary masquerades to consider are:

- depression
- diabetes mellitus

- drug problems
- anaemia
- thyroid disorders, especially hypothyroidism
- urinary tract infection
- vertebral (spinal) dysfunction

Hypothyroidism has been estimated to exist in up to 15% of women aged 60 and above, and searching for clues may elicit subtle symptoms and signs previously attributed to ageing.

Relationships and psychosocial health. Consider the mental health of patients, particularly the elderly, by enquiring about how they are coping with life, how they are coping financially, about their peace of mind and how things are at home. Focus on the quality of their close relationships (e.g. husband–wife, father–son, mother–daughter, employer–employee). Enquire about losses in their life, especially family bereavements.

Screening for children¹⁴

Childhood health record books provide an excellent opportunity for communication between different health care givers; parents should be provided with the record books and encouraged to bring them to every visit. Various recommendations for screening are made under the following headings.

Height/weight/head circumference. Record length/height, weight and head circumference at regular intervals. Head circumference can be recorded until 2 years and should increase by 1 cm per month in the first 3 months, then 0.5 cm per month from 3–6 months. It provides further data about a child's growth. It is important to check the fontanelles. Calculate the BMI from 2 years. The adequacy of a child's growth cannot be assessed on one measurement and serial recordings on growth charts are recommended.

Hips. Screen for congenital dislocation at birth, 6–8 weeks, 6–9 months and 12–24 months (see CHAPTER 54).

The flexed hips are abducted, checking for movement and a 'clunk' of the femoral head forwards (the test is most likely to be positive at 3–6 weeks and usually negative after 8 weeks). Shortening or limited abduction is also abnormal. Ultrasound examination is more sensitive than the clinical examination, especially up to 3–4 months. Observe gait when starting to walk.

Strabismus. Strabismus should be sought in all infants and toddlers by occlusion testing (not very sensitive), examining light reflexes and questioning parents, which must be taken very seriously. Amblyopia can be prevented by early recognition and treatment of strabismus by occlusion and surgery. Early referral is essential.

Visual acuity. At birth and 2 months, eyes should be inspected and examined with an

ophthalmoscope with a 3+ lens at a distance of 20–30 cm to detect cataracts and red reflexes. At 9 months gross vision should be determined by assessing ability to see common objects. Visual acuity should be formally assessed at school entry using Sheridan Gardiner charts.

Hearing. Hearing should be tested by distraction at 9 months or earlier; also by pure tone audiometry at 1000 and 4000 hertz when a child is 4 years (preschool entry) and 12 years.

Note: Formal audiological evaluation should be carried out at any time if there is clinical suspicion or parental concern. No simple screening test is very reliable for sensorineural or conductive deafness.

Testes. Screen at birth, and 6–8 weeks, 6–9 months and 3 years for absence or maldescent. Those who have been treated for maldescent have a higher risk of neoplastic development in adolescence.

Oral health/dental assessment/fluoride. Advise daily fluoride drops or tablets, if water supply is not fluoridated. Children's teeth should be checked regularly, particularly if a school dental service is not available. Advice should be given on sugar consumption, especially night-time bottles, and tooth cleaning with fluoride toothpaste to prevent plaque.

Scoliosis. Screening of females by the forward flexion test, which is carried out around 12 years of age, is of questionable value because of poor sensitivity and specificity.

Congenital heart disease. The heart should be auscultated at birth, in the first few days, at 6–8 weeks and on school entry.

Femoral pulses. Testing for absence of femoral pulses or delay between brachial/femoral pulses at birth and 8 weeks will exclude coarctation of the aorta. Refer the child immediately if concerned.

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Speech and language. A child's speech should be intelligible to strangers by 3 years. It is related to hearing.

General development

Apart from speech and language, check social and emotional development, toilet habits, behaviour and mood.

This includes 'parents' evaluation of developmental status' (PEDS) (see: www.pedstest.com; www.rch.org.au/ccch).

For general checklists, see www.cdc.gov/actearly. Be alert to the 'red flags' of autism spectrum disorder (see [CHAPTER 87](#)).

Screening in the elderly

Refer to [CHAPTER 125](#) .

Screening for adults¹⁴

The following recommendations apply for adults.

Weight. Weight should be recorded at least every few years. Obesity is a major reversible health risk for adults, contributing to many diseases (e.g. heart disease, diabetes, arthritis). Body mass index (BMI) should ideally be between 20 and 25.

$$\text{BMI} = \text{weight (kg)} \div \text{height (m}^2\text{)}$$

Abdominal obesity is a major risk factor for adults. The waist:hip circumference ratio is regarded as a useful predictor of cardiac disease. Recommended waist:hip ratios are:

- males <0.9
- females <0.8

Blood pressure. Blood pressure should be recorded at least every 1–2 years on all people 16 years and over. There is no dispute that control of blood pressure results in reduced mortality from cerebrovascular accidents and, to a lesser extent, heart disease, kidney failure and retinopathy.

Cholesterol. All adults aged 45 and over should have a 5-yearly estimation of serum cholesterol. Total cholesterol is adequate for screening purposes. HDL levels give additional information. The National Heart Foundation recommends keeping cholesterol levels below 4.0 mmol/L. For most, dietary modification is sufficient to achieve these levels; some may require drug treatment.

Fasting blood glucose. Screen every 3 years for all patients >40 years of age.

Cervical cancer. From age 25 (to age 74), women who have ever been sexually active should commence cervical screening with a HPV test 2 years after their last Pap test. If negative, this can be performed every 5 years. If positive, cervical cytology will be checked with the sample and follow-up is determined according to the national guidelines. Women aged 70–74 should be offered a final ‘exit test’ and can cease screening if negative.

Breast cancer. Mammography should be performed at least every 2 years on women aged 50–74 years. It is not useful for screening prior to age 40 years due to difficulty in discriminating malignant lesions from dense tissue. Women aged 40–49 years may also choose to have a mammogram.¹⁴ Mammography must not be used alone to exclude cancer if a lump is palpable. Such lesions require a complete appraisal since, even in the best hands, mammography still has a false-negative rate of at least 10%. Genetic testing should be considered in those at risk.

Colorectal cancer (CRC). A history should be taken, with specific enquiry as to family history of adenomas or colorectal cancer, past history of inflammatory bowel disease and rectal bleeding. Rectal examination should be performed as part of an examination. Immunochemical faecal occult blood testing (FOBT) every 2 years is now recommended for screening for people over 50 years (continuing to 74 years) without symptoms and with average or slightly above average

risk.

Should a positive history be elicited, then the following are recommended:

- past history of large bowel cancer or colonic adenomas—colonoscopy
- past or present history of ulcerative colitis—colonoscopy with biopsies
- familial polyposis, Gardner syndrome—sigmoidoscopy or colonoscopy

Prophylactic colectomy needs consideration in some individuals.

Apart from FOBT screening, the National Health and Medical Research Council (NHMRC) currently recommends:

- for people at moderate risk (family history category 2)—2-yearly FOBT for people age 40–49, then colonoscopy every 5 years for people age 50–74
- for high risk (family history category 3)—2-yearly FOBT for people age 35–44, then colonoscopy every 5 years for people age 45–74

Refer to the RACGP *Guidelines for Preventive Activities in General Practice*¹⁴ for further information. Genetic testing should be considered in those at risk.

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Prostate cancer. Screening is controversial. The RACGP guidelines do not recommend routine screening with DRE, PSA or transabdominal ultrasound. Patients should make their own decision after being fully informed of the potential benefits, risks and uncertainties of testing. Doctors should also use their clinical judgment for their individual male patients.

Skin cancer. All patients should be informed regularly about the need for protection of the skin and eyes from ultraviolet (UV) radiation, using hats, clothing, sunglasses and sunscreens, and avoiding exposure during peak UV periods (10 am to 3 pm).

Skin cancer, which is increasing in incidence, is common in Australia, particularly in more northern areas. Squamous cell carcinoma, and melanoma in particular, may be lethal. Detection and treatment of early lesions prevents mortality and morbidity. Prevention of skin cancer by reduction of sun exposure should be taught to all patients.

Oral hygiene/cancer. Patients should be counselled about cessation of smoking and alcohol consumption, and dental hygiene should be taught. The oral cavity should be inspected annually in patients over the age of 40 years.

Although oral cancer has a relatively low incidence, premalignant lesions may be detected by inspection of the oral cavity. Its incidence is highest in elderly people with a history of heavy smoking or drinking. Poor dental hygiene may result in poor nutrition, particularly among the elderly.

Cancer screening in summary:¹⁴

- Screen for breast, cervical and colorectal cancer.
- Routine population-based screening is at this stage of evidence not recommended for lung, melanoma, ovarian, prostate and testicular cancers.

Immunisation

Children and adolescents should be immunised according to the current NHMRC recommended standard vaccination schedule (see: www.health.gov.au/health-topics/immunisation).

The NHMRC advises administering intramuscular and subcutaneous vaccines to the anterolateral thighs for children under 12 months, and to the deltoid region in older children and adults. Do not postpone immunisation for minor illnesses such as mild URTI.

All adults should receive an adult diphtheria and tetanus (ADT) booster every 10 years.

All women of child-bearing years should have their rubella antibody status reviewed. During pregnancy, it is recommended to have the seasonal influenza vaccination any time in the pregnancy and a pertussis booster in the final trimester.

Table 6.4 National Immunisation Program Schedule¹⁵ (as from 2018)

Age	Immunisation
Birth	Hepatitis B
2 months	DTP, Hib, hepatitis B, polio, pneumococcus, rotavirus
4 months	DTP, Hib, hepatitis B, polio, pneumococcus, rotavirus
6 months	DTP, polio, Hib and hepatitis B
12 months	Measles/mumps/rubella (MMR), pneumococcus, meningococcal ACWY
18 months	DTP, varicella, measles, mumps, rubella (MMR), Hib
4 years	DTP, polio
School programs	HPV, DTP (adult), meningococcal ACWY, hepatitis B (if no first course)

12–16 years (contact state authorities)	
Pregnant women	Influenza, pertussis
From 65 years	Influenza (yearly), pneumococcal polysaccharide (23vPPV)
70–79 years	Herpes zoster

Hib = *Haemophilus influenzae type b*

HPV = *human papilloma virus*

DTP (triple antigen) = *diphtheria, tetanus, pertussis*

Note: Aboriginal and Torres Strait Islanders (ATSIP) and other at-risk groups have further recommended immunisations, including influenza, pneumococcus and hepatitis A.

Adverse effects of vaccination

Common adverse effects are irritability, malaise, fever and a local reaction to the injection. There is a very small risk of anaphylaxis. It is advisable to wait 15–30 minutes for observation after vaccination. Paracetamol is recommended for fever and local pain; however, routine use at the time of or immediately after vaccination is not recommended.¹⁵

Fever and illness. Children with minor illness (providing the temperature is <38.0°C) may be vaccinated safely. Otherwise it should be delayed. A simple past febrile convulsion or pre-existing neurological disease is not a contraindication to pertussis vaccination. Absolute contraindications include encephalopathy within 7 days of a previous DTP or an immediate severe or anaphylactic reaction to DTP.

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The case for vaccines

Influenza. The population needs to be immunised against this ever severe and constantly mutating endemic infection. Influenza immunisation is recommended on an annual basis for persons of all ages with chronic debilitating diseases, especially chronic cardiac, pulmonary, kidney and metabolic diseases, persons over 65 years of age, all Aboriginal and Torres Strait Islander people over 12 months of age, especially adults over 50 years of age, and persons receiving immunosuppressant therapy. Health care personnel may wish to consider it for their own use.

Pneumococcal disease. This should be considered for the same risk groups as influenza vaccine. Those at higher risk of fatal pneumococcal infection (e.g. post-splenectomy or Hodgkin lymphoma) should receive a booster every 5 years. This is currently provided for all children.

Hepatitis A. Immunisation is recommended for:

- certain occupational groups at risk (e.g. health workers, child care workers, sewage workers)
- non-immune homosexual men

- those with chronic liver disease
- recipients of blood products
- travellers to hepatitis A-endemic areas

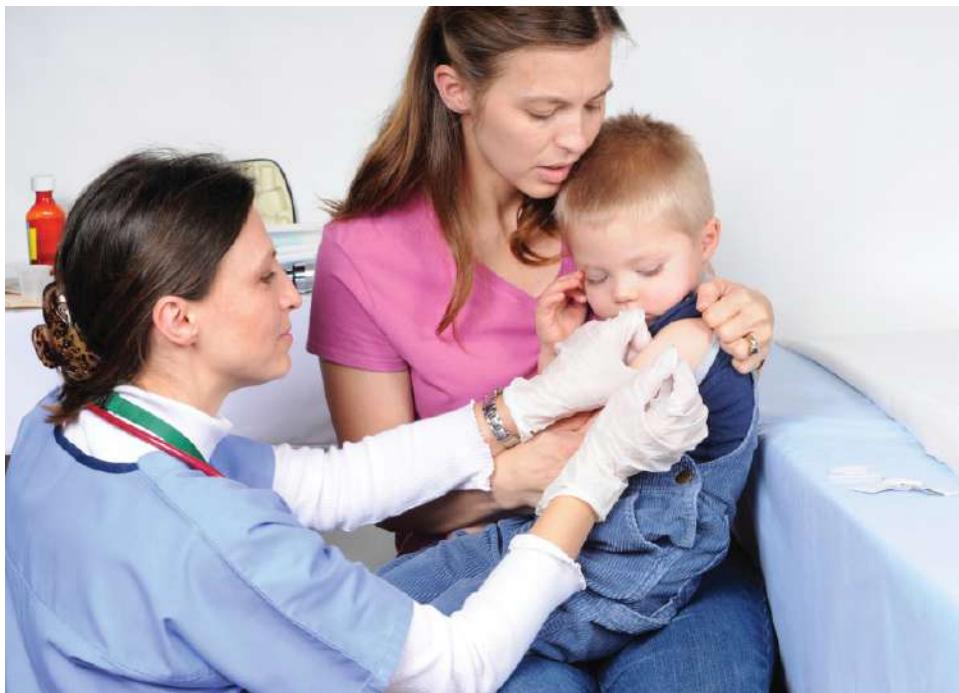


FIGURE 6.2 Immunisation of an older child: important continuing preventive care

Hepatitis B. Immunisation is recommended routinely for all children at birth, 2 months, 4 months and at either 6 or 12 months, and for individuals of all ages who, through work or lifestyle, may be exposed to hepatitis B and have been shown to be susceptible. Such groups would include health care personnel, personnel and residents of institutions, prisoners and prison staff, persons with frequent and/or close contact with high-risk groups, and persons at increased risk due to their sexual practices. Household contacts of any of the above groups should be considered for immunisation. Booster doses are not recommended for immunocompetent people but are recommended for immunosuppressed individuals. Universal vaccination represents a preventive step against hepatocellular cancer.

Haemophilus influenzae type b. Hib immunisation is recommended for all children, especially those in child care. It is ideal to achieve immunity by the age of 18 months and preferably commencing at 2 months. Risk factors for Hib disease include day care attendance, presence of ill siblings under 6 years of age in the home and household crowding.

Q fever. People at reasonable risk from Q fever, particularly abattoir workers, should be given this vaccine, which is virtually 100% effective.

Measles-mumps-rubella. Both females and males should be immunised against measles, mumps and rubella at the age of 12 months and 18 months using the trivalent vaccine. All non-immune women who are postpartum or of child-bearing age should be immunised.

Varicella vaccine. This is available and one dose is given at 18 months. Those over 12 years have a course of two injections.

Meningococcal vaccine. Meningococcal disease is caused by *Neisseria meningitidis*, which has 13 serogroups of which A, B and C account for over 90% of isolated cases, with serogroup B responsible for most cases. A vaccine against serogroup B is available but is not yet part of the recommended schedule, as evaluation studies are being assessed. The main vaccine that is available is a quadrivalent polysaccharide vaccine against serogroups A, C, Y and W125 for use in individuals over 2 years as a single injection. Universal prevention by immunisation remains unsatisfactory. It is most useful when a community outbreak due to proven serogroup C occurs.

Rotavirus. A course of two (usually) or three oral live attenuated rotavirus vaccines is given to children to cover a common cause of childhood gastroenteritis. Inform parents of the risk of intussusception with the first dose.

Human papillomavirus. A course of two injections is provided by schools to all pupils aged 11–12 years.

Neonatal screening

Blood from a heel prick at 48–72 hours following birth checks 25 conditions including

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cystic fibrosis, phenylketonuria and hypothyroidism.

Genetic screening

Genetic screening programs are presented in [CHAPTER 23](#).

Key checkpoints

- Leading risk factors contributing to the burden of disease in Australia are tobacco, hypertension, excess weight/obesity, physical inactivity, hypercholesterolaemia, alcohol, and low fruit and vegetable consumption.
- Studies in the US conclude that a healthy lifestyle consists of not smoking, BMI <30 kg/m², five servings of fruit and vegetables a day and about 150 minutes of exercise each week.

Resource

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7 Research and evidence-based medicine

Not the possession of truth, but the effort of struggling to attain it brings joy to the researcher.

GOTTHOLD LASSING (1729–1781)

Effective research is the trademark of the medical profession. When confronted with the great responsibility of understanding and treating human beings, we need as much scientific evidence as possible to render our decision making valid, credible and justifiable.

Research can be defined as ‘a systematic method in which the truth of evidence is based on observing and testing the soundness of conclusions according to consistent rules’¹ or, to put it more simply, ‘research is organised curiosity’,² the end point being new and improved knowledge.

In the medical context the term ‘research’ tends to conjecture bench-type laboratory research. However, the discipline of general practice provides a fertile research area in which to evaluate the morbidity patterns and the nature of common problems in addition to the processes specific to primary health care.

There has been an excellent tradition of research conducted by GPs. Tim Murrell in his paper ‘Nineteenth century masters of general practice’³ describes the contributions of Edward Jenner, Caleb Parry, John Snow, Robert Koch and James MacKenzie, and notes that ‘among the characteristics they shared was their capacity to observe and record natural phenomena, breaking new frontiers of discovery in medicine using an ecological paradigm’.

This tradition was carried into the 20th century by Australian GPs such as Clifford Jungfer, Alan Chancellor, Charles Bridges-Webb, Kevin Cullen and Trevor Beard,⁴ and now the research activities of the new generation of GPs, academic-based or practice-based, have been taken to a higher level with the development of evidence-based medicine (EBM).

Based on the work of the Cochrane Collaboration and the initiatives of Chris Silagy, Paul Glasziou and Chris Del Mar in particular, research has moved from the relatively ‘pure’ hospital environment to ‘real world’ scenarios which better reflect the circumstances of patients living in the community. Plenty of interventions which seem to work well in sponsored clinical trials are

less impressive when measured in general practice. Some other interventions such as lifestyle management turn out to be surprisingly effective once they are accurately measured.

The focus of EBM has been to improve health care and health economics. Its development has gone hand in hand with improved information technology. EBM is inextricably linked to research.

The aim of this chapter is to present a brief overview of research and EBM and, in particular, to encourage GPs, either singly or collectively, to undertake research—simple or sophisticated—and also to publish their work. The benefits of such are well outlined in John Howie's classic text *Research in General Practice*.⁵

Why do research?

The basic objective of research is to acquire new knowledge and to justify decision making in medical practice. Research provides a basis for the acquisition of many skills, particularly those of critical thinking and scientific methodology. The discipline of general practice is special to us with its core content of continuing, comprehensive, community-based primary care, family care, domiciliary care, whole-person care and preventive care. To achieve credibility and parity with our specialist colleagues, we need to research this area with appropriate methodology and to define the discipline clearly. There is no area of medicine that involves such a diverse range and quantity of decisions each day as general practice, and therefore patient management needs as much evidence-based rigour as possible.

Our own patch, be it an isolated rural practice or an industrial suburban practice, has its own micro-epidemiological fascination. Thus, it provides a unique opportunity to find answers to questions and make observations about that particular community.

Increasingly, GPs are expected to be able to sift through mountains of information in order to reliably offer advice about how the evidence applies to the individual sitting in front of them. Much of the information available to patients and doctors is either dubious opinion or skewed towards the interests of an entity providing the intervention, rather than to the patient. An understanding of how research is produced provides a basis for the ability to critically appraise medical evidence.

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There are also personal reasons to undertake research. The process assists professional development, encourages clear and critical thinking, improves knowledge and offers the satisfaction of developing new skills and opening horizons.

The author undertook many small studies on common, everyday problems during 10 years in country practice to determine the most effective treatments for which no or minimal evidence in the literature could be found. Many of these recommendations—for problems such as tennis elbow, cold sores, aphthous ulcers, ingrown toenails, hiccoughs, back pain, nightmares, temporomandibular dysfunction and warts—appear in this text. Although the numbers were relatively small, it was useful to compare treatments for about 10 or 20 cases to test hypotheses and allow trends to emerge. Subsequent results from a large controlled trial would, of course,

take precedence over these recommendations if they differed. However, the exercise, albeit limited, added immense interest to one's practice, which at times can be tedious without such scholarly challenges.

An important reason to undertake research is to conform with quality assurance processes that are now being expected of practitioners. The significant processes evaluating our accountability for quality control include audits of our own records, studies of critical incidents and morbidity studies.

Who should do research?

Any GP searching for answers to questions and who has the opportunity should undertake research. Research is largely opportunistic; for some it may be an impulsive reaction to a fascinating observation, for others a carefully conceived plan.

The research question should be answerable, and that answer, whether positive or negative, should be useful to patients.

Research can be collaborative, and in fact a group practice is an excellent way to get started. Ideally, start with the 'apprentice' model, where one's first attempt is a collaboration alongside a more experienced researcher.

Many GPs who have started 'small' have progressed to great heights of research activity, especially if they enjoy analysing the raw data once it has been produced. In the process of posing questions and eventually finding the answers, they frequently refer to the experience as 'good fun'.

The Royal Australian College of General Practitioners (RACGP) promotes and supports general practice research (visit: www.racgp.org.au/support/research or email: research@racgp.org.au).

Asking questions

We often ask questions during the course of managing patients and such questions can form the basis of a research project, however simple.

Typical questions might be:

- Is suicide or attempted suicide in adolescent males precipitated by sexual-orientation issues?
- Is recurrent migraine caused by cervical dysfunction?
- Should we use antibiotics to treat otitis media in children presenting in general practice?
- Does the distribution of leaflets by the receptionist in the waiting room lead to increased immunisation rates or cervical smears?
- Are my patients satisfied with the services they receive?

- Does the provision of patient information leaflets for the management of hypertension lead to better adherence?

Research on what?

General practice has its own unique characteristics including illness content, processes, epidemiology, health services, quality assurance and doctor–patient relationships. The special contact with patients provides opportunities to evaluate their perspectives on health service delivery, psychosocial issues and communication skills. The old saying ‘dig where you are’ is relevant to all of us. GPs invariably develop their own special interests and this is a logical area in which to conduct research. Conducting a morbidity and prescribing survey in a practice is a simple and fascinating study. If the results are added to a wider study, invaluable information about the nature of general practice is obtained.^{5,6}

The World Organization of National Colleges and Assemblies of General Practice (WONCA) produced the first *International Classification of Primary Care* (ICPC) in 1987, since ratified by the WHO. This classification of presenting symptoms, diagnoses and treatments has greatly assisted the process of morbidity studies.⁷

Research in general practice obviously covers many clinical areas studied by other groups but we may ask different types of questions, study different populations and use different methodologies, especially qualitative methods.

It would be logical to conduct research on those common problems requiring continuing care by the GP. These include:

- alcohol problems
- anxiety and depression
- arthritis
- chronic back pain and neck pain
- cancer
- cardiovascular disorders
- diabetes
- epilepsy
- common acute infections
- migraine and other headache
- women’s health

Special opportunities, such as the observation that certain diseases or conditions are linked with specific circumstances, present frequently in primary care. An example is the observation that a group of farmers who presented to their rural practitioner over a period of time with lymphosarcoma were all exposed to a specific herbicide to control blackberry growth on their farms. This led to further, statewide investigations of this association, which indicated a significant link between the agent and the disease.

Research in primary care populations often overturns long-held beliefs based on specialist research in high-risk populations, which was wrongly assumed to apply to general practice. Examples include screening for prostate cancer using the PSA test and the use of antibiotics in otitis media.

Understanding terminology

Validity and reliability

- An ideal method of collecting research material is one that is valid.
- A valid method is one that measures what it claims to measure.
- A reliable method is one that produces repeatable results.

Validity refers to the ‘true’ answer, which must be relevant, complete and accurate. Three significant questions that evaluate validity are:¹

- Is the study useful or is the result inconclusive?
- Do you accept the results of this study as applied to the source population?
- Do the results apply to the population in which you would be interested?

Internal validity refers to the adequacy of the study methods in reference to the study population, while *external validity* refers to the generalisability of the results to the general population (or, more specifically, to the patient sitting in front of you).

Reliability refers to the stability of question-and-answer response and is most successfully measured by testing and then retesting (repeatedly).

Sensitivity, specificity and predictive values

Sensitivity and specificity, which are integral to validity, are important considerations in decision making in medicine, particularly in choosing appropriate investigations for disease diagnoses. The method of calculation of sensitivity, specificity and predictive values is summarised in FIGURE 7.1 .

	Test positive	Test negative		
Condition present	A True positive	C False negative	A + C	Sensitivity $\frac{A}{A + C} \%$
Condition absent	B False positive	D True negative	B + D	Specificity $\frac{D}{B + D} \%$
	Positive predictive value $\frac{A}{A + B} \%$	Negative predictive value $\frac{D}{C + D} \%$		

Sensitivity:

How often a test shows pathology when it is present

Specificity:

How often a test is normal when no pathology present

Positive predictive value:

Indicates the likelihood of the patient having disease when the test is positive

Negative predictive value:

Indicates the likelihood of the patient not having disease when the test is negative



FIGURE 7.1 Definitions of sensitivity, specificity and predictive values

The *sensitivity* of a test depends on the proportion of people with the characteristic (disease) in whom the test is positive (i.e. percentage positive with disease). For example, if the sensitivity for a sign is 90%, then the sign will be detected in 90% of the people but not in 10%. The ultimate sensitive test is one that detects all true positive cases.

The *specificity* of a test depends on the proportion of people without the characteristic (disease) in whom the test is negative (i.e. percentage negative of healthy people). The ultimate specific test is one that detects all the truly negative (disease-free) cases. A *gold standard* test is one that is as close to 100% specificity and 100% sensitivity as possible.

Aide-mémoire tip

SPIN—Specific tests where a positive helps rule *IN* disease

SNOUT—Sensitive tests where a negative helps rule *OUT* disease

A clinical example of sensitivity and specificity is presented in TABLE 7.1 .

Table 7.1 The predictability of signs and symptoms for carpal tunnel syndrome⁹

	Sensitivity (%)	Specificity (%)
Paraesthesia	97	4
Waking at night	91	14
Anaesthesia	57	61
Phalen test	58	54
Tinel test	42	63
Two-point discrimination test	6	98

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Predictive values express the proportion of positives that are ‘true positives’ and negatives that are ‘true negatives’. They are markedly affected by the underlying risk of the disease in the population being studied. Because community patients usually have considerably lower rates of disease than hospitalised patients, positive predictive values (PPVs) are generally lower in general practice for any given test or symptom. This reduces the usefulness of ordering the test or relying on the symptom for a diagnosis.

For example, the presence of haematuria in a general practice patient gives a PPV of less than 5% for carcinoma being the cause, but the PPV is about 50% in the inpatient hospital setting.

Incidence and prevalence

The meanings of these two terms are easily confused:

- *Incidence* refers to the number of new cases of a disease (or factor of interest) occurring in a defined population within a specified period of time.
- *Prevalence* refers to the total number of individuals who have the disease (or factor of interest) at a particular time in a population. The number is divided by the number of people in the population at that time.

Examples: The prevalence of multiple sclerosis in temperate climates is 1 in 1000–2000 compared with 1 in 10 000 in the tropics. The incidence of multiple sclerosis in the Australian state of Victoria (population 5.8 million) is 8 per 100 000 per year.

Bias

This is any effect occurring during the research that tends to produce results that depart systematically from the true values. Varieties of bias include *measurement bias* (e.g. fault with a

sphygmomanometer recording blood pressure), *confounding bias* (e.g. investigating the association between stress and hypertension without considering the influence of alcohol), *selection bias* (e.g. using hospital outpatients in a community-based study) and *publication bias* (around half of all research is not published, which skews the pool of evidence available for reading and analysis).

Confounding

This is a situation in which a measure of the effect of exposure on risk is distorted by the association of exposure with other (known or unknown) factors that influence the outcome.¹ A confounder is a factor that distorts the apparent magnitude of the effect of a study on risk.

Chance

One must question the probability that the results favouring the experimental intervention could have occurred by chance; therefore, we resort to statistical help in the form of a probability statement or significance level.

How is the research undertaken?

‘Getting started’ can be quite difficult for the beginner. However, assistance is available [Page 60](#) from several sources, including individual GPs with research experience, university departments of general practice and the RACGP research committee. Seek out a suitable supervisor for the study. A chronological method follows.

1. *The idea.* Start with an idea or question, which needs to be interesting, relevant, significant and answerable.⁸ It may be appropriate to develop a hypothesis at this stage.
2. *Float the idea.* Next, discuss the idea with colleagues or an appropriate accessible authority.
3. *Do a literature search.* Review the literature: for example, a Medline search or check with a central research ‘bank’. Undertake a critical review. Don’t waste effort researching a question someone else has satisfactorily answered already.
4. *Prepare a plan.* This can be a short written plan outlining the methodology for the study.
5. *Evaluate the plan.* Then, contact a supervisor or appropriate authority to evaluate the study plan, which may be referred to a reference group or research committee.
6. *Methodology: develop a protocol.*
 - Prepare background, outline objectives and develop a hypothesis.
 - Select target population using clear criteria and appropriate numbers.
 - Design the research:

qualitative or quantitative?

questionnaire(s)

- Assess internal validity.
- Consider statistical implications early:

number of patients

method for data analysis

- Recruit subjects and assistants.
- Assess the timeframe.
- Assess the ethical considerations → ethics approval committee.

7. *Consider a preliminary pilot study and project timetable.*

8. *Seek funding.* Solicit advice from appropriate funding bodies.

9. *Conduct the study.*

10. *Analyse the data/statistics.*

11. *Undertake interpretation and conclusions.*

12. *Prepare for publication.*

Research design

Hypothesis development

The reasoning process of the researcher is based on the null hypothesis—the default assumption that an experimental group does not differ from a control ‘normal’ group in outcome. One question to consider is: ‘What is the probability that results from the experimental intervention would have occurred by chance?’

Selecting a representative sample of appropriate size

Two basic components of subject selection are sample size and sample representativeness. The latter should be selected in a well-controlled manner.

A common question is: ‘What is the ideal size of the sample?’ There is no fixed answer but it must be adequate to produce statistically meaningful results, without being so large as to make the research impractical or unaffordable.

Recruitment of patients is a particular skill and often hard work, but it is easier if the researcher has a large pool of patients with whom he or she enjoys a good relationship. A useful rule is to aim to approach $3n$ patients if you wish to work with a sample size of n .

Some guidelines for choosing the sample size are:⁹

- the more the individuals in the population differ, the larger the required sample
- the more planned comparisons, the larger the size
- larger sample sizes allow detection of smaller differences

Types of research¹

The two broad categories of research in general practice are qualitative research, which is based on observation and talking with people, and quantitative research, which is based on measurement and analysis of data collection.

Research can also be classified as primary research, which includes both qualitative and quantitative methods, and secondary research, which involves systematic reviews and meta-analysis.

Qualitative research¹⁰

This research is basically concerned with evaluating human behaviour from the subject's perspective. It is based on close observation and is expressed in a descriptive way. It addresses questions that begin 'Why?', 'How?', 'In what way does?', e.g. 'Why have so many people been dropping out of this fitness program?'

Common qualitative approaches

- Phenomenology
- Ethnography
- Grounded theory
- Biography (life story, narrative enquiry)
- Case study

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The methods used are:

- interviews (open-ended, semi-structured)
- focus groups

- participation observation
- document analysis

Qualitative research is an excellent method for generating hypotheses, and can lead to quantitative research.

Phenomenology

The central focus of this philosophy/method is the lived experience of the world of everyday life. It describes events, situations, experiences and concepts. It provides:

- detailed descriptions of an experience or event as it is lived
- deeper understandings and sensitivities
- improved thoughtful provision of care

Examples:

- effects of Viagra (and other agents) on marital/sexual relationships
- experience of carers in Alzheimer disease
- effects of workplace bullying on absenteeism

Ethnography (*ethnos* = a nation)

This examines cultures, peoples and societies including subgroups, e.g. adolescents. It is the basis of anthropology. The investigator usually identifies a number of key witnesses (informants) and interviews them to clarify observations.

Grounded theory

This is the development of new theory through the collection and analysis of data. It seeks to identify the core social processes within a given context in order to build theory that is grounded in the reality of those being studied.

Quantitative research

Quantitative research is research based on the collection of data in numerical quantities and asks a specific narrow question, such as 'What is the chance that . . .?' or 'What proportion of ...?'. It is concerned with hypothesis testing, reliability and validity, and is the cornerstone of epidemiology. It can be classified broadly as *observational*, which includes case control, cross-sectional and cohort studies, and *experimental*, which includes the classic controlled trial.¹⁰

- *Case control (or retrospective) study* is an observational study in which people with a disease

(cases) are compared with those without it (control group). It is often used to determine a statistical association between an exposure and an outcome, particularly a rare outcome.

Examples: Patients with mesothelioma were investigated for exposure to asbestos or other agents; the mothers of children born with birth defects were investigated for an association with drug intake during pregnancy.

- *Cross-sectional or prevalence study* follows a correlation approach using existing databases. It is a survey of the frequency of disease, risk factors or other characteristics in a defined population at one particular time.

Example: The prevalence of type 2 diabetes mellitus (diagnosed and undiagnosed) was investigated in an Aboriginal community living in a particular area of metropolitan Sydney.

- *Cohort (or prospective) study* is also referred to as ‘follow-up’. The study follows a group (cohort) of individuals with a specified characteristic or disease over a period of time. Comparisons may be made with a control group.

Example: 120 people with chronic sciatica were followed over 10 years to determine the outcome of their pain and neurological deficit. These were compared with a matched group who had undergone laminectomy.

- *Randomised controlled trial (RCT)* is an experimental study that tests for hypothesised outcomes. Participants in the trial are randomly allocated to either receive the specific intervention or not receive it (the control group). The objective is to establish a causal relationship between the intervention and the hypothesised outcome. The ideal scientific trial is a **double-blind trial** where neither staff nor the participating patient are aware whether the participant is in the intervention or control group. An RCT is the typical study when assessing the effect of a drug compared to a placebo.

Meta-analysis

Meta-analysis is the process that systematically assesses compatible randomised controlled trials by merging the data (usually from smaller and inconclusive trials) to draw a ‘firmer’ conclusion from larger numbers of subjects.

Evidence-based medicine

Evidence-based medicine (EBM) is a process of basing clinical practice on validated information. According to one of its modern architects, David Sackett, it is ‘the explicit, judicious and conscientious use of current best available evidence in making decisions about the care of individual patients’.¹¹ According to Silagy and Haines, ‘EBM is the integration of the best available scientific evidence with your clinical expertise and knowledge, your intuition, your wisdom’.¹²

The process of using EBM should be very comfortable for GPs because scientific methodology

and evidence is second nature to us and has been the basis of our clinical decision making prior to and subsequent to graduation.

The proposed five steps of applying EBM are similar to basic research methodology:¹²

1. Construct a clinical question or define the problem.
2. Search for the evidence.
3. Appraise the quality and relevance of the evidence for this particular circumstance.
4. Apply it to the care of an individual patient.
5. Evaluate how effective it is.

The statistical methodologies used in EBM cover the traditional research methods but there is an emphasis on the methods of risk reduction, absolute and relative risk reduction, and number needed to treat (NNT). These definitions are included in the glossary of terms later in this chapter.

GPs have a responsibility to their patients to be well versed with the best evidence when making decisions about management (see TABLE 7.2), whether it be for a minor surgical procedure, selection of drugs, selection of an investigation or referral to the most appropriate consultant. If the best evidence reveals that a certain practice we are using is of no value or is less efficacious than another method, then we should be prepared to change. On the other hand, if we find that a certain method works for us and there is no current evidence that it is inappropriate, or the evidence is equivocal, then there is no compelling reason to change.

Table 7.2 Levels of evidence

-
- | | |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I | Evidence obtained from a systematic review of all relevant randomised trials. |
| II | Evidence obtained from at least one properly designed randomised controlled trial. |
| III | Evidence from well-controlled trials that are not randomised, or from well-designed cohort or case-control studies, or multiple time series (with and without the intervention). |
| IV | Opinions of respected authorities; opinion based on clinical experience; descriptive studies; or reports of expert committees. |
-

Source: Modified from the NHMRC

GPs need a healthy scepticism about what is best evidence and claims for treatment in addition to the skill of critical appraisal of research/evidence. We tend to be impressed by the perception that

evidence is a numbers game. However, the great work of James Lind shows that facts do not necessarily involve large numbers.

For EBM to be accepted by GPs the information needs to be readily accessible, user friendly, significant, relevant and, perhaps, believable.

The strength of EBM is that it can provide the answers to very important everyday decisions, especially in screening and preventive medicine, where guidelines have fluctuated over the decades. The most recent RACGP guidelines for preventive activities in general practice (the red book)¹³ highlight the value of current evidence (see: www.racgp.org.au/your-practice/guidelines).

GPs are currently faced with important decisions about the effectiveness of complementary therapies, which are very tempting to embrace or trial when searching for ways to manage difficult problems, such as chronic fatigue syndrome, fibromyalgia, chronic asthma, chronic pain syndromes and other difficult-to-treat diseases. We are hopeful that EBM can provide the answers to best practice in addition to evaluating individual therapies.

Remember, however, that Bayes' theorem tells us that a positive trial result means less if the pre-existing chances of the treatment working were low to begin with. In other words, 'extraordinary claims require extraordinary evidence'. Thus, it is poor practice to justify a new, unusual treatment by using the reasoning that 'no one knows, so it might be true', as if sceptics of that treatment need to produce proof it doesn't work before discrediting it. Treatments that are inherently very unlikely to work (such as homeopathic products or crystal healing) will remain very unlikely unless a large body of independent evidence suggests otherwise. For the vast majority of marketed 'unlikely' therapies, such evidence will never be produced because the null hypothesis is actually true.

While it is important to ensure one's medical practice is based on—or at least heavily informed by—evidence, there are concerns that EBM will be seized by bureaucrats to develop 'cook book' guidelines, Holy Writ or economic rationalisation. Others are concerned about the perceived lack of flexibility. An interesting critical review, especially affecting psychiatry, was presented by John Ellard in his paper 'What exactly is evidence-based medicine?'¹⁴ He questioned the validity of the evidence underpinning EBM and the biases of both the proponents of 'science' and 'art' with the caution of Louis Pasteur: 'The greatest derangement of the mind is to believe in something because one wishes it to be so'.¹⁵

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Glossary of terms^{16,17}

Apart from the terms and definitions used in preceding pages, it is important to highlight the following terms used in EBM/research.

Absolute risk reduction (ARR) The absolute difference in event rates between two intervention or treatment groups. It gives an indication of the baseline risk and treatment effect. An ARR of 0 means no difference and thus the treatment has no

effect.

Example: The ARR for prophylactic ciprofloxacin in the case cited is $10 - 2 = 8$ per 100 (0.08) or 8%.

Accessing the evidence

- The Cochrane Library is free to access in Australia. It includes:

Database of Systematic Reviews

Database of Abstracts of Reviews of Effectiveness

- www.thecochanelibrary.com

or

www.cochrane.org

- The TRIP database searches for all relevant research articles that answer your question (typed in plain English). See: www.tripdatabase.com

Analysis of variance This allows comparisons between the means of two samples of similar populations with a normal distribution. The contribution to variance for each variable can be determined and tested for statistical significance.

Clinical significance Whether the benefit to people receiving an intervention compared to the control group is great enough to warrant the intervention. It is based on measure of effect.

Confidence interval A measure of the imprecision of the data results. The statistically derived range of values around a trial result in which the probability is that the true result will be within the range.

A 95% (standard) confidence interval for a sample indicates that there is a 95% chance that the interval includes the true population proportion whose circumstances comply with the evidence.

Control event rate (CER) The percentage of subjects in the control group that experienced the event of interest.

Experimental event rate (EER) The percentage of subjects in the intervention group that experienced the event of interest.

Kappa Cohen's kappa measures the agreement between the evaluations of two raters when both are rating the same object. A value of 1 indicates perfect agreement. A value of 0 indicates that agreement is no better than chance. It is an appropriate statistic for tables that have the same categories in the columns as in the rows (e.g. when measuring agreement between two raters).

Number needed to treat (NNT) The number of people who must be treated over a given period of time with the experimental therapy (specific intervention) to achieve one good outcome or prevent one adverse outcome. This incorporates the duration of treatment. It is a measure of the absolute relative risk. Obviously the lower the *NNT*, the better the treatment. It is calculated as $100/ARR\ (%)$; that is, the reciprocal of the *ARR*.

Note: The *NNT* will be different for different patient populations depending on their baseline risk for developing the outcome of interest.

Odds ratio The probability of the occurrence of an event compared to its non-occurrence.

Publications

- Clinical evidence: BMJ Publishing Group, refer to: www.clinicalevidence.org
- Evidence-based medicine. BMJ Publishing Group

Probability (p) value A deceptively complex measure to understand. It is a statistical summary of the incompatibility between the observed data and what we would have expected to see if the treatment did not work in the slightest (i.e. if the ‘null hypothesis’ was true). The lower the p value, the less consistent it is that the experiment results can be explained by the null hypothesis. Confusingly, a $p=0.05$ does not at all equate to saying the treatment is therefore 95% likely to work, nor that the result had a 5% probability of occurring by chance. For the curious, a 2016 article offers a 14-page explanation.¹⁸

Relative risk (RR) The ratio of the risk of the outcome (e.g. disease or death) in the treatment/exposure group compared with the control/unexposed group. *RR* informs us how many times more likely an event is to occur in the treatment group compared with the control group.

Calculation: $RR = EER/CER$

$RR = 1$ means no difference, so treatment has no effect

$RR > 1$ means the treatment increases the risk of disease/death

$RR < 1$ means the treatment decreases the risk

Example: If the risk of death from people exposed to inhalation of anthrax spores is reduced from 10 in 100 cases to 2 in 100 cases with 60 days of prophylactic ciprofloxacin, the *RR* of death in this group is 0.20 or 20%.

Relative risk reduction (RRR) The proportional reduction of adverse events between the treatment/experimental and the control groups in a trial (i.e. *RRR* is the ratio of the absolute risk reduction to the risk of the outcome in the control

group). An alternative way to calculate the *RRR* is to subtract the *RR* from 1 (i.e. $RRR = 1 - RR$).

In the example it is: $1 - 0.2 = 0.80$ or 80% or:

$$RRR = \frac{APR}{10} = \frac{8}{10} = 0.80 \text{ or } 80\%$$

RRR is probably the most commonly reported measure of treatment effects, particularly when trying to emphasise the usefulness of a treatment, but the *ARR* gives a more realistic picture.

Risk (R) The probability that an event (death or disease) will occur.

Statistical significance The likelihood of a difference between two groups being real, based on the possibility that the difference may have occurred by chance alone. It is based on confidence intervals and p values.

Type I error A type I error occurs when a study concludes that there is a difference between two groups when there is no difference.

Type II error A type II error occurs when a study concludes that no difference exists between groups when there is a true difference.

Critical appraisal of published research

The objective of critically appraising a paper is to determine whether the methods and results of the research have significant validity to produce useful information. The appraisal starts with a careful review of the abstract, which ideally should be presented in a structured format.

1. What were the objectives of the study?
2. What was the study design?
3. Were there any potential problems associated with the design?
4. Were all the patients who entered the study properly accounted for at its conclusion?
5. What were the important results?
6. How would you interpret and explain these results?

Many studies, quite legitimately, are sponsored by a company that may benefit from a positive finding, and/or are authored by researchers who have received industry funding. This does not

negate any finding, but does probably warrant a more thorough critical appraisal before applying that finding to your patients. A sponsored study that supports an intervention is more likely to be published and widely disseminated than an unsponsored study that does not support the intervention.

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8 Inspection as a clinical skill

More mistakes, many more, are made by not looking than by not knowing.

SIR WILLIAM JENNER (1815–1898)

GPs have an ideal opportunity to practise the art of careful observation and to notice all the signs and features characteristic of a patient from the time seen in the waiting room until the physical examination. We should be ‘like Sherlock Holmes’ in our analysis of the patient and accept the challenge of being astute diagnosticians and proud members of a noble profession.

It is important to stand back (so to speak) and look at the patient’s general appearance and demeanour. We should be assessing their mood and affect as much as their physical appearance. The first assessment to make is ‘Does the patient look sick?’.

First impressions

The first impression of the patient is always striking in some way and we should discipline ourselves to be as analytical as possible.

A rapid inspection from a trained observer may be all that is necessary to allow the observer to pinpoint specific disorders, such as anaemia, hyperthyroidism, jaundice, acromegaly and alcohol abuse. Such ‘spot’ diagnosis is not justifiable unless the original signs are supported by further examination, which must be comprehensive.

The following observations should therefore be made:

- facial characteristics
- abnormalities of the head and neck
- examination of the mouth
- character and distribution of hair
- examination of the skin (in general)

- height and weight
- posture and gait
- genitalia
- examination of extremities (hands, feet, nails, etc.)

Physiognomy

Physiognomy, from the Greek *physiognomonia*, meaning the judging of one's nature, is the art of judging character from the features of the face. It flourished during the Middle Ages. According to Addison,¹ 'everyone is in some degree a master of that art which is physiognomy; and naturally forms to themselves the character of a stranger from the features of the face'. In reality, all doctors use a physiognomical approach to diagnose many medical conditions, although we may not be as expert at the art as we should be.

The face is a person's most immediate means of communicating with others; it is a shield and banner, a mask and a mirror. It reveals mental faculties and emotional turmoil. It is the first perspective gained of patients as they walk into the consulting room.

The face as a mirror of disease

A fascinating aspect of the art of clinical medicine is the clinical interpretation of the patient's facies. The term 'facies' refers to the appearance, form and character of the face. Not only are specific skin lesions common on the face but the face may also mirror endocrine disorders and organ failure such as respiratory, cardiac, kidney and liver failure.

Jaundice may be masked by the natural colour of the cheeks but the yellow conjunctivae will be distinctive. A marked plethoric complexion may be seen in chronic alcoholics (alcohol may produce a pseudo-Cushing syndrome), in Cushing disease or in polycythaemia. Thickening of the subcutaneous tissues may be seen in chronic alcoholism, acromegaly and myxoedema, and the puffiness of the eyelids in the latter condition may simulate the true subcutaneous oedema of kidney disease.

An individual's personality and mood rarely fail to leave an impression on the facial characteristics.² This is partly due to the alteration in facial lines and wrinkles, which may become modified in anger, irritability, anxiety and stress. More profound changes occur with mental disease. Various CNS diseases, such as Parkinson disease and myopathies, can affect facial expression (e.g. the immobile face of the patient with Parkinson disease).

The appearance of the eyes can also be very significant and may reflect underlying systemic disease (see FIG. 8.1).



FIGURE 8.1 Kayser–Fleischer ring around the cornea in a patient with Wilson disease

Diagnostic facies³

Acromegalic

The enlarged characteristic face is due to a large supra-orbital ridge that causes frontal bossing, a broad nose and a prominent broad and square lower jaw. Other features include an enlarged tongue and soft tissue swelling of the nose, lips and ears ([CHAPTER 14](#)).

Adenoidal

Due to mouth breathing in children: a narrow nose/nares, a high-arched palate (the ‘Gothic’ palate), prominent incisor teeth, undershot jaw with a perpetually open mouth and ‘stupid’ expression.

Alcoholic (due to chronic use)

It is important to recognise the characteristic changes as early as possible—a plethoric face, thickened ‘greasy’ skin, telangiectasia, suffused conjunctivae and rosacea. Other features may include rhinophyma, parotid swelling and characteristic changes to the lips and corners of the mouth.

Children born with fetal alcohol spectrum disorder have specific facial features (see

CHAPTER 23).

Bird-like (systemic sclerosis: CREST syndrome)

The bird-like features—beaking of the nose, limitation of mouth opening, puckering or furrowing of the lips and a fixed facial expression—are due to binding down of facial skin. Other features include telangiectasia on the face and hands.

Chipmunk (thalassaemia major)

There is bossing of the skull, hypertrophy of the maxillae (which tends to expose the upper teeth), prominent malar eminences and depression of the bridge of the nose. The major haemoglobinopathies cause hyperplasia of the skull and facial bones because of an increase in the bone marrow cavity.

Choleric

The patient with cholera has a pale face with cold clammy skin, sunken eyes, hollow cheeks and a forlorn, apathetic look (similar to the Hippocratic facies).

Congenital syphilis

Sometimes referred to as ‘bulldog’ face, it is characterised by a saddle nose due to the sunken bridge of the nose and interstitial keratitis.

Cushingoid

The face has a typical ‘moon shape’, plethora (rubicund), hirsutism (more obvious in women) and acne (CHAPTER 14).

Facial nerve palsy

Features include unilateral drooping of the corner of the mouth and flattening of the nasolabial fold (CHAPTER 22).

- Upper motor neurone (UMN) type: the forehead movement is spared
- Lower motor neurone (LMN) type (e.g. Bell palsy, Ramsay–Hunt syndrome): lack of forehead muscle tone

Hippocratic

This describes the deathly, mask-like features of advanced peritonitis or streptococcal septicaemia—sunken eyes; ‘gaunt’ face; ‘collapsed’ temples; dry, crusty lips; and clammy

forehead.

Horner syndrome

Due to dysfunction of cervical sympathetic output, the main abnormalities are ocular—ipsilateral partial ptosis, miosis (constricted pupil) and enophthalmos; also associated anhidrosis.

Marfanoid (Marfan syndrome)

The typical tall stature, arachnodactyly and chest deformities, combined with the facial features of a subluxation of the lens of the eye and high-arched palate, help to pinpoint the diagnosis ([CHAPTER 23](#)).

Mitral (mitral valve disease, especially mitral stenosis)

This is typically shown in flushed or rosy cheeks with a bluish tinge due to dilatation of the malar capillaries. It is associated with pulmonary hypertension.

Mongoloid (Down syndrome)

The facial features include a flat profile, with crowded features, a round head, dysplastic [Page 67](#) lowset ears, protruding tongue, mongoloid slant of the eyes with epicanthic folds, mouth hanging open and peripheral silver iris spots (Brushfield spots) ([CHAPTER 23](#)).

Myopathic (myopathy/myasthenia gravis)

Facial characteristics include an expressionless, ‘tired’-looking face with bilateral ptosis.

Myotonic (dystrophy myotonia)

Typical features include frontal baldness, expressionless triangular facies, partial ptosis, cataracts and temporal muscle atrophy.

Myxoedemic (hypothyroidism)

The face usually has an apathetic look and is ‘puffy’ with possible periorbital oedema. There is broadening of the lower part of the face. The skin (not the sclera) may appear yellow (due to hypercarotenaemia) and is generally dry and coarse. Other features may include thin, coarse, listless hair and loss or thinning of the outer third of the eyebrows. The tongue is usually enlarged and the patient speaks with a ‘thickened’, croaking, slow speech ([CHAPTER 14](#)).

Obese

The distinguishing feature from the ‘moon face’ of Cushing disease is the general roundness and

uniform flatness of the face.

Pagetic (Paget disease)

The main feature is skull enlargement, notably of the frontal and parietal areas (the head circumference is usually greater than 55 cm, which is abnormal)—the ‘hat doesn’t fit any more’ hallmark. Other features include increased bony warmth and deafness ([CHAPTER 58](#)).

Parkinsonian

Characteristic is the mask-like facies with lack of facial expression and fixed unblinking stare. There is immobility of the facial muscles ([CHAPTER 22](#)).

Peutz–Jeghers

Pigmented macules (1–5 mm in diameter) occur on lips, buccal mucosa and fingers.

Risus sardonicus

A grin-like appearance of hypertonic facial muscles (typical of tetanus).

Smoker’s

A face older than the years with premature gross wrinkling of the skin, stained teeth, deep raspy voice, ‘loose’ cough, smell of tobacco.

Thyrotoxic (hyperthyroidism)

The prominent eyes (sclera may not be covered by the lower eyelid) and conjunctivitis are features of the thyrotoxic patient ([CHAPTER 14](#)). The thyroid stare (a frightened expression) may also be present (see [FIG. 8.2](#)).



FIGURE 8.2 Thyrotoxicosis illustrating a typical thyroid stare

Turner syndrome

The facial characteristics include ptosis—‘fish-like’ mouth, small chin (micrognathia), low-set ears and deafness. Cardiac lesions include coarctation of the aorta and pulmonary stenosis. Webbing of the neck is the classic sign ([CHAPTER 23](#)).

Uraemic

A sallow ‘muddy’ complexion with uraemic fetor—an ammoniacal halitosis.

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Other classic facies (similes)

Bulldog	Congenital syphilis
Chipmunk	Thalassaemia major
Death mask	Peritonitis; cholera
Elfin	William syndrome
Fish-like mouth	Turner syndrome
Hatchet	Dystrophia myotonica
Long face	Fragile X syndrome
Mask	Parkinson; Wilson disease
Monkey	Hypopituitarism
Moon	Cushing syndrome
Old man in child	Marasmus

Raccoon	Basilar skull fracture
Rodent	Beta thalassaemia; Pierre Robin sequence
Toad	Hypothyroidism

Specific characteristics

Various facial signs may be present. The causes of these signs are listed below.

Butterfly 'rash'

- **SLE**

Erythema, scaling with a discrete red advancing edge on the cheeks and bridge of the nose; the sharp border, lack of pustules and adherent scale make it differ from rosacea

- **Rosacea**

Papules, pustules and telangiectasia on an erythematous background on cheeks, forehead and chin

- **Erysipelas**

Painful, erythematous, indurated skin infection with a well-defined raised edge

- **Seborrhoeic dermatitis**

Red and scaly rash involving eyebrows, eyelids, nasolabial folds

- **Photosensitivity eruptions**

Erythematous on areas that are exposed to the sun

Chloasma/melasma

Increased browning pigmentation, usually confined to symmetrical areas of the cheeks (see FIG. 8.3). Common in pregnancy and caused by drugs:

- combined oral contraceptive pill
- hydroxychloroquine (Plaquenil)
- diphenylhydrazine



FIGURE 8.3 Melasma (chloasma) in the typical distribution soon after the birth of the second child. Sometimes called the mask of pregnancy.

Malar flush