and became the most famous English physician of his time, providing clinical descriptions of gout (from which he suffered), fevers, hysteria and venereal disease. He was called the Father of English Clinical Medicine.

[eee] George Huntington (1850–1916), American general practitioner. He described this disease in his only clinical paper in 1872, when he was 22.

[fff] William Battle (1855–1936), surgeon, St Thomas's Hospital, London.

Chapter 12

The psychiatric history and mental state examination

> Law number four: the patient is the one with the disease.
> *House of God: Samuel Shem*

This chapter deals with the psychiatric history and the mental state examination. The practising clinician must have an understanding of psychiatric illness and know how to perform a psychiatric interview and a mental state examination. This is because there is considerable overlap between psychiatric and physical illness.

Psychiatric disorders (especially anxiety and depression) are common, and people suffering from these conditions often have medical problems. Appropriate management of these patients will require an understanding of the intercurrent psychiatric disorder and the effect of that disorder on the primary medical problem. A medical illness may, in some instances, present as a psychiatric illness. For example, some endocrine disorders, such as myxoedema, may present with depression. On the other hand, some psychiatric disorders may present medically. Panic disorder (or acute anxiety) may be mistaken for an acute myocardial infarction. Furthermore, a patient's psychological state may interfere with the course of a medical illness; it may lead in some cases to exaggeration of the symptoms and in others to denial of the severity of physical symptoms.

The psychiatric history generally follows the same format as the standard medical history, and the principles described in Chapters 1 and 2 apply just as much here as in any history taking.[1] One should inquire about the history of the present illness, the past psychiatric and medical history, and the social and family history. However, the psychiatric history aims to elicit more detail about the patient's illness from a broad perspective, focusing not only on symptoms but also on the patient's social background, psychological

functioning and life circumstances (a biopsychosocial approach). There is, therefore, more attention paid to the developmental, personal and social history than is normal for a standard medical history.

The method of psychiatric history taking is somewhat different from the standard medical interview. The psychiatric interview aims to be therapeutic as well as diagnostic. In the course of the interview it is hoped that the patient will be able to talk about his or her problems and their context. In doing so, patients will gain some relief from their distress by airing their problems. For this to take place, the clinician's attitude needs to be unhurried, patient and understanding. The psychiatric history also aims to gain an understanding of how the patient's problem arose from a biological, interpersonal, social and psychological perspective, so that the best management plan can be worked out.

Obtaining the history

The clinician taking a psychiatric history wants the patient to tell his or her story in his or her own words. In this way the patient will be more likely to report the most important aspects of the illness. This is best achieved using a non-directive approach with open-ended questions. Open-ended questions are those to which the patient will respond with narrative (or a description about what has been happening) rather than a simple factual response. They give the patient an opportunity to talk about his or her problems. Closed questions are more likely to elicit 'yes' or 'no' responses. For example, in the assessment of a patient with depression, a closed question would be: 'Have you been depressed?' An open-ended question would be: 'Tell me about how you have been feeling.' At first glance it might appear that the open-ended question is less efficient, as it could take a longer time to find out about a range of symptoms. However, with a careful and judicious approach, open-ended questioning—by permitting the patient to tell the story—will enable the clinician to get a comprehensive history efficiently. This is not to say that targeted, more-closed questions must not be used—they are necessary to elicit certain symptoms.

While the patient is telling his or her story, the clinician should begin to formulate hypotheses about the problem or diagnosis. These hypotheses are tested by asking more-focused questions later in the interview, at which point a diagnostic hypothesis can be rejected or pursued further. For example, a patient may describe tiredness and lethargy, an inability to concentrate and loss of appetite. These symptoms will suggest a diagnosis of depression. Follow-up questions should focus on this possibility. The clinician should ask questions about other symptoms of depression such as: 'How have you been feeling in yourself?', 'What has your mood been like?' and

have you been feeling in yourself?', 'What has your mood been like?' and 'How have you been sleeping?'

Introductory questions

The psychiatric interview should start off with non-threatening questions. After introducing yourself, it can be useful to begin by asking about basic demographic information (age, marital state, occupation, whom the patient lives with) and then making the patient feel at ease by discussing some neutral topic.

History of the presenting illness

In assessing the history of the presenting illness, one needs to cover a number of areas.

1. The problem

Find out the nature of the patient's problem, and the patient's perception of his or her difficulties. This can, of course, be difficult if the patient is psychotic and does not believe a problem exists at all. In these cases a corroborative history must be taken. For example, a manic patient may consider that there is nothing wrong and that his or her behaviour is reasonable, whereas his or her partner is able to recognise that ordering an expensive new sports car when the family is impoverished is a problem.

A range of symptoms commonly found in psychiatric disorders needs to be reviewed in the course of assessing the history of the present illness. These include mood change, anxiety, worry, sleep pattern, appetite, hallucinations and delusions. A set of simple screening questions for each of the major diagnoses is listed within Table 12.1. It is especially useful to ask about symptoms of anxiety and depression (the most common psychiatric disorders). The definitions of other symptoms are given in Table 12.2. It is important to ask about drug usage (legal and illegal) as well as alcohol and caffeine (which may be associated with anxiety disorders).

TABLE 12.1 The common psychiatric disorders* and their screening questions

MOOD (AFFECTIVE) DISORDERS

Mood disorders have a pathological disturbance in mood (depression or mania) as the predominant feature. They are distinguished from 'normal' mood changes by their persistence, duration and severity, together with the presence of other symptoms and impairment of functioning.

1. Manic-depressive illness—bipolar disorder

Bipolar disorder is a broad term to describe a recurrent illness characterised by episodes of either mania or depression, with a return to normal functioning between episodes of illness.

a. Mania

A disorder demonstrated by change in mood (*elation*), thought form (*grandiosity*) and behaviour disturbance *(increased energy and disinhibition)*.

Questions box 12.1

Questions to ask the patient with possible mania

1. Have you felt especially good about yourself?

2. Have you been

Frequently associated symptoms: increased talkativeness, distractibility, decreased need for sleep, loss of inhibition (e.g. engaging in reckless behaviour such as spending sprees, sexual indiscretion or social overfamiliarity).	2. Have you been needing less sleep than usual? 3. Do you feel that you are special or that you have special powers? 4. Have you been spending more than usual?
b. Depression A disorder characterised by depressed mood (or loss of pleasure) and the presence of somatic (*sleep disturbance, change in appetite, fatigue and weight*), psychological (*low self-esteem, worry- anxiety, guilt, suicidal ideation*), affective (*sadness, irritability, loss of pleasure and interest in activities*) and psychomotor (*retardation or agitation*) symptoms.	**Questions box 12.2** **Questions to ask the patient with possible depression** 1. How have you been feeling in yourself? 2. What has your mood been like? 3. Have you been feeling sad, blue, down or depressed? 4. Have you lost interest in things you usually enjoy?

	5. How have you been sleeping?

ANXIETY DISORDERS	
Anxiety disorders are those in which the person experiences excessive levels of anxiety. Anxiety may be somatic (*palpitations, difficulty breathing, dry mouth, nausea, frequency of micturition, dizziness, muscular tension, sweating, abdominal churning, tremor, cold skin*) or psychological (*feelings of dread and threat, irritability, panic, anxious anticipation, inner [psychic] tension, worrying over trivia, difficulty concentrating, initial insomnia, inability to relax*).	
1. Generalised anxiety disorder (GAD) A chronic disorder characterised by a tendency to worry excessively about everyday things. It is accompanied by: symptoms of anxiety or tension; mental tension (*feeling tense or nervous, poor concentration, on edge*); physical tension.	**Questions box 12.3** **Questions to ask the patient with possible anxiety** 1. Have you been feeling nervy or tense? 2. Do you worry a lot about things? 3. Do you worry about things most other people would not worry about?
2. Panic disorder	**Questions box 12.4** **Questions to ask the patient with**

A disorder characterised by episodes of panic occurring spontaneously in situations where most people would not be afraid. A panic attack is characterised by the presence of physical symptoms (*palpitations, chest pain, a choking feeling, a churning stomach, dizziness, feelings of unreality*) or fear of some disaster (*losing control or going mad, heart attack, sudden death*). They begin suddenly, build up rapidly, and may last only a few minutes.	**possible panic disorder** 1. Have you ever had an attack of acute anxiety or panic? 2. Did this occur in a situation in which most people would not feel afraid? 3. Can these attacks happen at any time?
3. Agoraphobia (phobic anxiety) A disorder in which an individual avoids places (such as supermarkets or trains) in which they fear they may have a panic attack and cannot escape.	**Questions box 12.5** **Questions to ask the patient with possible phobic anxiety** 1. Do you avoid going out? 2. Do you avoid going to places because you fear you may have an anxiety attack?
	Questions box 12.6 **Questions to ask the patient with**

4. Obsessive–compulsive disorder A disorder in which the person has either obsessions or compulsions which interfere with everyday life.	**possible obsessive–compulsive disorder** 1. Are there any rituals or habits that you have to carry out every day? 2. Do they cause you problems? 3. Do you ever have a thought going round in your head that you can't get rid of?
STRESS-RELATED DISORDERS	
1. Acute stress disorders Individuals may present shortly after a traumatic event with a range of symptoms, such as *anxiety, depression, disturbed sleep, problems with memory or concentration*. Images, dreams or flashbacks of the traumatic event may also occur.	**Questions box 12.7** **Questions to ask the patient with possible acute stress disorder** 1. Have you been having any problems following … ? 2. Have you been feeling worried? Or depressed?

	or depressed? 3. Have you had trouble sleeping? 4. Do you have bad memories?
2. Post-traumatic stress disorder (PTSD) Onset of persistent problems within 6 months of a traumatic event of exceptional severity. The individual experiences *repetitive and intrusive re-enactments* of the trauma in images, dreams or flashbacks. *Sleep, concentration, memory, mood and attention may be disturbed*. Individuals may feel emotionally detached and avoid things that act as reminders of the traumatic event.	**Questions box 12.8** **Questions to ask the patient with possible PTSD** 1. Since … happened, have you been troubled by bad memories of it? 2. Have you been having nightmares? 3. Have you had trouble with sleep? 4. Have you had trouble with your memory? 5. Are you jumpy?
SCHIZOPHRENIA AND DELUSIONAL DISORDERS	
	Questions box 12.9

A disorder characterised by disorders of content (*presence of delusions*), thought form (*shown by difficulty understanding the connections between the patient's thoughts*), perception (*hallucinations—predominantly auditory*), behaviour (*erratic or bizarre*) and/or volition (*apathy and withdrawal*).	**Questions to ask the patient with possible schizophrenia** 1. Have you ever heard people speaking when there is no one around? 2. Do you ever hear voices? 3. Have you heard your thoughts out loud? 4. Do you have any thoughts or beliefs that others might find unusual or strange? 5. Have you felt people may be against you? 6. Have you felt that the TV or radio sends you messages? 7. Do you ever feel as if

	someone is spying on you or plotting to hurt you? 8. Do you have any ideas that you don't like to talk about because you're afraid other people will think you're mad?

ORGANIC BRAIN DISORDERS

These are disorders in which there is brain dysfunction manifested by cognitive disturbances such as memory loss or disorientation; there may be behavioural disturbance as well.

1. Delirium (acute brain syndrome)

A disorder characterised by the acute onset of disturbed consciousness plus changes in cognition that are not due to a pre-existing dementia. It is a direct physiological consequence of a *general medical condition (substance intoxication or withdrawal, use of a medication, exposure to a toxin, or a combination of these factors*).

Delirium is characterised by *confusion and clouding of consciousness*. This may be accompanied by *poor memory, disorientation, inattention, agitation, emotional upset, hallucinations, visions or illusions,*

Questions box 12.10

Questions to ask the patient with possible delirium

1. What day is it today?

2. How long have you been here?

3. What is the name of the place we are in?

4. Do you remember my name?

suspiciousness and disturbed sleep (reversal of sleep pattern).	name? Mental state examination (page 416)
2. Dementia (chronic brain syndrome) A generalised impairment of intellect, memory and personality with no impairment of consciousness. Characterised by *loss of memory* (especially short-term memory), *loss of orientation and deterioration in social functioning and behaviour and emotional control* (may be easily upset—tearful or irritable).	**Questions box 12.11** **Questions to ask the patient with possible dementia** 1. What day is it today? 2. How long have you been here? 3. What is the name of the place we are in? 4. Do you remember my name? Mental state examination (page 416)

OTHER DISORDERS

There are a number of other psychiatric disorders which may present with physical problems, or may be seen in an emergency department with some complication (particularly after attempted suicide).

A. Eating disorders (anorexia nervosa and bulimia nervosa)

	Questions box 12.12

Here the sufferer (generally female) has a disturbed body image with an unreasonable fear of being fat, and makes extensive efforts to lose weight (strict dieting, vomiting, use of purgatives, excessive exercise). She may deny that weight or eating habits are problems.	**Questions to ask the patient with a possible eating disorder** 1. Do you worry about your weight? 2. Do you think that you are fat? 3. Do you diet? 4. Have you ever made yourself sick after a meal?
Bulimia nervosa is characterised by binge eating followed by vomiting or purging. *Anorexia nervosa* is characterised by excessive dieting, but there may also be binges followed by vomiting or purging. Anorexic patients will be grossly underweight and may show signs of malnutrition. Amenorrhoea is generally present.	
B. Somataform disorders	
1. Somatisation disorder A disorder characterised by multiple physical complaints that cannot be satisfactorily explained by physical disease. An individual	**Questions box 12.13** **Questions to ask the patient with possible somatoform disorder** 1. Do you have any other medical

with this disorder will have complaints in several bodily systems (e.g. gastrointestinal, cardiac, respiratory, musculoskeletal, menstrual).	problems? 2. Have you had symptoms that your doctor has not been able to find a cause for? 3. Are you often sick?
2. Hypochondriacal disorder These patients fear they have a serious illness despite repeated medical reassurance. They often seek repeated medical opinions. In some cases the disorder becomes delusional, e.g. of parasitic skin infection.	**Questions box 12.14** **Questions to ask the patient with possible hypochondriacal disorder**† 1. Have you been very worried about your health? 2. What do you think might be wrong? 3. What have your doctors told you?
	Questions box 12.15 **Questions to ask the patient with possible**

3. Conversion disorder (hysteria)

These patients usually present with a neurological abnormality that is not fully explained medically. Common symptoms include: blindness, gait disturbances, sensory loss, limb paralysis and loss of speech.

conversion disorder.

1. What have you noticed has been wrong?

2. What tests have you had?

3. What have you been told about your illness?

SUBSTANCE MISUSE

This category includes the misuse of alcohol, illegal drugs and prescription medications.

PERSONALITY DISORDERS

In these disorders the individual, while not having specific symptoms, has behavioural disturbances and problems with impulse control, interpersonal relationships and mood. Individuals who repeatedly attempt suicide often have a personality disorder. They may also have stormy illnesses, causing frequent problems for staff.

Questions box 12.16

Questions to ask the patient with a possible personality disorder

1. Have you ever tried to harm yourself?

2. Have you ever had problems with relationships?

NEURASTHENIA (CHRONIC FATIGUE SYNDROME)

This is a somewhat controversial inclusion in the current WHO

classification of psychiatric disorders.
PUERPERAL MENTAL DISORDERS
This category includes post-partum depression and psychosis.

* Based on the WHO International Classification of Disease 10th ed (ICD-10). ICD-II will be published in 2014.

† Alfons Jakob (1884–1931), professor of neurology in Hamburg from 1924, had over 200 cases of neurosyphilis on his ward at a time; he died of osteomyelitis. Jakob described this cerebral atrophy in 1920 and before Hans Creutzeld (1885–1933).

TABLE 12.2 Symptoms of psychiatric illness

Affect	The observable behaviour by which a person's internal emotional state is judged.
Agitation (psychomotor agitation)	Excessive motor activity associated with a feeling of inner tension. The activity is usually non-productive and repetitious and consists of such behaviour as pacing, fidgeting, wringing the hands, pulling the clothes and inability to sit still.
Anxiety	The apprehensive anticipation of future danger or misfortune. It is associated with feelings of tension and symptoms of autonomic arousal.
Conversion symptom (hysteria)	A loss of, or alteration in, motor or sensory function.
	Psychological factors are judged to be associated with the development of the symptom, which is not fully explained by anatomical or pathological conditions. The symptom is the result of unconscious conflict and is not feigned.
Delusion	A false unshakable idea or belief that is out of keeping with the patient's educational, cultural and social background.
Depersonalisation	An alteration in the awareness of the self—the individual feels as if he or she is unreal.
Derealisation	An alteration in the perception or experience of the external world so that it seems unreal.
Disorientation	Confusion about the time of day, date or season (time), where one is (place) or who one is (person).
	A nearly continuous flow of accelerated speech

Flight of ideas	A nearly continuous flow of accelerated speech with abrupt changes from topic to topic that are usually based on understandable associations, distracting stimuli, or plays on words. When severe, speech may be disorganised or incoherent.
Grandiosity	An inflated appraisal of one's worth, power, knowledge, importance or identity. When extreme, grandiosity may be of delusional proportions.
Hallucination	A sensory perception that seems real, but occurs without external stimulation of the relevant sensory organ. The term *hallucination* is not ordinarily applied to the false perceptions that occur during dreaming, while falling asleep (*hypnagogic*) or when awakening (*hypnopompic*).
Ideas of reference	The feeling that casual incidents and external events have a particular significance and unusual meaning that is specific to the person.
Illusion	A misperception or misinterpretation of a real external stimulus.
Mood	A pervasive and sustained emotion that colours the perception of the world.
Overvalued idea	An unreasonable belief that is held, but not as strongly as a delusion (i.e. the person is able to acknowledge the possibility that the belief may not be true). The belief is not one that is ordinarily accepted by other members of the person's culture or subculture.
Personality	Enduring patterns of perceiving, relating to, and thinking about the environment and oneself.
	A persistent irrational fear of a specific object,

Phobia	activity or situation (the phobic stimulus) that results in a compelling desire to avoid it.
Pressured speech	Speech that is increased in amount, accelerated, and difficult or impossible to interrupt. Usually it is also loud and emphatic. Frequently the person talks without any social stimulation and may continue to talk even though no one is listening.
Psychomotor retardation	Visible generalised slowing of movements and speech.
Psychotic	Psychotic can be used to mean a loss of contact with reality, but is generally used to imply the presence of delusions or hallucinations.

Based on DSM-IV, APA 1994.[2]

2. Precipitating events

Psychiatric illness rarely occurs for no reason and there is generally an event that has precipitated the illness. Such events include a range of experiences which may have affected the patient, or a member of the patient's social network. Events such as physical illness, drug treatment or treatment non-compliance may be implicated as precipitants. The last-mentioned is important, as patients with psychiatric illness are often non-compliant, a major contribution to relapse.

3. Risk

An assessment of the patient's risk of harm, either to others or to him- or herself, is essential: this will indicate whether the patient needs to be treated involuntarily. Patients with psychotic illness may, in some circumstances, need to be treated involuntarily under the *Mental Health Act*. While the exact details for involuntary treatment are different under individual mental health acts, the essential features are generally that: (a) a person has a mental illness; and (b) the person is a danger to self or to others. Assessment of danger to others is difficult, with the best predictor being a history of past threat or harm to others. It is best to err on the side of caution in such cases.

Assessment of suicide risk needs to be made with sensitivity and using a direct approach, as shown in Table 12.3.

TABLE 12.3 Assessment of suicide risk

Suicide may be the unfortunate outcome of psychiatric illness but loss of job, family disruption, alcoholism and self-mutilation can also be the distressing result. Assessing the risk of suicide is an essential part of the psychiatric interview. Asking about this does not increase the risk or put the idea into the patient's head. It may reduce the risk, as the patient may feel relief in talking about his or her fears. The risk of suicide is assessed by asking directly whether the person has ever contemplated it.
Have you thought that life was not worth living?
Or
Have you felt so bad that you have considered ending it all?
If 'yes'...
Have you thought of killing yourself?
Have you thought how you might do this?
Have you made any plans for doing this?

The past history and treatment history

Both the past psychiatric and medical history should be assessed. The past medical history should be evaluated in the same way as the general medical history. An assessment should be made of stresses that may have contributed to past episodes of illness, and that may have led to relapse. For the past psychiatric history, it is important to obtain not only the diagnosis but also the treatment the patient has had, and its outcome.

treatment the patient has had, and its outcome.

Ask about previous non-drug treatment including counselling, psychotherapy and electroconvulsive therapy (ECT), and whether the patient thought the treatment was effective. Was the patient ever admitted to a psychiatric unit, and for how long?

Find out what drug treatment has been tried—the class (Table 12.4) of psychiatric medication, its effectiveness and any side-effects. The antipsychotic drugs in particular have common long term side-effects (Table 12.5).

TABLE 12.4 Classes of psychiatric drugs and their major indications

1 Anti-anxiety e.g. benzodiazepines, beta-blockers (control somatic symptoms)	For anxiety disorders, insomnia, alcohol withdrawal
2 Antipsychotic e.g. phenothiazine, major tranquillisers	For schizophrenia, mania, delirium
3 Antidepressants e.g. tricyclics, selective serotonin reuptake inhibitors (SSRIs)	For depression, obsessive-compulsive disorder
4 Mood-stabilising e.g. lithium, carbamazepine	For prevention of manic depression or treatment of mania

TABLE 12.5 Common side effects of the antipsychotic drugs

1 Anti-cholinergic—dry mouth, blurred vision, urinary retention, erectile dysfunction

erectile dysfunction
2 Hypersensitivity reactions—photosensitivity dermatitis, cholestatic jaundice, neutrophilia (clozapine)
3 Effects due to dopamine blockade—Parkinsonianism, motor restlessness (akathisia), tardive dyskinesia, dystonia, gynaecomastia, malignant neuroleptic syndrome

The family history

There is a familial component in many psychiatric disorders. Two aspects must be assessed in the family history.

First, the patient should be asked tactfully if anyone in the family has had any psychiatric or mental illness or has committed suicide. He or she should also be asked if anyone in the family has had any treatment for psychological problems, such as anxiety, depression, agoraphobia,[a] eating disorders or drug and alcohol problems (these last few areas are often not considered by patients to be psychiatric or mental illnesses).

Second, one should try to determine what sort of family the patient grew up in. Drawing up a family tree is a useful way of finding this out. Factual details about each family member can be included in this family tree (age, mental state, health). In the psychiatric history we also need to know about what type of person each family member is, and how family members get on with each other. It is worth exploring how much care (or neglect) the patient received from each parent, and how controlling or protective each was. These two factors have been shown to be important in contributing to psychiatric illness. One needs to ask about the quality of the parental relationship and the general family atmosphere.

Childhood abuse (physical or sexual)[3] may be an important predisposing event for many illnesses, and should be inquired about. This can be elicited by saying something like ‘Sometimes children can have had some unpleasant experiences—I wonder if you had any? Did anyone ever harm you? … or hit you? … How about interfering with you sexually? … Could you tell me more about that and what happened?’

Taking a detailed family history in this way sets the scene for the patient’s developmental history, which should be taken next.

The social and personal history

Open-ended questions are again the best way to obtain the personal and

Open ended questions are again the best way to obtain the personal and social history. Ask the patient something like 'Could you tell me a bit about your background, your development, what sort of childhood you had, what are the important things you remember from your childhood?', and then allow the patient to tell his or her own story. During the course of this narrative, the patient may require some prompting to add information about important issues such as the birth history (schizophrenia is known to be associated with perinatal morbidity) and early development, and whether there were significant problems in early childhood, such as head injuries or serious infections. How did the patient cope with early separations, particularly when starting primary school and going on to secondary school (difficulty in separation may be a risk factor for panic disorder or abnormal illness behaviour). The patient should be asked about peer relationships, friendships, school, academic ability, adolescence and teenage relationships. The adult history should focus predominantly on the quality of intimate relationships and the social support network, especially whether there are people in whom the patient can confide.

The patient's living circumstances should be asked about in the same way as for a medical history. There should also be a focus on the patient's occupation: not only on the type of job but also on how he or she copes with work or, if he or she does not work, how that is coped with.

Premorbid personality

An assessment should be made of the patient's premorbid personality. Ask the patient to describe him- or herself. The personality can be described using the predominant trait, such as obsessional, nervy or highly strung; it is not necessary to use official systems to describe a patient's personality. In the assessment of premorbid personality it is important to evaluate both positive and negative aspects of the person, how he or she copes adaptively and maladaptively to life stress, what type of interests he or she has, and what other strengths and weaknesses are present.

The mental state examination

While assessing the patient, one should carefully make observations about appearance, behaviour, patterns of speech, attitude to the examiner and ways of interacting. These observations are brought together in a systematic fashion in the mental state examination. This is not something that is 'done' at the conclusion of taking a history; it is an essential part of the total process of assessing the patient.[4]

However, there are a number of tests that need to be conducted in a

However, there are a number of tests that need to be conducted in a formalised way as part of the mental state examination. These include assessing the cognitive state (orientation, memory, attention, registration) and inquiring about perceptual disturbances and, in some cases, disorders of thought. The mental state examination provides valuable diagnostic information; with some disorders, it is this examination which gives most of the diagnostic clues.

The headings under which the mental state is recorded are shown in Table 12.6, together with some simple bedside tests for assessing cognitive function. Also shown in Table 12.6 are some abnormal features of the mental state examination that are commonly found in psychiatric disorders.

TABLE 12.6 The mental state examination

	What is assessed, described or observed	Common findings indicating psychopathology	Types of illness
General description			
Appearance	A general description of the patient's appearance, including body build, posture, clothing (appropriateness), grooming (e.g. make-up) and hygiene. Note any physical stigmata (e.g. tattoos) and facial expression (depression, apprehension, worry, etc).	Bizarre appearance	Psychotic disorders (schizophrenia, mania), personality disorder
		Unkempt, poorly groomed	Schizophrenia, depression
		Apprehensive, anxious	Anxiety disorders
		Over-bright clothing	Mania
		Scarred wrists, tattoos	Personality disorder
Behaviour	All aspects of the patient's behaviour. Note the appropriateness of the patient's behaviour within the interview context. Abnormal motor behaviour: mannerisms, stereotyped movements, tics. Variants of normal motor behaviour: restlessness, psychomotor change (agitation, retardation).	Uncooperative behaviour	Psychotic disorder, personality disorder
		Manneristic behaviour	Psychotic disorder
		Stereotypic behaviour	Psychotic disorders,developmental disability, organic syndromes
		Bizarre behaviour	Psychotic disorders
		Assaultive, threatening	Personality disorders, intoxication, neurological disorders
		Restlessness	Akathisia from antipsychotic medication
		Psychomotor change	Depression
Attitude towards examiner	The way the patient responds to the interviewer, the level of cooperation, willingness to disclose information. A range of attitudes and deviation from appropriateness may occur, ranging from hostility to seductiveness.	Uncooperative attitude, belligerence	Psychotic disorder, personality disorder
		Seductiveness	Personality disorder
Mood and affect			
Mood	A relatively persistent emotional state: describe the depth, intensity, duration and fluctuations of mood. Mood may be neutral, euphoric, depressed, anxious or irritable.	Depressed	Depression
		Anxious/irritable	Depression/anxiety disorders
Affect	The way a patient conveys his or her emotional state. Affect may be full, blunted, restricted or inappropriate.	Depressed	Depression
		Blunted, restricted	Schizophrenia
Appropriateness	Are the patient's responses appropriate to the matter being discussed?	Inappropriate	Schizophrenia
Speech	The tempo, modulation and quality of the patient's speech should be described here. Note should be made of dysphasia or dysarthria (see Chapter 11).	Increased tempo	Mania, acute schizophrenia
		Slowed	Depression
	What is assessed, described or observed	**Common findings indicating psychopathology**	**Types of illness**
Mood and affect (continued)			
Perceptual disturbances	The presence of hallucinations (auditory, visual, gustatory or tactile) should be noted. It is important to check whether they occurred with a clear sensorium. Hypnagogic or hypnopompic hallucinations are normal experiences. Other perceptual disturbances (e.g. illusions,	Visual hallucinations	Acute brain syndrome, epilepsy, alcohol withdrawal, drug intoxication
		Auditory	Schizophrenia

	depersonalisation or derealisation) should be noted.	Tactile/gustatory	Epilepsy, schizophrenia
Thought			
Thought form	The process of the patient's thinking. This involves the quantity of ideas (pressured thought, poverty of ideas) and the way in which the ideas (thoughts) are produced. Are they logical and relevant, or are they fragmented and irrelevant? The link between ideas should be assessed—do they flow logically, or are they disconnected and 'fragmented'? Are ideas connected by spurious concepts (rhyming, the way they sound—'clang' associations)?	Disorder of thought form	Schizophrenia
		Flight of ideas	Mania, schizophrenia
		Poverty of ideas	Schizophrenia, mania, depression
Thought content	The content of the patient's thought. Abnormalities range from preoccupation, obsessions, overvalued ideas to delusions. Themes should also be assessed: suicidal or homicidal thoughts or paranoid ideas. In the medical setting, preoccupation with illness (hypochondriacal thoughts) should be assessed, as well as thoughts of omnipotence—denying illness when it is present.	Delusions	Schizophrenia, mania, depression
Sensorium and cognition Listed below are bedside tests for a basic assessment of cognitive function. If abnormalities are detected, a full mini-mental state examination (Table 12.7) should be carried out.			
Alertness and level of consciousness	The level of consciousness should be assessed. Clouding or fluctuating levels of consciousness should be noted.	Clouding	Delirium
Orientation	Orientation to time, place and person. Ask the day, date, month and year. Ask where he or she is, and if he or she knows who he or she is.	Disorientation	Dementia, delirium
Short-term memory	Short-term memory refers to the ability to retain information over a period of 3–5 minutes. Less than this refers to immediate recall. Ask the patient to recall a list of three objects after 3–5 minutes.	Loss of short-term memory	Dementia, delirium

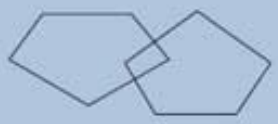
mory of remote events. Ask the patient to recall previous few days, as well as events of a year	Loss of long-term memory	Impaired judgment	Psychoses, dementia, personality disorders
o subtract 7 from 100 and keep subtracting 7, backwards.	Poor concentration		Delirium, acute psychosis
reamt events. Intelligence can be gauged age used. Ask the patient to do some simple sks. Literacy should be assessed.	Poor general knowledge		Dementia, delirium
behave appropriately. Describe a hypothetical ask how the patient would behave in it (e.g. ou do if you smelt smoke while sitting in a		Lack of insight	Psychoses, dementia
er the patient is aware that he or she has a the level of understanding of this.			

Long-term memory	This refers to mem events of the p ago.				
Concentration	Ask the patient to or spell 'world				
General knowledge and intelligence	Ask about some from the langu arithmetical to				
Judgment and insight					
Judgment	The capacity to b situation, and 'What would y cinema?').				
Insight	Determine wheth problem, and				

When cognitive dysfunction is suspected, as in patients with dementia,[5] a more detailed examination of cognitive function should be carried out. A widely used tool for doing this is the mini-mental state examination,[6] which assesses aspects of orientation, memory and concentration. Details of this examination are shown in Table 12.7. Some of the common causes of delirium and dementia are listed in Tables 12.8 and 12.9.

TABLE 12.7 The mini-mental state examination

	Score	Max
Orientation		
'What is the (year) (season) (date) (day) (month)?' Ask for the date, then specifically inquire about parts omitted (e.g. season). Score 1 point for each correct answer.	❒	5
'Where are we (country) (state) (town) (hospital) (ward)?' Ask in turn for each place. Score 1 point for each correct answer.	❒	5
Registration		
'May I test your memory?' Repeat three objects (e.g. pen, watch, book). Score 1 point for each correct answer. Then repeat until the patient learns all three. Count trials and record (up to six).	❒	3
Attention and calculation		
'Count backwards from 100 by sevens' (serial 7s). One point for each answer, up to five (93, 86, 79, 72, 65) *Or* Spell 'world' backwards. Score 1 point for each letter in correct order.	❒	5
Recall		
Ask the patient to recall the three objects in 'registration', above. Score 1 point for each correct answer.	❒	3
Language		
Ask the patient to name two objects shown (e.g. pen and watch). Score 0–2 points.	❒	2
'Repeat the following: "No ifs, ands or buts".' Score 1 point.	❒	1
Ask the patient to follow a three-stage command: e.g. 'Take this paper in your right hand, fold it in half and put it on the table.' Score 1 point for each step.	❒	3
Read and obey the following: CLOSE YOUR EYES. Score 1 point.	❒	1

WRITE A SENTENCE. Do not dictate—must be sensible, but punctuation and grammar are not essential. Score 1 point.	❒	1
 'Copy this design.'		
All ten angles must be present, and the two must intersect. Score 1 point.	❒	1
TOTAL	❒	30

Assess patient's level of consciousness along a continuum:

Alert **Drowsy** **Stuporose** **Coma**

Scores of 21–29 indicate mild cognitive impairment. Scores below 20 indicate more severe cognitive impairment, and are likely to be due to dementia, especially if obtained on repeated examinations.

TABLE 12.8 Common causes of delirium

Drug intoxication	Alcohol
	Anxiolytics
	Digoxin
	L-dopa
	‘Street drugs’
Withdrawal states	Alcohol (delirium tremens)
	Anxiolytic sedatives
Metabolic disturbance	Uraemia
	Liver failure
	Anoxia
	Cardiac failure
	Electrolyte imbalance
	Postoperative states
Endocrine disturbance	Diabetic ketosis
	Hypoglycaemia
Systemic infections	Pneumonia
	Urinary tract infection
	Septicaemia
	Viral infections
Intracranial infection	Encephalitis
	Meningitis
Other intracranial causes	Space-occupying lesions
	Raised intracranial pressure

Head injury	Subdural haemorrhage
	Cerebral contusion
	Concussion
Nutritional and vitamin deficiency	Thiamine (Wernicke' encephalopathy)
	Vitamin B_{12}
	Nicotinic acid
Epilepsy	Status epilepticus
	Post-ictal states

TABLE 12.9 Common causes of dementia

Degenerative type	Senile dementia of Alzheimer's
	Front temporal dementia*
	Huntington's chorea
	Parkinson's disease
	Normal-pressure hydrocephalus
	Multiple sclerosis
Hereditable Alzheimer'	Mutation of presenilin-1
Intracranial space-occupying lesions	Tumour
	Subdural haematomas
Traumatic	Head injuries
	Boxing encephalopathy
Infections and related conditions	Encephalitis
	Neurosyphilis
	HIV (AIDS dementia)
	Jacob-Creutzfeldt disease
Vascular	Multi-infarct dementia
	Carotid artery occlusion
Metabolic	Uraemia
	Hepatic failure
Toxic	Alcoholic dementia
	Heavy-metal poisoning

Anoxia	Anaemia
	Carbon monoxide poisoning
	Cardiac arrest
	Chronic respiratory failure
Vitamin deficiency	Vitamin B_{12}
	Folic acid
	Thiamine (Wernicke–Korsakoff's syndrome)
Endocrine	Myxoedema
	Addison's disease

* Slowing of thought, relative sensory presentation.

The diagnosis

At the conclusion of the psychiatric history, which should include a general physical examination, a provisional diagnosis and formulation should be made. Essentially, the diagnostic formulation is a means of pulling together, in a succinct yet comprehensive manner, your understanding of the patient's problem.

Psychiatric disorders generally arise through a combination of biological, psychological and psychosocial factors, and each of these needs to be considered when a patient's problem is being assessed (a biopsychosocial approach). The patient's problem needs to be understood longitudinally, by defining biophysical factors that may have predisposed to the illness and, more immediately, may have precipitated the illness, and factors that may be contributing to the person remaining ill (perpetuating factors). A simple grid can be used for assessing the patient in this manner (Table 12.10). Here biological, psychological or psychosocial factors that predispose to, precipitate or perpetuate the psychiatric illness are identified. Perpetuating factors are very important, particularly among medically ill patients, as it may be the medical or physical illness that maintains the patient's psychiatric problem. By the same token, psychological factors may perpetuate a patient's medical illness.

TABLE 12.10 A formulation grid

	Predisposing	Precipitating	Perpetuating
Biological			
Psychological			
Psychosocial			

An example of such a formulation grid is shown in Table 12.11 for a 53-year-old man who becomes depressed after a myocardial infarction. He has a family history of depression (a genetic predisposing factor) and chronic low self-esteem (a psychological predisposing factor), which he coped with by succeeding in business. He has few friends and his marriage is unsatisfactory (a psychosocial factor). He had his infarct one week after he heard that he would not be promoted at work (a psychological factor) and his job was at risk (a psychosocial precipitant). His insecurity about work and his failing marriage, together with his low self-esteem, is maintaining his illness, as are the biological changes to the neurotransmitter system.

TABLE 12.11 A completed formulation grid (see text)

	Predisposing	Precipitating	Perpetuating
Biological	Genetic predisposition	Acute myocardial infarct	Neurotransmitter changes
Psychological	Low self-esteem	Not promoted	Low self-esteem and insecurity
Psychosocial	Poor social support Dysfunctional marriage		Dysfunctional marriage

Understanding the patient in this manner helps one to plan an effective management approach that will focus on all the relevant factors, so that, for the patient in this example, a combination of antidepressants, marital counselling and assertiveness training (to build self-esteem) can be organised.

A good psychiatric history will provide a comprehensive understanding of the patient and will permit appropriate management to be planned. This is immensely rewarding for the clinician, and will also be of considerable benefit to the patient.

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[a] From the Greek, meaning ‘fear of the market place’.

Chapter 13

The eyes, ears, nose and throat

Diagnosis is not the end, but the beginning of practice.
Martin H Fischer

The examination of the eyes and ears, nose and throat is important for any medical patient because these small parts of the body may be involved in local or systemic disease.

The eyes

Examination anatomy (Figure 13.1)

The structure of the eye is shown in Figure 13.1. Many of these structures can be examined as outlined below.

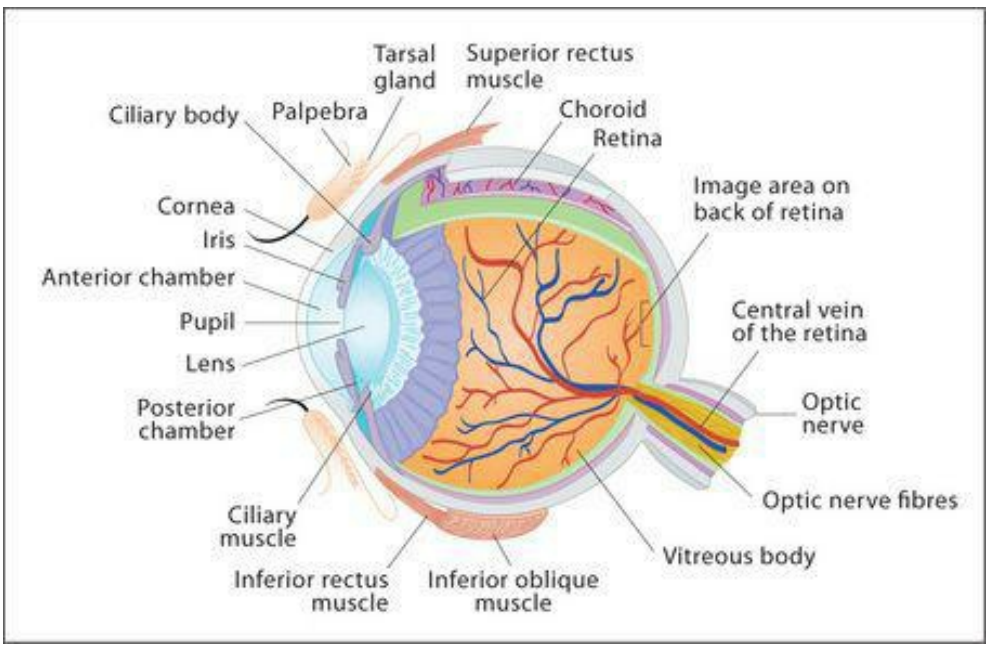

Figure 13.1 The structure of the eye

Examination method

Sit the patient at the edge of the bed. Stand well back from the patient at first, and note the following.

1. **Ptosis** (drooping of one or both upper eyelids).

2. The **colour of the sclerae**;

2. **The colour of the sclerae:**

- **yellow** (deposits of bilirubin in jaundice)
- **blue** (which may be due to osteogenesis imperfecta, because the thin sclerae allow the choroidal pigment to show through; blue sclerae can also occur in families without osteogenesis imperfecta); blue-grey scleral discoloration occurs in patients with ochronosis, due to the accumulation of homogentisic acid in connective tissue in this inherited condition; the concha of the ear is often affected (Figure 13.2), as are the joints and heart valves
- **red** (*iritis* or scleritis which causes central inflammation; or *conjunctivitis*, which causes more-peripheral inflammation often with pus; or *subconjunctival haemorrhage* (which causes influent blood as a result of trauma) (Tables 13.1 and 13.2)
- **scleral pallor**, which occurs in anaemia—pull down the lower lid and look for the normal contrast between the pearly white posterior conjunctiva and the red anterior part; loss of this contrast is a reliable sign of anaemia (Figure 13.3).

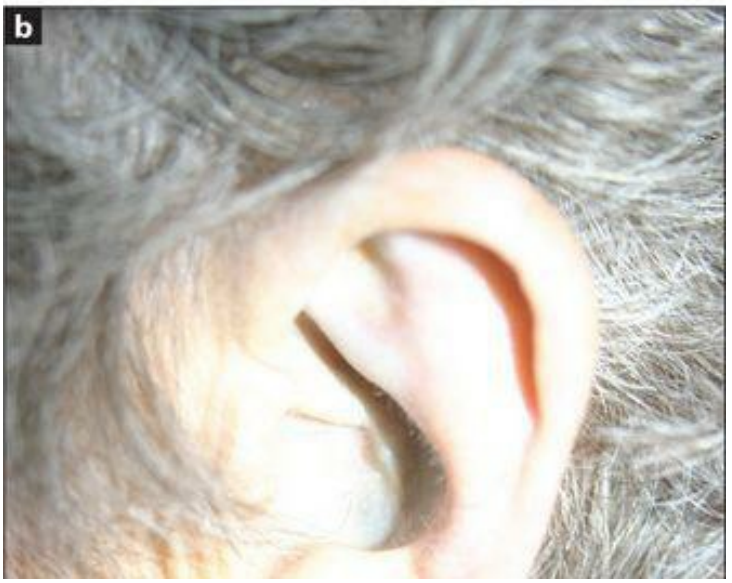

Figure 13.2 Ochronosis (a) Sclerae. (b) Ears.

TABLE 13.1 Distinguishing among common causes of a red and painful eye

Disease	Distribution of redness	Corneal surface	Pupil
Bacterial conjunctivitis	Peripheral conjunctiva Bilateral (central sparing)	Normal	Normal
Episcleritis	Segmental, often around cornea Unilateral	Normal	Normal
Acute iritis	Ciliary flush Unilateral	Dull (vision blurred)	Small, irregular shape, may be no light response
Glaucoma	Around cornea Unilateral	Dull	Mid-oval shape, no light response
Corneal ulcer	Around cornea Unilateral	Dull Fluorescein dye stains ulcer	Normal
Subconjunctival haemorrhage	Localised haemorrhage No posterior limit	Normal	Normal
Conjunctival haemorrhage	Localised haemorrhage Posterior limit present	Normal	Normal

TABLE 13.2 Causes of uveitis

Iritis (anterior uveitis)
Idiopathic
Generalised disease
- Seronegative spondyloarthropathies

Seronegative spondyloarthropathies
- Inflammatory bowel disease
- Diabetes mellitus
- Granulomatous disease—e.g. sarcoidosis
- Infections—e.g. gonococcal, syphilis, toxoplasmosis, brucellosis, tuberculosis

Choroiditis (posterior uveitis)

Idiopathic

Generalised disease

- Diabetes mellitus
- Granulomatous disease—e.g. sarcoidosis
- Infections—e.g. toxoplasmosis, syphilis, tuberculosis, toxocaral infection

The uveal tract consists of the anterior uvea (iris) and posterior uvea (ciliary body and choroid).

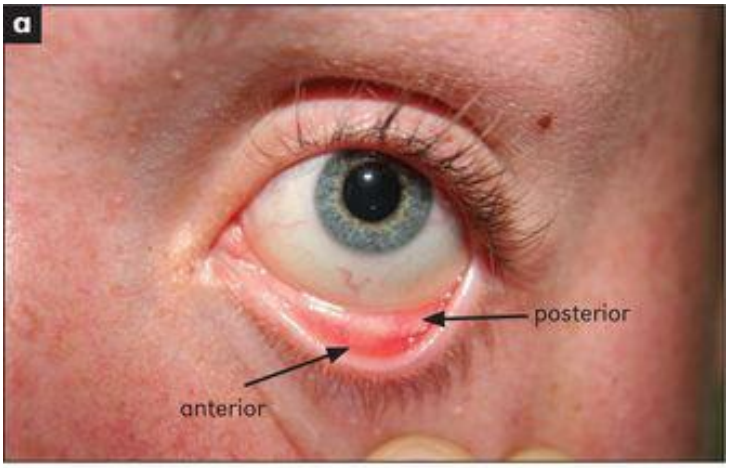

Figure 13.3 (a) Normal sclera (b) Conjunctival pallor in an anaemic patient
Note contrast between anterior and posterior parts in the normal eye.

Look from behind and above the patient for **exophthalmos**, which is prominence of the eyes. If there is actual protrusion of the eyes from the orbits, this is called **proptosis**. It is best detected by looking at the eyes from above the forehead; protrusion beyond the supraorbital ridge is abnormal. If exophthalmos is present, examine specifically for thyroid eye disease: lid lag (the patient follows the examiner's finger as it descends—the upper lid lags behind the pupil), chemosis (oedema of the bulbar conjunctiva), corneal ulceration and ophthalmoplegia (weakness of upward gaze). Look then for any corneal abnormalities, such as band keratopathy or arcus senilis.

3. Look for **corneal ulceration** which may be obvious if severe. A drop of sterile fluorescein will stain corneal ulcers.

4. Proceed then as for the **cranial nerve examination**—that is, testing *visual acuity*, *visual fields* and *pupillary responses* to light and accommodation. Interruption of the sympathetic innervation of the eye at any point results in *Horner's syndrome (partial ptosis* and a *constricted but reactive pupil)*. Perceptible *anisocoria* (inequality of the diameters of the pupils) has been found in 20% of normal people. Remember also that elderly people quite often have imperceptible pupillary light reactions.

5. Test the **eye movements** (Figure 13.4). Look also for fatiguability of eye muscles by asking the patient to look up at a hat-pin or finger for about half a minute. In myasthenia gravis the muscles tire and the eyelids begin to droop.

6. Test **colour vision** if acuity is not poor. Ishihara test plates (where coloured spots form numbers) can be used. Red desaturation (impaired ability to see red objects) can occur with optic nerve disease. Red-green colour blindness affects 7% of males (X-linked recessive).

7. Test the **corneal reflex**. Consider the possibility that the patient may have a glass eye. This should be suspected if visual acuity is zero in one eye and no pupillary reaction is apparent. Attempts to examine and interpret the fundus of a glass eye will amuse the patient but are always unsuccessful.

8. Perform **fundoscopy**. Successful ophthalmoscopy requires considerable practice. It is important that it be performed in reduced ambient lighting so that the patient's pupils are at least partly dilated and the examiner is not distracted. It can be easier to perform the examination, especially of the

fundi, through the patient's spectacles. Otherwise, the patient's refractive error should be corrected by use of the appropriate ophthalmoscope lens. The patient should be asked to stare at a point on the opposite wall or on the ceiling and to ignore the light of the ophthalmoscope. Patients will often attempt to focus on the ophthalmoscope light and should be asked not to do this.

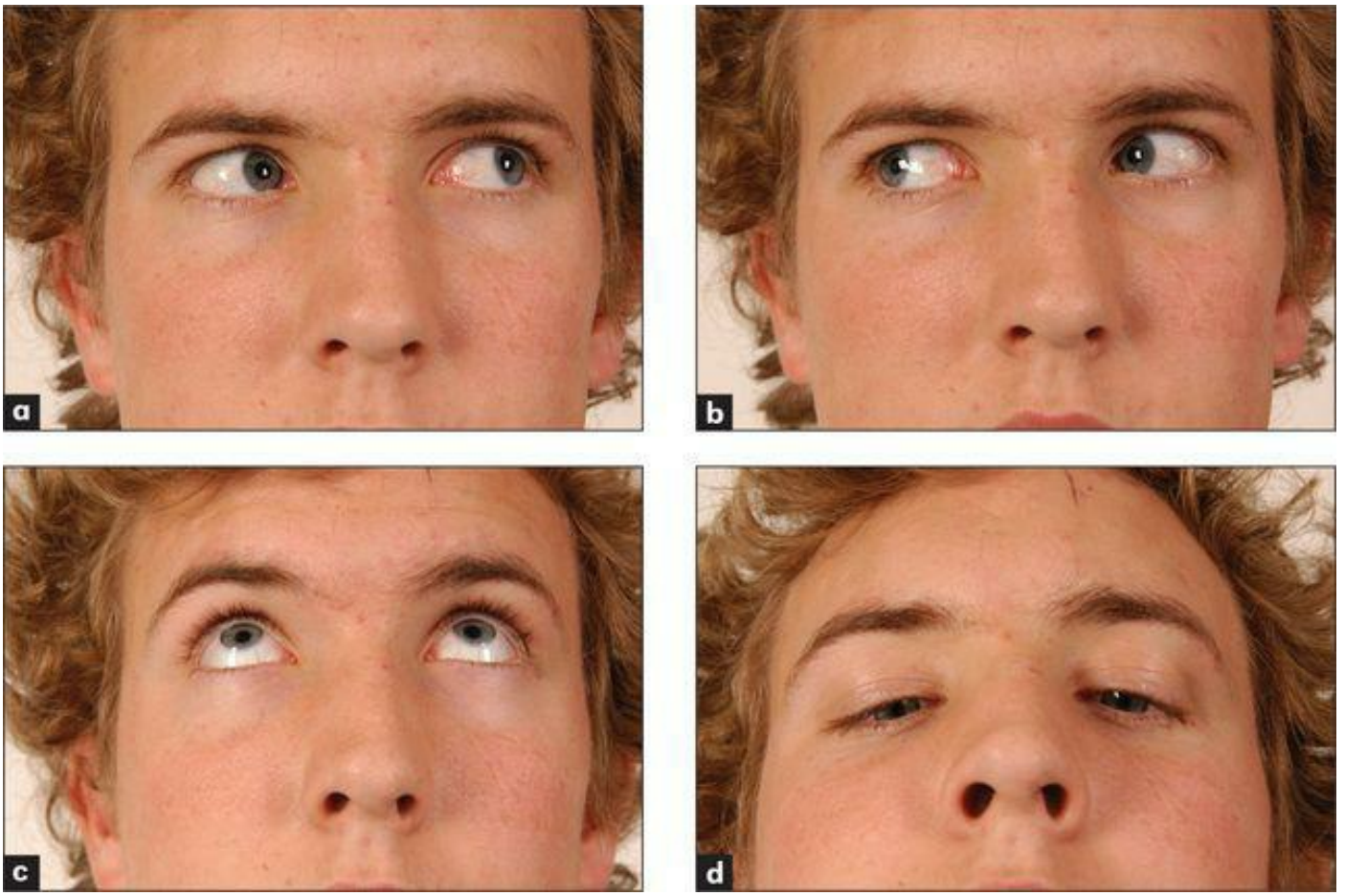

Figure 13.4 The cranial nerves III, IV & VI: voluntary eye movements
(a) 'Look to the left.' (b) 'Look to the right.' (c) 'Look up.' (d) 'Look down.'

Begin by examining the **cornea**. Use your right eye to examine the patient's right eye, and vice versa. Turn the ophthalmoscope lens to +20 and examine the cornea from about 20 cm away from the patient. Look particularly for corneal ulceration. Turn the lens gradually down to 0 while moving closer to the patient. Structures, including the *lens*, *humour* and then the **retina** at increasing distance into the eye, will swim into focus.

Examine the **retinas** (Figure 13.5; see also Figure 11.8, page 336). Focus on one of the retinal arteries and follow it into the optic disc. The normal disc is round and paler than the surrounding retina. The margin of the disc is usually sharply outlined but will appear blurred if there is papilloedema or papillitis, or pale if there is optic atrophy. Look at the rest of the retina

of papillitis, or pale if there is optic atrophy. Look at the rest of the retina, especially for the retinal changes of **diabetes mellitus** or **hypertension**.

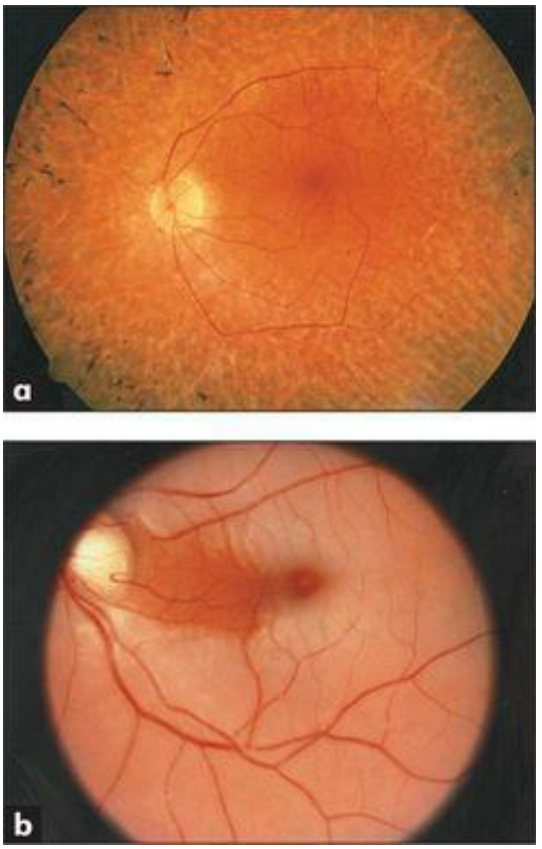

Figure 13.5 Retinal photographs
(a) Retinitis pigmentosa. (b) Central retinal artery occlusion.

There are four types of **haemorrhages**: *streaky haemorrhages* near the vessels (linear or flame-shaped); large *ecchymoses* that obliterate the vessels; *petechiae*, which may be confused with microaneurysms; and *subhyaloid haemorrhages* (large effusions of blood which have a crescentic shape and well-marked borders; a fluid level may be seen). The first two types of haemorrhage occur in hypertensive and diabetic retinopathy. They may also result from any cause of raised intracranial pressure or venous engorgement, or from a bleeding disorder. The third type occurs in diabetes mellitus, and the fourth is characteristic of subarachnoid haemorrhage.

There are two main types of retinal change in **diabetes mellitus**: non-proliferative and proliferative. Non-proliferative changes include: (1) two types of haemorrhages—*dot haemorrhages*, which occur in the inner retinal layers, and *blot haemorrhages*, which are larger and occur more superficially in the nerve fibre layer; (2) *microaneurysms* (tiny bulges in the vessel wall), which are due to vessel wall damage; and (3) two types of exudates—*hard exudates*, which have straight edges and are due to leakage of protein from damaged arteriolar walls, and *soft exudates* (cottonwool spots), which have a

fluffy appearance and are due to microinfarcts. Proliferative changes include *new vessel formation*, which can lead to retinal detachment or vitreous haemorrhage.

Hypertensive changes can be classified from grades 1 to 4:

Grade 1—'silver wiring' of the arteries only (sclerosis of the vessel wall reduces its transparency so that the central light streak becomes broader and shinier)

Grade 2—silver wiring of arteries plus arteriovenous nipping or nicking (indentation or deflection of the veins where they are crossed by the arteries)

Grade 3—grade 2 plus haemorrhages (flame-shaped) and exudates (soft—cottonwool spots due to ischaemia, or hard—lipid residues from leaking vessels)

Grade 4—grade 3 changes plus papilloedema.

It is important to describe the changes present rather than just give a grade.

Inspect carefully for **central retinal artery occlusion**, where the whole fundus appears milky-white because of retinal oedema and the arteries become greatly reduced in diameter. This presents with sudden, painless unilateral blindness, and is a medical emergency.

Central retinal vein thrombosis causes tortuous retinal veins and haemorrhages scattered over the whole retina, particularly occurring alongside the veins ('blood and thunder retina'). This presents with sudden painless loss of vision which is not total.

Retinitis pigmentosa causes a scattering of black pigment in a criss-cross pattern. This will be missed if the periphery of the retina is not examined.

In **retinal detachment**, the retina may appear elevated or folded. The patient describes a 'shade coming down', flashes of light or showers of black dots. A diagnosis requires immediate referral to try to prevent total detachment and irrevocable blindness.

White spots occur in **choroiditis** which when active have a fluffy edge (e.g. in toxoplasmosis, sarcoidosis).

Finally, ask the patient to look directly at the light. This allows the examiner to locate and inspect the **macula**. Macular degeneration is the leading cause of blindness; central vision is lost. Drussen formation occurs in macular degeneration—small deposits are seen under the epithelium in the central retina. Macular degeneration may occur secondary to an atrophic or neovascularisation process.

9. **Palpate the orbits** for tenderness. Auscultate the eyes with the bell of the stethoscope—the eye being tested is shut while the other is open and the patient is asked to stop breathing. Listen for a bruit that may be a sign of an

arteriovenous malformation or a vascular tumour.

10. **Feel** for the pre-auricular node (adenoviral conjunctivitis).

The causes of common eye abnormalities are summarised in Table 13.3.

TABLE 13.3 Causes of eye abnormalities

Cataracts 1. Old age (senile cataract) 2. Endocrine—e.g. diabetes mellitus, steroids 3. Hereditary or congenital—e.g. dystrophia myotonica, Refsum's disease* 4. Ocular disease—e.g. glaucoma 5. Radiation 6. Trauma	
Papilloedema vs papillitis *Papilloedema*	*Papillitis* Optic disc swollen Acuity poor

Optic disc swollen without venous pulsation Acuity normal (early) Large blind spot Peripheral constriction of visual fields Colour vision normal Usually bilateral	Large central scotoma Pain on eye movement Onset usually sudden and unilateral Colour vision affected (particularly red desaturation)
Causes of papilloedema 1. Space-occupying lesion (causing raised intracranial pressure) or a retro-orbital mass 2. Hydrocephalus (large cerebral ventricles) Obstructive (a block in the ventricle, aqueduct or outlet to the fourth ventricle)—e.g. tumour Communicating Increased formation of CSF—e.g. choroid plexus papilloma (rare) Decreased absorption of CSF—e.g. tumour causing venous compression, subarachnoid space obstruction from meningitis 3. Benign intracranial hypertension (pseudotumour cerebri) (small or normal-sized ventricles) (a) Idiopathic (b) The contraceptive pill (c) Addison's disease	

(d) Drugs—e.g. nitrofurantoin, tetracycline, vitamin A, steroids (e) Head trauma 4. Hypertension 5. Central retinal vein thrombosis	
Causes of optic atrophy 1. Chronic papilloedema or optic neuritis 2. Optic nerve pressure or division 3. Glaucoma 4. Ischaemia 5. Familial—e.g. retinitis pigmentosa, Leber's disease,† Friedreich's ataxia	
Causes of optic neuritis 1. Multiple sclerosis 2. Toxic—e.g. ethambutol, chloroquine, nicotine, alcohol 3. Metabolic—e.g. vitamin B12 deficiency 4. Ischaemia—e.g. diabetes mellitus, temporal arteritis, atheroma 5. Familial—e.g. Leber's disease 6. Infective—e.g. infectious mononucleosis	
Causes of retinitis pigmentosa 1. 1 Congenital (associated with cataract and	

deaf-mutism) 2. Laurence-Moon-Biedl syndrome‡ 3. Hereditary ataxia 4. Familial neuropathy, i.e. Refsum's disease	

CSF = cerebrospinal fluid.

* Sigvald Refsum, 20th century Norwegian physician.

† Theodor von Leber (1840–1917), Göttingen and Heidelberg ophthalmologist.

‡ John Laurence (1830–1874), London ophthalmologist; Robert Charles Moon (1844–1914), American ophthalmologist; and Arthur Biedl (1869–1933), professor of physiology, Prague.

Diplopia

Most cases of diplopia (about 60%) are not due to a cranial nerve abnormality. It is important to have an approach to the problem that will help work out the cause.

First find out whether the diplopia is monocular (25%) or binocular. Monocular diplopia persists when one eye is covered. It is usually due to an eye problem such as astigmatism, dislocated lens, uneven contact lens surface or thick spectacles. It disappears if the patient looks through a pin hole. Although it is said to be due to hysteria, this is a very rare cause.

If the diplopia is binocular, consider the common causes:

1. Cranial nerve palsy (III, IV or VI)—look for ptosis, pupil changes (III), abnormal eye movements.

2. Eye muscle disease (myasthenia gravis)—worse later in day, worse after prolonged upward gaze and associated with bilateral ptosis.

3. Thyroid ophthalmopathy—proptosis, lid lag, chemosis.

4. Trauma to the orbit—history or signs of trauma.

5. Internuclear ophthalmoplegia—associated neurological signs.

Horner's syndrome

Examination anatomy

Interruption of the sympathetic innervation of the eye at any point (Figure 13.6) results in Horner's syndrome[a] (Table 13.4).

Figure 13.6 Left Horner's syndrome, with partial ptosis and miosis

TABLE 13.4 Causes of Horner's syndrome

1 Carcinoma of the apex of the lung (usually squamous cell carcinoma)
2 Neck • Malignancy—e.g. thyroid • Trauma or surgery
3 Lower trunk brachial plexus lesions • Trauma

• Tumour
4 Carotid arterial lesion • Carotid aneurysm or dissection • Pericarotid tumours (Raeder's syndrome)* • Cluster headache
5 Brainstem lesions • Vascular disease (especially the lateral medullary syndrome) • Tumour • Syringobulbia
6 Syringomyelia (rare)

* Sweating unaffected, as tumour localised to internal carotid artery.

Clinical approach

The syndrome includes partial *ptosis* (as sympathetic fibres supply the smooth muscle of both eyelids) and a *constricted* pupil (unbalanced parasympathetic action) which reacts normally to light (Figure 13.6). Remember the other causes of ptosis (Table 13.5).

TABLE 13.5 Important causes of ptosis

Cause	Associated features
Age-related stretching of levator muscle or aponeurosis	Common, often asymmetrical
Orbital tumour or inflammation	Orbital abnormality
Horner's syndrome	Constricted pupil, reduced sweating
Third nerve palsy	Eye 'down and out', dilated pupil
Myasthenia gravis or dystrophical myotonica	Extraocular muscle palsies, muscle weakness
Congenital or idiopathic	

Test for a difference (decrease) in the *sweating* over each eyebrow with the back of the finger (absence of this sign does not exclude the diagnosis).[b]

Horner's syndrome may be part of the *lateral medullary syndrome*.[c]

Next ask the patient to speak and note any hoarseness of the voice, which may be due to recurrent laryngeal nerve palsy from lung carcinoma or from a lower cranial nerve lesion.

Go on now to look at the hands for clubbing and test for weakness of finger abduction. If any of these signs is present, perform a respiratory examination, concentrating on the apices of the lungs for signs of lung carcinoma.

Examine the neck for lymphadenopathy, thyroid carcinoma and a carotid aneurysm or bruit. Syringomyelia may rarely be a cause of this syndrome, so the examination should be completed by testing for dissociated sensory loss. Remember, syringomyelia may cause a bilateral Horner's syndrome.

Iritis

Iritis (anterior uveitis) presents with pain, photophobia and unilateral eye redness (Tables 13.1 and 13.2). On examination of the eye, there is classically a ciliary flush with dilated vessels around the iris. *Hypopyon* refers to pus in the anterior chamber; a fluid level may be seen. The pupil is usually

irregular. There may also be new vessel formation over the iris.

Iritis is associated with inflammatory arthropathies that are linked to HLA-B27 positivity, including ankylosing spondylitis, inflammatory bowel disease, Reiter's syndrome and Behçet's disease with an acute presentation. Chronic iritis can be linked to juvenile rheumatoid arthritis, as well as sarcoidosis and syphilis.

Scleritis presents similarly but with bilateral painful red eyes; it is also associated with the same HLA-B27 arthropathies. Eye movements are painful in scleritis.

Glaucoma

Here prolonged elevation of intraocular pressure induces progressive visual loss. Closed-angle (narrow-angle) glaucoma is due to a rapid pressure increase. Symptoms include severe eye pain, halos around lights and nausea; it is an ocular emergency. The examiner may see a fixed mid-dilated pupil, conjunctival hyperaemia and corneal redness; intraocular pressure on measurement is increased. The condition occurs secondary to iris neovascularisation (e.g. new renal formation in diabetes mellitus) or primarily from an anomalous iris (e.g. genetic).

Shingles

Herpes zoster involving the first (ophthalmic) division of the trigeminal nerve may result in uveitis and keratitis, and threaten vision. The tip of the nose, cornea and iris are all innervated by the nasociliary nerve (a branch of the trigeminal nerve). The appearance of vesicles on the tip of the nose (Hutchinson's[d] vesicles) in patient with herpes zoster indicates an increased risk of ophthalmic complication (LR 3.5).[1]

Eyelid

Two conditions of the eyelid are worth remembering:

1. Stye of the eyelid (*hordeolum*). This is an infection typically caused by *Staphylococcus aureus*; it is tender.

2. A slowly enlarging non-tender nodule of the eyelid is a *chalazion* (sterile inflammation of the meibomian glands if deep, or of the sebaceous glands if superficial). See Figure 3.18.