24. Organic disorders

INTRODUCTION

The organic disorders (**1037**) considered in this chapter are those commonly arising in old age, such as dementia; epilepsy; endocrine disorders; and toxic disorders. It has already been noted that the classification of mental disorders in official usage in England and Wales is the World Health Organisation's International Classification of Diseases, now in its tenth revision (ICD–10); and, more particularly, that part of it dealing with mental and behavioural disorders.[1] Diagnostic guidelines set out in the classification are used to specify which combinations of symptoms are adequate to substantiate a diagnosis. Before considering the different disorders, it is useful to briefly outline the way in which the brain functions and the meaning of terms commonly used to describe injury to it (**1277**).

THE BRAIN AND THE NERVOUS SYSTEM

The nervous system comprises the central nervous system, the peripheral nervous system and the autonomic (self-regulating) nervous system —

- The central nervous system (CNS) consists of the brain and the spinal cord. Its overall role is to receive sensory information from organs such as the eyes, ears and receptors within the body, to analyse this information, and to initiate an appropriate motor response, for example the contraction of a muscle.
- Nerves fan out from the central nervous system to the peripheries of the body — the muscles, skin, internal organs and glands. The peripheral nervous system (PNS) consists of all the nerves which carry signals between the CNS and the rest of the body.
- The autonomic nervous system is involved in involuntary, automatic, reflex activities; bodily functions such as heart rate carried out and co-ordinated in the brain below the level of consciousness. The effects of autonomic control are mainly the stimulation or depression of glandular secretion and the contraction of cardiac and smooth muscle tissue.

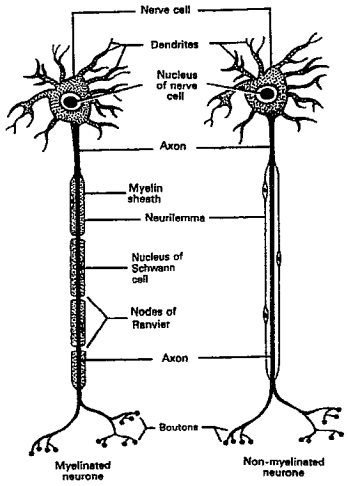
1 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines* (World Health Organisation, 1992).

- For descriptive purposes, the autonomic nervous system is divided into two parts: the sympathetic and parasympathetic. Sympathetic stimulation prepares the body to deal with exciting and stressful situations ("fight or flight") while parasympathetic stimulation has a tendency to slow down body processes. Normally the two systems function simultaneously producing a regular heart beat, normal temperature and an internal environment compatible with the immediate surroundings.[2]

Nerve cells and nerve impulses

Cells are the basic structural unit of the body. The nucleus is the control centre of a cell, governing its activities and functions —

- The physiological units of the nervous system are nerve impulses, akin to tiny electrical charges. Nerve tissue is "irritable" which means that it has the capacity to initiate nerve impulses in response to thought and external stimuli. Thus, a particular thought may give rise to a voluntary, that is willed, movement of the muscles of an eye or limb.
- The nervous system consists of a vast number of neurones. Each neurone consists of a nerve cell (the "grey matter"), in the centre of which is the nucleus, and extensions of the nerve cell located deep in the brain (the "white matter").
- The nerve cells of some neurones initiate nerve impulses while others act as relay stations at which impulses are passed on or redirected.
- Each neurone has two types of extension, an axon and dendrites. Axons carry nerve impulses away from the nerve cell while dendrites carry nerve impulses to the nerve cell. Axons and dendrites which are located in the peripheral nervous system (outside the brain and spinal cord) are commonly referred to as "nerves."
- Sensory nerves transmit information to do with the senses to the brain where the sensation is perceived. Motor nerves transmit impulses away from the centre towards the periphery, to bring about some action or movement in response to a sensory input.



Source: K.J.W. Wilson, Ross and Wilson, Anatomy and Physiology in Health and Illness (Churchill Livingstone, 7th ed., 1990), fig. 12.2. With permission.

[2] K.J.W. Wilson, *Ross and Wilson, Anatomy and Physiology in Health and Illness* (Churchill Livingstone, 7th ed., 1990), p.270.

Sensory nerves

Sensory nerves divide into fine branching filaments, the sensory nerve endings. A **receptor** is the small structure in which a sensory nerve fibre terminates. Sensory nerves originate in the peripheries of the body — the limbs, eyes, skin, muscles, internal organs — and transmit information to do with the senses to the brain where the sensation is perceived. Taking the brain as the central point of the process, sensory nerves therefore convey nerve impulses from the peripheral nervous system in to the central nervous system (the brain and spinal cord). Because sensory nerves transmit nerve impulses from the sensory organs in towards the central nervous system, where they can be analysed and acted upon, they are often referred to as ascending or afferent nerves; afferent meaning to convey inwards. There are several kinds of sensory nerve —

- special senses are concerned with the higher senses of sight, hearing, smell and taste;
- cutaneous senses originate in the skin and are stimulated by touch, pain, heat and cold;
- proprioceptor senses, which are stimulated by stretch, originate in the muscles and joints and they control balance and posture;
- autonomic afferent nerves originate in internal organs and tissues and are associated with reflex regulation of activity and visceral pain.

Motor nerves

In contrast to sensory nerves, motor nerves transmit impulses *away* from the centre towards the periphery, to bring about some action or movement in response to a sensory input. Consequently, they are often referred to as descending or efferent nerves, efferent meaning to convey outwards. Motor neurone stimulation results in the contraction of skeletal (voluntary) and smooth (involuntary) muscle. The motor nerves divide into fine filaments terminating in minute pads called **motor end-plates**. One motor nerve has many end-plates and each stimulates a muscle fibre. The nerve impulse is transmitted across the gap between the end-plate and the muscle fibre by chemical means, the substance involved being called a neurotransmitter.

Voluntary and involuntary movements

The contraction of the muscles which move the joints is mainly under the control of the will, which means that the stimulus to contract originates at the level of consciousness in the cerebrum. However, some nerve impulses which affect skeletal muscle contraction are initiated in the midbrain, brainstem and cerebellum. The activity here occurs below the level of consciousness and is associated with the *co-ordination* of muscle activity. For example, very fine balancing movements and the maintenance of posture and balance.[3]

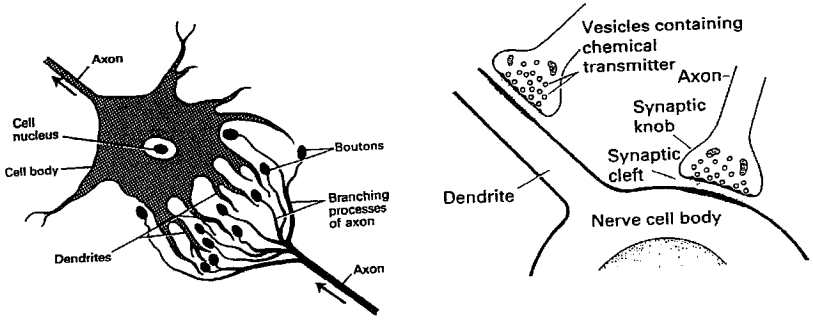
[3] K.J.W. Wilson, *Ross and Wilson, Anatomy and Physiology in Health and Illness* (Churchill Livingstone, 7th ed., 1990), p.255.

Mixed nerves

In the spinal cord, sensory and motor nerves are arranged in separate cables or tracts. Outside the spinal cord, sensory and motor nerves are enclosed within the same sheath of connective tissue and called "mixed nerves." Most of the nerves of the peripheral nervous system are composed of sensory nerve fibres conveying impulses from sensory end organs to the brain, and motor nerve fibres conveying impulses from the brain through the spinal cord to the effector organs, *e.g.*, skeletal muscles, smooth muscle and glands.

Synapses

The transmission of all sensory and motor nerve impulses involves more than one nerve cell (neurone) so at some stage a change-over has to be effected. The process is often likened to an athletics relay, with the nerve impulse being a baton passed on at the conclusion of each stage to the next runner. The point at which a nerve impulse passes from one neurone to another is the **synapse**. As has been noted, axons carry nerve impulses away from a nerve cell while dendrites carry nerve impulses towards the nerve cell. At its free end, the axon of one neurone breaks up into minute branches which terminate in small swellings called **boutons**. These boutons are in close proximity to the dendrites of the next neurone in the chain but not touching them. The space between them is known as the **synaptic cleft** and the nerve impulse is transmitted across that space chemically — by substances known as **neurotransmitters**. These chemical transmitters are secreted by the nerve cells and stored at the end of the boutons in spherical **synaptic vesicles**. The action of chemical transmitters is short-lived and immediately they have stimulated the next neurone they are neutralised by enzymes.

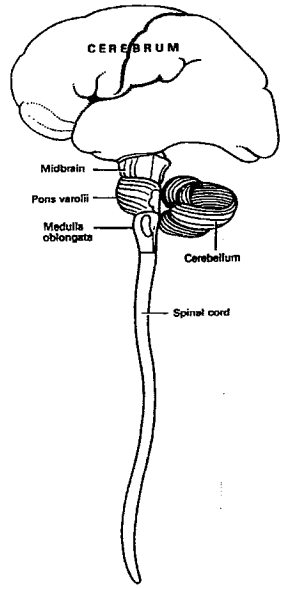


Source: K.J.W. Wilson, Ross and Wilson, Anatomy and Physiology in Health and Illness (Churchill Livingstone, 7th ed., 1990), figs. 12.4A and 12.4B. With permission.

THE BRAIN

The brain comprises—

- the cerebrum
- the diencephalon
- the brain stem, which includes the midbrain
- the cerebellum or hindbrain



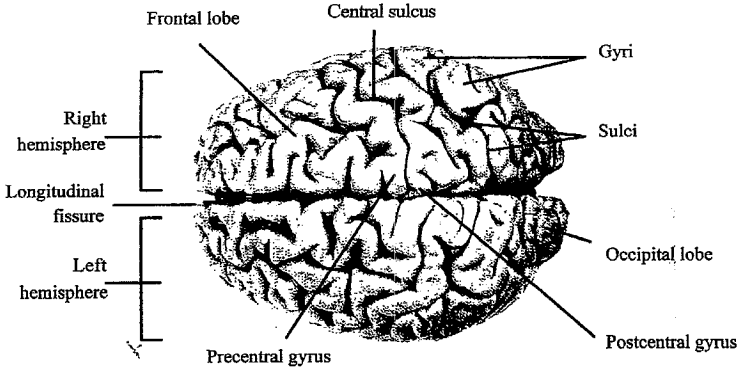
Source: K.J.W. Wilson, Ross and Wilson, Anatomy and Physiology in Health and Illness (Churchill Livingstone, 7th ed., 1990), fig. 12.12. With permission.

THE CEREBRUM

The cerebrum is the largest and most developed part of the brain and the site of most conscious and intelligent activities. This is the structure which most people think of as "the brain" and it is concerned with conscious thought, perception and motor activity. It can override most other components in the nervous system. It consists of both nerve cells ("grey matter") and nerve fibres which connect the cells and transmit nerve impulses from one cell to another along a chain ("white matter").

The hemispheres

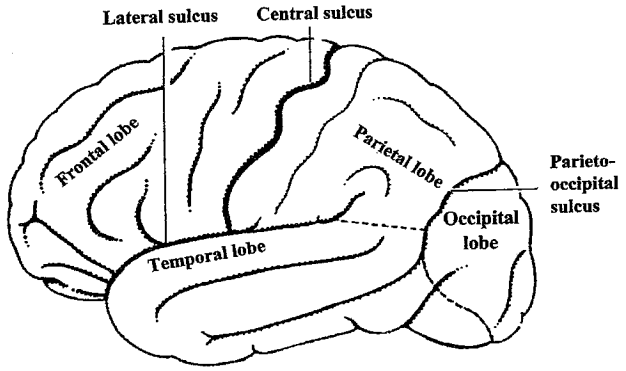
The cerebrum is divided by a deep ravine or cleft ("**the longitudinal fissure**") into two hemispheres, consisting of two large out-growths from the main part of the brain-stem which together form an almost continuous mass which envelops most of the rest of the brain.



Source: Rod R. Seeley, et al., Anatomy & Physiology (Mosby Year Book, 2nd ed., 1992), fig. 13–8A. With permission.

The cerebral cortex and the lobes

The surface of each cerebral hemisphere (known as the "cerebral cortex") is about one centimetre deep and made up of "grey matter." It can also be seen from the diagram above that the surface of the cerebrum ("the cerebral cortex") is not smooth and flat but undulating, its many irregular hills or folds (**"the gyri"**) being separated by ravines or fissures (**"sulci"**). If one looks at the overall impression formed by these undulations, the most pronounced fissures seem to be like boundaries which divide the landscape into distinct regions. That being so, the surface areas of the cerebrum are named, partly for descriptive purposes, after the four bones of the skull under which they lie — the **frontal, occipital, parietal and temporal lobes**, a lobe being simply a "projection" (as in "ear-lobe"). The diagram shows the boundaries of the lobes, which are connected by masses of nerve fibres.



Source: K.J.W. Wilson, Ross and Wilson, Anatomy and Physiology in Health and Illness (Churchill Livingstone, 7th ed., 1990), fig. 12.13. With permission.

The ventricles

Each of the hemispheres contains within it a space called a "ventricle" ("the lateral ventricles") which is filled with cerebro-spinal fluid. An inner layer adjacent to the ventricles consists of important clusters of nerve cells, in particular the basal ganglia, thalamus and hypothalamus.

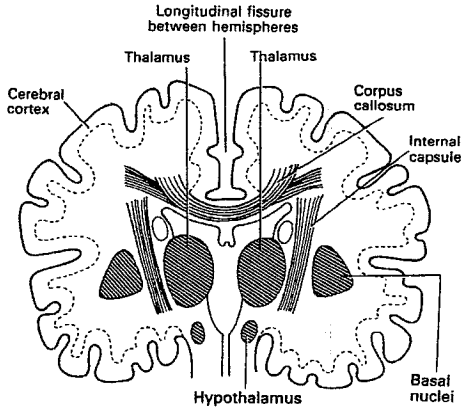
Connecting the hemispheres

The corpus callosum consists of tracts of nerve fibres ("white matter") which connect the two hemispheres deep within the cerebrum, so as to allow for the transmission of nerve impulses from one cell to another across the divide. Just as the nerve fibres known as the **corpus callosum** connect the two hemispheres so arrays of interconnecting nerve fibres (called **association fibres**) connect areas of the cerebral cortex within the same hemisphere. Yet other tracts of nerve fibres (called **projection fibres**) allow signals to be transmitted and relayed from the cerebral cortex to the other parts of the brain and the spinal cord. All nerve impulses passing to and from the cerebral cortex are carried by projection fibres, which form what is known as the **internal capsule**.

THE DIENCEPHALON

The diencephalon is the part of the brain between the brainstem and the cerebrum, the main components of which are —

- the thalamus;
- subthalamus;
- hypothalamus; and
- epithalamus.



Source: K.J.W. Wilson, Ross and Wilson, Anatomy and Physiology in Health and Illness (Churchill Livingstone, 7th ed., 1990), fig. 12.14. With permission.

Thalamus

The thalamus constitutes four-fifths of the total weight of the diencephalon. Within the thalamus is the third ventricle. Most sensory input projects to the thalamus where afferent neurones synapse with thalamic neurones and send projections to the cerebral cortex. These impulses include auditory and visual nerve impulses. The thalamus also plays an important role in bodily movement associated with strong emotions such as rage and fear.

Sub-thalamus

A small portion of the red nucleus and the substantia nigra (**1275**) extend to the subthalamic region, which is also associated with basal ganglia. The sub-thalamus is involved in controlling motor functions.

Epithalamus

The epithalamus is involved in emotional and visceral responses to smell and may possibly also be concerned in the sleep-wake cycle. It includes the **pineal gland**.

Hypothalamus

The hypothalamus plays a number of important functions, generally associated with mood and the emotions. Efferent fibres originating in the hypothalamus pass to the brain stem and the cerebral cortex where they synapse with neurones of the autonomic nervous system. The hypothalamus is involved in olfactory reflexes and emotional responses to smells. It is also important in controlling the secretion of hormones from the pituitary gland and with control of the autonomic nervous system, *e.g.* defensive reactions associated with fear and rage.

BRAINSTEM (INCLUDING THE MIDBRAIN)

The brain stem comprises —

- the medulla oblongata;
- pons; and
- the midbrain (the **mesencephalon**).

These structures are less involved in the complicated task of integrating the senses and more concerned with basic, primitive physiological functions such as controlling an individual's level of arousal. The brainstem connects the spinal cord to the remainder of the brain. All but two of the cranial nerves enter or exit the brain through the brainstem and even small areas of damage to the brain stem can be fatal.

Medulla oblongata

The most inferior part of the brainstem. From the surface, the spinal cord appears to blend into it although the spinal tracts within each are in fact different. The medulla acts as a pathway for both ascending and descending nerve tracts and is also involved in regulating various reflex actions such as a person's heart-rate. Several cranial nerves are located within the medulla.

The pyramids and the olives

On the anterior surface of the medulla are two prominent enlargements called the **pyramids**. They consist of descending nerve tracts involved in the conscious movement of skeletal muscles. Near their inferior ends the descending nerve tracts cross over to the opposite sides, in the manner of a crossroads or a figure "X." This accounts in part for the fact that each half of the brain controls the opposite side of the body. The technical term for this is that the tracts "decussate." The **olives** are two rounded structure, shaped like olives, which protrude from the anterior surface of the medulla. The olives consist of nuclei (clusters of grey matter deep inside the brain) involved in the functions of balance, co-ordination, and the modulation of sound impulses from the inner ear structures.

Pons Varolii

The Pons, located above the medulla oblongata, contains several ascending and descending nuclei ("the **pontine nuclei**"). The pontine nuclei relay information from the cerebrum ("the brain") to the cerebellum ("the little brain"). It consists mainly of nerve fibres which form a bridge between the two hemispheres of the cerebellum and of fibres passing between the higher levels of the brain and the spinal cord.

Mid-brain

The midbrain, or mesencephalon, is the smallest region of the brainstem and consists of groups of nerve cells and nerve fibres which connect the cerebrum with lower parts of the brain and with the spinal cord.

The tectum

The tectum (literally "the roof") of the midbrain consists of four nuclei which form mounds on the dorsal surface. Each mound is called a colliculus (Latin for a hill), there being two superior colliculi and two **inferior colliculi**. The inferior colliculi are an integral part of the auditory pathways within the central nervous system and are involved in hearing. Neurones transmitting impulses from the structures of the inner ear all synapse in the inferior colliculi. The **superior colliculi** are involved in visual reflexes, such as sudden flashes of light, and receive input from the eyes, the skin and the inferior colliculi. They play an important function in tracking moving objects, and the turning of the eyes and head.

The tegmentum

The tegmentum (literally "floor") of the midbrain consists of ascending tracts from the spinal cord to the brain and contains the **red nuclei** — so named because they have a pinkish colour in fresh brain specimens due to an abundant blood supply. The red nuclei aid in the unconscious regulation and co-ordination of motor activities. The **substantia nigra** (literally "black substance"), a mass of nuclei situated close to the tegmentum, is involved in co-ordinating movement and muscle tone.

The reticular formation

A reticle is a network of fine threads and the reticular formation is a collection of neurones scattered dust-like through most of the brainstem. When considered together with its various connections, the system is known as the reticular activating system, which is concerned with the sleep-wake cycle and thus with phenomena such as alertness and attention and, conversely, drowsiness, sleep and coma.

THE CEREBELLUM

The cerebellum is a region of the brain concerned primarily with the maintenance of posture and balance and with the co-ordination of movement. Disease or damage to it (due, for example, to a stroke, multiple sclerosis or a brain tumour) may cause **cerebellar ataxia**. The gait is jerky and staggering, and other movements uncoordinated, accompanied in some cases by slurred speech (dysarthria), hand tremor, and nystagmus. Because alcohol impairs cerebellar functions, it may produce similar symptoms.

THE SPINAL CORD

The spinal cord is the elongated, almost cylindrical part of the central nervous system, continuous above the medulla oblongata and about the thickness of the little finger. The white matter of the spinal cord is arranged in three columns or tracts; anterior, posterior and lateral. Except for the cranial nerves, the spinal cord is the nervous tissue link between the brain and the rest of the body. Nerves conveying impulses from the brain to the various organs and tissues descend through the spinal cord. At the appropriate level they leave the cord and pass to the structure they supply. Similarly, sensory nerves from organs and tissues enter and pass upwards in the spinal cord to the brain.

THE CRANIAL NERVES

There are 12 pairs of cranial nerves originating from nuclei in the brain, some sensory, some motor and some mixed. By way of example, the olfactory nerves make their central connection in the temporal lobe of the cerebrum and their peripheral connection in the mucous membrane in the roof of the nose and the optic nerves arise in the occipital lobe and the cerebellum and connect to the retina in the eye.

PROTECTING THE BRAIN AND SPINAL CORD

The brain and spinal cord are protected in the following ways.

The meninges

The brain and the spinal cord are completely surrounded by three membranes which lie between the brain and the skull. These membranes are collectively known as the meninges, an infection of the meninges being called meningitis. Furthest from the brain, on the skull side, is the **dura mater,** dura meaning literally "hard" or "durable." The middle membrane is the **arachnoid mater**, named because of its shape after the Greek word for a spider ('arachnoid'). The inner membrane which adheres to the cerebrum is the **pia mater**, pia being an Arabic word meaning "thin." The meninges descend down the spinal cord, enveloping and protecting it in a similar fashion, and acting as a protective layer between the spinal cord extending from the brain and the skeletal surround (the backbone or vertebrae). There are spaces in between each of the meningeal layers, known as **potential spaces**, and also between the inner layer, the pia mater.

Central spinal fluid

The central spinal fluid consists of water, mineral salts, glucose, proteins and other similar substances and supports the brain, maintaining a uniform pressure round the brain and spinal cord, acting as a cushion and shock absorber.

Neuroglia (the blood-brain barrier)

The central nervous system consists of nerve cells ("neurones") and supporting tissue ("neuroglia"). The neuroglia play an important role in forming a barrier between the blood and the brain (the blood-brain barrier).

DESCRIBING INJURY TO THE BODY

Various words are used to describe injury or damage to the body. **Encephalopathy** denotes any disease or disorder affecting the brain, especially one of a chronic or degenerative nature. Disease, inflammation, or damage affecting the peripheral nerves is referred to as **neuropathy**. Neuropathy may produce symptoms which include numbness, tingling, pain, or muscular weakness depending upon which nerves are attacked. The term **idiopathic** (literally "one's own disease"), as in idiopathic epilepsy, denotes a disorder the cause of which is unknown but presumed to be organic.

WORDS DESCRIBING INJURY OR DAMAGE TO THE BODY

Anoxia	A complete absence of oxygen within a body tissue, *e.g.* the brain. Hypoxia denotes a reduction rather than an absence in oxygen supply.
Atrophy	The shrinking or wasting away of a tissue or organ due to a reduction in the size or number of its cells.
Lesion	An all-encompassing term for any abnormality of structure or function in any part of the body. The term may refer to a wound, infection, tumour, abscess, or chemical abnormality.
Neoplasm	Neoplasm is a medical term for a tumour and therefore denotes any abnormal new growth.
Seizure	A sudden episode of uncontrolled electrical activity in the brain, also known as a fit. Recurrent seizures are called epilepsy and may be partial or generalised.
Toxin	A poisonous protein produced by pathogenic bacteria.
Trauma	A physical injury or a severe emotional shock. It may result in a disorder known as post-traumatic stress disorder.
Tumour	Strictly, any swelling and usually synonymous with neoplasm. It refers to an abnormal mass of tissue which forms in a specific area when cells there reproduce at an abnormal rate.

DISORDERS AFFECTING OLDER PEOPLE

Compulsory admission is used for about five per cent of people aged 65 or over who come into psychiatric wards, usually when paranoid, manic, or dangerously depressed, and less often when confused.[4] The use of the term "older people" in the text refers to people aged 65 or over. A general principle of psychogeriatric care is that older people fare best in familiar environments and removal from home should be avoided where possible. About five per cent of them live in institutions, the same proportion as at the beginning of the century.[5]

FUNCTIONAL MENTAL DISORDERS

Dementia is the most characteristic disorder affecting older people because it is rarely seen in the young. However, older people experience the same range of mental disorders and mood disorders contribute up to half the workload of a comprehensive psychogeriatric service. Because their presentation can sometimes mean that they are difficult to differentiate from organic disorders it is important to briefly consider them first. It is worth noting that some hospitals maintain separate

4 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, 1984), p.97.

5 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.131.

wards for patients with organic and functional mental disorders althc opinion differs as to whether this is advantageous.

Mood disorders

Major mood disorders are present in some two to three per cent of older people. Recurrent mood disorders sometimes become more disabling as periods between illnesses shorten and the duration of illnesses lengthen.[6] Suicide is more common in old age than in youth while attempted suicide is less common. Men are at greater risk than women. It is sometimes difficult to distinguish depression from dementia and mania from delirium. Although a manic episode can start by resembling delirium (an acute confusional state), the confusion passes while the euphoric irritable hyperactivity remains.[7]

Depression

Approximately 22 per cent of people over 60 suffer depression and some 10 per cent of depressive disorders develop in the over–60s. The Mental Health Act Commission biennial reports suggest that most second opinions authorising ECT involve older detained patients suffering from depression with life-threatening problems of nutritional intake. Continued physical ill-health is an important factor in maintaining depressive symptoms[8] but it is also easy to dismiss depression as understandable, even inevitable, and to thereby commit the patient to unnecessary suffering.[9] The prognosis is worse than in cases with a younger age of onset. It is quite common for the patient to be left with a residue of mild symptoms which interfere with the routine tasks of daily life. If tricyclic medication (**1209**) is prescribed, this will normally consist of a second generation tricyclic because these drugs are associated with fewer adverse effects for older people. Most older patients require full adult dosages.[10] Depressive states may sometimes be misdiagnosed as dementia (**1280**).

Paranoid states

Failure of the special senses of hearing and vision is widely recognised to predispose to paranoid states, while failing health in general, and consequent reduced mobility and restricted contact with the outside world, also seem to possess the potential.[11] Paranoia may arise from confusion, paraphrenia, or personality. Confusional paranoia results from the patient blaming others for difficulties arising from his forgetfulness which he fails to recognise. The paranoia takes the form of outbursts that pass quite quickly. Medication is of little value.[12] The sustained delusions, hallucinations, and hostility of paraphrenia may erupt into violence towards neighbours (although this is rarely dangerous) or result in withdrawal into a state of siege with a serious risk of self-neglect and malnutrition.[13]

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6 A.T. Beck, *Depression: clinical, experimental and theoretical aspects* (Staples Press, 1967).

7 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, 1984), pp.92 and 96.

8 F. Post, *The Significance of affective symptoms in old age* (Oxford University Press, Maudsley Monograph No. 10, 1962); R.C. Baldwin and D.J. Jolley "The prognosis of depression in old age" *British Journal of Psychiatry* (1986) 149, 574–583.

9 S. Jolley and D. Jolley, "Psychiatric disorders in old age" in *Community Psychiatry: The Principles* (ed. D.H. Bennett and H.L. Freeman, Churchill Livingstone, 1991), p.269.

10 B. Pitt, "Management problems in psychogeriatrics," *supra*, p.94.

11 S. Jolley and D. Jolley, "Psychiatric disorders in old age," *supra*, p.269.

12 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, 1984), p.97.

13 B. Pitt, "Management problems in psychogeriatrics," *supra*, p.97.

Personality disorder

Personality clashes between spouses, parent and child, neighbours or helpers are as common among older people as younger people but more likely to lead to labelling as mentally ill. Long-established personality traits that cause difficulty "such as cantankerousness, obstinacy, parsimony, hoarding, and reclusiveness are sometimes hopefully attributed to mental illness with the vague expectation that the psychiatrist will be able to remove the symptoms."[14] Similarly, suicidal threats may wrongly be thought to indicate illness when in fact they may be an expression of disturbed relationships.

Prescribing medication

The principles concerning prescribing medication for older people have been enumerated by Pitt and his advice merits detailed consideration. According to him, a fundamental principle of treatment is not to overtreat or undertreat. "Drastic drugging is rarely justified and talking to the patient until he has settled, nursing in a side room, or the use of a mild hypnotic ... often suffices."[15] Overtreatment is apparent when a confused patient has been rendered drowsy, dehydrated, hypotensive, and ataxic. Incontinence, bed sores, fractures, and hypostatic pneumonia are other hazards of such overtreatment. The dilemma "is that the cure may be as bad as the disease. The best course is to treat only when the disorder is truly troublesome, to use the lowest effective dose possible and oral medication where compliance seems at all likely, to be especially cautious in the presence of confusion or physical infirmity, to use antiparkinsonian drugs at the first sign of side effects, to try occasional drug holidays, and to maintain close supervision during follow up."[16] As to the risks of undertreatment, examples are the overcautious prescription of antidepressants, not giving ECT when it is needed, and denying the older patient psychological treatments that take time and skill such as psychotherapy and behaviour therapy.[17]

Anxiety, agitation and restlessness

Anxiety, agitation, restlessness, and difficulty in getting off to sleep "may all respond to major tranquillisers used in low/moderate doses: perphenazine 2mg, haloperidol 1–2mg, promazine syrup 50–100mg nocte, and chlorpromazine syrup 50–100mg nocte ... Higher doses of major tranquillisers and/or the use of more potent compounds ..., are required when persecutory ideas, delusions, and hallucinations are prominent. Care must be taken by clinicians to avoid becoming so determined to eradicate these phenomena that the patient's drive, sparkle, and ability to cope and survive are steam-rollered out of existence. There are quite a number of paranoid old people who are better off when left medication-free, for they do not suffer much and cause little bother, as long as they are known and understood."[18]

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14 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, 1984), p.92.

15 *Ibid.*, p.93.

16 *Ibid.*, pp.93–94.

17 *Ibid.*, p.94.

18 S. Jolley and D. Jolley, "Psychiatric disorders in old age" in *Community Psychiatry: The Principles* (ed. D.H. Bennett and H.L. Freeman, Churchill Livingstone, 1991), p.284.

DELIRIUM

Delirium is a state of acute mental confusion characterised by impairment o consciousness which manifests itself as reduced clarity of awareness of the environ ment. It is quite common among older people, particularly those with concurren physical illness, and surveys indicate that up to one-fifth of older people admitted t medical and geriatric wards suffer from it. Physical illnesses such as pneumonia an strokes may precipitate a crisis by adding an acute delirium to a pre-existing mil dementia or by imposing hospital care on a person just maintaining his grasp o reality at home.[19] There may be accompanying incontinence, ataxia (**1063**) and fall leading to fractures.[20] Delirium may be drug related and common offending drug include digoxin, hypnotics, phenothiazines, anti-parkinsonian agents, hypotensiv drugs, and diuretics.[21] The basic requirement in management is to search for an treat the underlying cause. While this treatment is taking effect, psychotropic drug can provide symptomatic relief. Small doses of haloperidol or a phenothiazine ar usually effective without increasing confusion. Since many of the causes of delirium threaten life, the mortality of delirium is high.[22] The features which distinguisl delirium from dementia are considered below (**1287**).

DEMENTIA

Dementia is not a single disease but a generic term covering numerous condition that have certain clinical features in common. More particularly, it is a syndrom associated with a variety of diseases in which there is degeneration and atrophy o the brain. The characteristics of a dementing illness are global intellectua impairment (impairment of several aspects of cognition at the same time) an preservation of clear consciousness.[23] Memory impairment and loss of intellectua capacities are severe enough to interfere with social or occupational functioning.

DEMENTIA

"Dementia is a syndrome due to disease of the brain, usually of a chronic or progressive nature, in which there is disturbance of multiple higher cortical functions, including memory, thinking, orientation, comprehension, calculation, learning capacity, language and judgement. Consciousness is not clouded. Impairments of cognitive function are commonly accompanied, and occasionally preceded, by deterioration in emotional control, social behaviour, or motivation ... Dementia produces an appreciable decline in intellectual functioning, and usually some interference with personal activities of daily living, such as washing, dressing, eating, personal hygiene, excretory and toilet activities. How such a decline manifests itself will depend largely on the social and cultural setting in which the patient lives."

ICD–10 Classification of Mental and Behavioural Disorders: Clinical descriptions and diagnostic guidelines, World Health Organisation, Geneva, 1992, p.45.

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19 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.132.

20 J.B. Macdonald and E.T. Macdonald *British Medical Journal* (1977) ii, 483.

21 E.H. Jarvis, *Adverse Drug Reaction Bulletin* (1981) 86, 312.

22 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.520.

23 C. Oppenheimer, "The Elderly," *supra*, p.134.

ICD–10 diagnostic guidelines

The ICD–10 diagnostic guidelines are as follows[24]—

- The primary diagnostic requirement is evidence of a decline in both memory and thinking which is sufficient to impair personal activities of daily living, such as washing, dressing, eating, personal hygiene, excretory and toilet activities.
- The impairment of memory typically affects the registration, storage, and retrieval of new information, but previously learned and familiar material may also be lost, particularly in the later stages.
- There is impairment of thinking and of reasoning capacity and a reduction in the flow of ideas.
- The processing of incoming information is impaired, in that the individual finds it increasingly difficult to attend to more than one stimulus at a time, such as taking part in a conversation with several persons, and to shift the focus of attention from one topic to another. If dementia is the sole diagnosis, evidence of clear consciousness is required. However, a double diagnosis of delirium superimposed upon dementia is common.
- The above symptoms and impairments should have been evident for at least six months for a confident clinical diagnosis of dementia to be made.

The prevalence of dementia

The prevalence of moderate to severe dementia rises markedly with age, from about two per cent in persons aged 65–70 to approximately 20 per cent in those over 80. The prevalence of dementia continues to rise as a consequence of increasing longevity in the population.

Types of dementia and diagnosis

Traditionally, dementing illnesses were divided into presenile (under 65 years of age at onset) and senile (over 65 years of age at onset). Some researchers have also categorised dementias as either reversible or irreversible, treatable or untreatable. Conclusive diagnosis of the precise type of dementing illness in any particular case must usually await the post-mortem. In the majority of cases, the type of dementia is established as Alzheimer's disease (**1282**), which is found at post-mortem in 60 per cent of deceased hospitalised patients previously diagnosed as having dementia. Cerebrovascular disease (**1283**), including strokes, is established as the cause in a further 20 per cent of cases and a combination of the two in another 10 per cent. In life, both diagnoses are made presumptively, that is the diagnosis must await confirmation after death. Rarer causes of dementia include Pick's disease (**1285**) and Huntington's chorea (**1286**). A whole range of other conditions may also cause dementia but they account for very few cases each year.

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24 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines* (World Health Organisation, 1992), p.46.

ALZHEIMER'S DISEASE (F00)

Dementia in Alzheimer's disease is a degenerative cerebral disease of unknown cause which has characteristic neuropathological and neurochemical features, such as a marked reduction in the number of brain cells and in some neurotransmitters. The research and literature concerning the disease have recently been examined by Terry.[25]

Diagnostic guidelines

According to the ICD–10 diagnostic guidelines, the features set out in the following table below are essential for a definite diagnosis.[26]

ALZHEIMER'S DISEASE — ICD–10 DIAGNOSTIC GUIDELINES

- presence of a dementia as described (**1281**)
- insidious onset with slow deterioration
- absence of clinical evidence, or findings from special investigations, to suggest that the mental state may be due to other systemic or brain disease which can induce a dementia (*e.g.*, hypothyroidism, hypercalcaemia, vitamin B_{12} deficiency, niacin deficiency, neurosyphilis, normal pressure hydrocephalus, or subdural haematoma)
- absence of a sudden, apoplectic onset, or of neurological signs of focal damage such as hemiparesis, sensory loss, visual field defects, and incoordination occurring early in the illness.

Prevalence of the disorder

It has been noted that Alzheimer's disease is the most common cause of dementia in older people. Autopsy information, based largely on hospitalised patients, has consistently shown that an Alzheimer pathology is the most common variety of dementia encountered and occurs in some half to two-thirds of patients.[27] The disease is slightly more common in women, and patients with Down's syndrome are at high risk of developing it.[28]

Onset and development

The disease is usually insidious and develops slowly but steadily over a period of years. The progress is usually gradual for the first two to four years, with increasing memory disturbance and lack of spontaneity. Disorientation in unfamiliar

25 R.D. Terry, *et al.*, *Alzheimer's disease* (Raven Press, 1994).

26 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines* (World Health Organisation, 1992), p.48.

27 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.372.

28 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines, supra*, p.47.

surroundings is normally an early sign.[29] It usually begins after the age of 70 although the onset can be in middle adult life or even earlier. In cases with onset before the age of 65, there is the likelihood of a family history of a similar dementia, a more rapid course, and prominent features of temporal and parietal lobe damage. In cases with a later onset, the course tends to be slower and to be characterised by more general impairment of higher cortical functions. The disease is as yet untreatable. The erosion of the patient's intellectual and emotional reserves leaves him progressively more dependent on the work of others to provide an appropriate environment for him.[30] Death usually occurs within five to eight years of the appearances of the first signs of the disease.[31]

Management and treatment

The management and treatment of dementia is considered below (**1287**). Four kinds of drugs may be prescribed in cases of Alzheimer's disease, namely cholinergic drugs, vasodilators, neuropeptides and enhancers of brain metabolism. However, clinical trials have shown little or no benefit and Gelder concludes that their administration is not recommended.[32]

VASCULAR DEMENTIA (F01)

This form of dementia, formerly known as arteriosclerotic dementia, is caused by cerebrovascular disease: the term cerebrovascular denotes the blood supply of the brain. The meaning of other terms will be less familiar to many professionals and some of the more common of them are briefly defined below.

The terminology of vascular dementia

▪ *Arteriosclerosis*	Disease of the arteries resulting in the thickening and loss of elasticity of the arterial walls
▪ *Cerebrovascular accident*	The medical term for a stroke, the rupture of a blood vessel in the brain causing loss of consciousness.
▪ *Embolism*	An embolus is a fragment of material that travels in the blood circulation and causes obstruction of an artery. An embolism is more serious and the fragment (a blood clot, a bubble of air, a piece of tissue or tumour) causes actual blockage of the artery. A cerebral embolism may cause a stroke.
▪ *Infarction*	An infarct is an area of dead tissue caused by a lack of blood supply (ischaemia), often due to obstruction in the artery supplying the area. Infarction is the formation of an infarct and multi-infarct dementia (F01.1) is a form of vascular dementia brought about by a number of minor ischaemic episodes.

29 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.522.

30 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.134.

31 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry, supra*, p.522.

32 *Ibid.*, p.526.

- *Ischaemia* — An insufficient supply of blood to a specific organ or tissue. Ischaemia is usually caused by a disease of the blood vessels such as artherosclerosis.
- *Thrombosis* — A thrombus is a blood clot that has formed inside an intact blood vessel and which may obstruct supply to the brain or, if it grows large enough, block the artery. The condition is known as thrombosis. If a fragment of the thrombus breaks off, this may then obstruct or block the blood circulation elsewhere : see *embolism.*

Onset and development

The onset of vascular dementia is usually in the late sixties or the seventies. It is slightly more common in men than in women and the prevalence increases with age, approximately doubling every five years.[33] Arteriosclerosis will often be obvious. The onset may be acute, often following a succession of strokes from cerebrovascular thrombosis, embolism of haemorrhage — **vascular dementia of acute onset** (F01.0). In other cases the onset may be more gradual, following a number of minor ischaemic episodes which produce an accumulation of infarcts in the cerebral tissue — **multi-infarct dementia** (F01.1). When the onset is gradual, "emotional or personality changes may antedate definite evidence of memory and intellectual impairment. Other common early features include somatic symptoms such as headache, dizziness, tinnitus and syncope (fainting) which may be the main complaints for some considerable time. Once established the cognitive impairments characteristically fluctuate in severity, varying from day to day and sometimes even from hour to hour. In large measure this may be due to episodes of clouding of consciousness which are a feature from the early stages."[34] The disease often follows a "stepwise progression," with periods of deterioration being followed by partial recovery for a few months. From the time of diagnosis the life-span varies widely but averages about four to five years. Death is attributable to ischaemic heart disease in about half the cases.

Diagnostic guidelines

The ICD–10 diagnostic guidelines for vascular dementia are firstly that dementia is evident, as described above. In addition, "impairment of cognitive function is commonly uneven, so there may be memory loss, intellectual impairment, and focal neurological signs. Insight and judgement may be relatively well preserved. An abrupt onset or a stepwise deterioration, as well as the presence of focal neurological signs and symptoms, increases the probability of the diagnosis."[35] Associated features include hypertension, emotional lability with transient depressive mood, weeping or explosive laughter and transient episodes of delirium. Personality is believed to be relatively well preserved but changes may be evident in a proportion of cases with apathy, disinhibition, or accentuation of previous traits such as egocentricity, paranoid attitudes, or irritability.[36]

33 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.525.
34 See W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), pp.385–391.
35 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines* (World Health Organisation, 1992), p.48.
36 *Ibid.*

Management and treatme.

The management and treatment of dementia is considered below (**1287**). According to Gelder, there "is no specific treatment for vascular dementia apart from the control of blood pressure, low-dose aspirin, and if indicated, surgical treatment of carotid artery stenosis."[37]

PICK'S DISEASE (F02.0)

Pick's disease (Dementia in Pick's disease) constitutes about five per cent of all irreversible dementias. Women are affected twice as often as men. The features of the disease have been reviewed by Brown.[38] The area of the brain most affected is distinctive. In contrast to the parietal-temporal distribution of pathology in Alzheimer's disease, Pick's disease is characterised by a preponderance of atrophy in the frontotemporal regions.[39]

Onset and development

Pick's disease is a progressive dementia of unknown cause which usually commences in middle life between the ages of 50 and 60 years. Characteristically, it is marked by slowly progressing changes of character and social deterioration, followed by impairment of intellect, memory, and language functions, with apathy, euphoria, and occasionally extrapyramidal phenomena. The early stages of the disease are thought to be more often characterised by personality and behavioural changes than in cases of Alzheimer's disease[40] although the distinction is generally made at autopsy rather than in life.[41] These behavioural changes may include disinhibition, sometimes affecting sexual conduct, a deterioration of conventional manners, tactless and grossly insensitive behaviour, foolish jokes and pranks, and sometimes marked loss of drive and apparent indolence. As the disease progresses, impairment of intellect and memory become more obvious and slowly increase in severity.[42] Death occurs after between two and ten years.

Diagnostic guidelines

The ICD–10 diagnostic guidelines for Dementia in Pick's disease (F02.0) are three-fold. The following features are required for a definite diagnosis: (a) a progressive dementia; (b) a predominance of frontal lobe features with euphoria, emotional blunting, and coarsening of social behaviour, disinhibition, and either apathy or restlessness; (c) behavioural manifestations, which commonly precede frank memory impairment.[43]

Management and treatment

The management and treatment of dementia is considered below (**1287**).

37 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.526.
38 J. Brown, "Pick's disease" in *Baillière's clinical neurology* (Baillière Tindall, 1992), pp.535–553.
39 H.I. Kaplan and B.J . Sadock, *Synopsis of Psychiatry* (Williams and Wilkins, 7th ed., 1995), p.347.
40 *Ibid.*
41 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry*, *supra*, p.323.
42 See W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), pp.391–393.
43 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines* (World Health Organisation, 1992), p.52.

HUNTINGTON'S CHOREA (F02.2)

Huntington's chorea is normally inherited as an autosomal dominant gene and each child of an affected parent therefore has a 50 per cent chance of developing the disease. It is associated with progressive degeneration of the basal ganglia (**1273**) and the cerebral cortex (**1272**). The prevalence of the disorder is approximately 5–6 cases per 100,000 persons.

Terminology

Chorea (**1065**) is a type of movement characterised by quick, irregular, spasmodic and jerky involuntary movement of muscles, usually affecting the face, limbs and trunk. Those parts of the limbs closest to the trunk (the proximal portions) are more affected than those further away (the distal portions) and the trunk itself may be affected. The word choreiform means resembling chorea.

Onset and development

Huntington's chorea usually begins between the ages of 35 and 50 years. Psychiatric changes are often present for some considerable time before chorea or intellectual impairment develops. In consequence, between one-third and two-thirds of cases are initially misdiagnosed, with schizophrenia and paranoid psychosis being the most common errors. Personality change "may be marked, the patient becoming morose and quarrelsome, or slowed, apathetic, and neglectful of home and person ... Paranoid developments may be the earliest change, with marked sensitivity and ideas of reference (**1086**). Sometimes a florid schizophrenic illness may be present for several years before the true diagnosis becomes apparent. Depression and anxiety may be marked from the onset, perhaps appearing abruptly and being ascribed to some stressful event."[44] Psychotic features become obtrusive in many cases, most commonly a depressive psychosis. The early neurological signs are choreiform movements of the face, hands, and shoulders. These movements are sudden, unexpected, aimless, and forceful.[45] At first the patient is usually thought to be clumsy or fidgety. Dementia develops insidiously and is usual in the later stages but its severity and progress vary widely. Death usually occurs 15 to 20 years after onset.

Diagnostic guidelines

The diagnostic guidelines for "Dementia in Huntington's disease" (F02.2) are the association of choreiform movement disorder, dementia, and a family history of the disease. Involuntary choreiform movements, "typically of the face, hands, and shoulders, or in the gait, are early manifestations. They usually precede the dementia and only rarely remain absent until the dementia is very advanced."[46]

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44 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.396.

45 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.324.

46 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines* (World Health Organisation, 1992), pp.53–54.

Treatment and managem...

The condition cannot presently be cured. In general, the treatment is similar to that of other dementing disorders (*infra*). Phenothiazines (**1255**) and butyrophenones (**1255**) have been reported as effective for the specific control of choreiform movements. Antidepressants are useful for major depressive symptoms.[47]

DEMENTIA AND DIFFERENTIAL DIAGNOSES

The main differential diagnoses in apparent cases of dementia are mental handicap, delirium, depression and other neurological conditions. Motivational or emotional factors, particularly depression, in addition to motor slowness and general physical frailty, rather than loss of intellectual capacity, may account for failure to perform.[48]

Distinguishing between dementia and delirium

In contrast to the onset of delirium, the onset of dementia is usually insidious and it is distinguished from delirium by the absence of any clouding of consciousness (**1058**); the patient with dementia is usually alert.

Dementia and depression (pseudodementia)

The term pseudodementia describes a condition in which the patient's cognitive deficits are secondary to depression. Depression may be misdiagnosed as dementia "when the patient is slow and vague. A previous or family history of depression, the onset of depressive symptoms before apparent memory impairment, the presence of malaise and querulousness if not frank nihilism and despair, early waking, diurnal variation in mood, weight loss, a failure to confabulate, and ultimately the response to antidepressant therapy of electroplexy are all helpful in reaching the correct conclusion."[49]

THE MANAGEMENT AND TREATMENT OF DEMENTIA

Older people are the group most discriminated against in society. Oppenheimer has drawn attention to the fact that there has often seemed to be a philosophy of second best when it comes to providing medical services for older people and that in many cases very difficult choices have to be made—

> " ... for too many old people the reality is still one of harsh choices within a narrow range of options. A widow struggling against loneliness as her friends die one by one may have no choice but to give up the flat in which all her married life was spent, to move into an old people's home, sharing a bedroom and sitting at table with companions she would not freely have chosen. For a proudly independent man, disabled by a stroke, to be bathed and dressed by a cheery Care Assistant who calls him Dad may be a heavy price to pay for remaining in his own home."[50]

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47 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.325.

48 *Classification of Mental and Behavioural Disorders, Tenth Revision (ICD–10): Clinical descriptions and diagnostic guidelines* (World Health Organisation, 1992), p.45.

49 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, London, 1984), p.92.

50 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.131.

Assessment

Management and treatment should, as always, be based on a thorough assessment of the patient's mental state and circumstances. Assessment at home enables the problem to be seen where it presents, family and neighbours to be met, the local assets and liabilities to be noted, and the correct social diagnosis as well as the medical one to be made.[51]

Clinical pictuire

The clinical picture is made up of the patient's premorbid personality and intellect (the kind of person the patient is), the distribution and severity of the pathological process in the brain and the specific handicaps arising from that; the response of the patient to the illness (emotional response and coping strategies); the effect on the patient of other people's reactions. Within such a framework it becomes easier to understand the origins of problems for which help is being sought and to determine what kinds of intervention might help with them.[52] Physical examination should look for causes, complications such as dehydration, and additional disabilities such as arthritis. Mental functioning should be tested.

Testing cognitive functioning

The examination of cognitive function "should at a minimum include tests of orientation, remote memory, and registration and recall of new (simple) information; and should make some estimation of the use of language, abstract thought and visuo-spatial skills. Several short tests of mental function are available."[53] The use of rating scales in old age psychiatry has been reviewed by Copeland and Wilson.[54] The *Blessed Dementia Rating Scale* (BDRS),[55] which concentrates on memory and orientation, remains widely used. Where a single score is required as an indication of the severity of already recognised dementia, the scale can be recommended with confidence.[56] The *Mini Mental State Examination* (MMSE) takes between five and ten minutes to administer and consists of two parts, verbal and performance. Four verbal subtests with a maximum score of 21 points evaluate orientation in time, memory and attention. Two performance subtests with a maximum score of 9 points involve the naming of objects, execution of written or spoken orders, writing, and copying a complex polygon. Anthony found that 87 per cent of a sample of patients with clinical dementia scored below 23 points and similar findings have been reported by Roth.[57] The *Global Deterioration Scale* (GDS) grades dementia, mainly by disabilities of memory, according to seven levels of clinical descriptions ranging from normality to severe Alzheimer's disease.

51 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, London, 1984), p.90.

52 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.134.

53 *Ibid.*

54 J.R.M. Copeland and K.C.M. Wilson, "Rating scales in old age psychiatry" in *The Instruments of Psychiatric Research* (ed. C. Thompson, John Wiley and Sons, 1989).

55 G. Blessed, *et al.*, "The association between qualitative measures of dementia and senile change in the cerebral grey matter of older subjects" *British Journal of Psychiatry* (1968) 114, 797–811.

56 J.R.M. Copeland and K.C.M. Wilson, "Rating scales in old age psychiatry," *supra*, p.313.

57 J.C. Anthony, *et al.*, "Limits of the Mini-Mental State as a screening test for dementia and delirium among hospital patients" Psychological Medicine (1982) 12, 397–408; M. Roth, "Differential diagnoses of psychiatric disorders in old age" *Hospital Practice* (1986) 15, 111–125; J.R.M. Copeland and K.C.M. Wilson, Rating scales in old age psychiatry, *supra*, p.314.

Psychiatric services for older people

The general principles underlying the development of a psychiatric service for older people have been described by Arie, Bergmann, Oppenheimer and Pitt. The expertise of the psychogeriatrician is as much administrative as clinical.[58] He "must develop a multi-disciplinary team that undertakes responsibility for the problems of old people needing psychiatric help in a defined area. Ready availability, prompt appraisal, swift action where necessary, and deft liaison with the primary health care team, the geriatric and social services, and families and caring neighbours are of the first importance."[59] These agencies must work together to provide a pattern of care at the level of intensity suited to the patient's needs at each stage of the illness until death.

Hospital admission

Pitt has written that "after early and correct diagnosis the next principle of psychogeriatric treatment is to keep the patient at home as long as possible provided neither he nor those caring for him suffer unduly. Not only are institutional resources scarce but also old people fare best in familiar surroundings."[60] Following admission, the individual may be "disorientated by strange people and surroundings, bewildered by bizarre procedures, puzzled by the incongruous familiarity of very young nurses and their meaningless endearments, drugged into immobility and somnolence, and deprived of personal clothing, possessions, occupation, and choice."[61] Removal from familiar surroundings is therefore upsetting, and hospitalisation may simply avoid rather than solve problems.[62] Admission will, however, be indicated in cases where there will otherwise be a significant risk of severe self-neglect. The advantages of in-patient care have been summarised by Oppenheimer: skilled observation over long periods of time; access to specialist input; freedom of action for the patient in an environment tolerant of odd behaviour, with a stable and predictable timetable, and a variety of activities and levels of sociability. Good in-patient services should concentrate on maintaining the individual's personality and self-respect and improving his quality of life. This includes addressing him by his proper name and title; consulting his wishes; ensuring that he has the use of glasses, hearing aids, and other essential devices[63]; providing a locker for personal possessions, keeping medication to a minimum; providing cheerful, clean surroundings and a full programme of activities, including exercise; allowing unrestricted visiting; and the use of reality orientation therapy (teaching simple and useful facts by the frequent reiteration of information about time, place and person and the use of commonly encountered objects). The need for consultation applies no less to citizens who have been detained. While it may not always be possible to observe their wishes, they should as a matter of common decency be adhered to wherever possible. The purpose of invoking compulsory powers is not to dictate every aspect of the patient's life, merely to protect him and others from his worst follies.

58 T. Arie, *British Medical Journal* (1971) iii, 166.

59 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, London, 1984), p.90.

60 *Ibid.*, p.92.

61 *Ibid.*, p.95.

62 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.133.

63 Some 30–40 per cent. of persons over 65 living at home have hearing difficulties.

Professional support in the community

Many social problems which may affect mental health or its treatment are particularly prevalent amongst older people so that illnesses are often triggered or compounded by problems such as financial hardship, poor housing or loneliness. Professional support includes increasing personal social services where appropriate; visits by the patient's General practitioner, a health visitor, a district nurse, and a home-help; the prescription of medication to be taken at home; the allocation of a community psychogeriatric nurse, who can provide counselling and support, supervision, follow-up, and administer drugs; out-patient consultations; day hospital attendance; psychotherapy and marital therapy for personality and relationship problems; and short-term admissions and respite care to help carers, although the patient's confusion may temporarily be increased and the carer's tolerance reduced.[64] Practical measures taken by social workers include arranging state benefits, arranging laundry services for the incontinent[65]; paying neighbours to oversee the patient; explaining the patient's situation to neighbours and local shopkeepers; liaising with street and estate wardens; providing sheltered housing and arranging nursing home care if necessary.

Family and social support in the community

Approximately four per cent of persons aged over 65, and 20 per cent of persons aged over 85, are bedfast or housebound. Family and social support is, however, often sadly lacking. Most older people live alone or with another person of similar age and half of all women aged over 65 are widows. One-third of older people have no surviving children or never had any. This is particularly unfortunate because Bergmann concluded from a study of day hospital patients with dementia that family support was the most important factor determining their continuing life in the community.[66] The chances of providing a pattern of care suited to the patient's needs at each stage until death is greatest where there are family members who have the will and strength to act as the backbone of the care. The professional input can then "be concentrated on helping the family members, by offering a shared understanding of the illness, emotional support, time and space away from the task of caring in a reliable routine, immediate response in crises, and partnership in planning each step into the future."[67]

Modifying the patient's home

Practical modifications may improve the home environment and make it safer. For example, low-level light to guide the way to the bathroom, door catches to prevent the individual wandering onto a busy road, and the use of storage heaters.

Ways of relieving stress

Oppenheimer has suggested various ways of helping to relieve stress on the patient. These include treating any additional illnesses and disabilities; making the patient's

64 B. Pitt, "Management problems in psychogeriatrics" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, London, 1984), p.93.

65 In those over 75 years of age, 16 per cent. of women and eight per cent. of men have regular episodes of urinary incontinence.

66 K. Bergmann, *et al.*, *British Journal of Psychiatry* (1978) 132, 441.

67 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.134.

environment as consistent and predictable as possible, with clear cues to place and time; reinforcing the environment's comprehensibility at every natural opportunity, by introducing yourself by name, addressing the patient by name, explaining where you are; adapting communication strategies to the abilities of the patient (reinforcing words with gestures, avoiding ambiguity and distraction, keeping sentences simple); giving the patient access to enjoyable activities tailored to his competence; returning to areas of expertise, such as recollecting the past, as a break from demands of present difficulties; utilising memory impairment and the fact that the memory of upsetting experiences fades after a minute or two.[68]

EPILEPSY

Approximately five per cent of the population have a fit at some stage during their lives and about 4–6 persons per thousand suffer from epilepsy. About 40 per cent of cases arise after the age of 20. A disproportionate number of people with epilepsy experience psychiatric problems, possibly half of those suffering from temporal lobe epilepsy (**1293**). However, these problems most commonly fall within the "neurotic spectrum." Assessment usually includes an EEG (**1099**).

Terminology

Seizures are characterised by abnormal electrical activity in the brain. More specifically, a seizure is a transient paroxysmal disturbance of cerebral function that is caused by a spontaneous, excessive discharge of neurones. Patients are said to have epilepsy if they have a chronic condition characterised by recurrent seizures.[69]

The terminology of epilepsy

Generalised seizure	Generalised epileptic seizures involve the entire brain and do not clearly originate in one part of it. There are two main kinds, grand mal and petit mal. These are nowadays referred to by doctors as "generalised tonic-clonic seizures" and as "absences" respectively.
Partial seizure	Partial seizures start in one locality of the brain and the seizure activity may or may not then spread through the brain. Partial seizures which do not involve any impairment of consciousness are commonly described as simple partial seizures while those that result in altered consciousness are known as complex partial seizures.
Focal seizure	In general usage, synonymous with partial seizure, the word focal simply meaning localised.

68 C. Oppenheimer, "The Elderly" in *Essential Psychiatry* (ed. N. Rose, Blackwell Scientific Publications, 1992), p.135.

69 H.I. Kaplan and B.J. Sadock, *Synopsis of Psychiatry* (Williams and Wilkins, 7th ed.), p.364.

Prodromata	Prodromata are symptoms, such as mounting irritability, which precede a seizure.
Aura	The symptoms which usher in a partial seizure, their content being determined by the area of the brain within which the seizure is originating. Some attacks may proceed no further.
Ictus	The seizure itself. The ictal phase lasts up to one or two minutes. The post-ictal phase following the seizure usually includes confusion.
Temporal lobe epilepsy	A form of complex partial seizure arising in the temporal lobe. The majority of complex partial seizures originate here.

Generalised seizures (petit mal and grand mal)

Petit mal is seen most commonly in children. Three varieties are distinguished but by far the most common is the petit mal absence or "simple absence." Here, the individual without warning "loses contact with his environment, usually for four or five seconds but occasionally for as long as half a minute. To the onlooker he appears momentarily dazed, stops speaking and becomes immobile. The face is pale, the eyes assume a fixed glazed appearance, and the pupils may be observed to be fixed and dilated. Posture and balance are usually well maintained ... There are usually no after-effects whatever ... The frequency of episodes is commonly five to ten per day."[70] Generalised tonic-clonic seizures are what most people think of as constituting an epileptic attack. An aura is lacking and there is no evidence of a local onset. The fit is usually followed by a deep sleep which may then be succeeded by nausea, vomiting and headache. If sleep does not occur a period of confusion is usually seen during which the patient is disorientated, often restless, rambling and incoherent, and sometimes unaware of his personal identity.[71]

Focal or partial epilepsy

Focal symptoms in the form of an aura usher in the seizure, the precise symptomatology depending on the area of the brain in which the discharge originates and the direction of its subsequent spread. The auras which precede focal epileptic attacks "are of great clinical importance ... the symptoms appear abruptly, and in the majority of cases are experienced passively as foreign intrusions on the stream of awareness. They probably rarely occupy more than a few seconds or perhaps a minute, though subjectively the time course may appear much longer."[72] Auras are distinguished from prodromata, which do not appear abruptly but build up slowly for hours or days before the attacks occur. Typically, they consist of "psychological manifestations — mounting irritability, apprehension, sullenness, apathy or periods of mental dullness."[73] Such prodromata lack the clinical significance of the well-defined aura.

70 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.208.
71 *Ibid.*, p.209.
72 *Ibid.*, p.217.
73 *Ibid.*

THE AURAS (AURAE) OF FOCAL EPILEPSY

▪ **Parietal seizures**	Paraesthesiae, numbness, tingling, feelings of heat and cold, which spread to contiguous areas of the body; pronounced disorders of body image.
▪ **Occipital seizures**	Visual disturbances, well localised within the opposite half-field of vision; simple visual hallucinations consisting of flashes of light, colours, zig-zags, or radiating spectra.
▪ **Temporal lobe seizures**	Varied and complex auras. Churning fear or pain in the stomach rising towards the throat; salivation, flushing, pallor, subjective dizziness. Altered perceptual experiences: complex hallucinations of scenes, faces or visions of past events; objects seem larger or smaller, nearer or further away; auditory hallucinations in the form of ringing and buzzing, organised experiences of music or voices; sounds seem suddenly remote or intensely loud; feelings of derealisation or depersonalisation; déjà vu and jamais vu; gustatory and olfactory hallucinations (*e.g.* smell of burning rubber or burning cabbage); chewing, swallowing or smacking movements; speech automatisms; time appearing to rush by or standstill; strong affective experiences such as fear, anxiety, depression, guilt, anger.

Source: W.A. Lishman, Organic Psychiatry, The Psychological Consequences of Cerebral Disorder, 2nd Ed., Blackwell Scientific Publications, Oxford, pp.217–220.

Temporal lobe epilepsy

In a tribunal context, the importance of identifying temporal lobe epilepsy lies mainly in the fact that it is sometimes misdiagnosed for another condition which cannot be so readily brought under control. Schizophrenia-type episodes may be transient. In other cases, a schizophrenic illness may occur in someone known to have epilepsy, either coincidentally or by association, although even here the prognosis may be more favourable than is usual. Thus, Perez found that most patients with a dual diagnosis seemed to avoid institutionalisation and to live reasonably well in the community.[74] It should, however, be added that adult patients with temporal lobe epilepsy may be more prone to personality disturbance including, rarely, explosive aggression.

74 M.M. Perez, *et al.*, "Epileptic psychosis: an evaluation of PSE profiles" *British Journal of Psychiatry* (1985) 146, 155–163.

ANTICONVULSIVE DRUGS

Anticonvulsive drugs form the mainstay of treatment. There are many effective drugs available, some of the most important of which are noted in the table below.

ANTIEPILEPTIC DRUGS (B.N.F. 4.8)

Drug	*Proprietary*	*BNF guideline doses*
Carbamazepine	▪ Carbamazepine (tablets) ▪ Tegretol (tablets, liquid, suppositories) ▪ Tegretol Retard (tablets)	*By mouth* initially 100–200mg once or twice daily, increased to usual daily dose of 0.8–1.2g (some cases 1.6–2g). *By rectum* maximum 7 days use, 125mg approximately equivalent to 100mg tablet, maximum 1g daily. Plasma concentration for optimum response 4–12mg/litre (20–50 micromol/litre).
Ethosuximide	▪ Emeside (capsules, syrup) ▪ Zarontin capsules, syrup)	Initially 500mg daily, increased to usual daily dose of 1–1.5g. Occasionally up to 2g may be needed. Plasma concentration for optimum response 40–100mg/ litre (300–700 micromol/litre).
Phenytoin	▪ Phenytoin (tablets, capsules) ▪ Epanutin (tablets, suspension)	*By mouth* initially 3–4mg/kg daily or 150–300mg daily, increased gradually as necessary. Usual dose 300–400mg daily, maximum 600mg daily. Plasma concentration for optimum response 10–20mg/litre (40–80 micromol/litre).
Sodium Valproate	▪ Sodium Valproate (tablets, oral solution) ▪ Epilim (tablets, liquid, syrup) ▪ Epilim Chrono (tablets) ▪ Epilim Intravenous (injection) ▪ Convulex (valproic acid capsules)	By mouth, initially 600mg daily increasing by 200mg/day at 3-day intervals to a maximum of 2g daily (20–30 mg/kg daily). By IV injection or infusion, same as current dose by oral route.

ENDOCRINE DISORDERS

The internal environment of the body is controlled and regulated partly by the autonomic nervous system (**1267**) and partly by hormones. The endocrine system consists of a collection of glands[75] that produce hormones, secreting them directly into the bloodstream. A hormone is a chemical messenger which, having been formed in one organ or gland, is carried in the blood to a target organ or tissue where it influences activity.[76] Endocrine disorder can be accompanied by prominent mental abnormalities and epochs of life marked by endocrine change, such as pregnancy and the menopause, appear to be associated with special liability to mental disturbance.

[75] A gland is a group of specialised cells that manufacture and release chemical substances such as hormones and enzymes for use in the body.

[76] K.J.W. Wilson, *Ross and Wilson, Anatomy and Physiology in Health and Illness* (Churchill Livingstone, 7th ed., 1990), p.311.

With some endocrine disorders, such as myxoedema and Addison's disease, the psychiatric abnormalities are regularly intrusive to such a degree that there is a constant risk of mistaken diagnosis.[77]

TROPHIC HORMONES

Many glands are regulated by trophic (gland-stimulating) hormones secreted by the pituitary, which is itself influenced by hormones secreted by the hypothalamus in the brain. Production of too much or too little hormone by a gland is prevented by feed-back mechanisms: variations in the blood level of the hormones are detected by the hypothalamus, which prompts the pituitary to modify its production of trophic (gland-stimulating) hormone accordingly.

PITUITARY GLAND

The pituitary gland and the hypothalamus (**1273**) function as a unit and are attached by a short stalk of nerve fibres. The pituitary is a pea-sized structure that hangs from the base of the brain and lies in a cavity in the skull. It consists of three lobes known, because of their relative positions, as the anterior, intermediate and posterior lobes. The different lobes produce a range of hormones. The anterior pituitary produces ACTH (adrenocorticotrophic hormone), which stimulates hormone production by the adrenal glands, and TSH (thyroid-stimulating hormone), which stimulates hormone production by the thyroid gland.

Disorders of the pituitary

Any abnormality of the pituitary gland usually means that it produces either too much or too little of one or more hormones and this causes changes elsewhere in the body. Pituitary tumours are rare and usually benign but they often cause visual field defects and may result in either overproduction of pituitary hormones (hyperpituitarism) or underproduction (hypopituitarism). The tumour may also cause the gland to produce too much thyroid-stimulating hormone (TSH), causing hyperthyroidism (**1298**), or too much adrenocorticotrophic hormone (ACTH), causing Cushing's Syndrome (**1297**). The diagnosis is made from measurements of the levels of different hormones in the blood and urine, from CT scanning (**1103**) or MRI of the brain (**1104**), and from visual field testing. Treatment for a pituitary tumour may be by surgery, radiotherapy, or hormone replacement. Radiotherapy may cause general underactivity of the gland.

Simmond's disease (hypopituitarism)

The condition is commonly of long duration. Symptoms and signs include weakness, ready fatigue, marked sensitivity to cold, amenorrhoea in females and impotence in males, loss of weight, a thin dry skin which fails to tan normally, dull expressionless face, loss of pubic and axillary hair (hair in the armpit), low body temperature, blood pressure and pulse.

[77] W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.428.

Psychiatric symptoms

In one survey of patients with Simmond's disease, 90 per cent of patients showed psychiatric symptoms and in half these were severe. Alterations of mood form an integral part of the clinical picture and take the form of apathy, anergia and indifference. Depression may be marked, sometimes with bursts of irritability, self-neglect, and occasionally impairment of memory. Impairment of memory may give the impression of a dementing process and episodes of delirium may be seen. Chronic paranoid hallucinatory states are very occasionally seen but it is exceptional for hypopituitarism to give rise to a functional psychosis.

Anorexia nervosa

The "principal differential diagnosis is from anorexia nervosa. Many of the early reported cases of hypopituitarism seem in retrospect to have been anorexia nervosa."[78] The differentiating features are that in cases of Simmond's disease severe weight loss is rare, except terminally; there are no distinctive attitudes to food and no distorted body image; appetite may be well preserved; and patients are dull or apathetic, rather than restless and active. Conversely, loss of pubic and axillary hair is rare in anorexia.

ADRENAL GLANDS

The adrenal glands are a pair of small, triangular, glands located above the kidney. Each gland comprises two distinct parts, the outer adrenal cortex and the smaller inner adrenal medulla.

The adrenal cortex

The adrenal cortex secretes hydrocortisone (cortisol), corticosterone, and small amounts of androgen hormones, the production of which is governed by other hormones made in the hypothalamus and pituitary gland. Hydrocortisone is the most important human corticosteroid, controlling the body's use of fats, proteins, and carbohydrates. The rate of hydrocortisone secretion is controlled by the release of ACTH (adrenocorticotrophic hormone) by the pituitary gland (**1295**).

The adrenal medulla

The adrenal medulla is part of the sympathetic division of the autonomic nervous system and secretes the hormones adrenaline and noradrenaline in response to stimulation by sympathetic nerves.

Disorders of the adrenal glands

Adrenal tumours are rare and usually cause excess secretion of hormones. Tumours of the adrenal cortex may secrete hydrocortisone, causing Cushing's Syndrome (**1297**). Similarly, because hydrocortisone production is regulated by the pituitary gland, a pituitary disorder can cause excess ACTH secretion, too much hydrocortisone and, hence, Cushing's Syndrome. Deficient production of hormones by the adrenal cortex due to disease of the adrenal glands is called Addison's Disease.

78 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.444.

Cushing's Syndrome

In some 80 per cent of cases, Cushing's Syndrome is due to pituitary overproduction of ACTH (**1295**). The disorder is more common in women, usually starting in young middle-age. A tendency has been noted for it to start during puberty, pregnancy or the menopause, or while the subject is undergoing a prolonged period of psychological stress.[79] Almost half of the patients in Cohen's study had a family history of depression or suicide or a past history of early bereavement or separation; over 20 per cent had had an emotional disturbance shortly prior to onset, generally a loss of some kind such as separation or bereavement; and 86 per cent showed a significant degree of depression.[80] The physical changes are summarised by Lishman and they include moon face, buffalo hump, truncal obesity, insidious weight gain, plethoric complexion and hirsuties, excessive bruising, skin pigmentation, muscular weakness, hypertension, amenorrhoea in females and impotence, testicular atrophy or gynaecomastia in males.

Psychiatric symptoms

The chief diagnostic hazard lies with those patients who develop psychotic features early in the illness before the physical changes are marked. Psychiatric features are "strikingly frequent and can be severe."[81] Depression is the most frequent psychiatric symptom and paranoid features are also very common. A wide range of other mental abnormalities is seen: emotional lability with gross over-reaction to emotional stimuli, uncooperative behaviour, or sudden outbursts of restless hyperactivity, acute anxiety, states of apathy verging on stupor. A successful psychiatric outcome can be expected when the endocrine disorder is effectively treated: the physical and psychiatric symptoms usually improve in parallel and the resolution of psychotic features is sometimes dramatic.[82]

In-patients and psychoses

The "severe psychoses accompanying Cushing's syndrome are again mostly depressive in nature. Typically they are florid illnesses with delusions and auditory hallucinations and often with paranoid symptoms. Retardation tends to be severe, sometimes bordering on stupor ... Marked fluctuations in the severity of the condition appear to be characteristic."[83] Classic schizophrenic-type psychoses are rare.

Addison's Disease

Addison's disease is more common in males and usually presents in early adult or middle life. The onset of symptoms is gradual. The usual presentation is of chronic physical exhaustion, with tiredness and general weakness, loss of appetite and loss of weight, sensitivity to infections, amenorrhoea in females and impotence in males, hypotension, fainting, and pigmentation on exposed skin surfaces. Adequate replacement therapy is usually highly successful in alleviating both physical and mental disturbances.

79 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.436.

80 S.I. Cohen, "Cushing's syndrome: a psychiatric study of 29 patients" *British Journal of Psychiatry* (1980) 136, 120–124.

81 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder*, *supra*, p.436.

82 *Ibid.*, pp.438–439.

83 *Ibid.*, p.437.

Psychiatric symptoms

Psychiatric symptoms are present almost without exception, the commonest of them being depressive withdrawal and irritability (50 per cent of cases), apathy and negativism (80 per cent of cases), and loss of drive. There may be sudden fluctuations of mood, and difficulties with memory form a major feature in up to three-quarters of cases.[84]

In-patients and psychoses

Psychotic pictures of a depressive or schizophrenic nature "are rare in contrast to the situation in Cushing's disease ... From the psychiatric point of view an erroneous diagnosis of neurosis or early dementia may easily be made."[85]

THYROID GLAND

The thyroid gland is situated in the front of the neck, just below the larynx (voice-box). It consists of two lobes, one on each side of the trachea (windpipe), joined by a narrower portion of tissue called the isthmus. Thyroid tissue is composed of two types of secretory cells: *follicular cells*, which make up most of the gland and which secrete the iodine-containing hormones thyroxine (T_4) and triiodothyronine (T_3), and *parafollicular cells*, which produce the hormone calcitonin. T_4 (the hormone produced in greatest amounts by the thyroid gland) and T_3 regulate metabolism.[86] Their secretion by the thyroid is controlled by a hormonal feedback system involving the pituitary gland and the hypothalamus. Calcitonin acts in conjunction with the parathyroid hormone (**1301**) to regulate the level of calcium in the body.

Thyroid disorders

The function of the thyroid gland is controlled by both the pituitary gland and the hypothalamus, so thyroid disorders may be due not only to defects in the gland itself but also to disruption of the hypothalamic-pituitary hormonal control system. Insufficient thyroid hormone production is known as hypothyroidism and overproduction as hyperthyroidism. Thyroid tumours may be benign or malignant. Thyrotoxicosis is a general term for any condition that results from hyperthyroidism.

Hyperthyroidism (thyrotoxicosis)

Hyperthyroidism affects females more commonly than males, in a ratio of 6 to 1. It is commonest in the second and third decades of life. The onset is often abrupt and may follow directly some stressful event or emotional crisis. Tachycardia, fine finger tremor, palpitations and loss of weight are often features. In descending order of discriminating value, the symptoms of most importance in indicating the disorder

84 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.439; R.A. Cleghorn, "Hormones and tumours" in *Hormonal Steroids. Biochemistry, Pharmacology, and Therapeutics* (ed. L. Martini and A. Pecile, Academic Press, 1965), Vol. 2; R.P. Michael and J.L. Gibbons, "Interrelationships between the endocrine system and neuropsychiatry" *International Review of Neurobiology* (1963) 5, 243–302.

85 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder*, *supra*, p.440.

86 Metabolism is the chemical activity in cells that releases energy from nutrients or uses energy to create other substances such as proteins.

have been found to be sensitivity to heat and preference for cold, increased appetite, loss of weight, sweating, palpitations, tiredness.[87] In the majority of cases, laboratory investigations give unequivocal results with raised serum thyroxine (T_4) and triiodothyronine (T_3).

Psychiatric symptoms

Lishman, the leading expert on organic disorders, has summarised the psychiatric manifestations of the endocrine disorder.[88] Psychological disturbance in some degree is universal with thyroid overactivity and probably the result of increased thyroxine levels: "The patient becomes restless, overactive and irritable, sometimes with hyperacuity of perception and over-reaction to noise. Heightened tension leads to impatience and intolerance of frustration, and there may be emotional lability with unreasonable or histrionic behaviour. Fluctuating depression is occasionally a prominent feature, though unaccompanied by retardation ... The over-arousal leads to distractibility so that concentration is impaired and effort cannot be sustained ... The emotional disturbance can reach a degree which leads to difficulty in clinical management ... States of extreme anxiety or hostile irritation may emerge as a direct extension of the heightened emotional tension."[89] It seems that some emotional instability characterises a significant proportion of subjects and this may explain why some patients remain emotionally unstable after resolution of the endocrine disorder.[90] However, the result of treatment is generally satisfactory.

In-patients and psychoses

Psychotic developments have been reported in up to 20 per cent of cases.[91] McLarty, *et al.*, found eight patients with thyrotoxicosis in two psychiatric hospitals with a combined population of 1200 patients. The existence of hyperthyroidism had not been suspected in six of these patients prior to the survey and in five cases it seemed to be contributing to the mental illness.[92] Affective and schizophrenia-type psychoses are sometimes indistinguishable from the naturally occurring disorders, with mania said to be more frequent than depression. It is generally agreed that a distinctive colouring may be lent by the hyperthyroidism: agitation is often profound in the presence of depression and most observers agree that paranoid features are especially common whatever form the psychosis may take. "Apathetic hyperthyroidism" is rare but may be easily overlooked and the typical picture is of a middle-aged or older patient with considerable weight loss and apathy or depression.[93]

87 E.J. Wayne, "Clinical and metabolic studies in thyroid disease" *British Medical Journal* (1960) 1, 1–11, 78–90.

88 See W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), pp.429–432.

89 *Ibid.*, p.429.

90 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder*, *supra*, p.429; referring to C. Gurney, *et al.*, "A study of the physical and psychiatric characteristics of women attending an out-patient clinic for investigation for thyrotoxicosis" *(Communication to the Scottish Society for Experimental Medicine, 1967).*

91 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder*, *supra*, p.430.

92 D.G. McLarty, *et al.*, A study of thyroid function in psychiatric in-patients. British Journal of Psychiatry (1978) 133, 211–218.

93 F.B. Thomas, *et al.*, "Apathetic thyrotoxicosis: in a distinctive clinical and laboratory entity" *Annals of Internal Medicine* (1970) 72, 679–685.

Myxoedema (hypothyroidism)

Lishman has written that "myxoedema is of great importance in psychiatric practice and notorious for leading to mistakes in diagnosis. It is liable to be overlooked on account of its insidious development."[94] Hypothyroidism affects females more commonly than males, in a ratio of 8 to 1, and presents most frequently in middle age. Patients on long-term lithium therapy are at increased risk of developing the disorder. Lishman summarises the main physical features. The skin is dry and rough with swelling of face and limbs due to oedema. The appearance "is characteristic, with a pale puffy complexion and baggy eyelids ... The patient may have noticed increased loss of hair, which has become lank and dry in texture. Speech is slow, and the voice often coarse, thick and toneless. The whole disposition of the patient is sluggish and inert ... Appetite is diminished, the patient is constipated ... Menorrhagia is common in females, and impotence in males."[95] Neurological abnormalities may include the occurrence of fits, fainting, strokes and cerebellar disturbance, *e.g.*, nystagmus, dysarthria or ataxia. Laboratory investigations confirm the diagnosis with low thyroxine (T_4) and triiodothyronine (T_3) levels. The protein in the cerebrospinal fluid may be moderately raised. Elevated plasma TRH indicates primary thyroid failure in distinction to hypopituitarism.

Psychiatric symptoms

The typical picture is of mental lethargy, general dulling of the personality, and slowing of all cognitive functions. Ready fatigue may be a conspicuous feature, with a marked inability to sustain mental exertion. Memory is often affected from an early stage, with failure to register events and forgetfulness for day-to-day happenings. The typical mood change is towards apathy rather than depression, and irritability is a frequent feature, with some patients becoming markedly agitated and aggressive.[96] Treatment is "highly rewarding" and the "great majority of patients" with serious psychiatric developments can be expected to respond.[97] However, in the case of affective or schizophrenic-type illnesses, a duration of mental illness exceeding two years indicates a need for other forms of treatment in addition to thyroid replacement therapy, reflecting the fact that the psychiatric abnormalities are probably linked to constitutional factors.

In-patients and psychoses

The "only unifying feature, upheld by many observers, is the frequency of a paranoid colouring whatever form the psychosis may take."[98] The commonest form of severe psychiatric illness is an organic psychosis but a picture of dementia or, more rarely, a severe depressive psychosis or schizophrenic-type illness may develop—

- the common organic psychosis usually shows the features of delirium, with florid delusions and hallucinations, mental confusion, and impairment of consciousness. Delusions of persecution may be gross and bizarre. Auditory hallucinations appear to be particularly common.

94 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.433.
95 *Ibid.*
96 *Ibid.*, p.433.
97 *Ibid.*, p.436.
98 *Ibid.*

- depressive psychosis and schizophrenic-type psychoses may be accompanied by organic features and paranoid symptoms figure prominently. The depressive features are often severe, with agitation or bizarre hypochondriasis, and may prove particularly resistant to treatment until the myxoedema is discovered. Schizophrenic-type psychoses are usually coloured by mental slowing, often with features indicative of organic cerebral impairment.

PARATHYROID GLANDS

The parathyroid glands are two pairs of oval, pea-sized, glands which lie behind the lobes of the thyroid gland in the neck. The glands secrete parathyroid hormone, which maintains the calcium level in the blood. This requires constant regulation because even small variations from normal levels can impair muscle and nerve function.

Disorders of the parathyroid glands

In rare cases, the parathyroid glands may become overactive (hyperparathyroidism) or underactive (hypoparathyroidism). A parathyroid tumour may cause excess secretion of the parathyroid hormone into the bloodstream. In most cases, surgery provides a complete cure although occasionally hypoparathyroidism may result.

Hyperparathyroidism

Hyperparathyroidism is a rare but important cause of psychiatric morbidity and is important because the diagnosis may be missed, resulting in many years of chronic mental ill-health.[99] Women are affected more often than men and cases usually present in middle age. Physical symptoms and signs include pain, fracture or deformity of bones; muscular weakness; increased thirst, polyuria, anorexia and nausea. There is renal calcification in two-thirds of cases. Serum phosphate may be low and the serum alkaline phosphatase is raised when the bones are involved.

Psychiatric symptoms

The diagnosis should be borne in mind in patients who show chronic affective disorder in association with suspicious physical symptoms such as thirst.[100] Psychiatric symptoms are common, severe in approximately one-third of cases, and may dominate the picture. The commonest mental change is depression with anergia. There is tiredness and listlessness, the patient unable to work, sometimes accompanied by tension and irritability. Organic mental symptoms (chiefly impairment of memory and general mental slowing) are sometimes present. The cause of the psychiatric disturbance lies chiefly with the elevation of serum calcium and confirmation of the disease is by way of a raised serum calcium: affective disorders corresponding to a serum calcium of 12–16 mg/100 ml, acute organic reactions with florid delirium appearing at 16–19 mg/100 ml, and somnolence and coma with levels exceeding 19 mg/100 ml.[101] The mental disorder is commonly found to be wholly reversible and parallels the fall in serum calcium.

99 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.447.
100 *Ibid.*, p.449.
101 P. Peterson, "Psychiatric disorders in primary hyperparathyroidism" *Journal of Clinical Endocrinology and Metabolism* (1968) 28, 1491–1495.

In-patients and psychoses

Acute organic psychoses are occasionally seen, with spells of mental confusion, or acute delirious episodes with hallucinations, paranoia and aggressive behaviour. A mistaken diagnosis of pre-senile dementia may result.

Hypoparathyroidism

The literature on hypoparathyroidism is replete with examples of failure to diagnose the condition, sometimes over very many years.[102] The commonest cause is removal of the parathyroid glands at thyroidectomy or interference with their blood supply in the course of other operations on the neck. Calcium deposits may occur in the skin and the brain. A history of operation on the neck should bring the possibility of the condition to mind. Hypoparathyroidism should also be suspected in patients with symptoms of chronic tetany or when ocular cataracts develop at an unusually young age. Tetany occurs in the form of numbness and tingling in the hands and feet or around the mouth and, if more severe, the patient experiences muscular cramps and stiffness in the limbs. Epilepsy can be the first and sometimes the only manifestation. In addition to cataracts, patients may have a dry, coarse skin, scanty hair, trophic changes in the nails and poor dental development.[103] The deficiency of parathormone leads to low serum calcium and a raised serum phosphate. The response to correction of the serum biochemistry is usually excellent.

Psychiatric symptoms

A wide variety and high incidence of psychiatric disturbances are seen. Acute organic reactions with features typical of delirium may develop. In more insidious cases, there may be difficulty with concentration, emotional lability, impairment of intellectual functions, "pseudo-neurosis" (depression, nervousness, irritability with frequent crying spells and marked social withdrawal). Hypoparathyroidism may be mistaken as mental impairment, presenile dementia or, where mood-swings are apparent, manic-depressive disorder.

In-patients and psychoses

Psychotic illnesses of manic-depressive or schizophrenic type may more rarely be seen, particularly in cases due to surgery. Spontaneous remission or response to other forms of treatment may delay diagnosis.

TOXIC PSYCHOSES

The taking of certain drugs and the abuse of alcohol may adversely affect the user's mental state. It may initially be unclear whether the ingestion of illegal drugs has triggered an episode of mental illness, which may then be prolonged, or whether the symptoms will begin to subside once the drug exits the body. The subject of toxic psychoses has been succinctly reviewed by Davidson.[104] Although section 1(3) of

102 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.450.

103 *Ibid.*, p.451.

104 K. Davidson, "Toxic psychosis" in *Contemporary Psychiatry* (ed. S. Crown, Butterworths, 1984), p.93.

the Mental Health Act 198_ _ecludes the detention of a person on the sole ground that he is dependant on alcohol or drugs, it should be emphasised that this does not preclude the detention of individuals who become psychotic as a result of alcohol or drug abuse (**063**).

AMPHETAMINES

Prolonged high doses of amphetamines may lead to a mental state indistinguishable from paranoid schizophrenia. The condition usually subsides in about a week but occasionally persists for several months. Severe withdrawal effects include serious depression, anxiety, fatigue, and narcolepsy type symptoms (**1069**).[105]

CANNABIS

Some studies suggest that excessive use of cannabis over long periods of time can cause psychiatric disturbance but the evidence is inconclusive. It is probable that individuals are affected by cannabis on a continuum, "ranging from the relatively benign effects of intoxication ... to episodes of severe psychiatric disturbance ... in only a small percentage of users. The more florid disturbances are seen usually in markedly unstable individuals."[106] The following points emerge from the literature:

1. It is generally agreed that there is no specific cannabis psychosis, the content of the episode being determined *inter alia* by individual predisposition and the circumstances in which the drug is taken;

2. Acute paranoid or schizophrenic reactions probably occur mainly in subjects who are specially predisposed and such disturbances tend to gradually subside as the drug is cleared from the body;

3. In longer lasting psychotic episodes it can be hard to decide how far the drug is responsible, especially if use has been habitual over a lengthy period;

4. Longer lasting psychotic illnesses precipitated by the toxic effects of cannabis which then follow an independent course usually take the form of manic-depressive or schizophrenia-like psychoses.[107]

To summarise, while cannabis use may have insignificant adverse effects for many users in terms of their mental health, detained patients generally have obvious and often gross psychiatric problems. The issue therefore becomes to what extent cannabis use contributes to their abnormal mental state. It is certainly striking how many detained patients take cannabis, although this may be because persons predisposed to mental disorder are also predisposed to taking psychoactive drugs which seem to them to alleviate their distress. However, the safe option must be to refrain from further use and to see if the mental state improves. There is an illogicality in any bald assertion that psychoactive drugs available from a doctor can have adverse effects but not those supplied by a street vendor and this may also be

105 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.475.

106 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.525.

107 *Ibid.*, pp.523–525.

pointed out. Furthermore, there is little personal or social benefit in i. .g one psychoactive drug, cannabis, if the practical effect is that the user will thereby be compelled to take another psychoactive drug, such as haloperidol.

COCAINE

The effects of cocaine are similar to those of amphetamines and it blocks the re-uptake of dopamine. Chemically pure cocaine may be extracted to produce "crack" which has a very rapid onset of action. The psychological effects of ingesting cocaine include excitement, increased energy, and euphoria. Higher doses can result in visual and auditory hallucinations, prolonged heavy use to a paranoid psychosis. Formication (**1087**) may be a feature of cocaine abuse.[108]

LYSERGIC ACID DIETHYLAMIDE (LSD)

The acute effects of ingestion include dilation of the pupils, some rise in body temperature and, in severe reactions, muscular tremors and twitching. A heightened state of awareness is maintained, and thought processes characteristically remain clear. Euphoria is usually the predominant change of mood but this may be followed by sudden swings to depression, panic or a profound state of desolation. Some subjects become paranoid and hostile to their surroundings. Perceptual distortions, illusions and hallucinations are usually in the visual sphere but can affect all modalities. Distortions of body image usually figure prominently and can take bizarre forms. The use of LSD as an adjunct to psychotherapy was known to very occasionally lead to long lasting psychiatric complications, the more serious psychotic developments being attributed to the release of overwhelming conflict-laden material. The "psychoses which follow are usually of schizophrenic type. Catatonic and paranoid forms have been reported, often with elements similar to those seen during acute LSD intoxication. Visual hallucinations may be prominent, highly coloured and mobile, and euphoria and grandiosity are often much in evidence."[109] The vast majority of reported cases have concerned persons with markedly unstable personalities or long-standing schizophrenic illnesses, where the ingestion has acted as a trigger, and whether LSD can provoke a prolonged psychosis in a person without any special predisposition remains unresolved.[110]

LABORATORY TESTS

Following admission, a urine sample may be taken from a detained patient and screened from the presence of illegal drugs. It is important to know the length of time following ingestion during which the substance remains detectable. For example, amphetamines are no longer detectable after two days and, if tested for, a negative result generally has little significance. As to cannabis use, plasma levels of up to 1ng/ml may be found up to six days after smoking one marijuana cigarette and cannabinoid metabolites may still be detectable in the urine of chronic users for 46 days after last use.[111]

108 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.476.

109 W.A. Lishman, *Organic Psychiatry, The Psychological Consequences of Cerebral Disorder* (Blackwell Scientific Publications, 2nd ed., 1987), p.532.

110 *Ibid.*

111 J. Wallach, *Interpretation of Diagnostic Tests* (Little Brown and Co., 5th ed., 1992), pp.765–766.

TESTING FOR DRUGS OF ABUSE

Drug	*Length of time detected in urine*
Amphetamine	48 hours
Barbiturates	24 hours (short-acting); 3 weeks (long-acting)
Benzodiazepines	3 days
Cannabis	3 days–6.5 weeks depending on use.
Cocaine	6–8 hours (metabolites 2–4 days)
Heroin	36–72 hours
Methadone	3 days

ALCOHOL–RELATED DISORDERS

Alcohol-related disabilities fall into four groups: intoxication phenomena, withdrawal phenomena, chronic nutritional disorders, and associated psychiatric disorders.[112] Because of the prohibition in section 1 of the Mental Health Act 1983 (**063**), the conditions most frequently encountered by tribunals are alcohol withdrawal states and the Wernicke-Korsakoff syndrome.

ALCOHOL AND MENTAL HEALTH PROBLEMS

▪ **Alcohol withdrawal syndromes**	Alcoholic tremor, irritability, nausea, hallucinosis, fits, delirium tremens (vivid hallucinations, delusions, profound confusion, tremor, agitation, sleeplessness in the full syndrome).
▪ **Wernicke's Encephalopathy**	An *acute* organic reaction to severe thiamine deficiency, often resulting from alcoholism combined with an inadequate food intake. Mental confusion (90 per cent.), staggering gait, *i.e.* ataxia (87 per cent. cases), ocular abnormalities such as nystagmus (96 per cent.). Sometimes nausea, vomiting, lethargy. Completely reversible with treatment.
▪ **Korsakoff's psychosis**	Wernicke's Encephalopathy may progress to the chronic condition known as Korsakoff's psychosis. Only about 20 per cent. of patients recover. Profound impairment of recent memory. New learning is grossly impaired and there is often confabulation (**1023**).

Sources: W.A. Lishman, Organic Psychiatry, The Psychological Consequences of Cerebral Disorder (Blackwell Scientific Publications, 2nd ed., 1987), pp.491–521; H.I. Kaplan and B.J. Sadock, Synopsis of Psychiatry (Williams and Wilkins, 7th ed.), p.407.

112 M. Gelder, *et al.*, *Oxford Textbook of Psychiatry* (Oxford University Press, 3rd ed., 1996), p.448.