

CHAPTER 15: NEUROCOGNITIVE DISORDERS

KEY TERMS

Acetylcholine

A neurotransmitter that appears to be involved in learning and memory.

Adult Memory and Information Processing Battery (AMIPB)

A neuropsychological test in wide use in the UK, comprising two tests of speed of information processing, verbal memory tests (list learning and story recall) and visual memory tests (design learning and figure recall).

Agnosia

The loss of the ability to recognize objects, persons, sounds, shapes or smells while the specific sense is not defective and there is no significant memory loss.

Allostatic state

A biological state of stress.

Alzheimer's disease

A slowly progressive form of dementia involving progressive impairments in short-term memory, with symptoms of aphasia, apraxia and agnosia, together with evidence of impaired judgments, decision-making and orientation.

Aneurysm

A localized bulging in a blood vessel caused by disease or weakening of the vessel wall.

Anterograde amnesia

Memory loss for information acquired after the onset of amnesia. Also known as anterograde memory dysfunction.

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Antiretroviral drugs

Chemicals that inhibit the replication of retroviruses, such as HIV.

Aphasia

A speech disorder resulting in difficulties producing or comprehending speech.

Attention process training (APT)

A form of rehabilitation training for attention deficits that uses a number of different strategies to promote and encourage attentional abilities.

Bacterial meningitis

The inflammation (infection) of the meninges, which are the membranes that cover the brain and spine.

Beta amyloid plaques

Abnormal cell development, possibly caused by abnormal protein synthesis in the brain which clump together with the consequence of killing healthy neurons.

Broca's aphasia

Disruption of the ability to speak consisting of difficulties with word ordering, finding the right word and articulation.

Cardiovascular accident (CVA)

Otherwise known as a stroke. Strokes result from either a blockage or breaking of the blood vessels in the brain.

Cerebral embolism

A blood clot that forms somewhere in the body before travelling through the blood vessels and lodging in the brain, causing the brain cells to become damaged as a result of oxygen starvation.

Cerebral thrombosis

An injury caused when a blood clot (thrombus) forms in an artery (blood vessel) supplying blood to the brain. The clot interrupts the blood supply and brain cells are starved of oxygen.

Cholinesterase inhibitors

A group of drugs that prevent acetylcholine breakdown in the synaptic cleft by acetylcholinesterase and increase its uptake in the postsynaptic receptor. The most common of these drugs are donepezil, rivastigmine and galantamine.

Closed head injury

A concussion or head trauma, the symptoms of which include loss of consciousness after the trauma, confusion, headache, nausea or vomiting, blurred vision, loss of short-term memory and perseverating.

Concussion

An impact to the head which jars the brain and temporarily disrupts its normal functioning.

Constraint-induced movement therapy (CIMT)

A technique used with aphasic patients which involves the mass practice of verbal responses in which the patient may be required to communicate without gesturing or pointing to describe various objects of varying complexity.

Contusion

A severe head trauma in which the brain is not just jarred but the impact also causes bruising to the brain.

Deep brain stimulation (DBS)

A form of treatment for Parkinson's disease which uses a surgically implanted, battery-operated device called a neurostimulator to deliver electrical stimulation to the ventral intermediate nucleus of the thalamus or the subthalamic nucleus area in the basal ganglia.

Delirium

A disturbance of consciousness that develops over a short period of time.

Dementia

The development of multiple cognitive deficits that include memory impairment and at least one other specific deficit.

Errorless learning

A training procedure used in training individuals with amnesia where people are prevented – as far as possible – from making any errors while learning a new skill or new information.

Executive functions

Cognitive skills that involve problem-solving, planning and engaging in goal-directed behaviour.

Fluent aphasia

The production of incoherent, jumbled speech.

Frontotemporal neurocognitive disorder

Associated with a loss of neurons from the frontal and temporal regions of the brain that lead to progressive development of behavioural and personality changes and language impairment.

Gestural training

A form of rehabilitation training for limb apraxia in which the client is taught to recognize gestures and postures that are appropriate and in context.

Goal management training (GMT)

A procedure that involves training in problem solving to help evaluate a current problem, followed by specification of the relevant goals, and partitioning of the problem-solving process into sub-goals or steps.

Halstead-Reitan Neuropsychological Test Battery

A common neuropsychological test used in the USA, compiled to evaluate brain and nervous system functioning across a fixed set of eight tests. The tests evaluate function across visual, auditory and tactile input, verbal communication, spatial and sequential perception, the ability to analyse information, and the ability to form mental concepts, make judgements, control motor output and to attend to and memorize stimuli.

Holistic rehabilitation

Treatment methods for neurological disorders which attempt to address multiple aspects of dysfunction.

Huntington's disease

An inherited, degenerative disorder of the central nervous system, caused by a dominant gene.

Infarction

The injury caused when the blood flow to the brain is impeded in some way, resulting in damage to the brain tissue fed by that blood flow.

Levodopa

A natural amino acid that is converted by the brain into dopamine and used in the treatment of Parkinson's disease.

Lewy bodies

Abnormal protein deposits that disrupt the brain's normal functioning.

Major neurocognitive disorder

DSM-5 defines neurocognitive disorders as conditions where there is evidence of a significant decline in performance across one or more cognitive domains, such as complex attention, executive functioning, learning and memory, language, perceptual-motor, or social cognition. Major NCDs reflect a substantial impairment.

Mild neurocognitive disorder

DSM-5 has introduced disorder categories that are designed to identify populations that are at risk for future mental health problems, and these include Mild Neurocognitive Disorder, which diagnoses cognitive decline in the elderly.

Mini Mental State Examination (MMSE)

A structured test that takes 10 minutes to administer and can provide reliable information on a client's overall levels of cognitive and mental functioning.

Minor cognitive motor disorder (MCMD)

A form of HIV dementia consisting of memory loss and the reduction of cognitive and computational functions.

Mutant Huntingtin (mHtt)

A protein which causes cell death in the basal ganglia and contributes to Huntington's disease.

Neurofibrillary tangles

Abnormal collections of twisted nerve cell threads which result in errors in impulses between nerve cells and eventual cell death.

Non-fluent aphasia

An inability to initiate speech or respond to speech with anything other than simple words.

Open head injury

A head injury in which the skull and outer layer of the meninges are breached.

Parkinson's disease

A progressive neurological condition affecting movements such as walking, talking and writing, and causing psychological disturbance in between 40 and 60 per cent of sufferers.

Phineas P. Gage

A victim of a penetrating head injury, one of the first examples to indicate that brain damage could cause radical changes to personality and affect socially appropriate interaction.

Prefrontal cortex

An area of the brain which is important in maintaining representations of goals and the means to achieve them.

Primary brain tumour

A brain tumour that originates and grows within the brain itself.

Prion disease

Prion disease represents a group of conditions that affect the nervous system in humans and animals.

Rehabilitation programmes

Treatment programmes that usually combine a mixture of group work, psychological interventions, social skills training and practical and vocational activities.

Self-instructional training

A procedure used in the intervention for executive functioning deficits where individuals learn a set of instructions for talking themselves through particular problems.

Spongiform encephalopathy

A fatal infectious disease that attacks the brain and central nervous system. Commonly known as 'mad cow disease' or variant Creutzfeldt-Jakob disease (vCJD).

Stroke

A sudden loss of consciousness resulting when the rupture or occlusion of a blood vessel leads to oxygen lack in the brain.

Substantia nigra

A region of the basal ganglia.

Thrombolytic therapy

The use of drugs to break up or dissolve blood clots – one of the main causes of strokes.

Time pressure management (TPM)

An approach to dealing with attention deficits which aims not to try to improve attention itself, but to provide clients with some compensatory skills that will allow them to effectively manage their slowed information processing.

Variant Creutzfeldt-Jakob Disease (vCJD)

A fatal infectious disease that attacks the brain and central nervous system. Commonly known as 'mad cow disease'.

Vascular dementia

A degenerative cerebrovascular disease that leads to a progressive decline in memory and cognitive functioning.

Visual imagery mnemonics

A technique for teaching remembering strategies in order to help store and retrieve items and events to be remembered.

WAIS (Wechsler Adult Intelligence Scale)

A test designed to measure intelligence in adults and older adolescents. It contains scales that measure vocabulary, arithmetic ability, digit span, information comprehension, letter-number sequencing, picture completion ability, reasoning ability, symbol search and object assembly ability.

Wernicke's aphasia

A deficit in the comprehension of speech involving difficulties in recognizing spoken words and converting thoughts into words.

Wisconsin card sorting task

A widely used test of executive functioning where individuals must sort cards for a number of trials using one rule (e.g. colour) and then sort cards using a different rule (e.g. shape).