

Language and Hearing Centre	
Broca's Area	Major region for expressive language - i.e. formulation & production
Heschl's Gyrus	primary auditory cortex - i.e. hearing
Wernicke's Area	Major region for receptive language - i.e. comprehension

Neurogenic communication disorders	
different types of communication disorders, depending on which areas of the nervous system are damaged.	
> Acquired Language Disorders	
- Aphasia	- Cognitive-Communication Disorders
- difficult to understand language	> Motor Speech Disorders
- Dysarthria	- Apraxia
- Know what they want to say but difficult to physically produce speech	

Neurogenic communication disorders in Adults	
Stroke	Foremost cause of neurological damage
Injury to blood vessels in the brain	Thrombosis

Neurogenic communication disorders in Adults (cont)	
embolism	
haemorrhage	
stroke occurs when a part of your blood flow is blocked	
> The blood provides glucose and oxygen to the brain and nutrients which are vital for their functions	
> No blood to the brain tissue	
> Block could be from the narrowing of the artery (thrombosis)	
> Blood clot (embolism)	
> Bleeding, artery ruptures (hemorrhage)	
> Brain tissue dies	

Aphasia	
Aphasia	> Language impairment caused by a brain damage
	> Usually acquired in adulthood
	> Site and size of the brain damage strongly associated with aphasia severity

Language network in the brain has a complex organisation	it is not restricted to one area, it is interconnected
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Posterior language areas	
Posterior cortex	Contains Wernicke's area

Posterior language areas (cont)	
	Responsible for understanding
Damage effects on language comprehension	Difficulty comprehending speech
	Possible reading problems
	causes fluent aphasia
Wernicke's area is responsible for understanding language	
Posterior language areas, temporal lobe	

Anterior language areas	
Frontal lobe	Contains Broca's area
	Responsible for speaking

Damage effects on language production:	Slow, laboured speech
	Word retrieval difficulties
	Lacks flow and intonation
	causes non fluent aphasia

Broca's area is responsible for speaking	
Putting sounds together to create speech	

Classification of Aphasia	
> Type of aphasia depends primarily on location and extent of damage	
- BUT not clear cut	
- BUT need to consider entire range of language problems	

Classification of Aphasia	
Fluent Aphasia	Wernicke's Aphasia
	Anomic Aphasia
	Conduction Aphasia
Non-fluent Aphasia	Broca's Aphasia
	Global Aphasia

Wernicke's Aphasia	
Salient features:	> Impaired spoken and written comprehension
	> Fluent speech:
	> Speech lacks content
	> Paraphasias

Speech is fluent and well-articulated but it doesn't make sense, making up words
Lack of content and meaning

Anomic Aphasia	
Acomic Aphasia	damage to a variety of brain regions in the language network

Anomic Aphasia (cont)

includes regions in the frontal, temporal and parietal cortex

Speech is typically fluent and produced with seeming ease

- will typically speak in complete, grammatically correct sentences

However, the individual might have trouble retrieving specific words

- especially nouns and verbs, often able to successfully communicate using strategies to work around their word-finding difficulties

usually have good comprehension; can understand spoken messages, They usually are able to read

There is content an meaning but just cannot find the right words sometimes

Conduction Aphasia (cont)

- > Relatively intact comprehension

- > Significant impairment in repetition

- > Conversational speech frequently marked by paraphasias

- > Have good comprehension & awareness of mistakes

Recovery

- > Neurological dysfunction at its worst immediately post-stroke

- > Recovery begins within a few days

- Some injured cells begin to function more normally again
- “Penumbra” = Areas of the brain that were damaged but not yet dead

- possible to rescue brain tissue with appropriate therapies (→ increasing oxygen transport & delivery to cells in the danger zone → limiting cell death)

- > We cannot predict exact course or nature of recovery

Broca's Aphasia

- > Relatively intact auditory and reading comprehension

- often able to understand most of what is said to them, but they have trouble responding

- > person knows what they want to say but is unable to produce the words or sentence

- > Non-fluent aphasia because speech is effortful

Salient features:

- Paucity of speech

- Agrammatism

- = usually missing function words and word endings

- small words like prepositions, articles and conjunctions are especially difficult and often left out

- = sentences produced often have incorrect syntax, or word order and grammar

- Word retrieval deficits

- Substitutions can occur

- Slow, laboured speech

- Writing abilities often mirror speech (see slide: Writing)

- Single words non-fluent sentences

Broca's Aphasia (cont)

- Not full sentence

Global Aphasia

Most severe form of aphasia

- > All language modalities are affected

- = speaking, comprehension, reading, and writing

- > Results from lesions in both anterior and posterior language areas

- > Mixed effects of Broca's and Wernicke's aphasias

- Severe comprehension and production deficits

- Impaired naming and repetition
- > People with global aphasia usually have a limited number of utterances

- Very few or no spoken words

- If words are spoken, it is likely to be a single word and might contain errors, such as paraphasias (word & sound substitutions)

- Difficulty repeating words

- Understanding language is very difficult

Conduction Aphasia

Conduction Aphasia lesion is assumed to be in the tracts connecting Wernicke's area to Broca's area

- > Fluent conversational speech



The person with aphasia: Other issues

- > Sensory and motor problems
 - Impaired hearing, balance
 - Impaired mobility, eating, dressing, writing
- > May be subtle personality changes

Frequent Family Problems

- > Non-aphasic spouse has no time alone
- > Financial difficulties
- > New spousal roles as a result of aphasia
- > Dealing with issues of dependence/ independence for the aphasic spouse
- > Rehabilitation is important to the whole family, not just person who has aphasia



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