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Psychological Effects of Stroke

26 June 2019 / Dr Claire Whitelock, St George's Hospital and Wandsworth Community Neurorehabilitation Team

With thanks to Dr Ndidi Boakye, Principal Clinical Neuropsychologist

Excellence in specialist and community healthcare

Agenda

- Who is affected by Stroke?
- Neuropsychological and behavioural sequelae of Stroke
- Assessment of psychological effects of Stroke
- Psychological interventions for Stroke

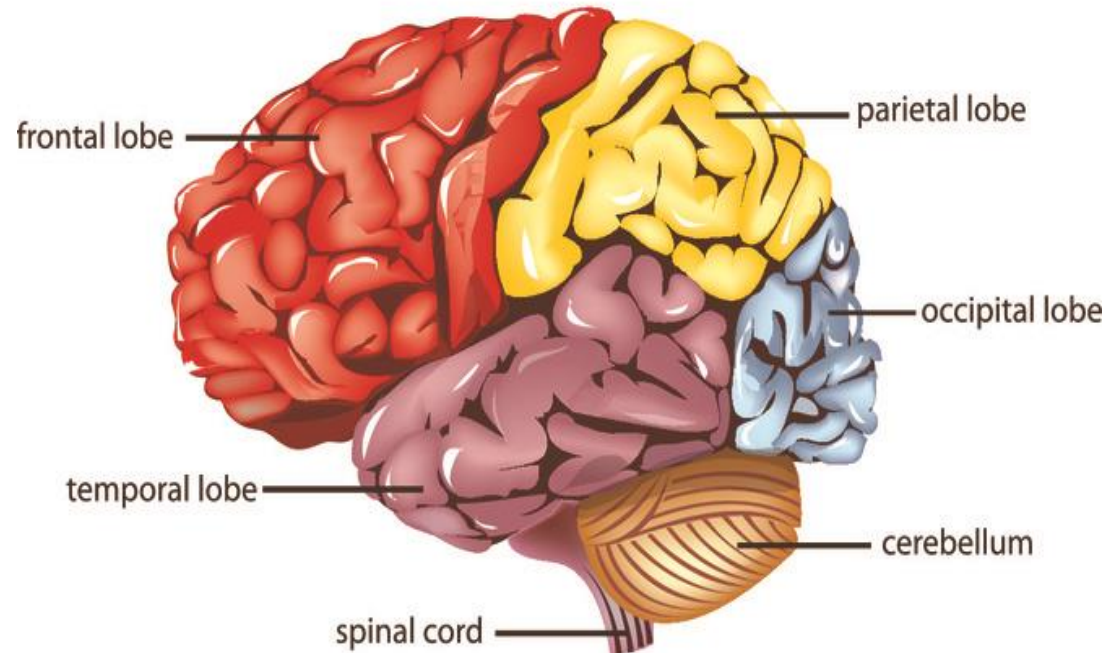
Some Stroke Statistics...

- Stroke occurs approximately 152,000 times a year in the UK; that is **one every 3 minutes 27 seconds**.
- First-time incidence of stroke occurs almost 17 million times a year worldwide; **one every two seconds**.
- There are over **1.2 million stroke survivors** in the UK.
- **3 in 10** stroke survivors will go on to have another stroke or TIA.
- Around **1000** people under the age of 30 have a stroke each year.
- More than **250,000** people live with disabilities caused by stroke.
- Almost **1 in 4 men** and **1 in 5 women** aged 45 can expect to have a stroke if they live to 85.

How are people affected by Stroke?

- Physical
- Sensory
- **Cognitive**
- **Behavioural**
- **Emotional**

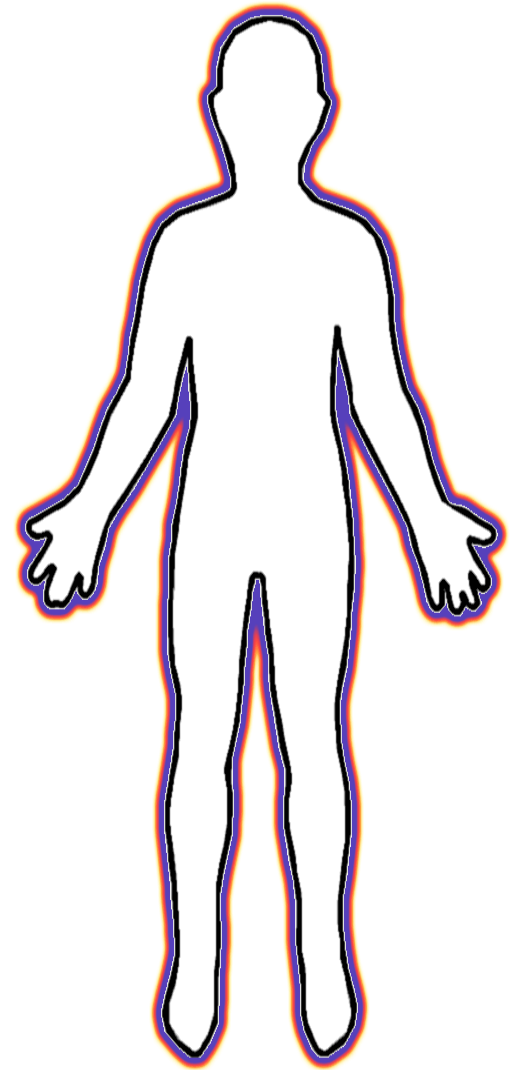
Parts of the Human Brain

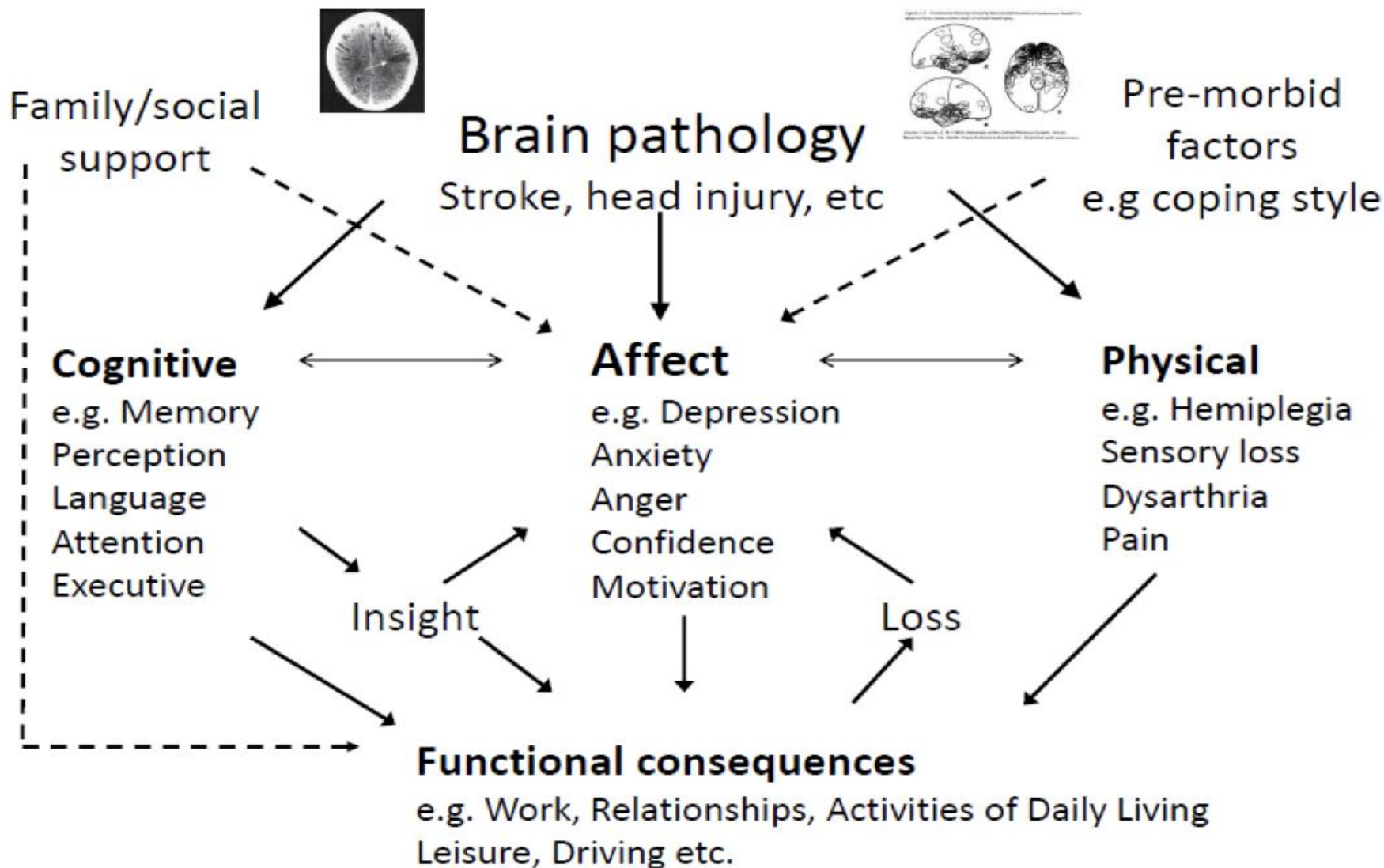


How are people affected by Stroke?

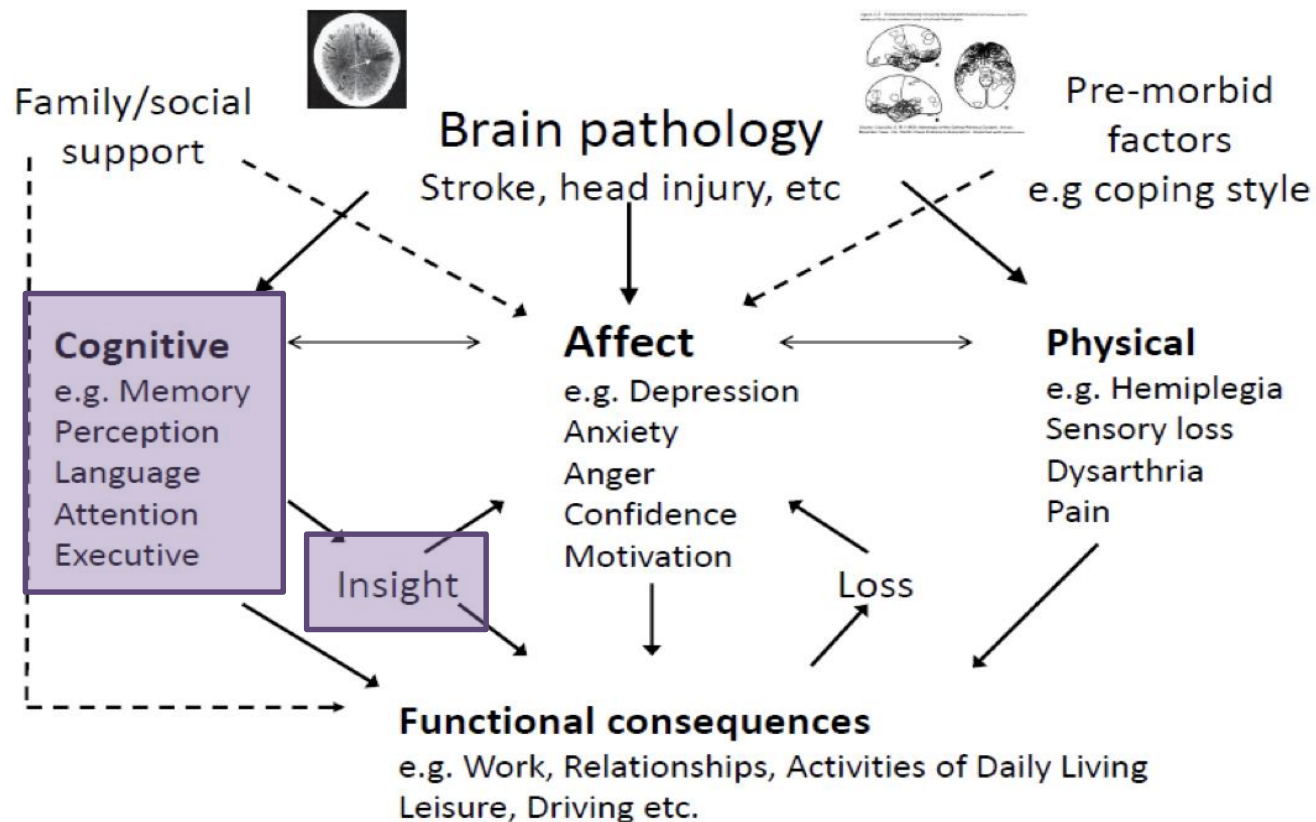
These impairments may have **functional consequences** for all domains of daily living:

- Personal
- Family
- Occupational
- Social





Cognitive Changes



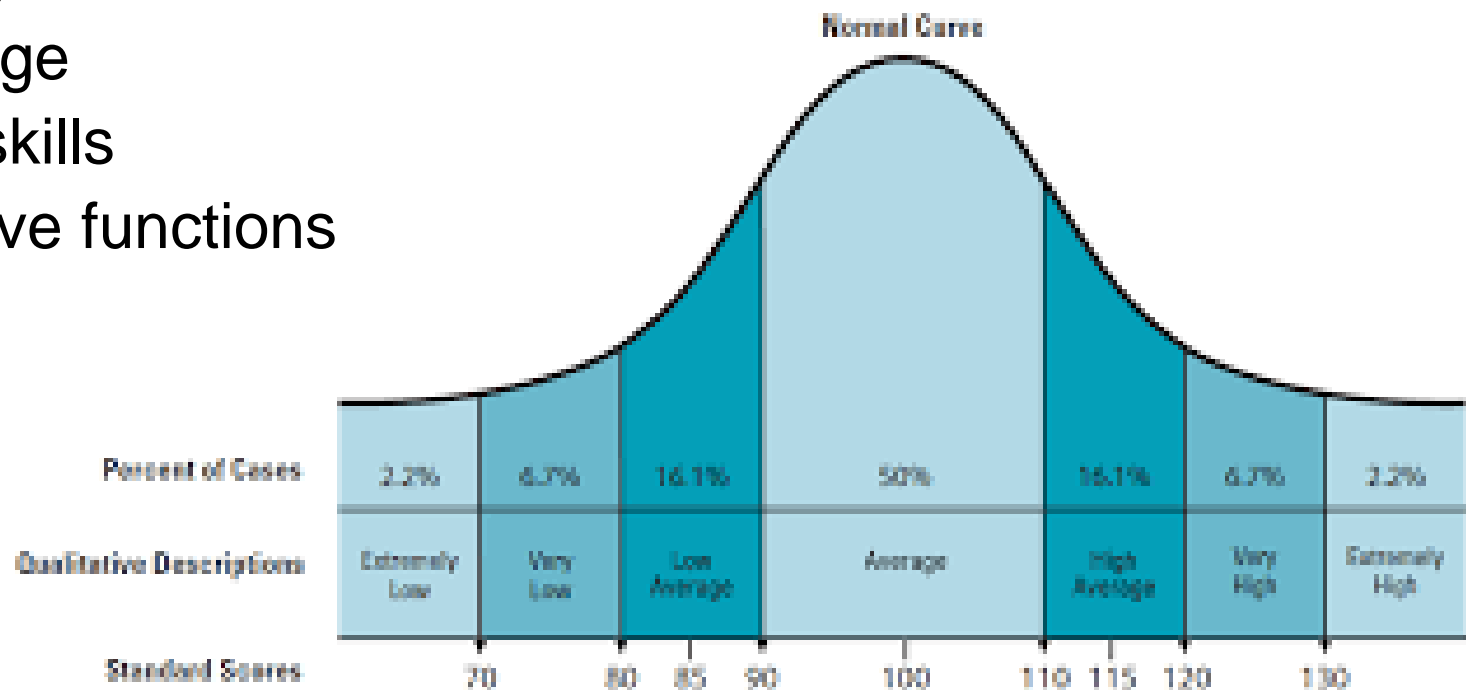
Cognition

- Cognitive changes are very common after stroke (~**80%**).
- The most commonly reported problems are:
 - Memory
 - Concentration
 - Speed of information processing
- Commonly changes in **executive functioning** and **visuo-spatial/ visuo-perceptual** processing also.
- Can be very obvious (e.g. aphasia, neglect) or more subtle (e.g. intellectual underfunctioning, visuo-perceptual difficulties).

Cognitive Assessment

Areas of assessment:

- Intellectual abilities – current and premorbid
- Attention
- Memory
- Language
- Visual skills
- Executive functions



Intellectual abilities

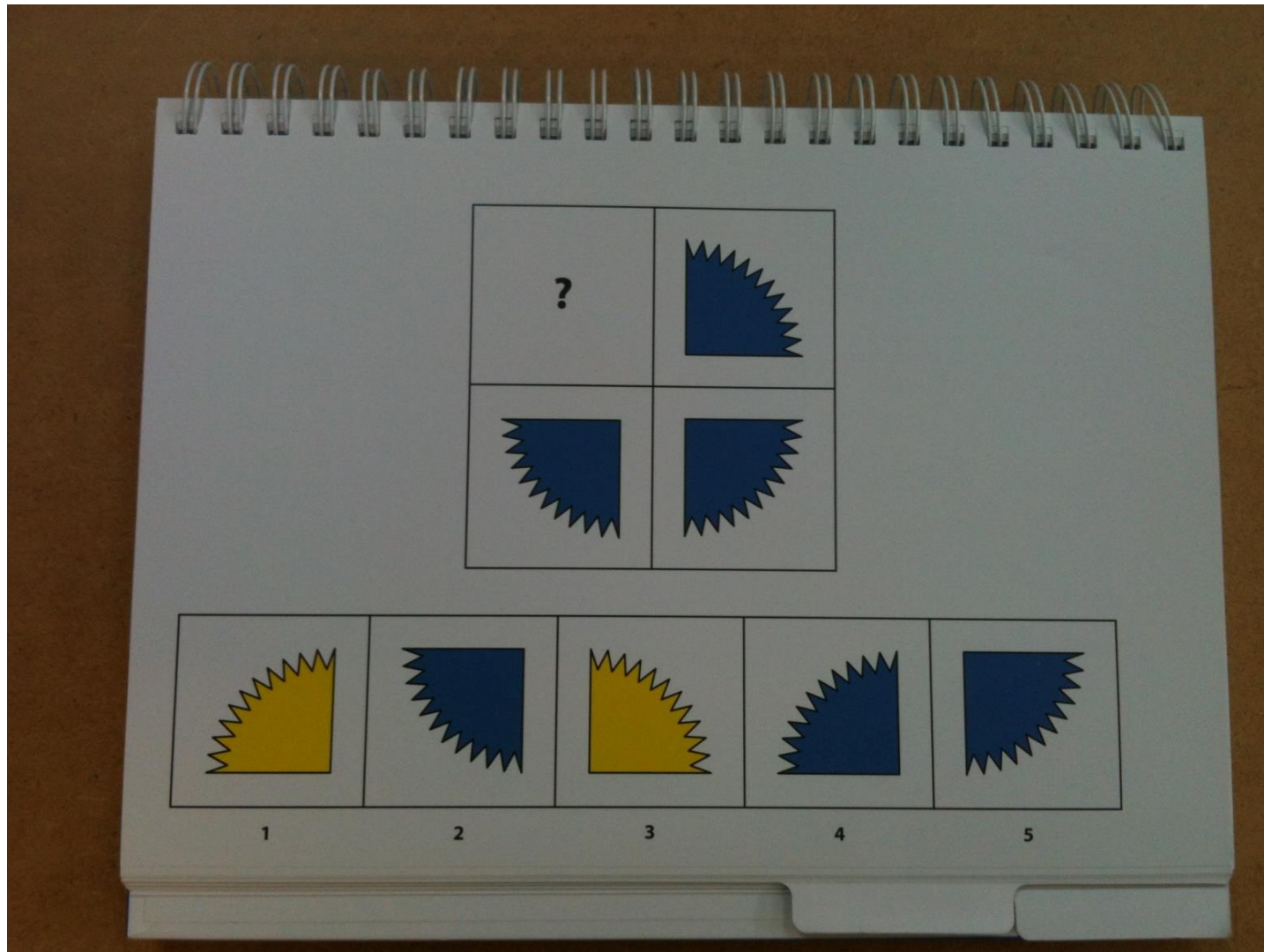
- **Similarities**

“In what way are **food** and **petrol** alike?”

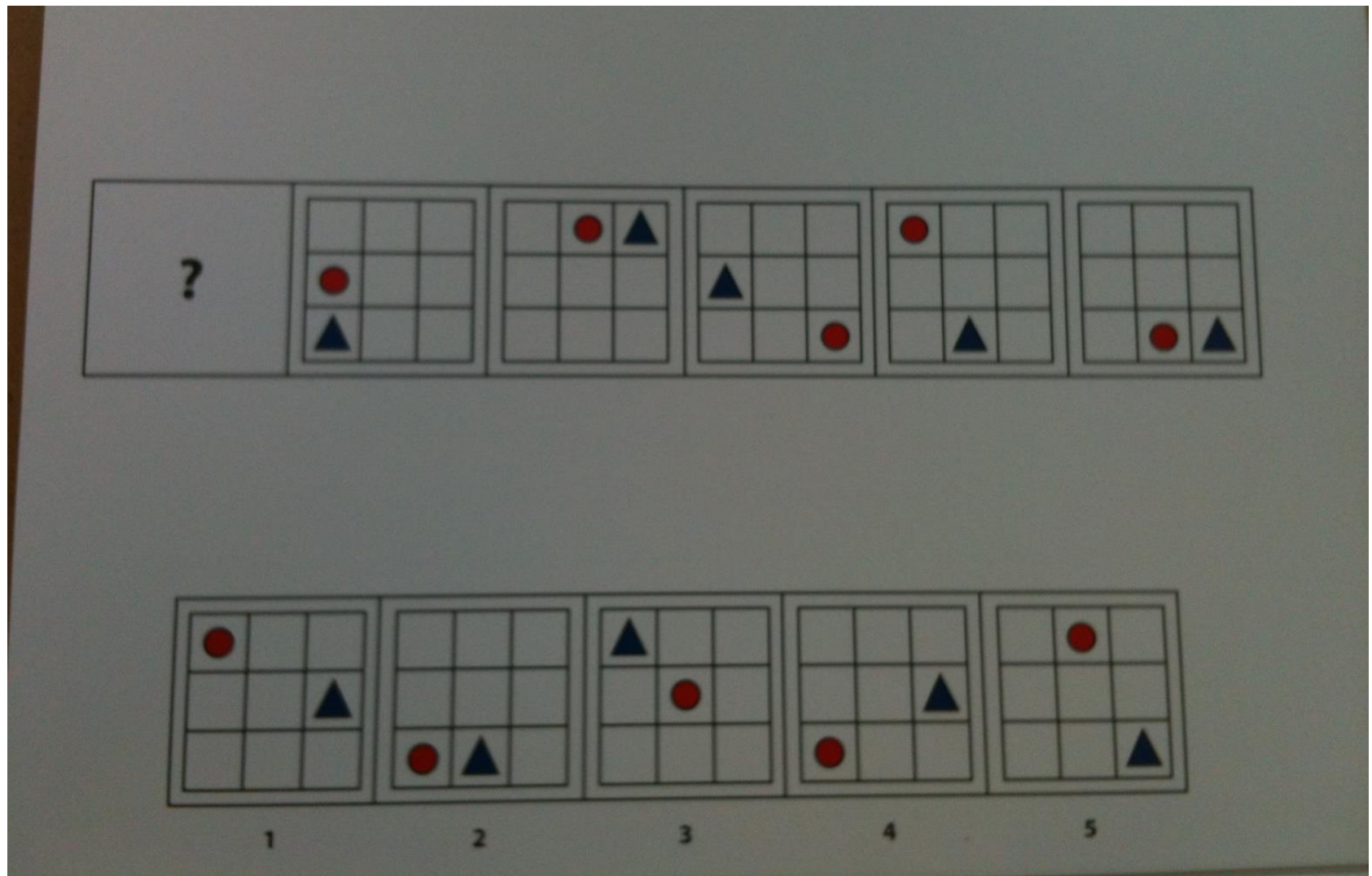
“In what way are **allow** and **restrict** alike?”



Intellectual abilities



Intellectual abilities



Attention & working memory

- **Auditory attention span:** e.g. Digit-span

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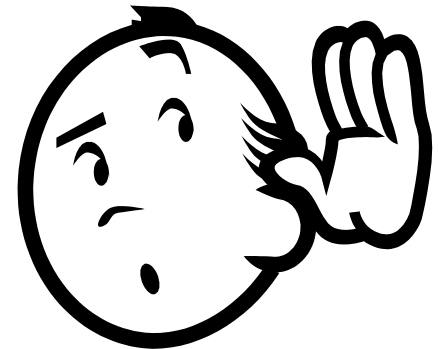
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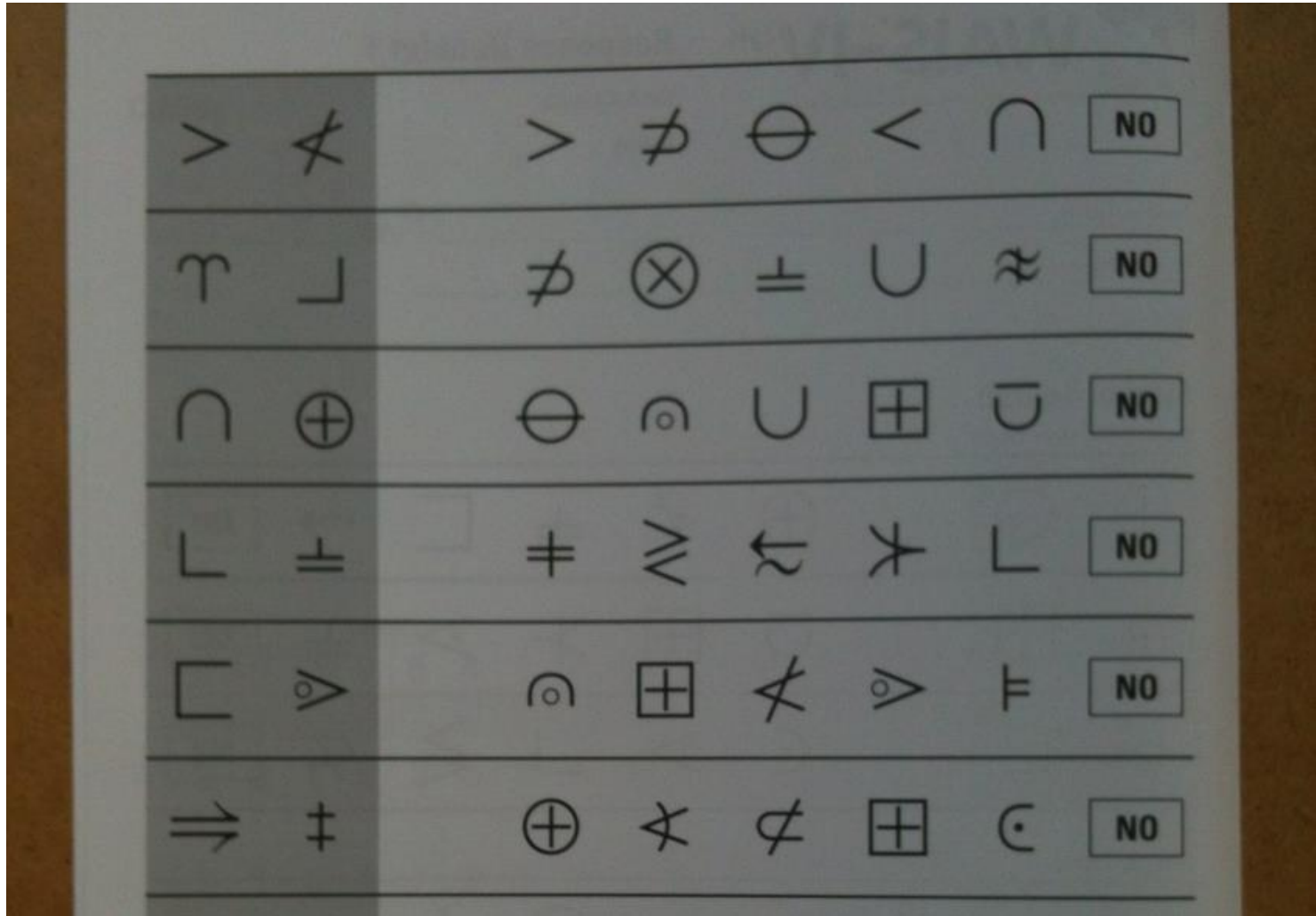
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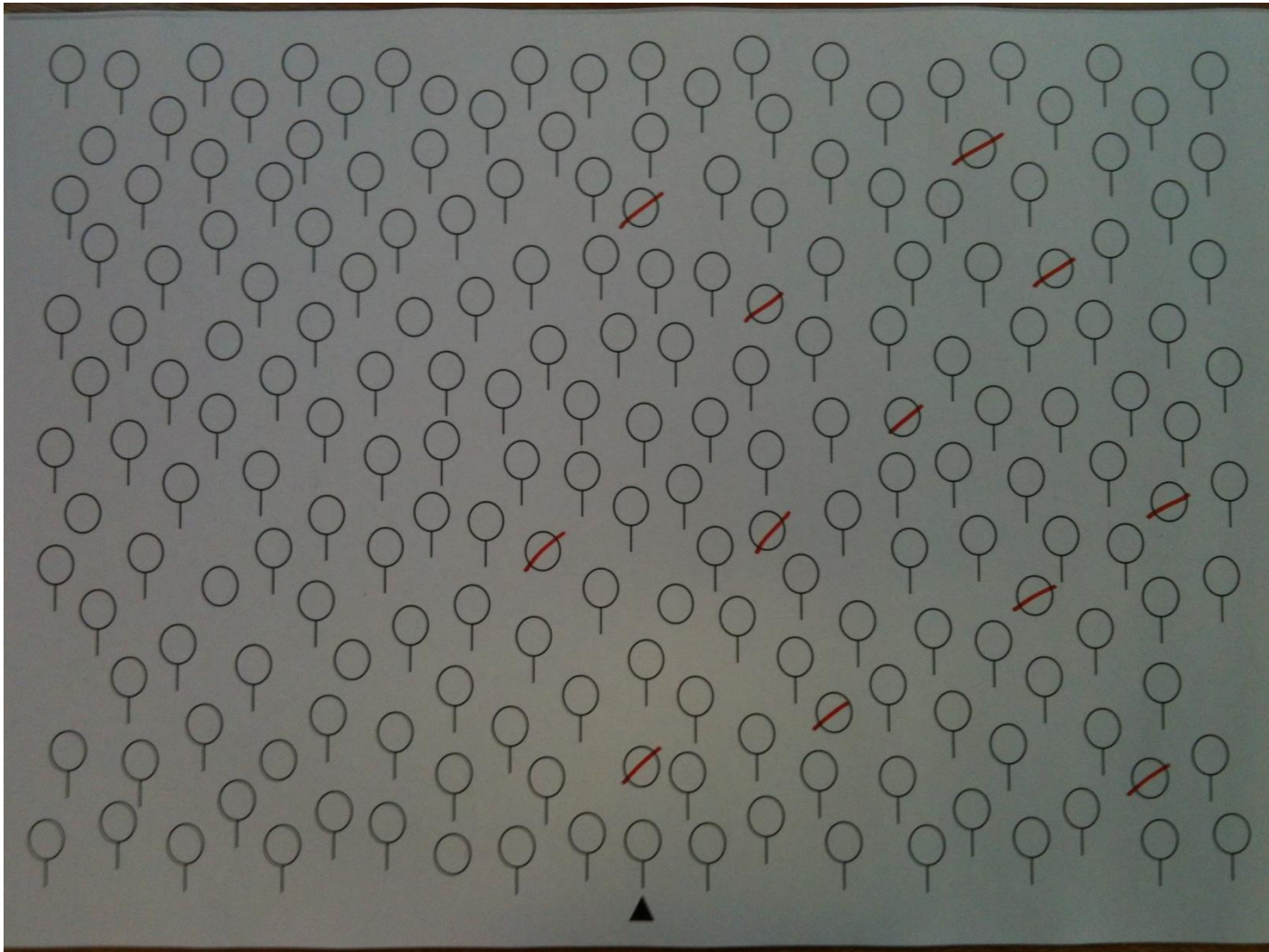
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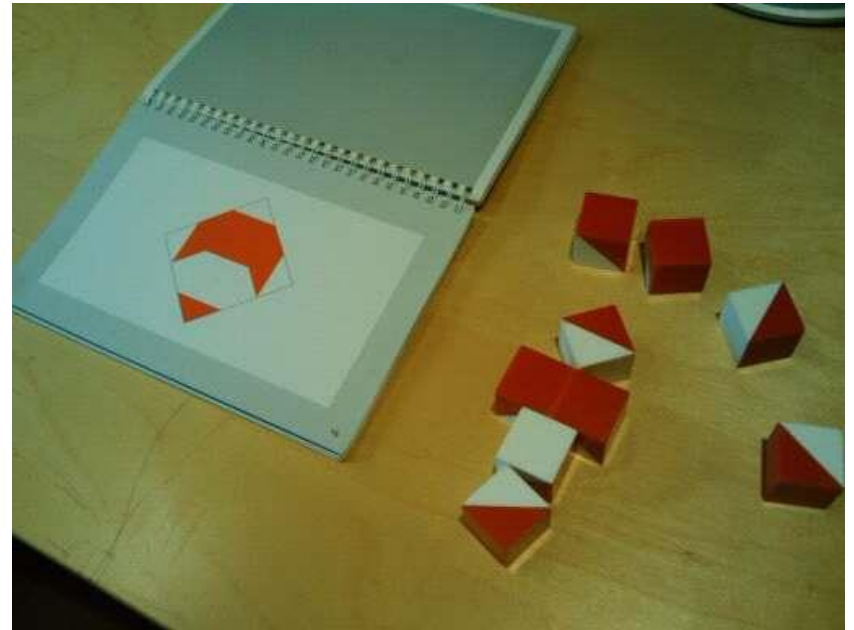
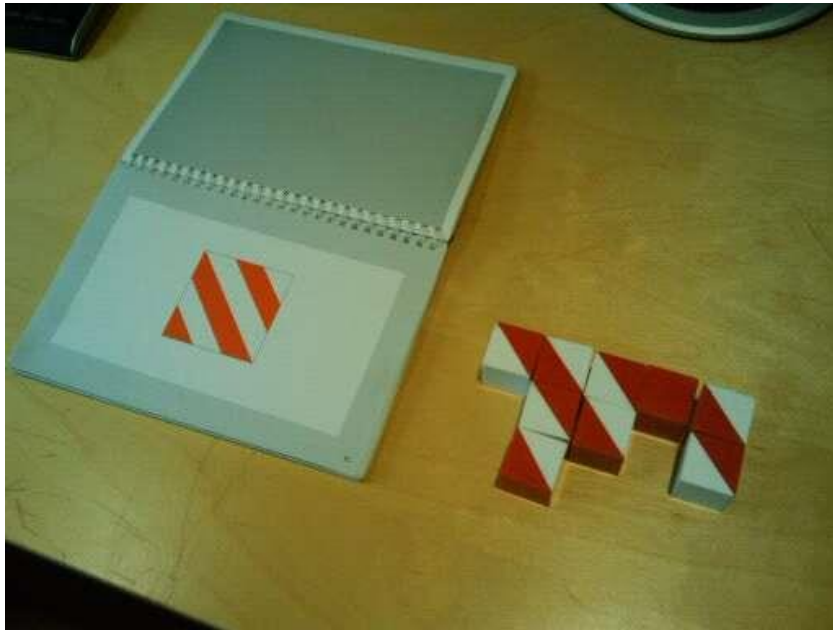
Attention & processing speed



Visual skills

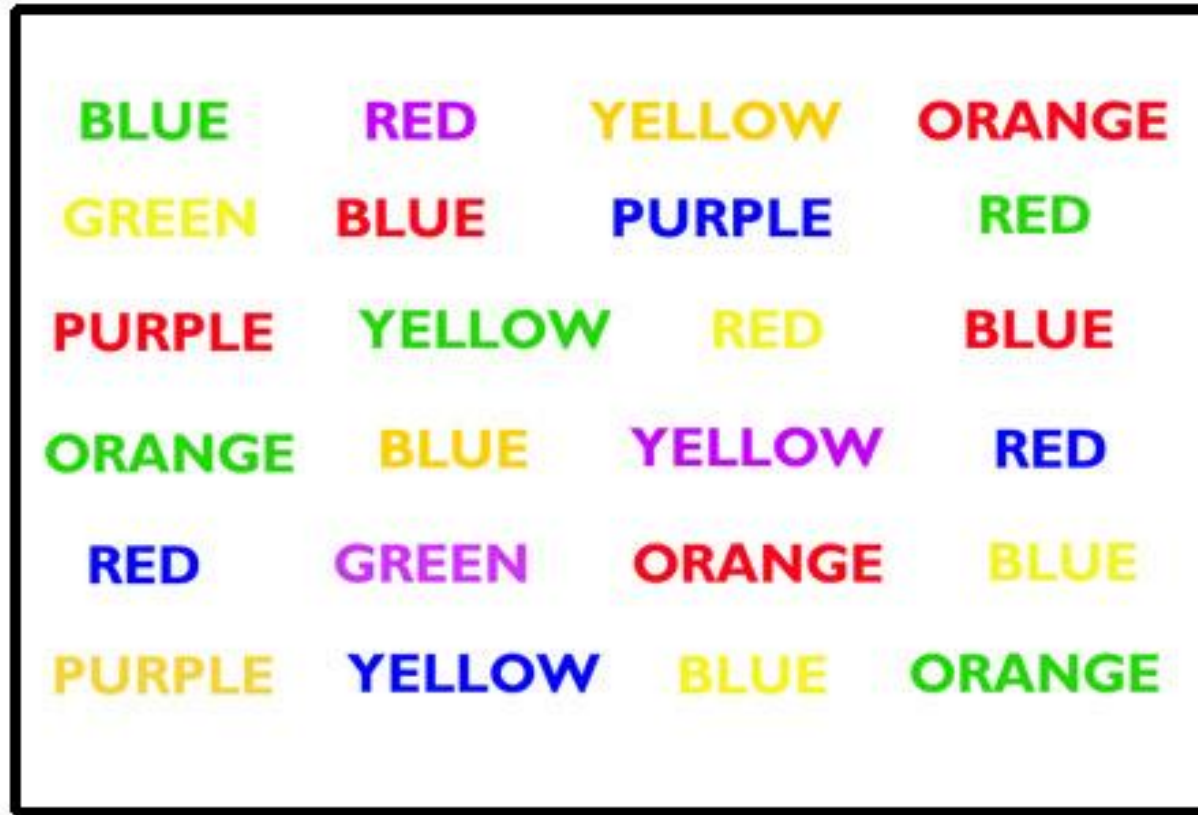


Visual skills & executive functions



Executive functions

The Stroop Test



Cognitive Assessment vs. Functioning

- Formal cognitive assessment is not always appropriate/necessary
- **Joint sessions** with the MDT
- **Observations** and feedback from nurses and MDT
- Assessment findings are treated as a “hypothesis”
- Even severely amnesic individuals can lead a relatively independent life with the use of appropriate strategies

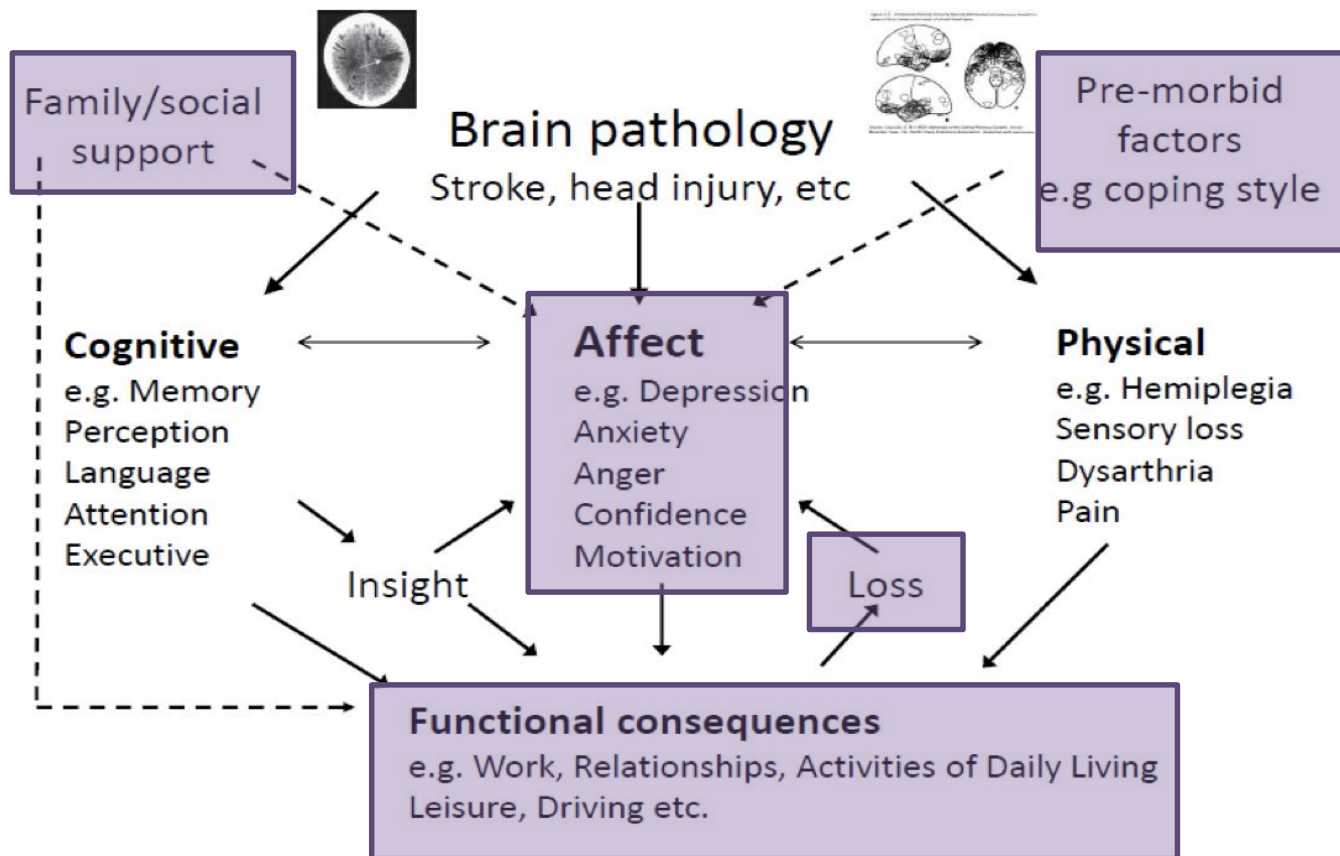
Intervention



Provide cognitive and behavioural strategies for managing any deficits

- Use the strengths to support weaknesses.
- Provide explicit and clear feedback about the results of testing.
- **Compensatory strategies**
- Provide feedback about their progress through using strategies (positive reinforcement).

Emotional Changes



Emotions

- **Depression** ~30% of stroke patients
- **Anxiety** ~30% of stroke patients
- **Emotional lability** ~10-20% stroke patients

The long-term impact of mood disturbance:

- Higher rates of mortality
- Long term disability – reduced engagement in physical and social rehabilitation
- Hospital readmission
- Suicide
- Increased carer burden

Patients consistently report that they feel mood difficulties aren't noticed or treated.

Assessment of emotional changes

- Formal measures plus clinical interview

Hospital Anxiety and Depression Scale (HADS)

Tick the box beside the reply that is closest to how you have been feeling in the past week.
Don't take too long over you replies: your immediate is best.

D	A		D	A	
		I feel tense or 'wound up':			I feel as if I am slowed down:
3		Most of the time	3		Nearly all the time
2		A lot of the time	2		Very often
1		From time to time, occasionally	1		Sometimes
0		Not at all	0		Not at all
		I still enjoy the things I used to enjoy:			I get a sort of frightened feeling like 'butterflies' in the stomach:
0		Definitely as much	0		Not at all
1		Not quite so much	1		Occasionally
2		Only a little	2		Quite Often
3		Hardly at all	3		Very Often
		I get a sort of frightened feeling as if something awful is about to happen:			I have lost interest in my appearance:
3		Very definitely and quite badly	3		Definitely
2		Yes, but not too badly	2		I don't take as much care as I should
1		A little, but it doesn't worry me	1		I may not take quite as much care
0		Not at all	0		I take just as much care as ever
		I can laugh and see the funny side of things:			I feel restless as I have to be on the move:
0		As much as I always could	3		Very much indeed
1		Not quite so much now	2		Quite a lot
2		Definitely not so much now	1		Not very much
3		Not at all	0		Not at all
		Worrying thoughts go through my mind:			I look forward with enjoyment to things:
3		A great deal of the time	0		As much as I ever did
2		A lot of the time	1		Rather less than I used to
1		From time to time, but not too often	2		Definitely less than I used to
0		Only occasionally	3		Hardly at all

Assessment of emotional changes

Signs of Depression Scale (Hammond, O' Keefe & Barer, 2000)

Does the patient sometimes look sad, miserable or depressed?

Does the patient ever cry or seem weepy?

Does the patient seem anxious, restless or anxious?

Is the patient lethargic or reluctant to mobilise?

Assessment of emotional changes

- Neurological factors:
 - Lesions to “limbic” structures involved in various aspects of emotion (e.g. orbito-frontal cortex, amygdala)
- Psychological factors:
 - Evaluating the **personal significance** of a situation or event (what has been **lost**?)
 - Evaluating the capacity to **cope** adequately with this event (**personal** coping / **family** coping?)
 - **Grief** process

7 Stages of Grief

(Modified Kubler-Ross Model)

Shock*

- Initial paralysis at hearing the bad news.

Denial

- Trying to avoid the inevitable.

Anger

- Frustrated outpouring of bottled-up emotion.

Bargaining

- Seeking in vain for a way out.

Depression

- Final realization of the inevitable.

Testing*

- Seeking realistic solutions.

Acceptance

- Finally finding the way forward.

Intervention

- RCTs demonstrate that **antidepressants** (SSRIs) are effective in treating and preventing Post-Stroke Depression (Robinson & Jorge, 2016 – The American Journal of Psychiatry)
- Evidence for traditional **CBT** is inconclusive but patient's may prefer this:
 - Fann et al. (2009) - More patients favoured physical exercise or counselling as a depression treatment than other treatment modalities.
- Grief **counselling**

Intervention

Help the patient explore the meaning of the injury and the affect on their own life, in order to achieve a sense of acceptance about what has happened

- What difficulties might they experience as a result of the changes (e.g. won't be able to drive because of visual problems).
- Explore what this means to them personally (e.g. was driving a really important thing to them; does driving represent independence?)
- What does it mean to lose this skill?

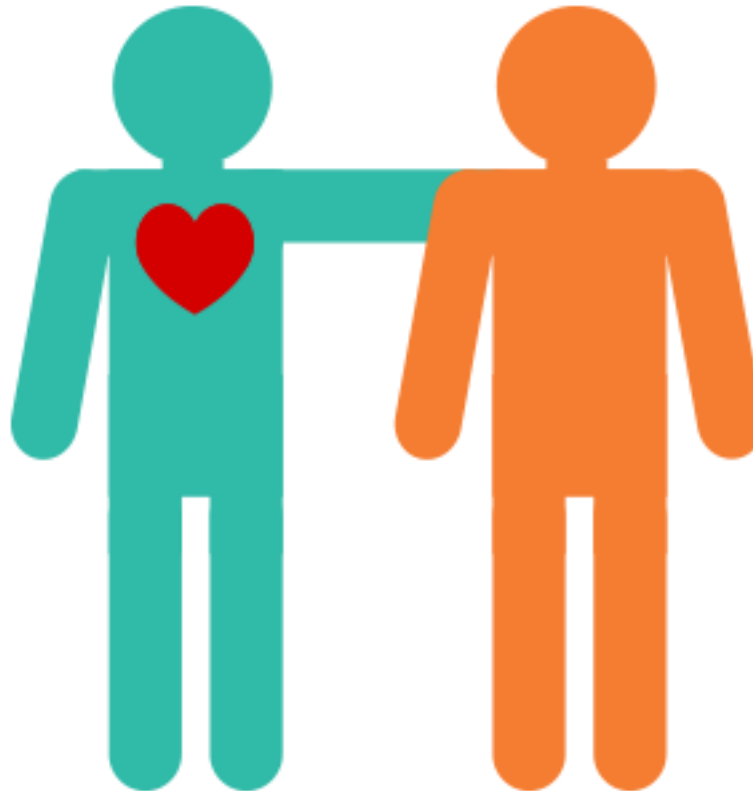
Help the patient integrate a new sense of 'self' and align this with the old 'self'.

- *Who am I? ... 'I am still the same person but now I have to do certain things differently ...'*
- Reconstruct new meaning and integrate in to new self image.
- Explore discrepancy between '*idealised*' pre-brain injury identity and current identity
- Explore what is now important to the patient – is it realistic?

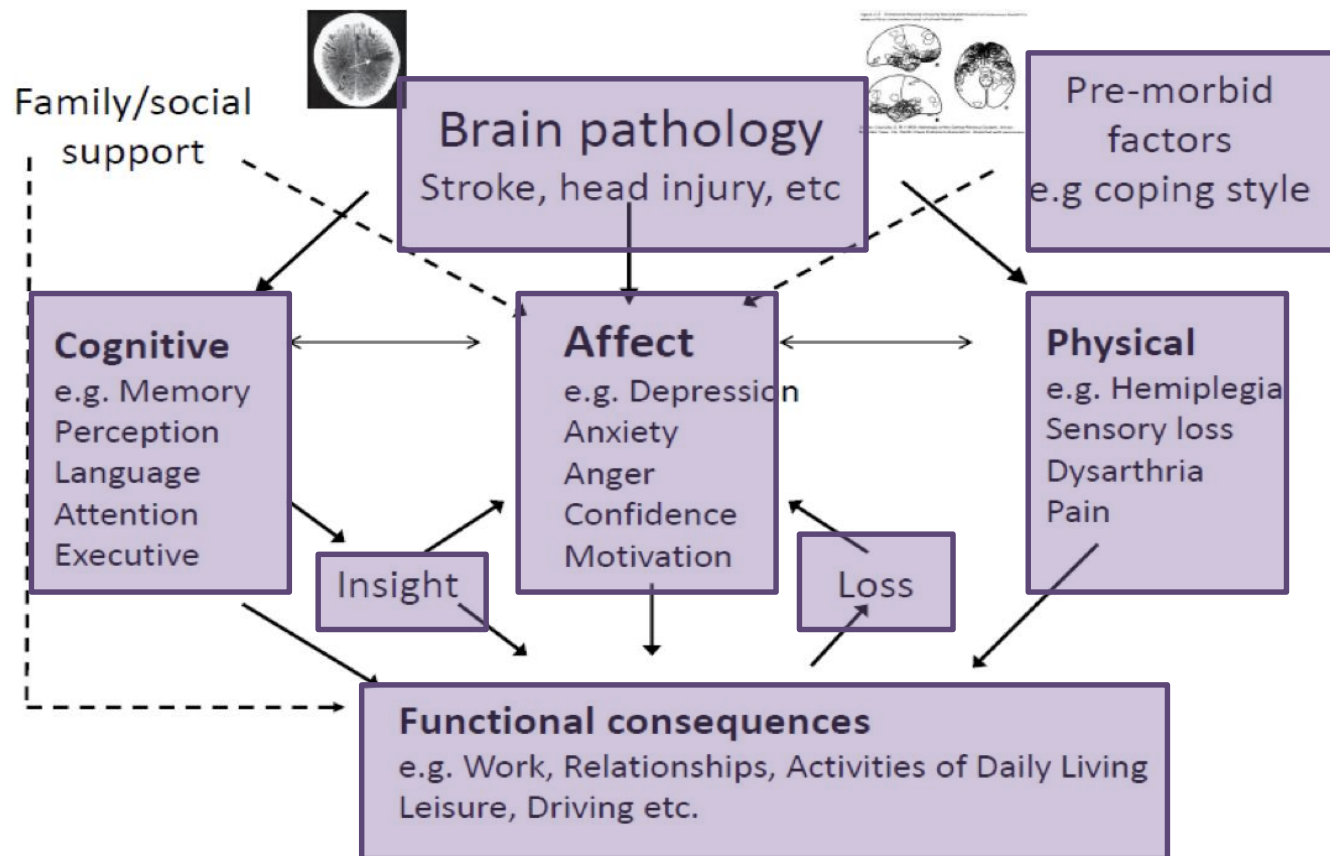
But also:

Taking the time to ask how someone is

...and really listening to the response.



Behaviour Changes



Behaviour changes

- Disorders of behaviour are common after stroke and can interfere with individuals' progress in rehabilitation and be distressing for those around them, e.g. –
 - Aggression
 - Disinhibition
 - Impulsivity
 - Distractibility



Assessment of behaviour

- Damage to emotional and behavioural control areas of the brain?
- Emotional impact of stroke (anxiety or depression)?
- A way to get needs met when cognitive and communication skills are reduced?
 - Pain, discomfort, nausea, hunger, thirst
 - Feeling afraid or threatened
 - A way of exerting independence, choice and control
 - A defensive reaction to being confronted with reality
 - Reaction to misunderstanding a situation
 - Frustration
 - Unable to remember why they are in hospital
 - Sensitivity to noise, temperature etc.

Determining needs

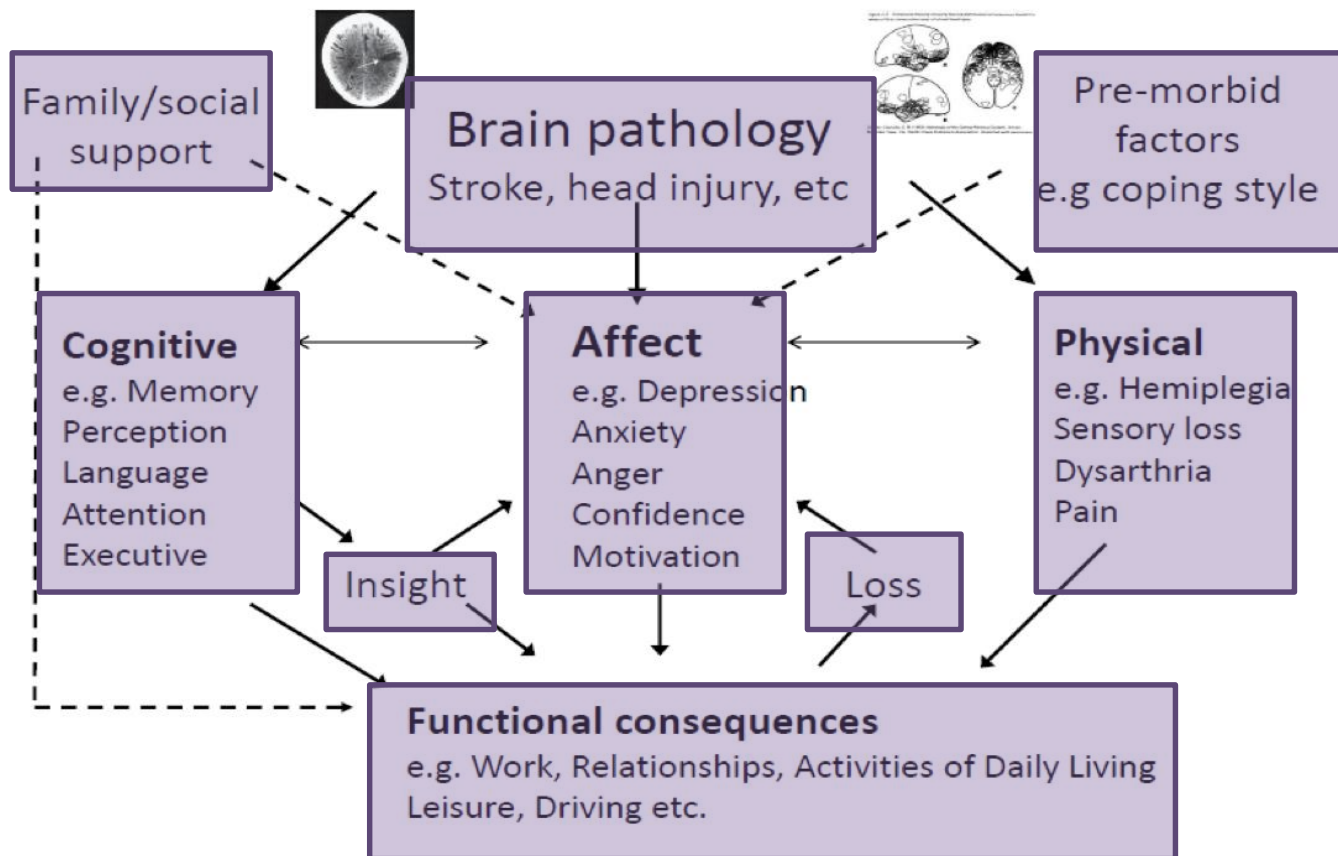
- The **ABC** approach:
 - **Antecedents** (what occurs before the behaviour, acting as a potential trigger?)
 - **Behaviour** (what happens during the behaviour, what does it look like exactly?)
 - **Consequences** (what are the immediate and delayed reactions of everyone involved?)

Intervention

- Help the person get their needs met a different way.
- Operant conditioning (reward the behaviour you want to see, ignore the behaviour you don't)
- Whole-team approach and **consistency** is key!



Bringing it all together



Questions

