

Thursday 14th March 2019
APIL North West Meeting, Exchange Chambers Liverpool

FRONTAL LOBE PARADOX

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The Disabilities Trust



Overview

1. Who am I?
2. Importance of the Brain
3. Impact of Brain Injury
4. Prevalence of Brain Injury in Prisons
5. Impact of Brain Injuries for Offenders
6. What can we do about it?



1. Who am I?



who am I...

- **clinical psychologist...**
- **worked in forensic services**
- **with extra training in neuropsychology...**
- **Member of DCP / DFP / DoN**
- **work with adults with brain injuries and their families for over 20 years...**
- **from hospital to community and from high secure hospitals to prisons...**



who is BIRT...

- **The Brain Injury Rehabilitation Trust (BIRT)**
- **UK charity leading brain injury rehabilitation.**
- **15 centres England, Scotland and Wales.**
- **1,000 Clinical & support staff.**
- **500+ services users supported p.a.**



2. Importance of the Brain



what the brain does...

Everything ! It is responsible for –

Thinking

Talking

Physical actions

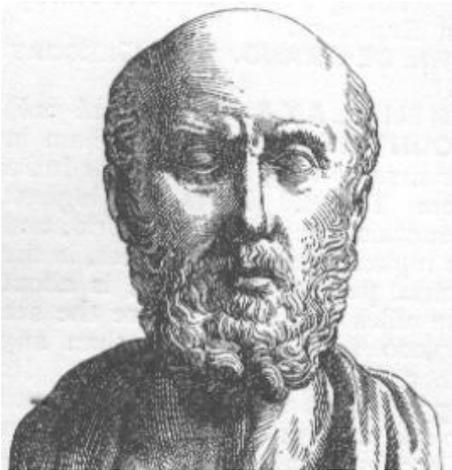
Seeing

Walking

Hearing

Breathing

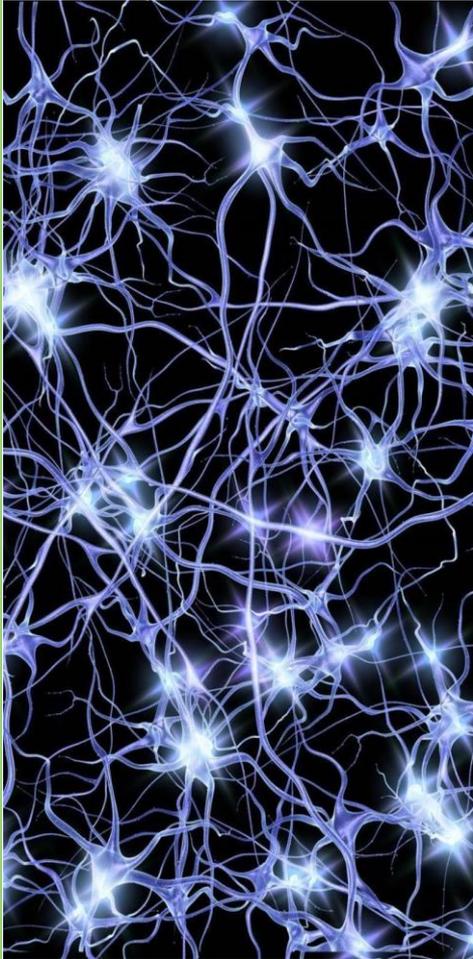
Emotions



Hippocrates realised its importance: “from the brain arises our pleasures, joy and laughter as well as our sorrows, pain and tears.”



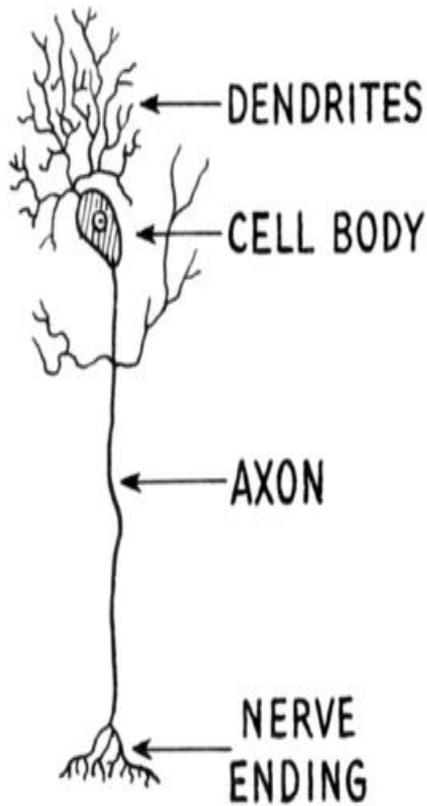
what it's made of...



- **100,000million neurons (thinking cells) and about 10 times as many glial (support) cells.**
- **The neurons form connections with each other, across which they pass small electro-chemical messages.**
- **The complex circuits these neurons form are the basis of all our thoughts, feelings and perceptions.**



'neuro'science of learning...

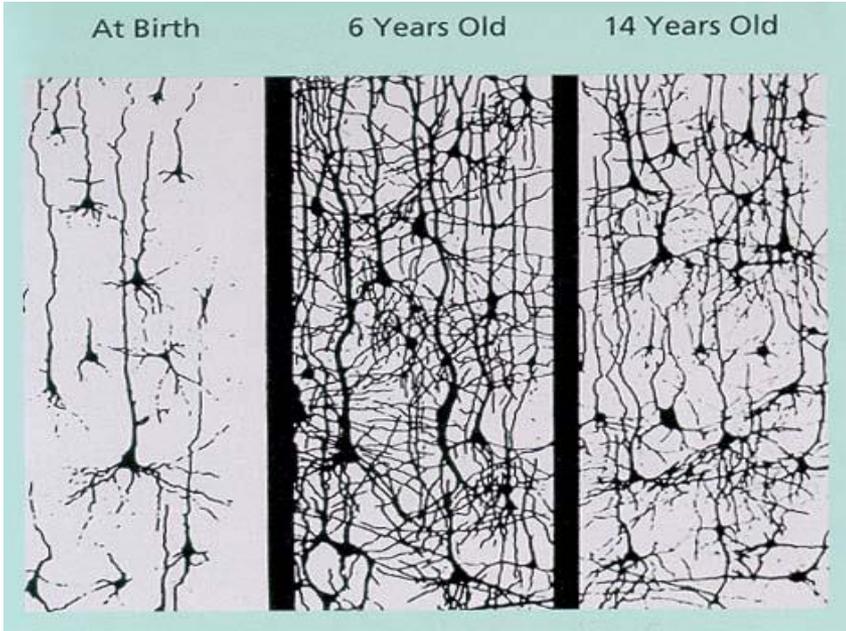


- Neurons know how to grow dendrites (just like how a stomach knows how to digest food)
- Dendrites (fibres) grow out of the neurons when you listen / write talk / practice something.
- Learning = Growth of Dendrites
- New dendrites take time to grow
- And it takes a lot of practice to encourage them to grow

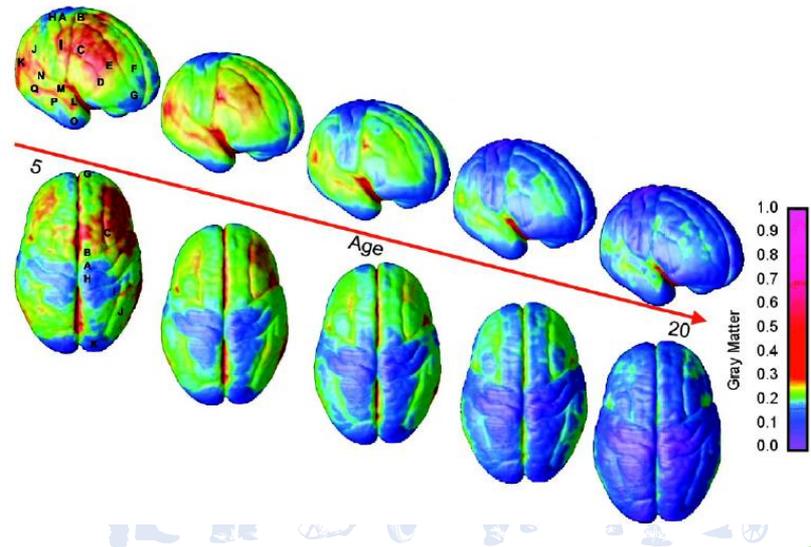


it's nature...

...growth and synaptic pruning of neural connections

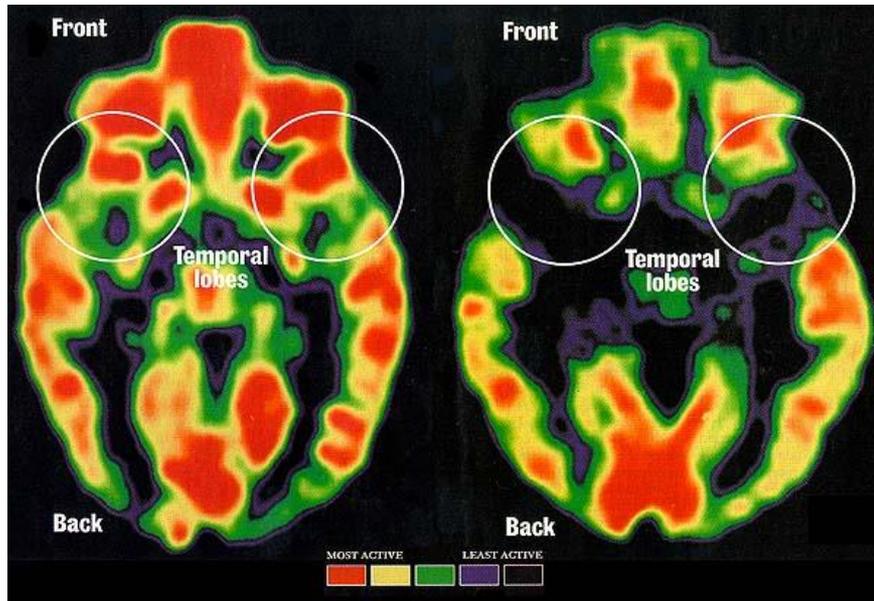


grey matter develops...



it's nurture...

...romanian orphans

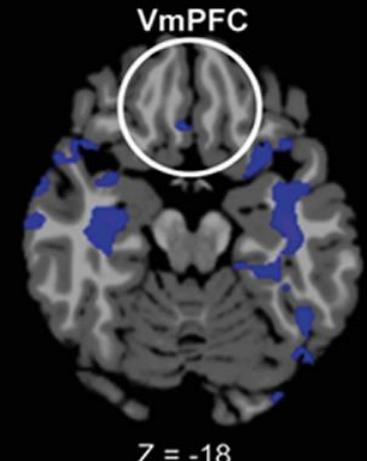
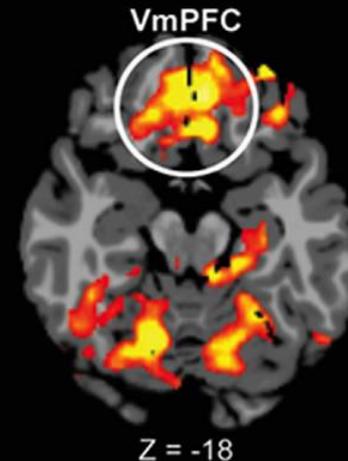


impact of stress...

Dynamic Brain Changes During Stress

Resilient Coping

Risky Coping

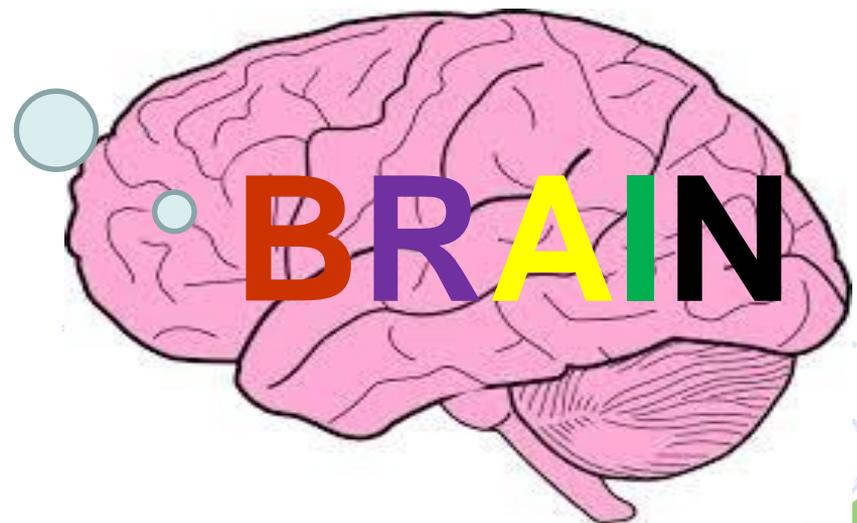


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psychological cartesian dualism...

MIND



3. Impact of Brain Injury



causes of brain injury...

Multiple Sclerosis (MS)
Huntington's Disease
Parkinson's Disease,
Alzheimer's Disease

Degenerative
diseases

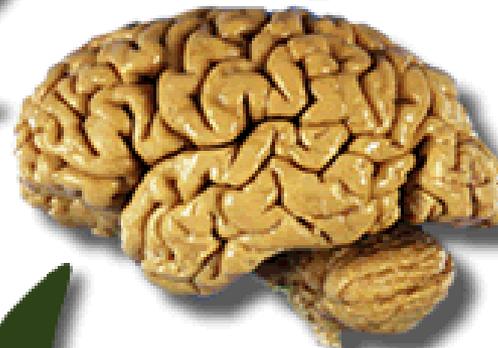
Benign tumours
Cancers

Tumours

Acceleration/
Deceleration injuries

Penetrating
injuries

Trauma



Stroke

Blocked
blood vessel
Bleeding in the brain

Infection

Infection leading
to inflammation

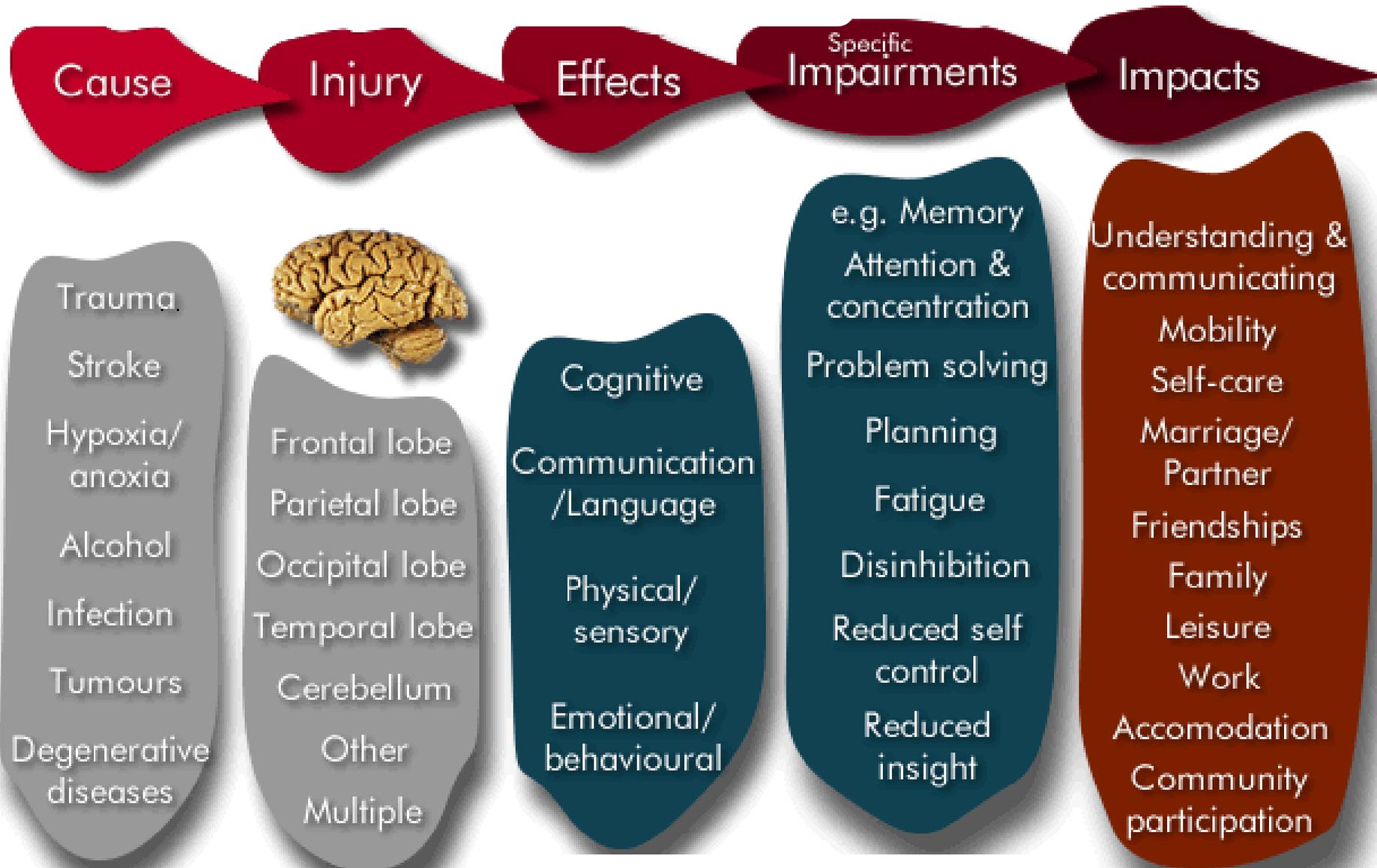
Alcohol
related
& other toxins

Toxic effects of
alcohol / toxins on brain

Hypoxia/
anoxia

Lack of oxygen

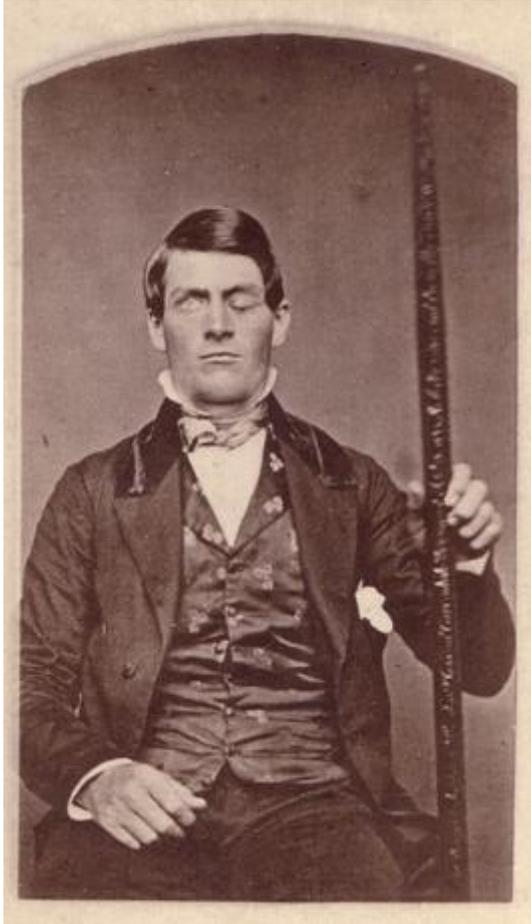
impact of brain injury...



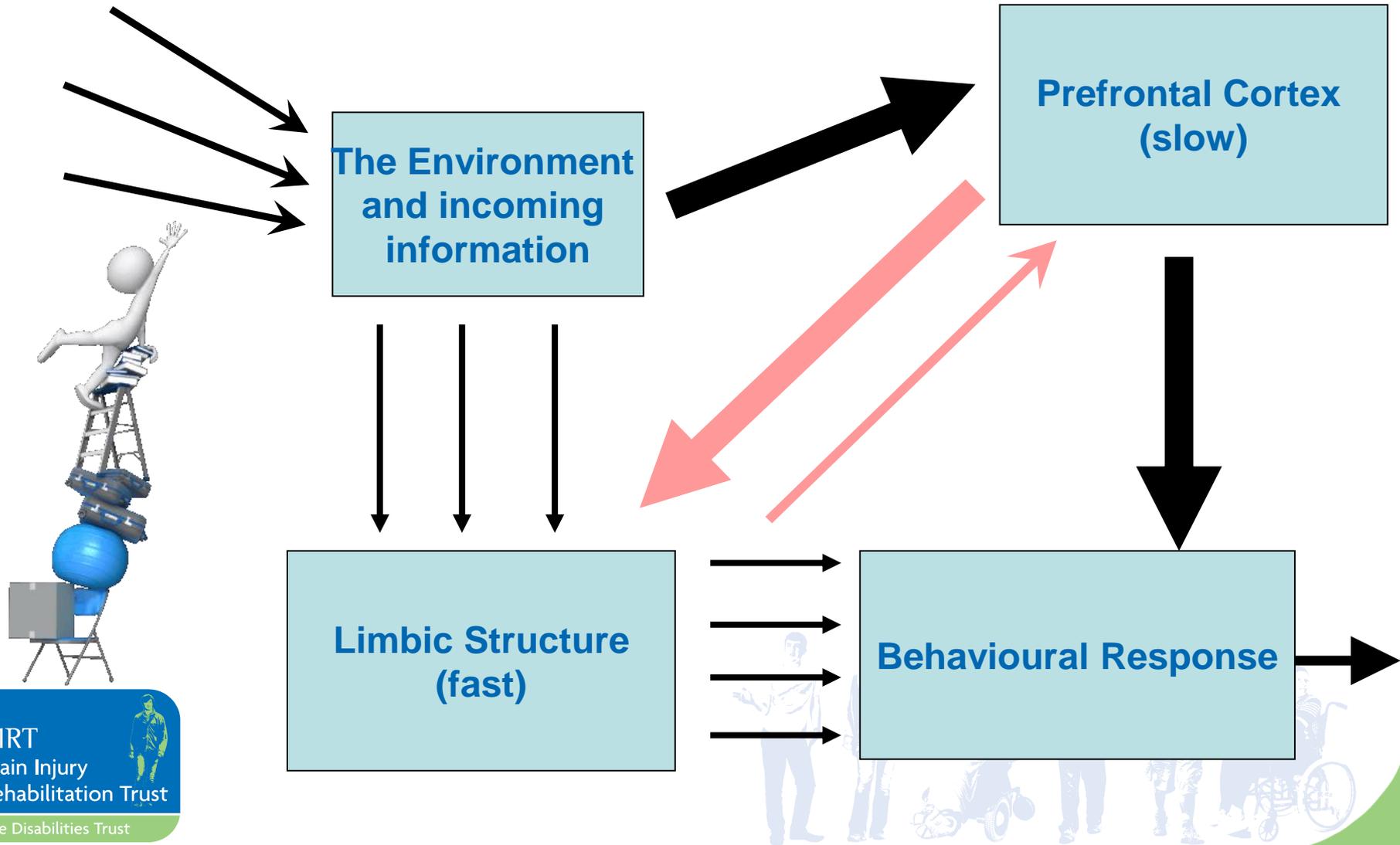
as a neuropsychologist I know...

injury to the brain causes changes in...

- **cognition**
- **behaviour**
- **personality**
- **emotional experience**
- **physical abilities**



'frontal lobe paradox' (Walsh, 1985) or the 'knowing doing dissociation' (Teuber, 1964)...



frontal lobe paradox...

- *‘knowing doing dissociation’* (Teuber, 1964)
- ‘The person should not be seen as knowingly or consciously denying their difficulties or lying’.
- Neuro-disability of the frontal lobes that are responsible for self-monitoring and developing insight
- *‘Paradox’* because person can appear entirely unimpaired in an office-based assessment, yet have significant functional difficulties in life.



the greater '*Paradox*'...

- Does the Criminal Justice System suffer from a Frontal Lobe Paradox in recognising the problem of Brain Injury within the Criminal Justice System
- Does the Criminal Justice System suffer from a knowing doing dissociation
- **TIME FOR CHANGE ?**



4. Prevalence of Brain Injury in Prisons



general rates of brain injury...

- **12% (adults) have TBI with a LOC** (Frost et al, 2013)
- **Traumatic BI (falls, accidents, assaults) is the biggest cause of death and disability WORLDWIDE**
- **WHO estimate by 2020 up to 10 Million individual's will be affected worldwide per year**
- **Age (toddlers, teens, retired), gender (male), urban location and social deprivation as key risk factors** (Yates et al 2006)



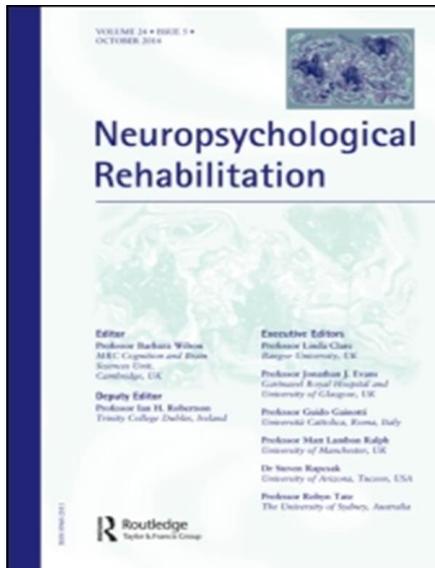
**...it's a modern story
it's endemic now...**

- **47% history brain injury**
- **73% suffered brain injury before first offence**
- **42% under 18yrs when committed first offence**
- **43% been in prison on more than 5 occasions**
- **At time of arrest...**

...80% had or were using drugs

...32% were drinking 20+units alcohol daily

**The association between neuropsychological performance
and self-reported traumatic brain injury in a sample of adult
male prisoners in the UK
Pitman, I. M. et al; Oct 2014**



...it's an old story the first case of insanity...



- James Hadfield (1771-1841)
- Battle of Tourcoing 1794
- 15th Light Dragoons
- struck eight times on the head with a sabre - the wounds being prominent for the rest of his life

- attempted to assassinate King George III in 1800.
- found to be insane
- Criminal Lunatics Act
- ‘a brain-damaged and deluded former soldier’
- permanently detained in Bethlem Royal Hospital



THE KING'S LIFE ATTEMPTED, MAY 15: 1800.

there is no doubt...

- **association of brain injury and violent crimes** (Devinsky 1984, Treiman 1986, Fazel 2009)
- **meta-analysis prevalence 41% - 60%** (Shiroma 2010, Farrer 2011)
- **over 50% serve less than 6 months**
- **58% of these were reconvicted within a year**



5. Impact of Brain Injuries for Offenders

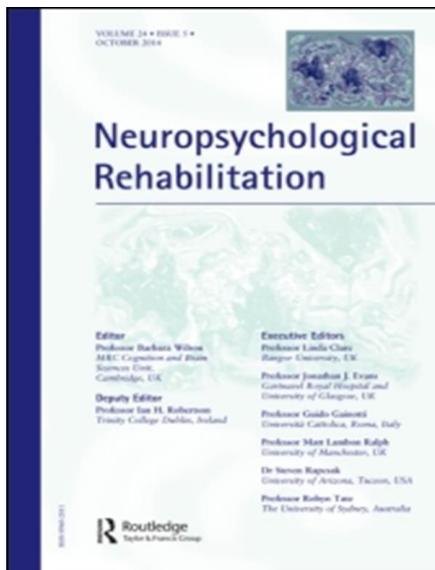


problems associated with brain injuries...

(139 interviewed reported)...

High levels of ...anxiety
...depression

Significant issues of ...disinhibition
...aggression
...memory functioning
...executive functioning



The association between neuropsychological performance and self-reported traumatic brain injury in a sample of adult male prisoners in the UK

Pitman, I. M. et al; Oct 2014



offenders often have “thinking” problems...

‘Offenders cope poorly with life because they exhibit various ‘cognitive deficits’

(Ross and Fabiano, 1985, cited in Home Office, 2002; Joliffe 2004)

- lack impulse control
- poor at controlling emotions
- poor problem solving
- rigid and inflexible thinking
- don’t recognising consequences of behaviour
- can’t see another person’s perspective

Study of 2,919 young offenders found over 80% had problems with recognising the consequences of their actions (Cattell et al, 2013)



does brain injury make people offend...

Could not possibly offend



Will definitely offend

No Injury

Injury



BI in offenders typically leads to...

- Poorer engagement in treatment
- Greater levels of infraction
- Higher level of re-conviction
- Often in areas of **violence**

Pitman (2015):

139 w TBI v 50 non-TBI
60% vs 38% violent
crime

Fishbein (2002):

224 (71 TBI) prisoners
TBI = early dropout from
tx & aggressive behavior

Ray & Richardson (2017)

151 inmates
Post release 1.6 higher
rate of recidivism



or in prison poor behaviour may be...

- frequently misses appointments – due to impaired memory functioning
- talk about the same thing over and over – due to slow information processing
- make inappropriate personal comments – due to poor impulse control
- say they will do something but never get around to it – due to diminished executive skills

...as a result of a brain injury

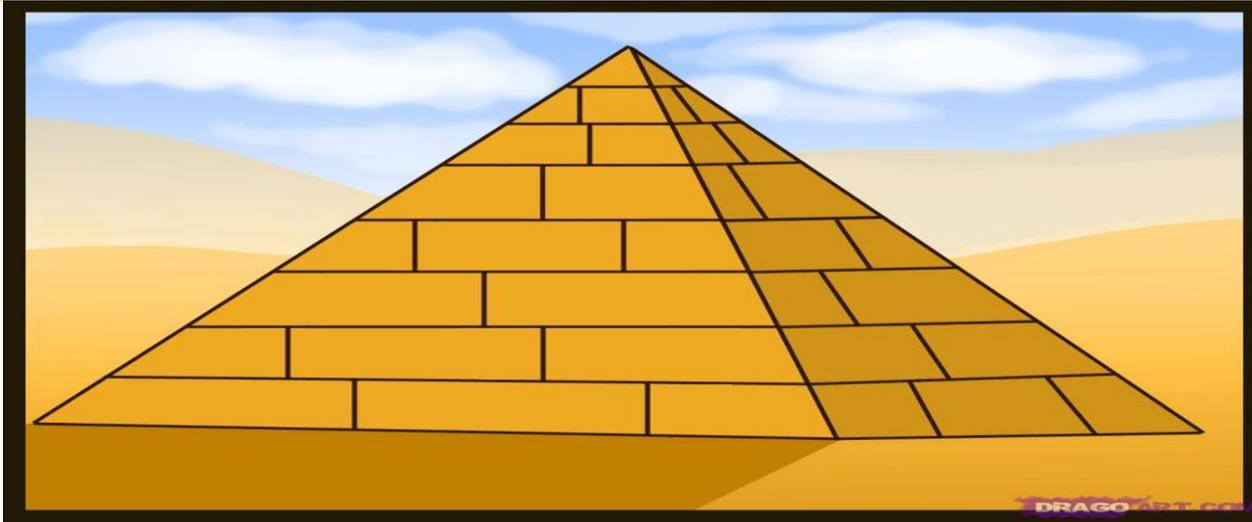


6. What can we do about it?



be **neuropsychologically** informed in
your practice...

Understanding of the nature of the
Brain and how it can be injured



Methods of training
and changing
behaviour

Philosophy of
community based
rehabilitation

rehabilitation is...

- improve functioning
- reduce handicap
- enhance quality of life
- encourage adherence to plan



“I am determined to ensure that we build a prison system that has a renewed focus on rehabilitation.” Michael Gove MP Secretary of State for Justice in the Government Response to Harris Report 2015



prisons could be excellent rehabilitation environments...

- prison offers a very structured environment
- you know what to do, when and where
- rules, roles and boundaries are crystal clear
- people with executive impairments often respond well to this environment
- habitual learning rather than formal
- it is not always like that on the outside



but it's a '*hidden disability*' ...



| | |
|-----------------|--|
| SEVERE | <ul style="list-style-type: none">• 5%• Obvious physical, behavioural & cognitive problems• Dependency on others |
| MODERATE | <ul style="list-style-type: none">• 10%• Some physical, behavioural & cognitive problems• Independent but unable to fulfill all activity may seek help |
| MILD | <ul style="list-style-type: none">• 85%• 'Masked' - subtle behavioural & cognitive problems• Independent in all activity but not always successful |

the good old days...

- **Phrenology 19th Century**
- **Franz Gall (1758 – 1828)**
- **brain has 28 organs of various mental faculties**
- **skull is shaped by the brain**
- **criminal instinct is located above the ears (temporal lobe)**



modern day...



- fMRI are relatively new research techniques
- relationship between brain and behaviour still unclear
- not all '*risky*' behaviour can be explained by an immature prefrontal cortex or enlarged amygdala
- there is A LOT of inter-individual variability in both brain and behaviour



so what's the problem...



- there is no brain injury identification in prisons
- the structure of prison is helpful
- prisoners spend a lot of time in their cell
- prisoners are often in and out of prison
- *'mild' brain injury is a 'hidden disability'*



begin screening...

Brain Injury Screening Index [BISI]

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| | |
|-----------------|--|
| Name: | |
| Prison Number: | |
| Date Completed: | |
| Completed By: | |

1. Have you ever had a serious blow to your head that knocked you out or where afterwards you felt **very** dazed and confused?

- Yes
 No
 Don't Know
 No Reply

[If 'Yes' go to question 2. If 'No' / 'Don't Know' / 'No Reply' then go to question 5]

2. How many times has this happened in your lifetime?

- Once
 Twice
 Three Times
 Four Times
 Five Times
 More than 5
 Don't Know
 No Reply

3. For each injury, how long did you suffer a loss of consciousness [LOC]?

| | | 1 st Injury | 2 nd Injury | 3 rd Injury | 4 th Injury | 5 th Injury |
|---|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | No LOC | <input type="checkbox"/> |
| 2 | LOC Less than 10 mins | <input type="checkbox"/> |
| 3 | LOC Between 10 mins & 6 hours | <input type="checkbox"/> |
| 4 | LOC More than 6 hours | <input type="checkbox"/> |

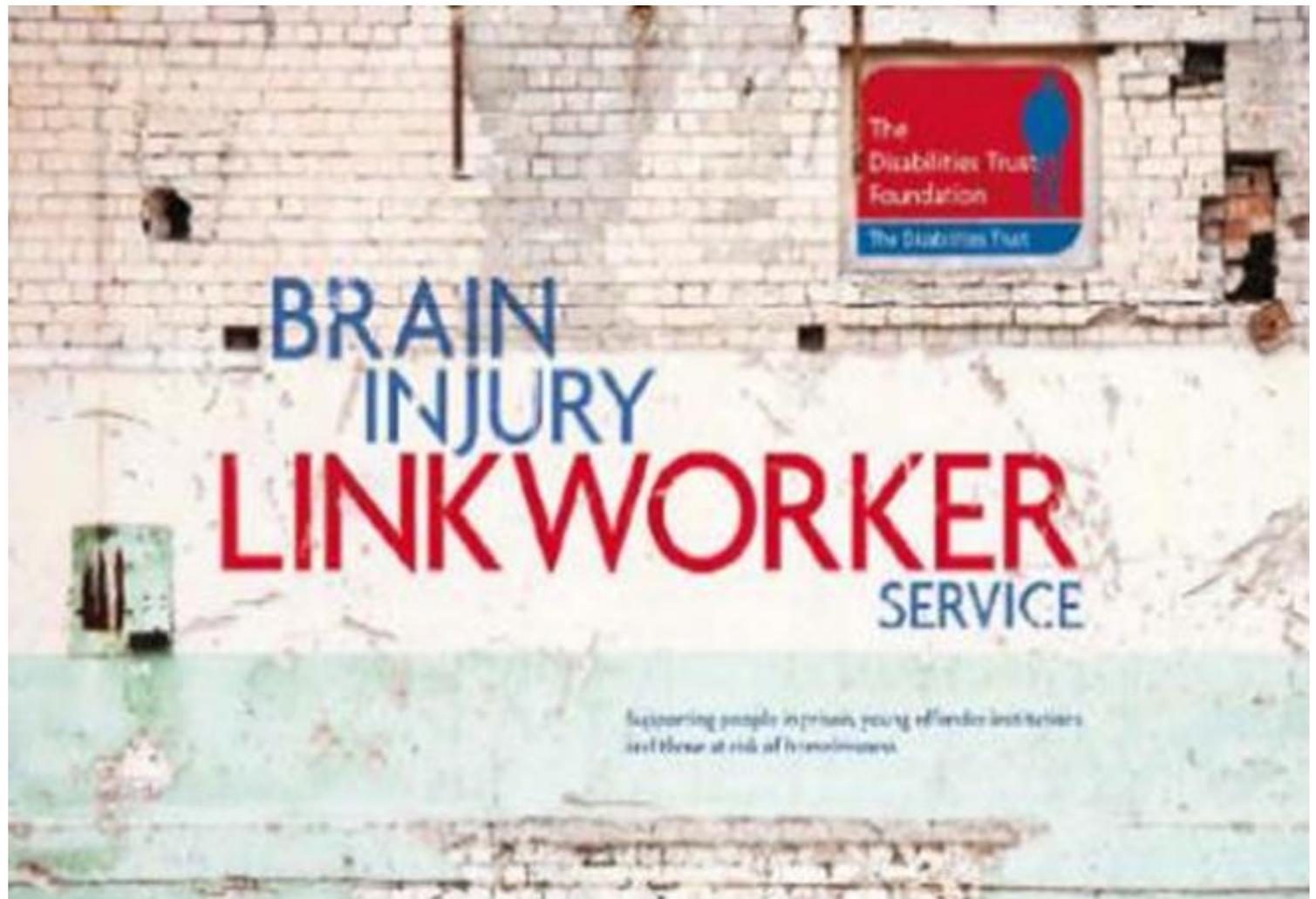
4. Following the injury(ies) did you... (tick more than one box if needed)

| | 1 st Injury | 2 nd Injury | 3 rd Injury | 4 th Injury | 5 th Injury |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Go to Hospital | <input type="checkbox"/> |
| See a Paramedic | <input type="checkbox"/> |
| Visit a GP | <input type="checkbox"/> |
| Ring NHS Direct | <input type="checkbox"/> |
| Do Nothing | <input type="checkbox"/> |
| Don't Know | <input type="checkbox"/> |
| Other (Please State): | | | | | |

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use brain injury linkworkers...



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Brain Injury Linkworker (BIL)...

- Identify individual's with a Brain Injury who enter custody
- Develop a Rehab Pathway and provide dedicated support to those with a BI
- Raise awareness of BI within the establishment and support staff to manage / adapt to meet the needs of those individuals



purpose...

- **Delivers a clinical service to individuals who screen positive for a history of self-reported brain injury**
- **Whilst there are some variations in the delivery of service between establishments the same pathway was followed**



Brain Injury Linkworker projects...

- **HMP Preston** (Cat 'B')
- **HMP Drake Hall** (female)
- **Closed Supervision Centres -
HMP Wakefield & HMP Woodhill**
- **Oxfordshire –
HMP YOI Aylesbury & HMP Bullingdon** (Cat 'B')
- **North East -
HMP YOI Deerbolt & HMP Durham** (Cat 'B')
- **South Wales -
HMP Cardiff** (Cat 'B') & **Mandeville House AP**



The BIL-Rehab Pathway...

Identify



Assess



Interventions



Post-Release Support



Identify

Brain Injury Screening Index [BISI]



Name: _____
 Prison Number: _____
 Date Completed: _____
 Completed By: _____

1. Have you ever had a serious blow to your head that knocked you out or where afterwards you felt very dazed and confused?

- Yes No Don't Know No Reply

(If 'Yes' go to question 2. If 'No' / 'Don't Know' / 'No Reply' then go to question 5)

2. How many times has this happened in your lifetime?

- Once Twice Three Times Four Times
 Five Times More than 5 Don't Know No Reply

3. For each injury, how long did you suffer a loss of consciousness [LOC]?

| | 1 st Injury | 2 nd Injury | 3 rd Injury | 4 th Injury | 5 th Injury |
|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. No LOC | <input type="checkbox"/> |
| 2. LOC Less than 10 mins | <input type="checkbox"/> |
| 3. LOC Between 10 mins & 6 hours | <input type="checkbox"/> |
| 4. LOC More than 6 hours | <input type="checkbox"/> |

4. Following the injury (ies) did you... (tick more than one box if needed)

| | 1 st Injury | 2 nd Injury | 3 rd Injury | 4 th Injury | 5 th Injury |
|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Go to Hospital | <input type="checkbox"/> |
| See a Paramedic | <input type="checkbox"/> |
| Visit a GP | <input type="checkbox"/> |
| Ring NHS Direct | <input type="checkbox"/> |
| Do Nothing | <input type="checkbox"/> |
| Don't Know | <input type="checkbox"/> |
| Other (Please State): _____ | | | | | |

- Pre screening Qu's on induction
- Staff referral
- Self referral

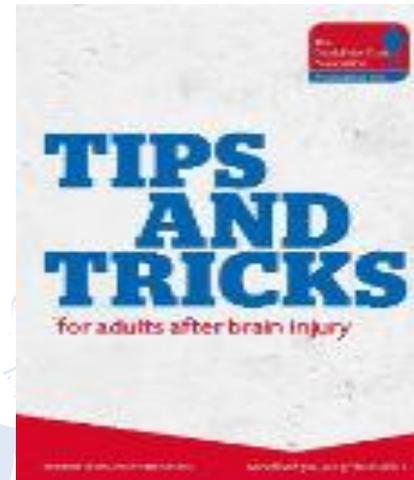


Assess

What level of input does an individual require?

- educational information
- sign posting or referral on
- 1:1 support

HAD A SERIOUS BLOW
TO THE HEAD?
Do you now find it
HARD TO COPE
with
**EVERYDAY
THINGS?**



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Assess

- **Semi-structured clinical interview**
- **Review of medical records (where possible)**
- **Corroboration with an informant (where possible)**
- **Completion of Mental Health, occupation and drug / alcohol use screening questionnaires**
- **consent**



Intervention

Education /
training

Behaviour
guidelines

**Indirect
work**

Cognitive
remediation

Link in with
others



Intervention

Psychoducation/
increasing
insight

Behaviour
management

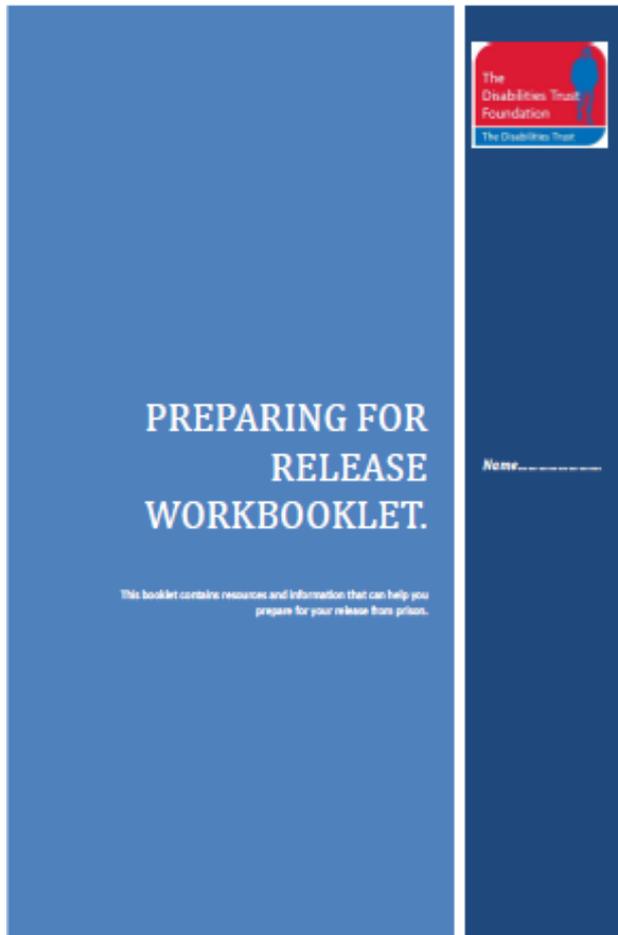
**Direct
work**

Cognitive
remediation

Pre-release work
and follow up



example of support pre-release work...



- Prior to release anxiety increases and it can be a difficult time for individuals
- When there is an increase in anxiety we are likely to see a reduction in cognitive functioning and problematic behaviour
- BIL supports individual to prepare for release in a number of ways



pre release workbook covered...

- **My day of release**
- **Sticking to the conditions of my licence and restrictions**
- **Planning my time**
- **Memory aids**
- **Useful contacts**
- **Managing stress**
- **Portable profile**



Post release follow up

- **Share information**
- **Maintain contact with individual**
- **Support links into community services**
- **Monitor progress and effectiveness of strategies and work completed within prison**
- **Structured pathway for follow up**



our success...

- **training with prison officers**
- **liaison with mental health staff**
- **established a joint clinic GP & SW**
- **established a review clinic with psychiatry**
- **1:1 clinics**
- **attendance on wings**
- **attendance on the first night stay centre**
- **trained peer support**
- **establish outreach networking**
- **liaison with service to gain appropriate support on release**



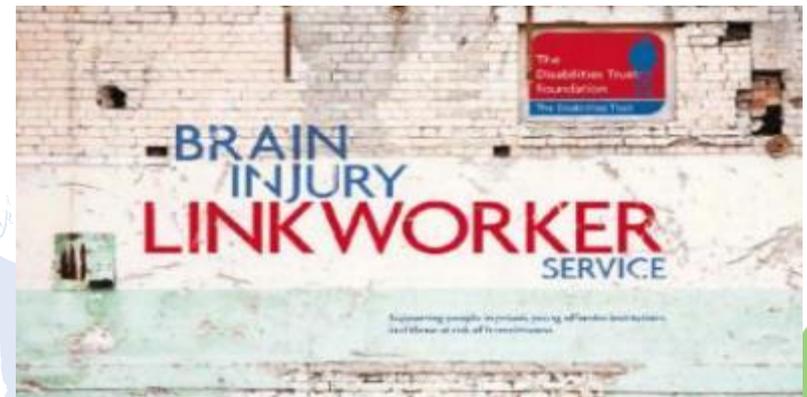
...key messages

- **Brain Injury is endemic within CJS**
- **Brain Injury affects behaviour and learning**
- **Prisons could be / should be excellent rehabilitation environments for injured brains**
- **BI Screening is vital (BISI)**
- **BI Awareness Training is essential**
- **BI Linkworker's are desirable**



future...

- Increase awareness and provision of training in prisons and custodial settings
- Continue to develop new services
- Support campaign for national screening
- continue to monitor effectiveness (BIL)



thank you for listening...

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