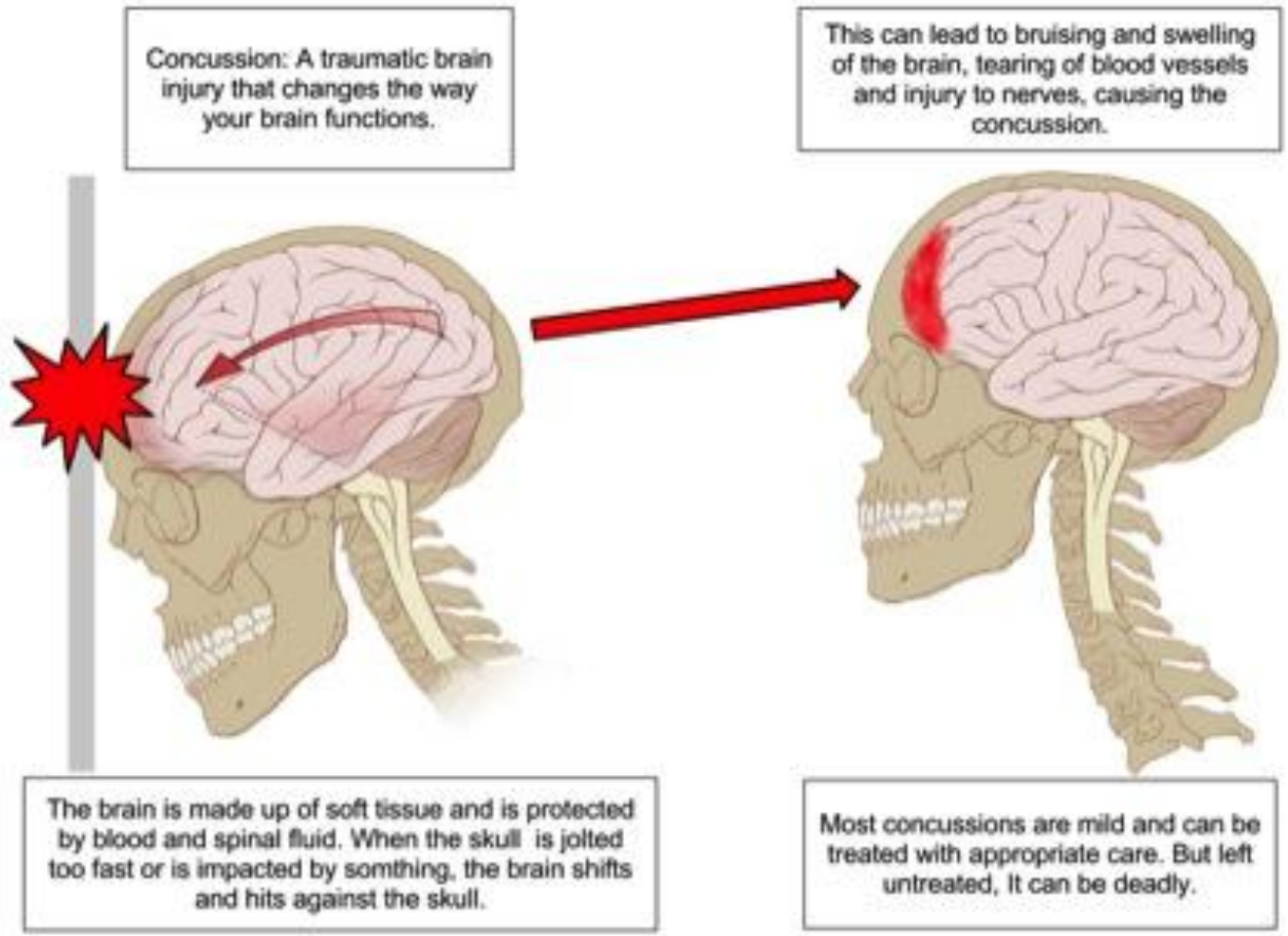
Post-Lect 1 slides

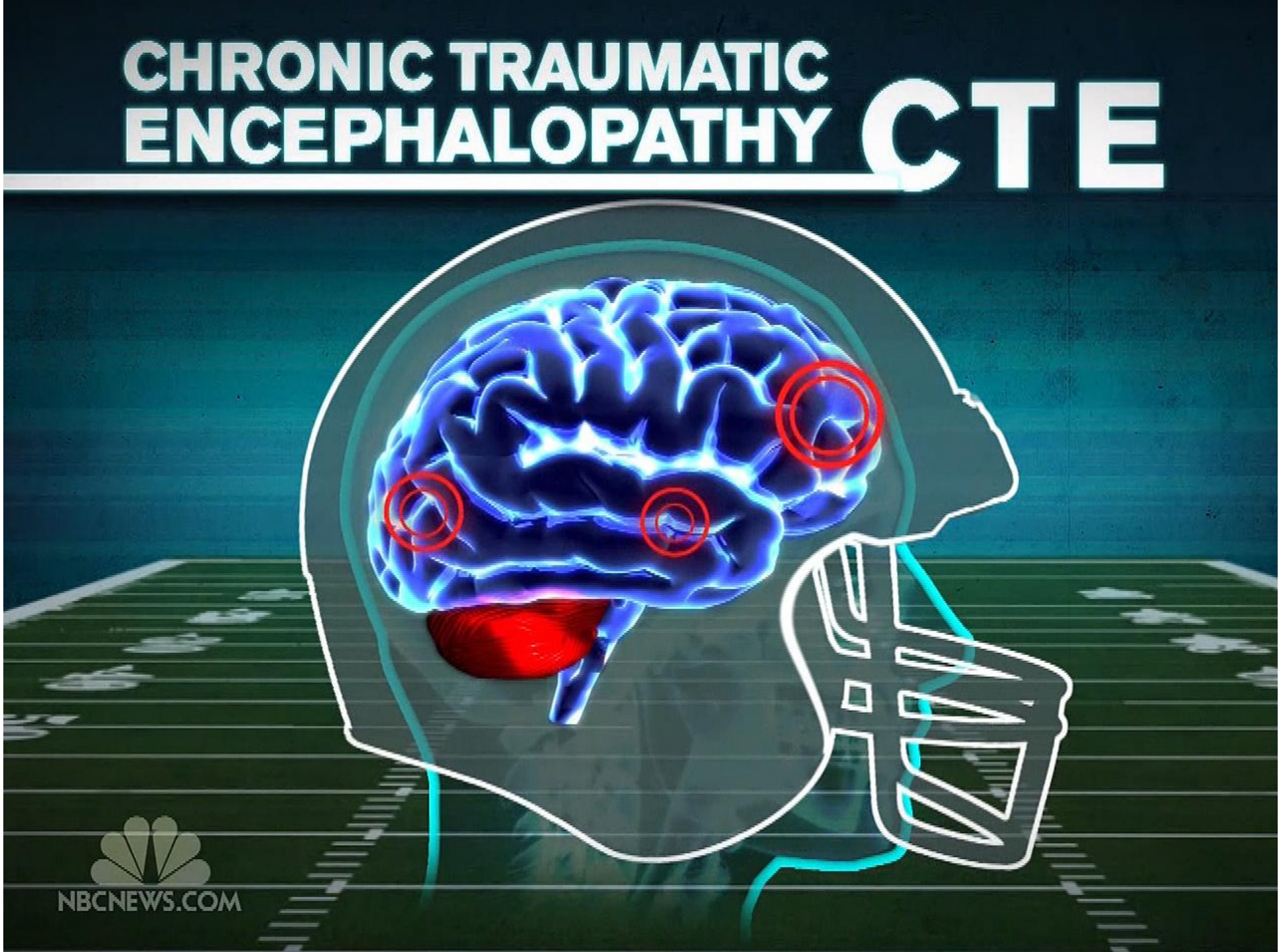
Brain’s Building Blocks

Adhe Noviello, 17, the team captain of Bedok Town Secondary's rugby team, was admitted to intensive care in a coma last week after suffering injuries in a match against Anglo Chinese School (Barker Road). He has since come out of the coma. Photo: Internet

What happens to our brain when it suffers repeated knocks (and traumas)?

What is a concussion?




CHRONIC TRAUMATIC
ENCEPHALOPATHY
CTE
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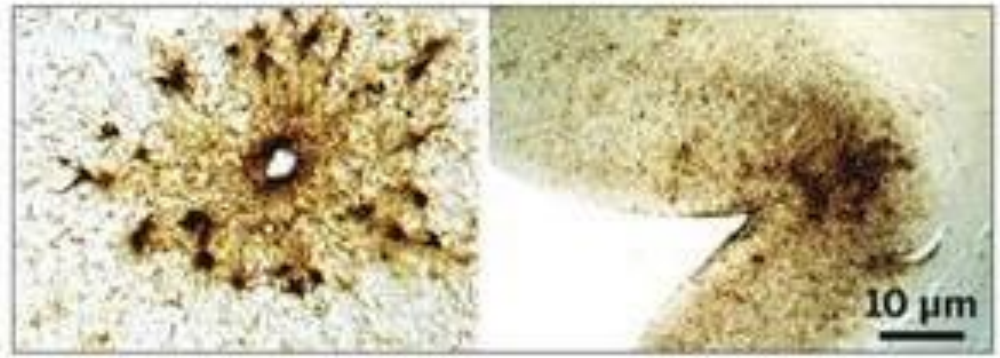
CTE At A Glance

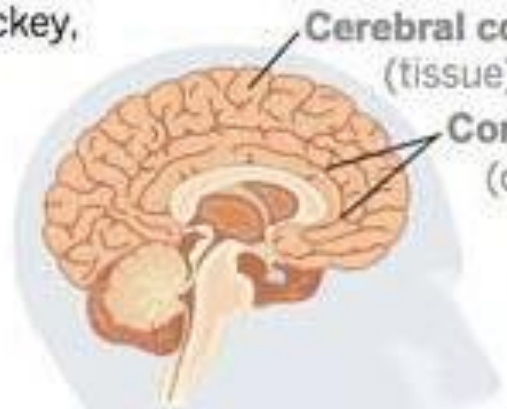
Full Name: Chronic traumatic encephalopathy

Cause: Repetitive mild traumatic brain injury

Who's affected: Athletes in contact sports such as boxing, football, ice hockey, soccer, and wrestling; military veterans; victims of domestic abuse; headbangers

Symptoms: Memory loss, depression, suicidal thoughts, explosive or aggressive behavior, and in some cases, trouble walking or speaking

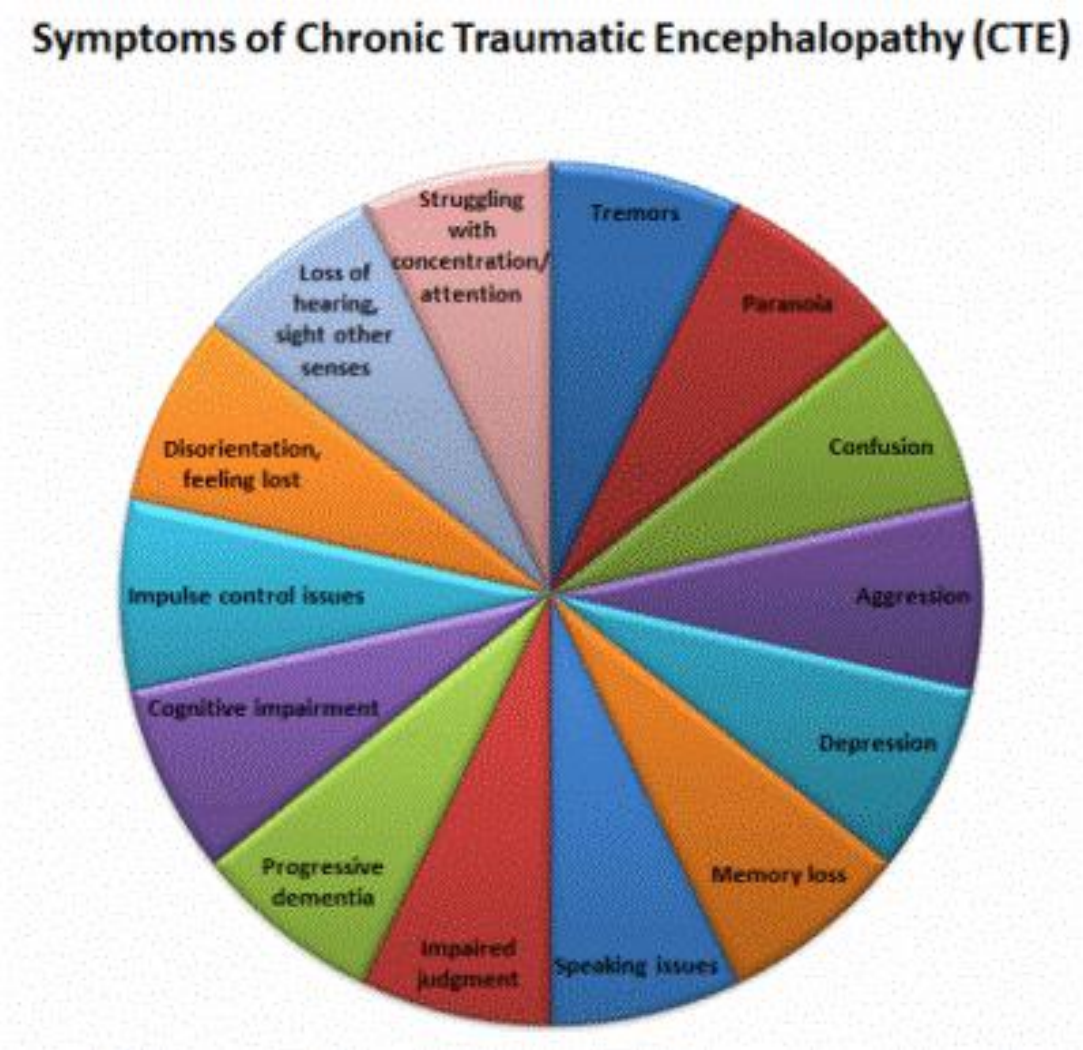




Pathology: Unlike in Alzheimer's disease, in CTE, tau protein tangles first accumulate in the brain's cortex. What also sets CTE apart from other brain disorders is that tau collects around blood vessels (above, left) and deep in the cortical sulci (above, right) of the brain.

Treatment: None

Symptoms of Chronic Traumatic Encephalopathy (CTE)



Stages Of Disease

Stage I: Hot spots of tangled tau pop up in isolated areas of the cortex (black circle).

Stage II: Multiple hot spots of tangled tau appear in the cortical sulci, and tau begins to migrate.

Stage III: Tau hot spots begin to blend with one another. Tangles appear more diffusely throughout the ridges of the brain. Tau begins to collect in the hippocampus (involved in learning and memory) and amygdala (involved in decision making and emotions).

Stage IV: Dense tau tangles cover the brain's cortex and appear in most other regions, including the spinal cord.

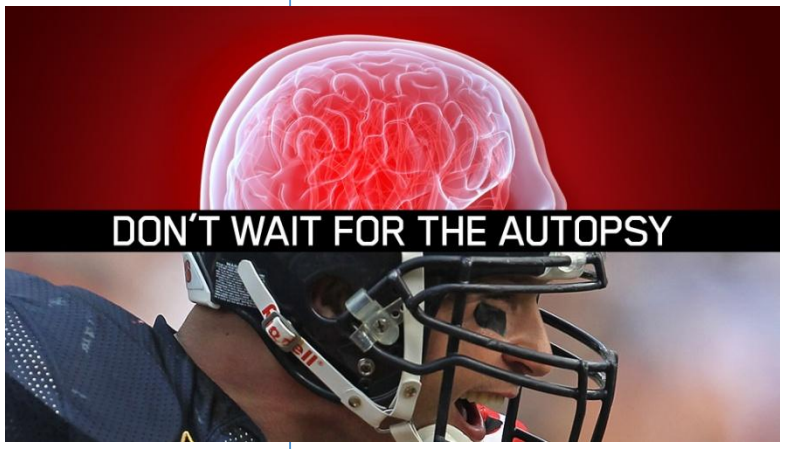
NOTE: Stages proposed by Ann C. McKee, Boston University, still need to be validated by other research groups. Based on *Brain* 2013, DOI: 10.1093/brain/aws307.

Is rugby headgear necessary?

Not everyone is convinced it will guarantee a player's safety

April 18, 2010 Sunday

Adhe Noviello, 17, the team captain of Bedok Town Secondary's rugby team, was admitted to intensive care in a coma last week after suffering injuries in a match against Anglo Chinese School (Barker Road). He has since come out of the coma. Photo: Internet



The recent case of a school rugby player who was admitted to the intensive care unit with head injuries has raised questions on whether there should be greater precautions to protect players on the pitch.

One possible measure is to make protective headgear mandatory for all schools' national competitions.

Studies have shown that head injuries are among the most common in rugby. They account for 25 per cent of all rugby injuries.

Although optional in most countries, protective rugby headgear, called the scrum cap, is mandatory in Japan and for some Canadian teams.In Australia, there has been a movement to implement such a rule for its junior players.

Not everyone in Singapore is convinced that such a move will guarantee a player's safety on the pitch.

Singapore Rugby Union president Low Teo Ping said: 'Safety is always a priority but I'm not sure making headguards compulsory will solve the problem.

'Let's not over-react to this incident.'

Should headgear be made compulsory?

What happened when a brain suffers blows