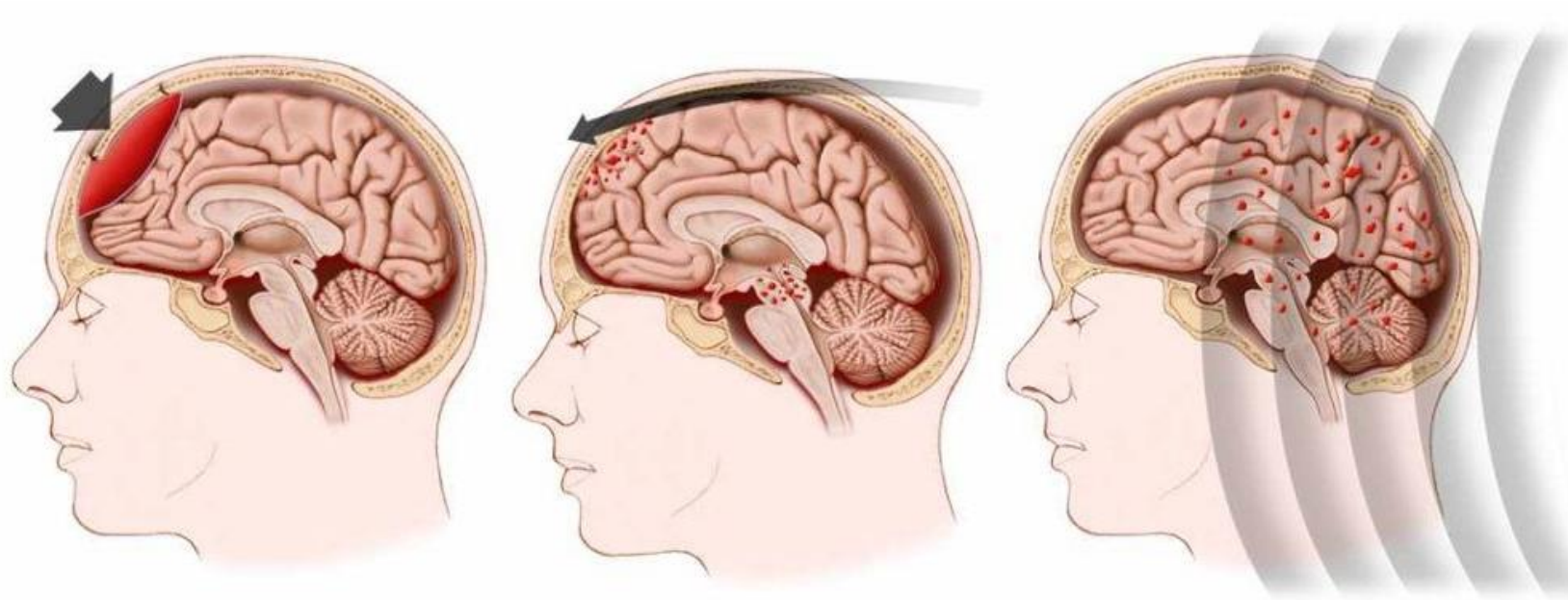


Concussions and TBI

What is a TBI?

Traumatic Brain Injury (TBI) is a disruption in the normal function of the brain that can be caused by a blow, bump or jolt to the head, the head suddenly and violently hitting an object or when an object pierces the skull and enters brain tissue.



Direct impact injury

Acceleration-deceleration injury

Shock wave injury

What is a Concussion?

A concussion is a mild Traumatic Brain Injury = mTBI

A concussion is caused by a blow to the head, face, neck, or somewhere else on the body that causes the head and brain to move rapidly back and forth.

Falls



Motor Vehicle Incidents



Sport Related Injury



What Happens After Concussion?

No visible injury to the structure of the brain, meaning that tests like MRI or CT scans appear normal.



What Happens After Concussion?

Movement of the brain inside the skull causes a change in brain function, resulting in a variety of symptoms.

In the minutes to days following a concussion, brain cells remain in a vulnerable state. The brain doesn't function normally on a temporary basis, and is more vulnerable to a second head injury.



Signs of Concussion

A visual sign of concussion is something friends, family, or a coach may notice.



**WHAT TO
WATCH
FOR**

**Poor
balance or
coordination**

**Slow or
slurred
speech**

**Poor
concentration**

**Delayed
responses
to questions**

**Vacant
stare**

**Sleep
disturbance**

**Disorientation -
can't remember date,
time, or location**

**Unusual emotions,
personality change,
inappropriate behavior**

Symptoms of Concussion

Symptoms are what the individual will feel.

PHYSICAL

- Headache
- Blurred vision
- Nausea/vomiting
- Dizziness; lack of balance
- Sensitivity to light, noise, smells
- Fatigue and muscle weakness
- Seizures

EMOTIONAL

- Easily irritated
- Sadness
- Emotionally imbalanced
- Nervousness or anxiety

COGNITIVE

- Inability to think clearly
- Confusion
- Feeling slowed down
- Inability to concentrate
- Inability to retain new information

SLEEP

- Difficulty falling asleep
- Change in sleep patterns
- Insomnia

- Some symptoms may appear right away and some may appear later.
- Symptoms may vary, and may last for days or weeks.

Why Concussion is Difficult to Diagnose

The Challenges



○ **No definitive diagnostic test**— cannot be seen by an MRI, x-ray, or CT scan

○ **No visible injury** like a broken bone or bruise - can mean it goes undetected

○ Symptoms can take **weeks/months** to appear and may be a little different for everyone

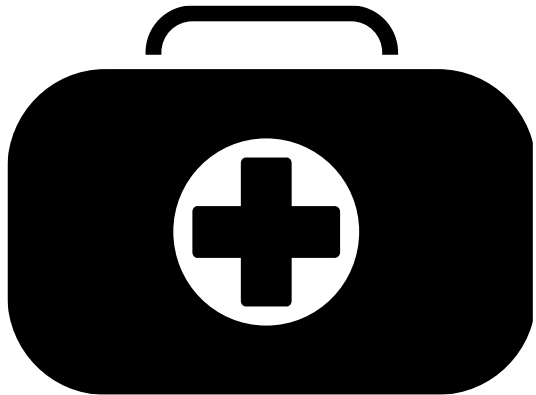
○ Many concussion symptoms can also occur due to **other causes**

○ Concussed individuals may not recognize or admit to having symptoms

○ False belief that one has to **lose consciousness** to have had a concussion *

What to Do If Concussion is Suspected

First Aid



Remove the individual from any activity. Symptoms may worsen after the event.

Do not leave the individual alone; monitor signs and symptoms.

Do not administer medication.

The individual should be evaluated by a medical doctor or nurse practitioner as soon as possible.

The individual must not return to activity until receiving medical clearance by a physician.

The First 24-48 Hours

The individual should be watched closely. If any of these warning signs develop, go to the nearest hospital or call 911 immediately.

- Individual complains of neck pain
- Increasing confusion or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness or tingling/burning in arms or legs
- Fainting, blacking out, can't be woken up
- Severe or increasing headache
- Unusual behavior change
- Double vision
- Slurred speech



The First 24-48 Hours*



Rest/Sleeping - Rest (both physical and mental); avoid strenuous activity for at least 24 hours.



Driving - Do not drive for at least 24 hours.



Drinking/Drugs - Do not drink alcohol or take sleeping pills or recreational drugs in the next 48 hours.



Pain Relief – You may use **acetaminophen** or **acetaminophen/codeine** for headaches (e.g Tylenol).



Sports - Do not return to sports until you have received medical clearance from your healthcare provider.

Returning to Normal Activities After Concussion

Full recovery is possible if the brain is given enough time to rest and recuperate.



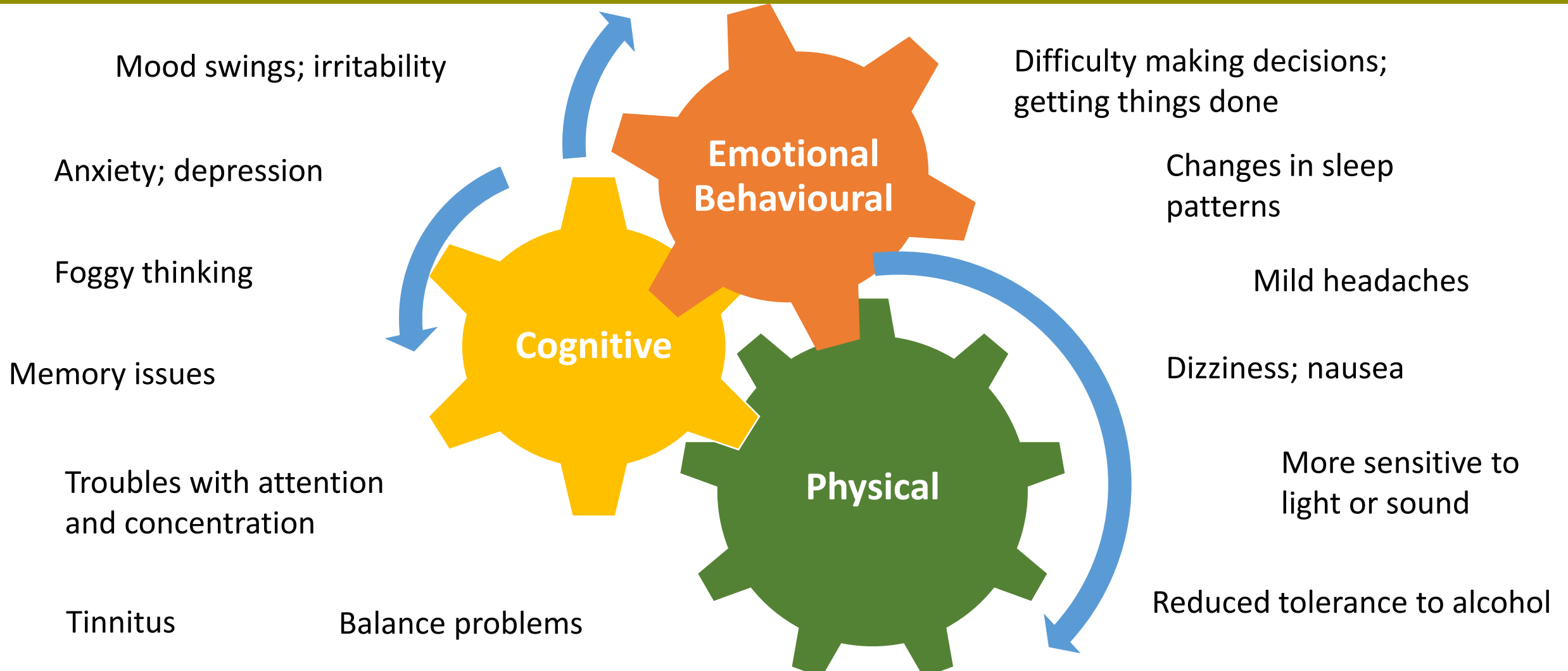
Most concussions resolve within the first three to four weeks.



Returning to normal activities is a step-by-step process that requires patience, attention, and caution.

Post-Concussive Symptoms

Common symptoms that usually go away within a few days or weeks.



Key Points to Remember

Concussion is a brain injury.

Concussion requires specific treatment for full recovery.

Recovery from concussion begins immediately.

There is **increased risk** of concussion if full recovery from a previous concussion was not completed.