Key Area 3: Movement analysis | 3.3: Planes & axes of movement

Knowledge

Planes of movement

To analyse the movement of the body you need to understand how the body moves through different planes and around different axes.

Axes of movement

A plane is best described as an imaginary surface which divides the body into equal parts. The body moves through different '**planes** of movement'.

Movement can occur through one of **three** planes. There are **three** planes of motion:

Sagittal plane:

This plane runs through the midline of the body from the head down to the feet; it divides the body into left and right side.

Frontal:

This plane runs through the midline of the body from the left side to the right side; it divides the body into front and back.

Transverse plane:

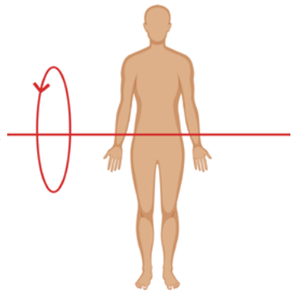
This plane divides the body into top and bottom halves.

To remember how the body is divided, use the first letter for each plane:

- **S**agittal = Sides (divides the body into left and right sides)
- **F**rontal = Front & Back (divides the body into front and back)
- **T**ransverse = Top & Bottom (divides the body into top and bottom)

An axis is best described as an imaginary rod which run through the body's centre of gravity.

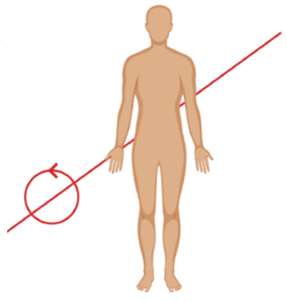
The body rotates around different **axes** of the body. The body can **rotate** around three axes:



Frontal axis:

This axis runs from side to side through the centre of gravity just like the player on table football.

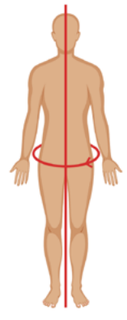
An example of rotation around this axis would be a front somersault in diving.



Sagittal axis:

This axis runs from front to back through the body's centre of gravity.

An example of rotation around this axis would be a cartwheel in gymnastics.



Vertical axis:

This axis runs head to feet through the centre of gravity.

An example of rotation around this axis would be a pirouette in skating.

Application

Plane	Axis	Movement
Sagittal	Frontal	Flection, Extension
Frontal	Sagittal	Abduction, Adduction
Transverse	Vertical	Rotation

Plane	Axis
Sagittal	Frontal
A gymnast performing a *front somersault* on a trampoline will move through the **sagittal plane** where there will be *flexion* at the hips. There will be *rotation* around the **frontal axis**.	

Plane	Axis
Frontal	Sagittal
A gymnast performing a *cartwheel* during a floor routine will move through the **frontal plane** where there will be *abduction* of the legs. There will be *rotation* around the **sagittal axis**.	

Plane	Axis
Transverse	Vertical
A ballet dancer performing a *pirouette* during a routine will move through the **transverse plane** where there will be *rotation* at the hips. There will be rotation around the **vertical axis**.	