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BA COMPUTER GAMES DESIGN

GAMES FOR POSITIVE IMPACT

Accessibility in Gaming



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Lecture Contents

- ① General Introduction**
- ② Overview of Physical accessibility issues**
- ③ Exercise**



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Accessibility in Gaming

Gaming as a genre is one of the widest reaching forms of entertainment in the world, there are games out there for (nearly) every taste.

- Traditional Console gaming and PC gaming (the biggest forms of gaming on the market) (32 and 49% respectively) provide the widest range of games to the widest range of people.
- Mobile gaming makes up 19% of all gamers.
- These all share one common issue:
 - Accessibility.
 - Note: not talking about demographic or regional accessibility – we will be focusing on disabilities that affect a persons ability to use the standard controls or layouts provided.
 - These can be physical or mental issues

It is extremely important that we treat these conditions with respect when discussing them, derogatory or immature remarks will not be tolerated and could result in ejection from class.



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Accessibility in gaming

Scope

Physical disabilities.



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There are a range of issues that can and do affect a persons ability to enjoy games fully.

This lecture will focus on issues that affect the individual user physically.

- **Cerebral Palsy**
- **Muscular Dystrophy**
- **Spinal Cord injuries**
- **Arthritis**
- **Multiple sclerosis**

We will get an overview of the issue and how it affects gaming, then we can discuss ways of assisting a player.



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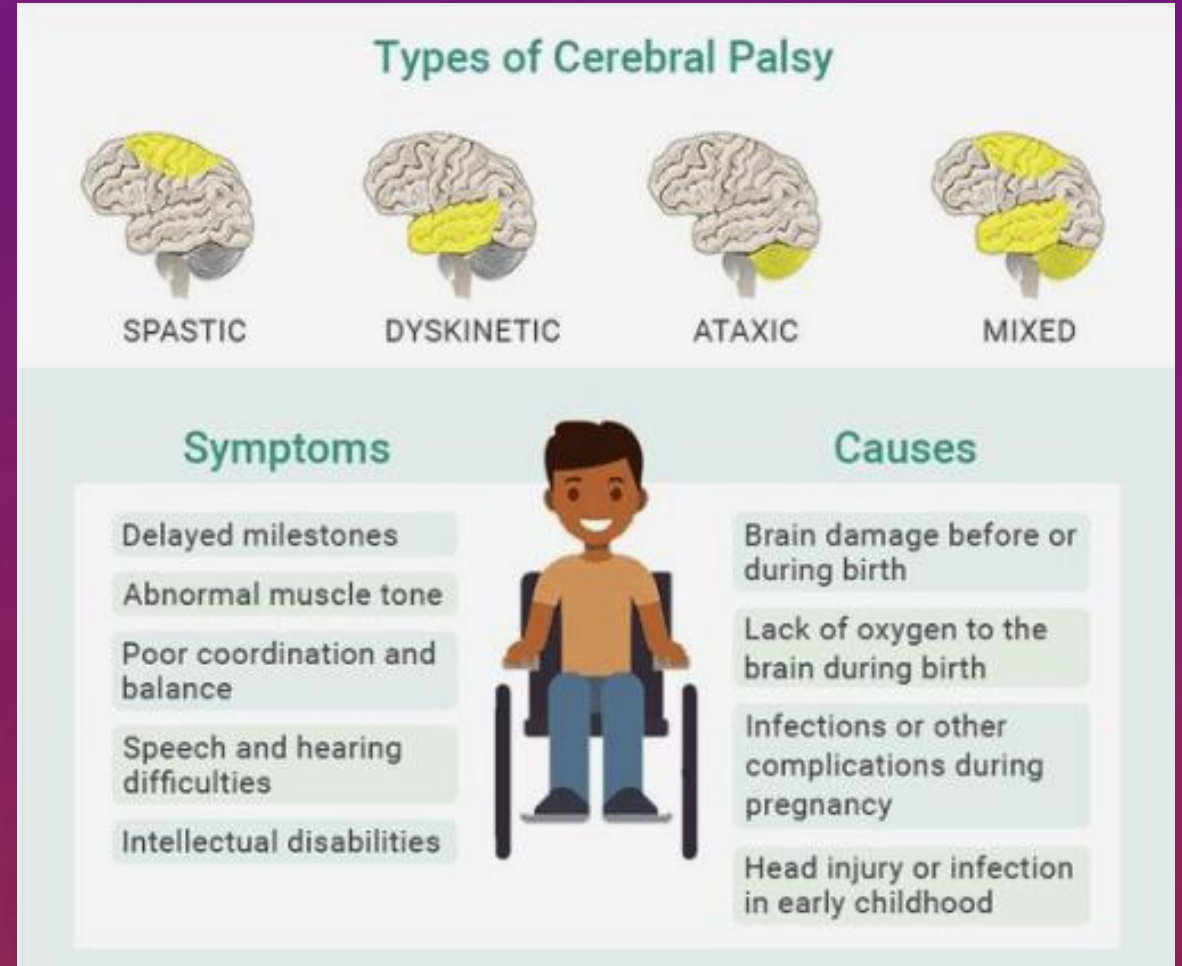
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Cerebral Palsy

Caused by a multitude of different reasons
These cause abnormal brain development
or damage in the areas of the brain that
deal with muscular coordination and tone.

This can vary in severity greatly

What issues would you expect to come up
against as a person affected by Cerebral
Palsy?





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Cerebral Palsy

Due to the nature of the human brain and how it develops, there is a heavy element of “person-centred” design where bespoke products are made for individual clients.

Some examples are shown here.

VR and AR are upcoming technologies – how can we incorporate them? Is this a good idea?





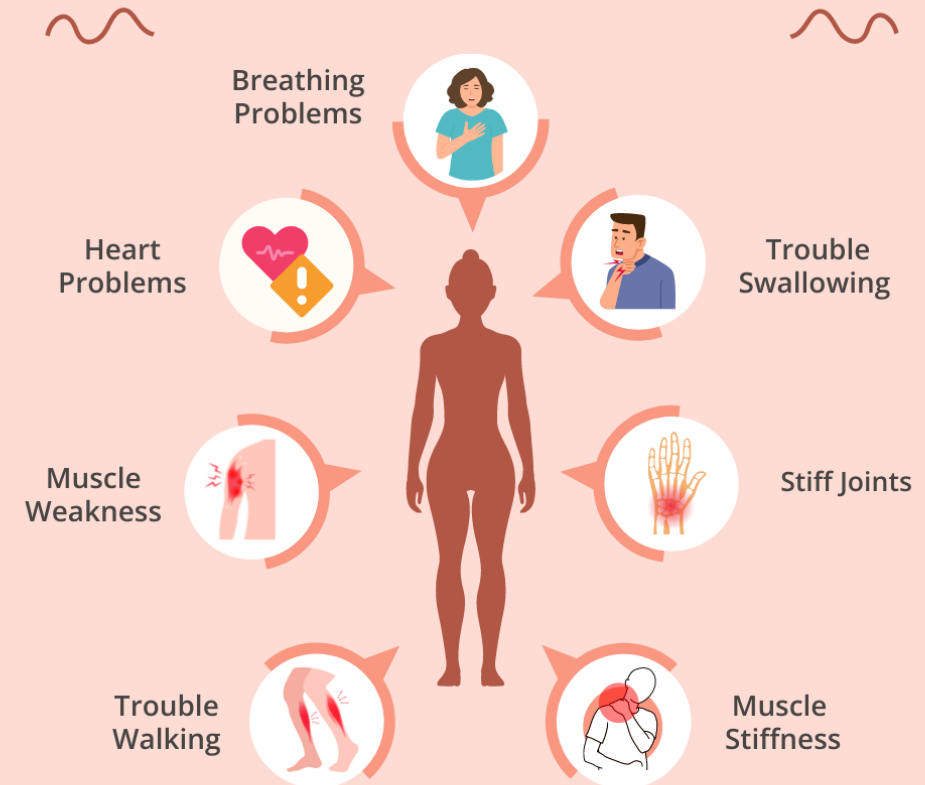
Muscular Dystrophy

Caused by mutations in the genes affecting muscle fibres, causing them to progressively weaken over time.

Life expectancy can be affected by certain types. Most develop in childhood but some can develop in adulthood.

What issues would you expect to come up against as a person affected by MD?

How Muscular Dystrophy Affects the Body



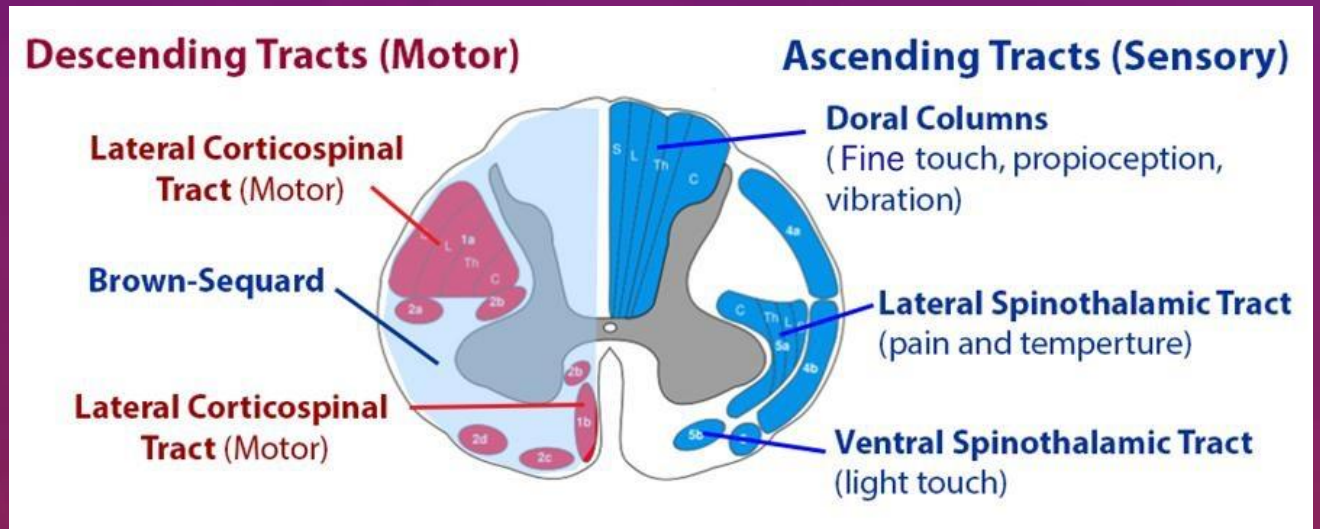


Spinal Cord Injuries

Spinal cord injuries range from the mild to the life altering

Spinal cord injuries are classified as injuries to the spine that cause damage to the nerves and fibres within – this is NOT a muscular issue.

It can also give issues with emotions, mood, sexual function and social issues



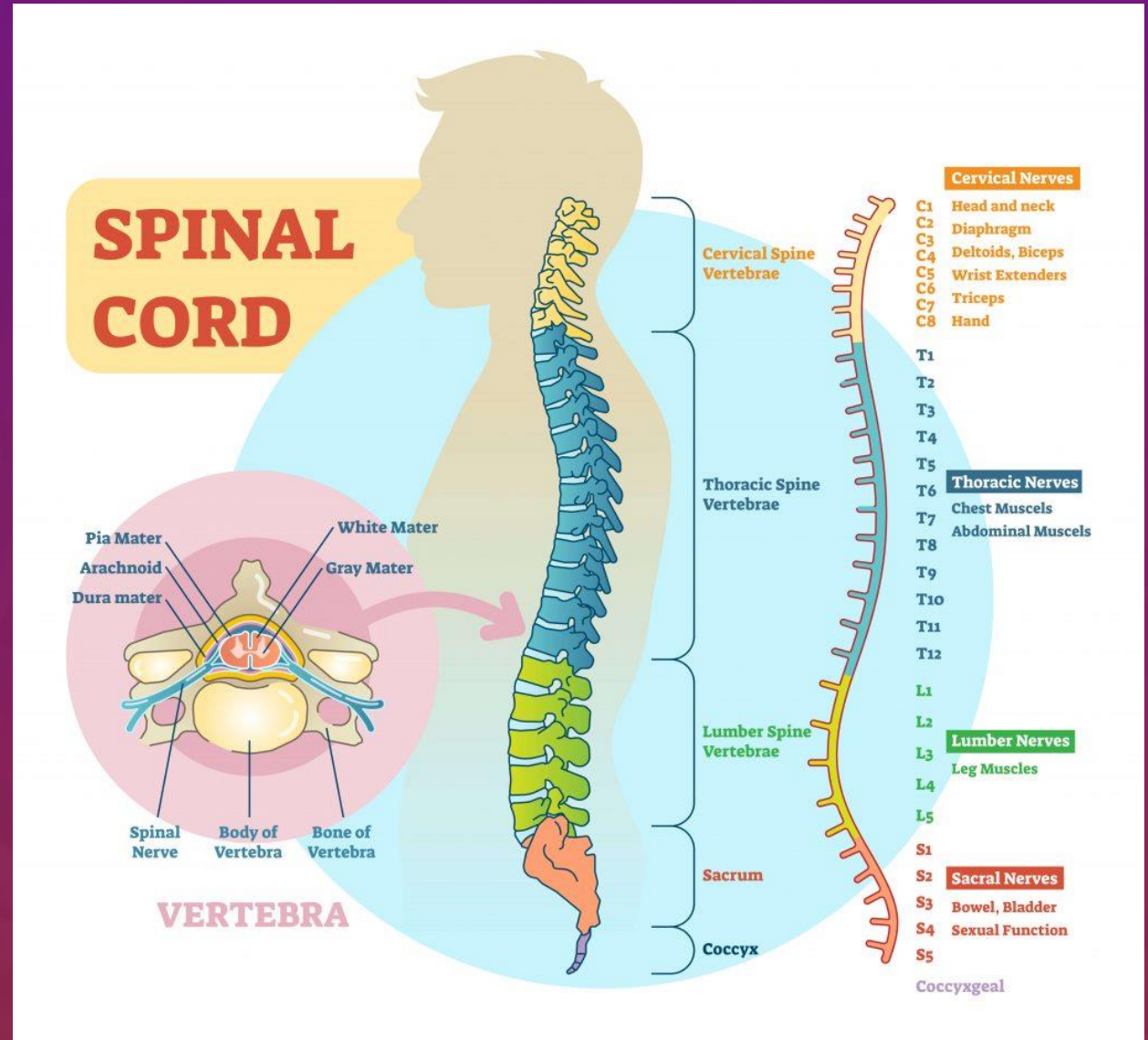


Spinal Cord Injuries

The spinal cord is made up of bones shielding nerve endings that travel to the rest of the body. These nerves are cushioned with white/ grey matter to further protect them.

Damage to different areas of the spine can affect different areas of the body. Injuries are classed as Complete or Incomplete.

How can gaming help with problems beyond the obvious? Could they help with rehabilitation?



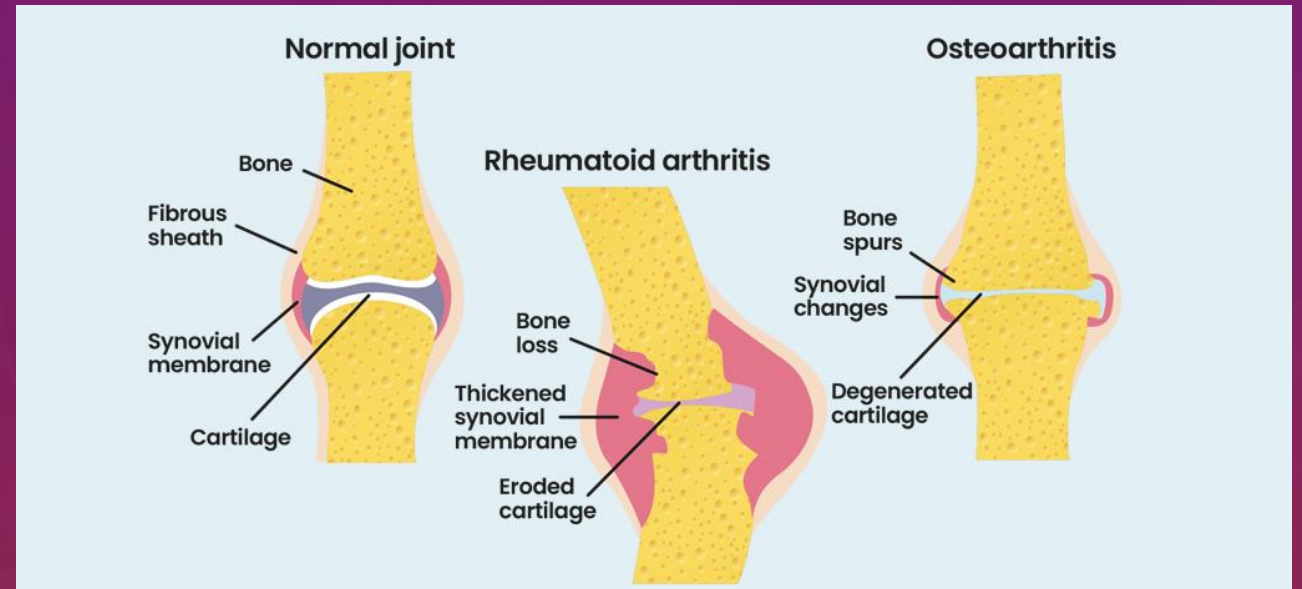


Arthritis

Arthritis comes in two forms:

Osteo – the cartilage in the joints begins to roughen and thin out causing the ligaments to work harder. The friction causes pain, swelling, stiffness and bony growths called Osteophytes.

Rheumatoid – an Autoimmune disease causing the body's immune system to target the affected joints, leading to pain and stiffness – and causing bone/ cartilage to break down.



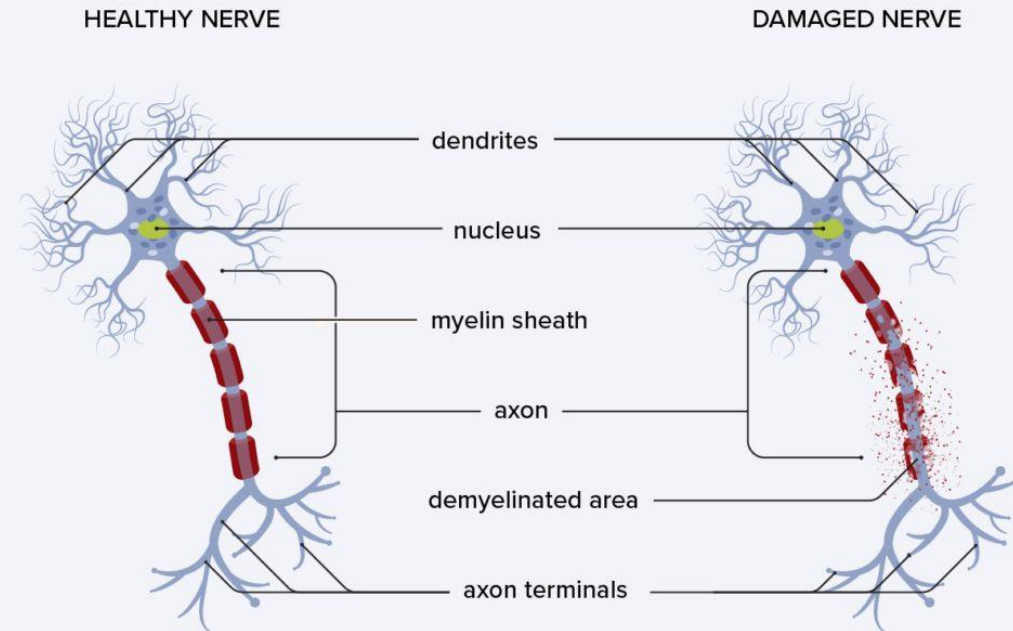


Multiple Sclerosis (MS)

A Neurological condition that affects the body's physical movements; there is currently no known cure for this illness.

It is believed to be an autoimmune illness where the body attacks the brain and spinal cord to fend off a perceived threat.

Multiple sclerosis



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Overview

These are just a few issues that can affect an afflicted persons ability to enjoy games, there are many others:

1. Game type
2. Situational limitations
3. Visual stimulation limitations
4. Playerbase limitations

The difficulty lies in the nature of how disabilities affect people:

“if you know someone with MS then you know ONE PERSON with MS”

The pathways are twofold:

1. Create a retailable product that can help with most of the common issues
2. Create a bespoke solution catering to one or two peoples individual needs



Tasking

The rest of the session:

Pick one of the previously mentioned issues and design a universal controller for a games console.



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Tasking

- You will need to do further research into the condition (15mins)
 - Identify the key usability criteria for the condition
 - Design the controller using and orthographic style
 - 250 words describing its functionality
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- Anything not completed by the end of session should be completed by the next GfPI session.