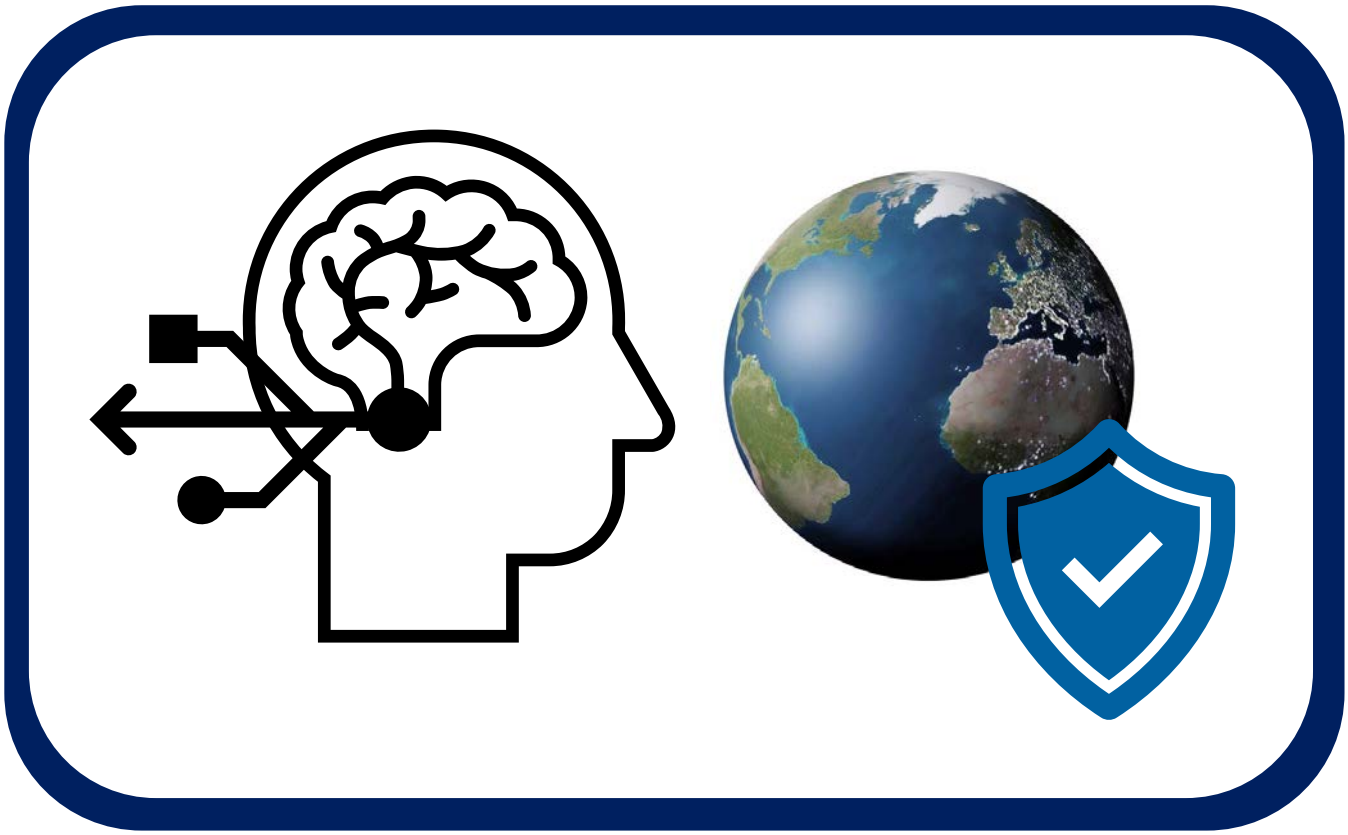
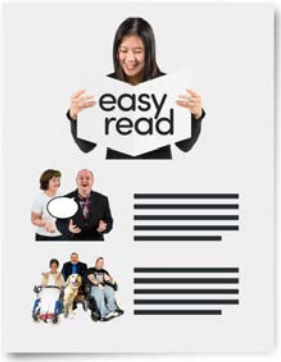
UNITED NATIONS
HUMAN RIGHTS
OFFICE OF THE HIGH COMMISSIONER


# A report on how neurotechnology might affect human rights



**Human Rights Council Advisory Committee**

# Easy Read




This is an Easy Read version of some information. It does not include all the information, but it tells you the important parts.

This Easy Read booklet uses easier words and pictures. You might still want help to read it.

**Technology**

Some words are **black and bold**. These are important words that might be hard to understand. We explain what these words mean.

**United Nations**

Some words are **blue and bold**. These words are names of things, like organisations.

# What is in this booklet

# Who we are

We are the **Office of the High Commissioner for Human Rights**, or **OHCHR** for short.

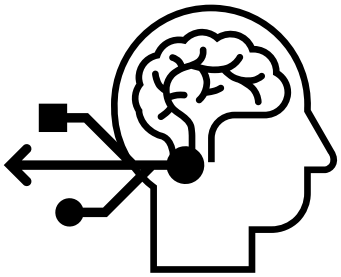
We do work to support and protect the **human rights** of people all over the world.

**Human rights** are basic rights and freedoms every person should have for their whole life.

We are part of an organisation called the **United Nations**, or **UN** for short.

The **UN** is a group of countries that work to make the world a better and safer place.

# What this booklet tells you about



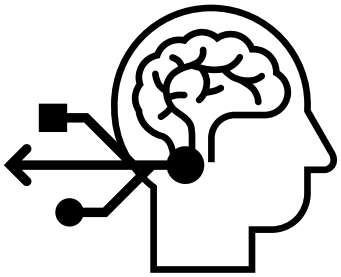
This booklet tells you about **neurotechnology** and how it might affect human rights. We tell you what **neurotechnology** means on the next page.


It is an Easy Read version of a report called **Impact, opportunities and challenges of neurotechnology with regard to the promotion and protection of all human rights**.

The report was written by a group of people called the **Human Rights Council Advisory Committee**.

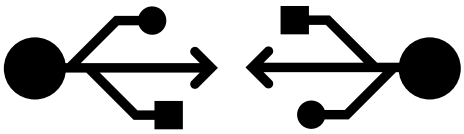
The **Human Rights Council Advisory Committee** are part of what we do. They give us expert advice about how to protect human rights.

# About neurotechnology



**Neurotechnology** is any type of **technology** that **interacts** with the **central nervous system**.

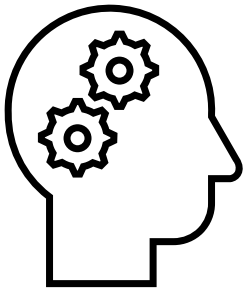

**Technology** means any device or system that is made to make human life better or easier.



**Interacts** is when 2 or more things work together and affect each other.

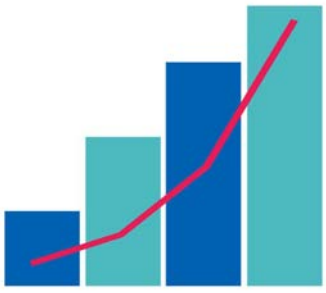
The **central nervous system** is the brain and spinal cord.

The central nervous system is a very important part of our bodies.



The brain controls how we think, learn, move, and feel.

The spinal cord gives your brain information about your body. For example, if your hand hurts, your spinal cord will tell your brain, and your brain will decide what to do about it.

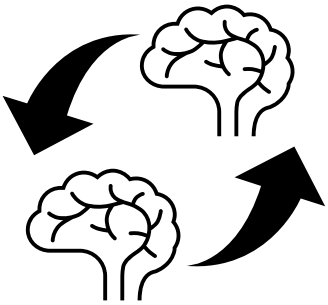


Neurotechnology has got much bigger in the last ten years. It is being used more as people learn more about it.

There are good things and bad things about how neurotechnology is being used.

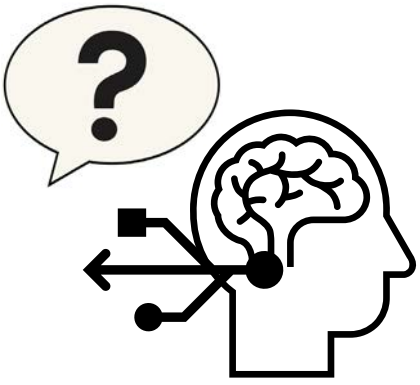
Neurotechnology can help us learn more about how the brain works.

This information can be used to make some health problems better, and to change how some people live.



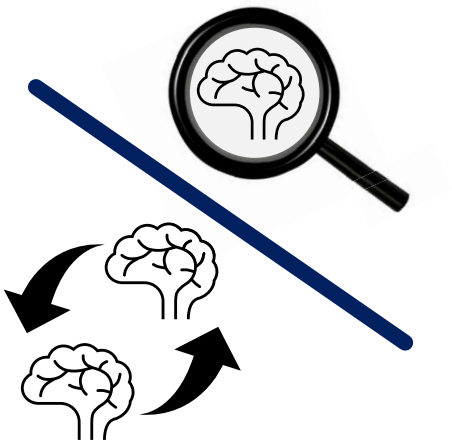
But because neurotechnology interacts with the brain, it means it can affect, control or change the brains of the people who use it.

This is why we asked our committee to write this report.



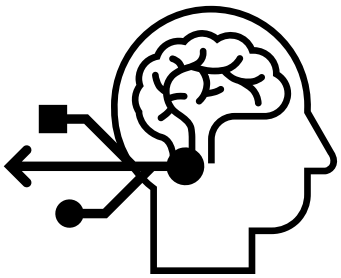
We want to know why people use neurotechnology and how they might use it in the future.

# How neurotechnology is used



Neurotechnology can be used to:

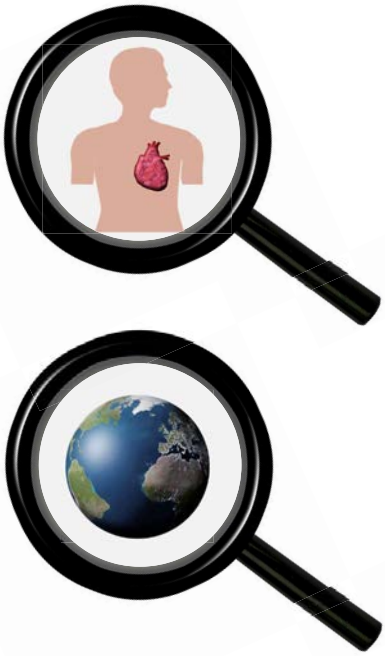
- Understand how the brain works.
- Affect how the brain works.



Neurotechnology can be used to help treat some health problems, like **neurological disorders**.

**Neurological disorders** are health problems that affect the central nervous system, like Parkinson's disease or epilepsy.

Neurotechnology can also be used for **medical** and **scientific research**.



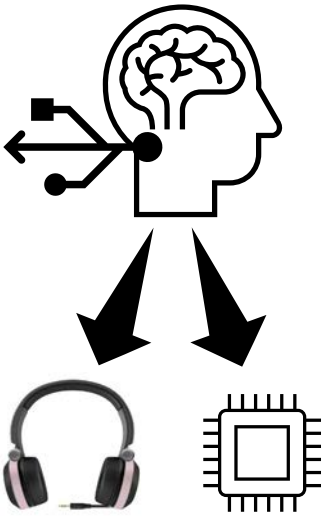
**Research** is work done to find out new information about a subject.

**Medical** research is work done to find out information about health and medicine.

**Scientific** research is work done to find out about the world around us.

Research about neurotechnology shows that it might be able to help people with **depression**.

**Depression** is when someone feels unhappy most of the time. They might also feel tired and not enjoy doing the things they used to do.



We tell you about different types of **neurotechnologies** in the next part of this booklet.

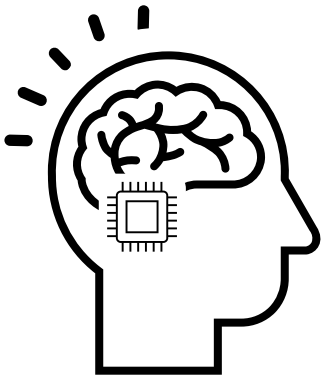
**Neurotechnologies** are devices that use neurotechnology.

# Types of neurotechnologies

## Neuroimaging

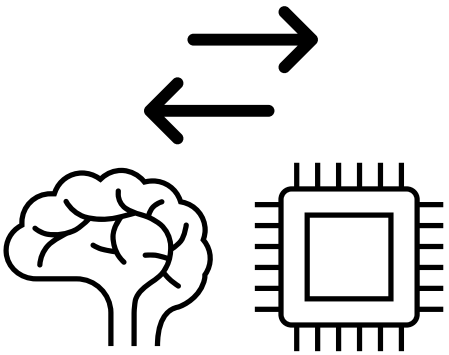
**Neuroimaging** is when photos are taken of the brain to show what it looks like and how it works.

Neuroimaging can be used to find out information about a person's brain. For example, why they feel a certain way.



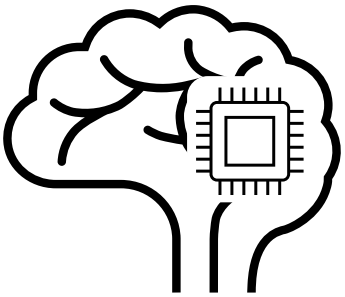
## Neuromodulation

**Neuromodulation** is when neurotechnologies are used to interact with the brain and affect how someone thinks, learns, moves or feels.



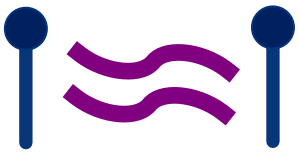
## Brain computer interface

**Brain computer interface** is when neurotechnologies are used to make a connection between the brain and a device. The brain and the device give each other information.

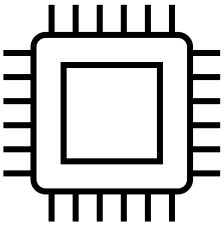


## **Invasive** and **non-invasive neurotechnologies**

**Invasive neurotechnologies** are things like **electrodes** or **implants** that are put inside the brain.



**Electrodes** are tiny devices that pass electricity through parts of the brain.

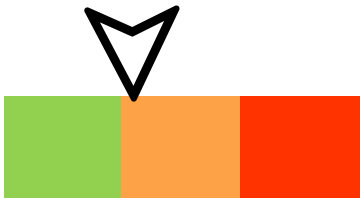


**Implants** are tiny devices that **monitor** and control brain activity.

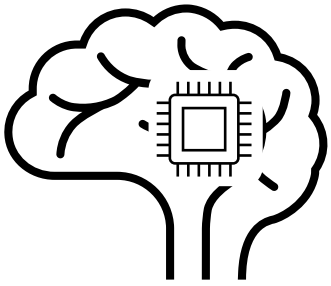
**Monitor** means watch and check something.

**Non-invasive neurotechnologies** are things like helmets, watches, earphones or patches that are used on top of the skin. They are not put inside the body.

Invasive technologies are more powerful than non-invasive technologies, but there is more **risk** because you need an operation to have them put inside your body.



**Risk** means how likely it is something will go wrong.



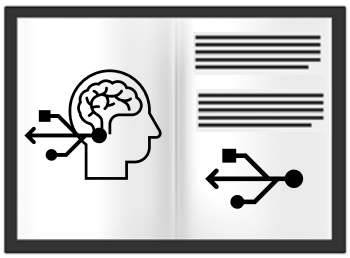
Invasive technologies have been used for many years to treat Neurological disorders.

Non-invasive neurotechnologies are used for medical reasons but also **commercial** reasons.

**Commercial** means sold to make money.

Companies use neurotechnology to make devices that say they can help people do some things, like be better at sport, work more or sleep better.

# Problems with how neurotechnology is used



Neurotechnology is being used more as people learn more about it.

In the last 10 years, lots of money has been given to projects that work with neurotechnology.

A lot of the projects are for commercial reasons.


When neurotechnology is used for medical or scientific reasons, there are rules and **processes** to follow.

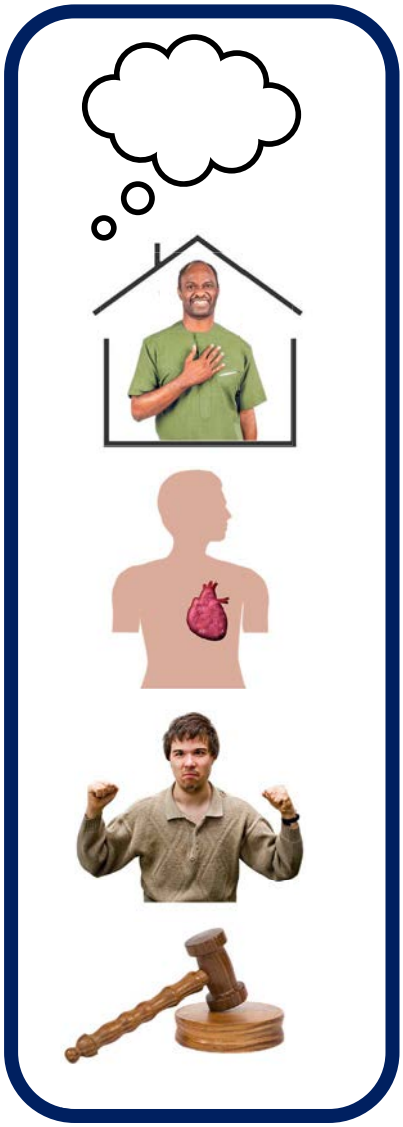

**Processes** are step-by-step instructions about how to do something properly.


When neurotechnology is used for commercial reasons, there are no clear rules or processes to follow. This is worrying.

This means companies who sell neurotechnology for commercial reasons do not know how the devices they make will affect the people who use them.

The devices might affect people's brains in a way they do not understand when they buy the devices.

## Human rights neurotechnology might affect



Neurotechnology might affect human rights called:

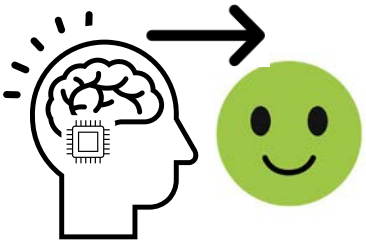
- **Freedom of thought**.
- **Right to privacy**.
- **Right to personal integrity**.
- **Right to the enjoyment of the highest attainable standard of physical and mental health**.
- **Prohibition of torture, cruel, inhuman or degrading treatment or punishment**.
- **Right to a fair trial and essential procedural guarantees**.

Pages 17 to 20

We tell you about these human rights and how neurotechnology might affect them on **pages 17** to **20**.

## Freedom of thought

**This means the right to think and believe what you want.**



Neurotechnology might be used to change the way people think or feel. It might also be used to guess how people might behave.


For example, information from neurotechnology might show a person is angry and this could be used to decide, with no real proof, that they are likely to hurt someone.

## Right to privacy

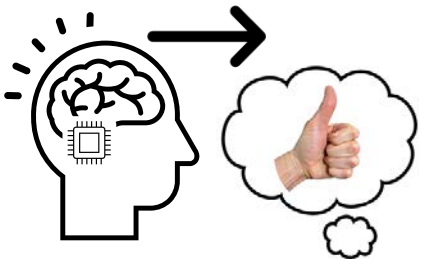
**This means the right to live your life the way you want to without other people knowing about it or affecting it.**

Neurotechnology collects private information about people that other people do not normally know.

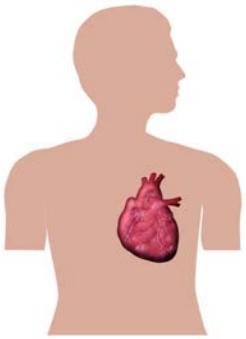
This information could be used to treat them badly because of what they believe in.

## Right to personal integrity

**This means the right to be a good and fair person and show this in what you say and how you behave**.



Neurotechnology can change how a person thinks and feels about themself. This includes what they think is good and fair.



## Right to the enjoyment of the highest attainable standard of physical and mental health

**This means the right to be as healthy as possible in your body and mind**.

Some people with neurological disorders might need treatments that use neurotechnology to be healthy.


These people should be able to have the treatments they need.

The treatments should not cost lots of money.

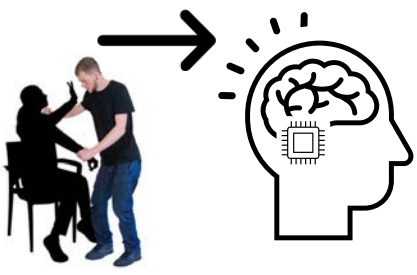
## Prohibition of torture, cruel, inhuman or degrading treatment or punishment

**This means the right to not be tortured, degraded or punished**.

**Torture** is when someone hurts someone else to make them say or do something.

**Degrade** is when someone makes someone else feel like they do not matter or have any worth.

**Punish** is when someone treats someone else badly or hurts them because of something they have done.



People who have broken the law have the right not to have **Neurocorrective treatment.**

**Neurocorrective treatment** is when neurotechnology is used to try and change the bad or harmful ways a person thinks or behaves.

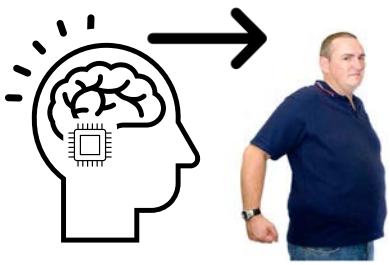
## Right to a fair trial and essential procedural guarantees

**This is the right to have a fair trial that follows the law**.

A **trial** is when a judge and other people come together to decide if someone has broken the **law**.

A **fair trial** means there must be proof to show someone has broken the law.


The **law** protects people and makes sure everyone is treated in a fair way.



Neurotechnology could be used to show that someone is likely to break the law.

This would not be fair.

# Vulnerable groups neurotechnology might affect

Some **vulnerable** groups might be more likely to be affected by neurotechnology in a bad way.

**Vulnerable** means bad things are more likely to happen to you and you need more help to stay safe.

Vulnerable groups include:

- People with disabilities.
- Children.
- Older people.

Pages 22 to 24

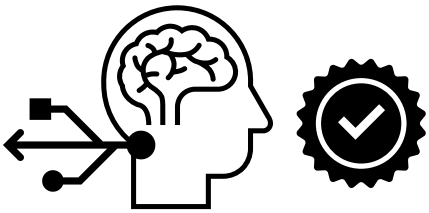
We tell you how neurotechnology might affect these vulnerable groups on **pages 22** to **24**.

## People with disabilities

People with some types of disabilities might find it hard to make decisions about their lives.


This means it might be harder for them to give **consent** to use neurotechnology.

**Consent** is when you officially say you understand and agree to do something.



Everyone who uses neurotechnology should understand how it might affect them.


There should be rules and processes that keep people with disabilities safe if they want to use neurotechnology.

## Children

There is not enough research to show how neurotechnology might affect children's brains.

Children’s brains and how they think and feel about the world changes as they grow.

Neurotechnology might stop children from making their own decisions about the world.

Some companies have started to make video games that children can control with their brains.

We do not know how these video games might affect children's brains.

Parents also might not know how the video games will collect and use information about their child.

## Older people

Neurotechnology can help older people.

It can help with neurological disorders like Parkinson's disease.

It is important older people understand that neurotechnology can also be dangerous.

# Places neurotechnology might affect

Some places might be more likely to be affected by neurotechnology in a bad way.

This includes places called:

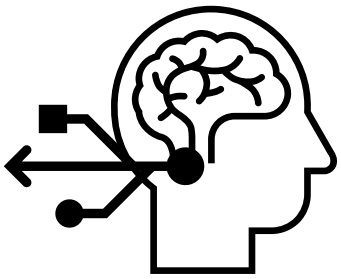
- The **workplace**.
- The **criminal justice system**.
- The **military**.

Pages 26 to 29

We tell you about these places and how neurotechnology might affect them on **pages 26** to **29**.

## In the **Workplace**

The **workplace** is anywhere people work, like offices or shops.



Neurotechnology is being used in the workplace.

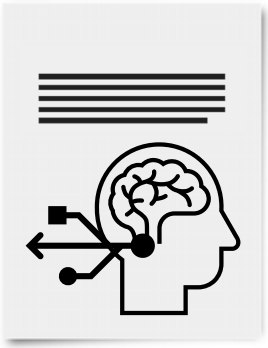
Neurotechnologies like headbands, watches or earphones can be used to monitor how hard people work.


This is not a fair way to treat people in the workplace.

We do not think workplaces should use this type of neurotechnology.

## In the **criminal justice system**

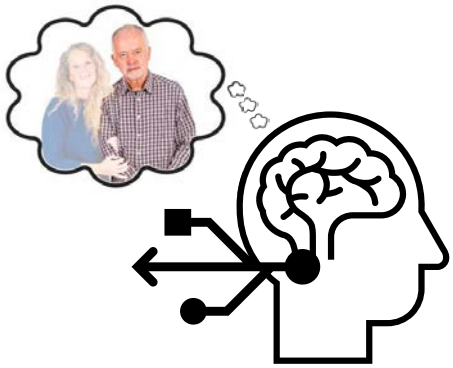
The **criminal justice system** is the system for dealing with people who have or might have broken the law.



Some people want to use information from neurotechnology as **evidence** in the criminal justice system**.**


**Evidence** is anything that can help show someone has broken the law, like photos or videos.

Neurotechnology is already used in some countries to find out if people are telling the truth about crimes.



Research is also being done to find out if neurotechnology can be used for **memory recovery**.

**Memory recovery** is when a person is helped to remember something difficult. For example, if someone hurt them in the past.

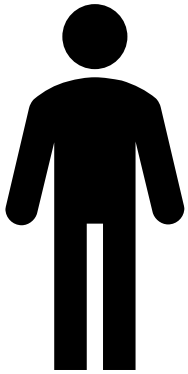
We think it is unfair for information from neurotechnology to be used as evidence in the criminal justice system.


People might not give their consent for their thoughts and feelings to be used as evidence.

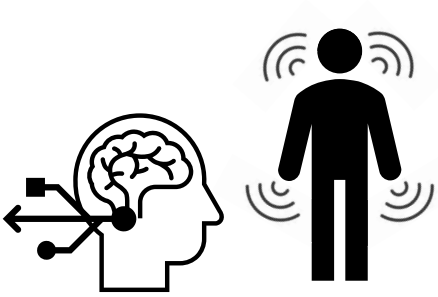
## In the **military**

The **military** means all the people whose job it is to help keep a country safe if they go to war with another country.

The military are doing research to find out how neurotechnology could **augment** soldiers. **Augment** means to make something stronger and better.

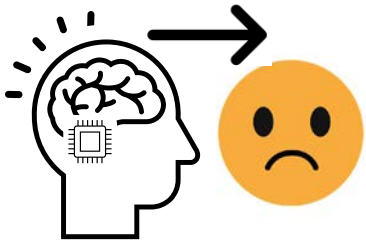


Neurotechnology could be used to make soldiers better at fighting or to make **exoskeletons** for fighting.



**Exoskeletons** are big suits people can wear to keep their body safe. They can move them using their brain.

Exoskeletons are powerful and could hurt people very easily. Soldiers might not think about who they are hurting when they are wearing them.



If neurotechnology is used to augment soldiers, it might affect how they think and feel.

It might mean they have less control over what they do or how they use their weapons.

# Human augmentation

**Human augmentation** is when technology is used to make the bodies and minds of people stronger and better.

Research is being done to find ways to use neurotechnology to augment healthy people.

This type of research does not help people who have health problems.

Some people think neurotechnology should only be used to help people who have health problems.

# Making sure neurotechnology is used in a good way

There are lots of good things about neurotechnology. It can be used to help make the lives of lots of people better.

But there are problems when it is not used in the right way.


There should be good rules and processes to follow when using neurotechnology.

This will help to keep people safe and make sure their human rights are protected.

# National policies


**National** means about a **nation**.
A **nation** is a place or a group of places with the same government.

A **policy** is a document that shows the best process to follow for something.


Lots of nations do not have a policy about neurotechnology.


Some nations do have a policy, but it is different from policies other nations have.


Nations should follow policies about neurotechnology that are the same or as good as each other.

Nations should also get help from human rights experts to write these policies.

# International policies

**International** means lots of nations from all over the world.


Some international organisations have done work to write policies about neurotechnology.

## The **OECD**

**OECD** is short for **Organisation for Economic Co-operation and Development**


The **OECD** work with lots of countries to write policies that will make the world fairer and safer.

In 2019, the **OECD** wrote the first policy about how to make and test neurotechnology in a safe way.

## UNESCO

**UNESCO** is short for **United Nations Educational, Scientific and Cultural Organization**.

**UNESCO** help countries all over the world to understand and talk to each other.


**UNESCO** has written policies about **ethics** and neurotechnology.


**Ethics** means what is right and wrong and what makes someone a good and fair person.

## The EU

**EU** is short for **European Union**.

The **EU** is a group of countries in Europe who work together to keep Europe safe.

The **EU** has not written any policies about neurotechnology, but it agrees that human rights should be thought about when neurotechnology is used.

# Making a human rights framework

A **framework** is an example of the best way to do something.

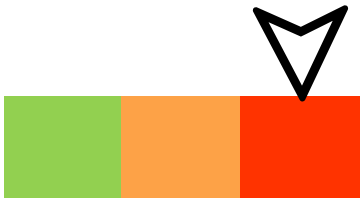

A **human rights framework** would give countries guidance on what rules are important to follow when working with neurotechnology.


They could use the framework to make sure their own policies are good enough.

The framework would also help people understand which human rights might be affected by neurotechnology.

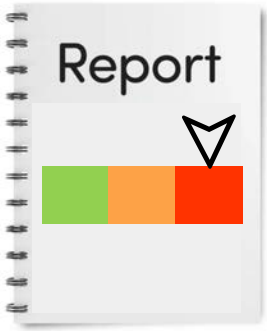
We could ask the **Human Rights Council Advisory Committee** to write a document about how neurotechnology should be used.

# How we will monitor the development of neurotechnology

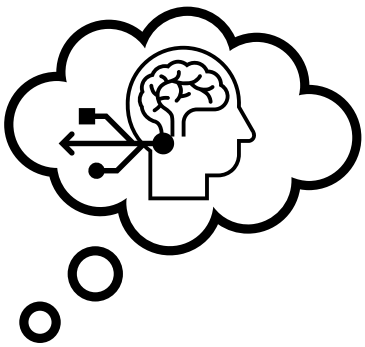


The **Human Rights Council** should take the lead in thinking about the risks of neurotechnology.

Human rights experts should be given support to learn more and think about these risks.



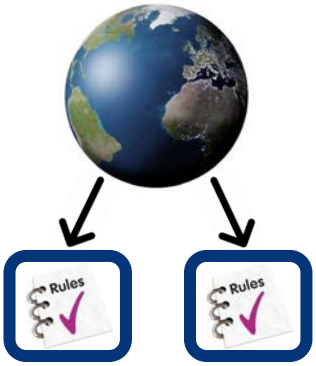

Human rights experts should also write about the risks and problems to do with neurotechnology in their reports.



Human rights experts should send these reports to the **UN** so they can find out what experts think about subjects that affect human rights.

We are also thinking about making a service that gives countries and companies advice on human rights and new technologies, like neurotechnology.

# Making sure people are responsible




Countries should have their own human rights framework to make sure neurotechnology is used in the right ways.


They should make sure organisations that work with neurotechnology follow rules to protect the rights of the people who work for them.

There should be rules about how to make, test and sell neurotechnology.


If companies and organisations do not follow the rules, they could be given a **penalty**, like having to pay a **fine**.


A **penalty** is when you must do something because you did not follow a rule.

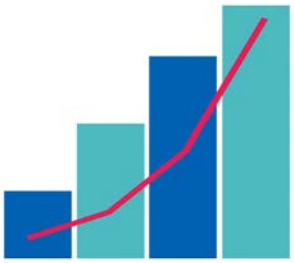
A **fine** is an amount of money you pay if you do something wrong.

All organisations that work with neurotechnology should do **impact assessments** that think about people's human rights.

**Impact assessments** check how a decision will affect people before it is made.

# Making sure everyone can say what they think

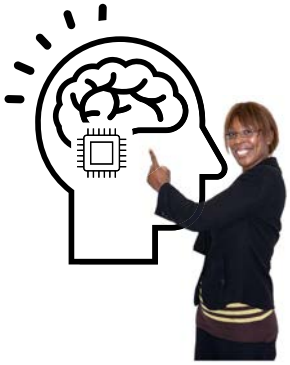
We think everyone should know about the **development** of neurotechnologies and how they affect human rights.



**Development** means how something changes or grows.

Everyone should be able to talk and learn about neurotechnology.

Vulnerable people and people who study neurotechnology should be able to say what they think.



Countries should teach the people who live there how to use neurotechnology in a safe way.

# Our conclusion

Neurotechnology affects human rights in a way that we have not had to think about before.


Governments and countries need to have policies that protect everyone's human rights.

We need to make sure companies and organisations follow these policies. We could reward them or give them a penalty if they do not follow them.

Policies about human rights should include new information about how neurotechnology might affect human rights.


A human rights framework should be made to help countries make their own policies about neurotechnology.

# Our recommendations


Our **recommendations** are what we think should be done to keep people safe and protect their human rights.

The **Human Rights Council** should:

- Ask the **Human Rights Council Advisory Committee** to write a document about how a framework for neurotechnology will be used.


- Keep talking to each other to decide if a team of experts can be set up to monitor the development of neurotechnology.

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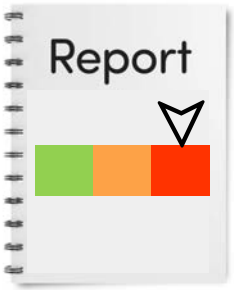
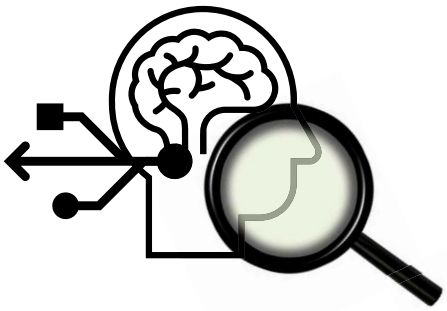
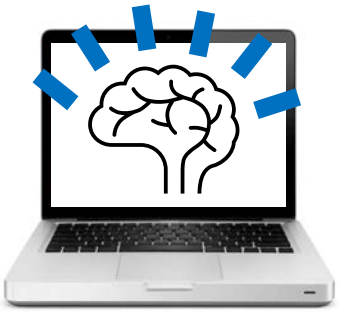
- Give the **OHCHR** everything they need to help countries make their own policies.


- Think about making a service that gives countries and companies advice about human rights and neurotechnology.




- Write reports to the **UN** about the risks and problems of neurotechnology.



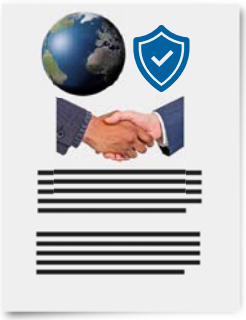
The governments we work with should:

- Monitor how neurotechnology is being made and used.
- Make their own frameworks for how to work with neurotechnology. This should include information about how neurotechnology might affect human rights.
- Think about what they will do if neurotechnology is made or used in a way that is unsafe or dangerous.
- Take part in conversations about neurotechnology and other things people are starting to use more, like **artificial intelligence**.

  **Artificial intelligence** is when technology, like computers, are programmed to do things that normally need a human brain.
- Think about stopping the use of neurotechnology in the military, law and criminal justice systems.

- Make sure vulnerable groups can use neurotechnology in a way that is safe and does not cost lots of money.

- Work closely with people with disabilities to find out what they think about neurotechnologies and what they want from them.



- Make sure neurotechnology frameworks follow **human rights treaties**.

  **Human rights treaties** are agreements countries make about how to treat people fairly and make sure their human rights are protected.


- Make sure organisations that test neurotechnology have people's consent.

- Make sure the **OHCHR** talk about how important it is for human rights to be thought about when decisions are made about neurotechnology.

- Give companies and organisations that make and use neurotechnology advice on what they should do to protect human rights.