PEACE

Pathway for Eating disorders and Autism developed from Clinical Experience

About the Brain:

Autism and Eating Disorders

@edac.uk

@EDACautism_ED

EDACResearch.co.uk

Peacepathway.org

King's College London · University of Aberdeen · The University of Edinburgh

UKRI Research England · UKRI Arts and Humanities Research Council · UKRI Medical Research Council · Medical Research Foundation · NIHR

EDAC

PEACE

At both **PEACE** and **EDAC**, we strive to learn more about autism and eating disorders.

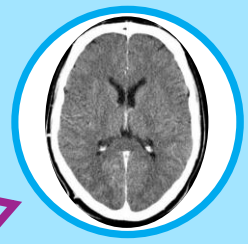
We have been using **neuroimaging techniques** to understand the Autistic brain as well as the impact of an eating disorder.

We are keen to share what we know so far!

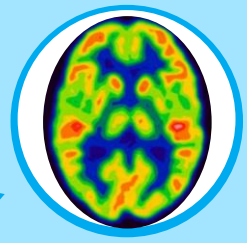
Neuroimaging: What is it?

Neuroimaging techniques are a collection of approaches used to investigate the **structure** and **function** of the human brain.

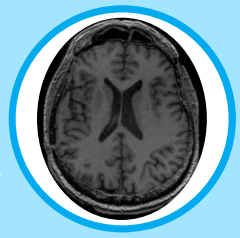
There are many **different** techniques scientists use to view the brain!



CT Scan
Uses a series of X-rays to view the brain



PET Scan
Uses low doses of radiation



MRI Scan
Uses magnetic and radio waves

Why Neuroimaging?

Neuroimaging techniques help researchers learn about **human behaviour** and **disorders**, which could **improve clinical practice**.

*Here are some **examples**...*

Roots of Human Behaviour

- *How do we manage our emotions?*
- *How do we make decisions?*

Causes and Consequences of Eating Disorders

- *Observe early signs of an eating disorder*
- *Highlight the impact of eating disorder symptoms*

Benefits to Clinical Practice

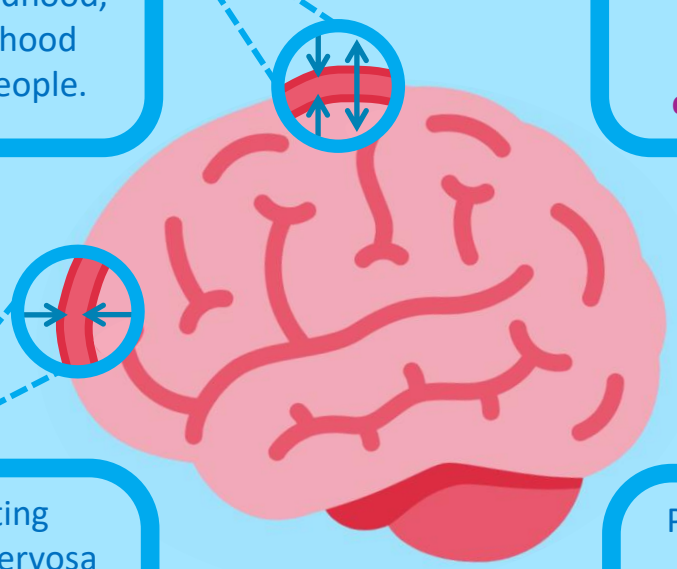
- *Assist with classification of eating disorders*
- *Monitor the effect of treatments*

EDAC

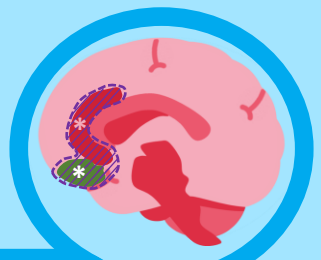
What do we Know?

In **Autistic people**, the outer layer of the brain, called the **cortex**, becomes much **thicker** in childhood, then much **thinner** in adulthood compared to non-Autistic people.

MRI scans from people recovered from AN show their volume and their cortex are **restored back to baseline**. Studies show weight restoration alone **may not be enough** to restore brain volume.



Those with restrictive eating disorders such as anorexia nervosa (**AN**) show a **thinner cortex** and **smaller brain volume** compared to individuals without AN. This is due to malnutrition, but also due to disordered eating behaviours.



People with **AN** show differences in brain regions involved with our ability to **monitor conflict**, **manage emotions**, and **experience reward** No specific brain region is associated with **Autistic characteristics**. We have a lot more to learn!

Why is this Information Important?

Eating disorders are not a choice

They involve changes in brain structure and function, which affect our thoughts, feelings, experiences and behaviours.

Autistic people experience eating disorders differently

Brain differences between Autistic relative to neurotypical people means Autistic individuals are likely to experience eating disorders in a different way or be more likely to develop an eating disorder.

Eating disorder recovery means more than just weight restoration

As weight restoration does not always lead to full recovery of brain volume, neuroimaging research raises the question:
what does true recovery mean?

Interested in learning more?

We are always thinking about conducting **future** neuroimaging research.

If you are keen to participate in upcoming studies and help us learn more, contact us at EDAC@ed.ac.uk

Stay up-to-date on our research on the PEACE and EDAC websites!

EDAC