Introduction to ethical research practice

Learning outcomes:

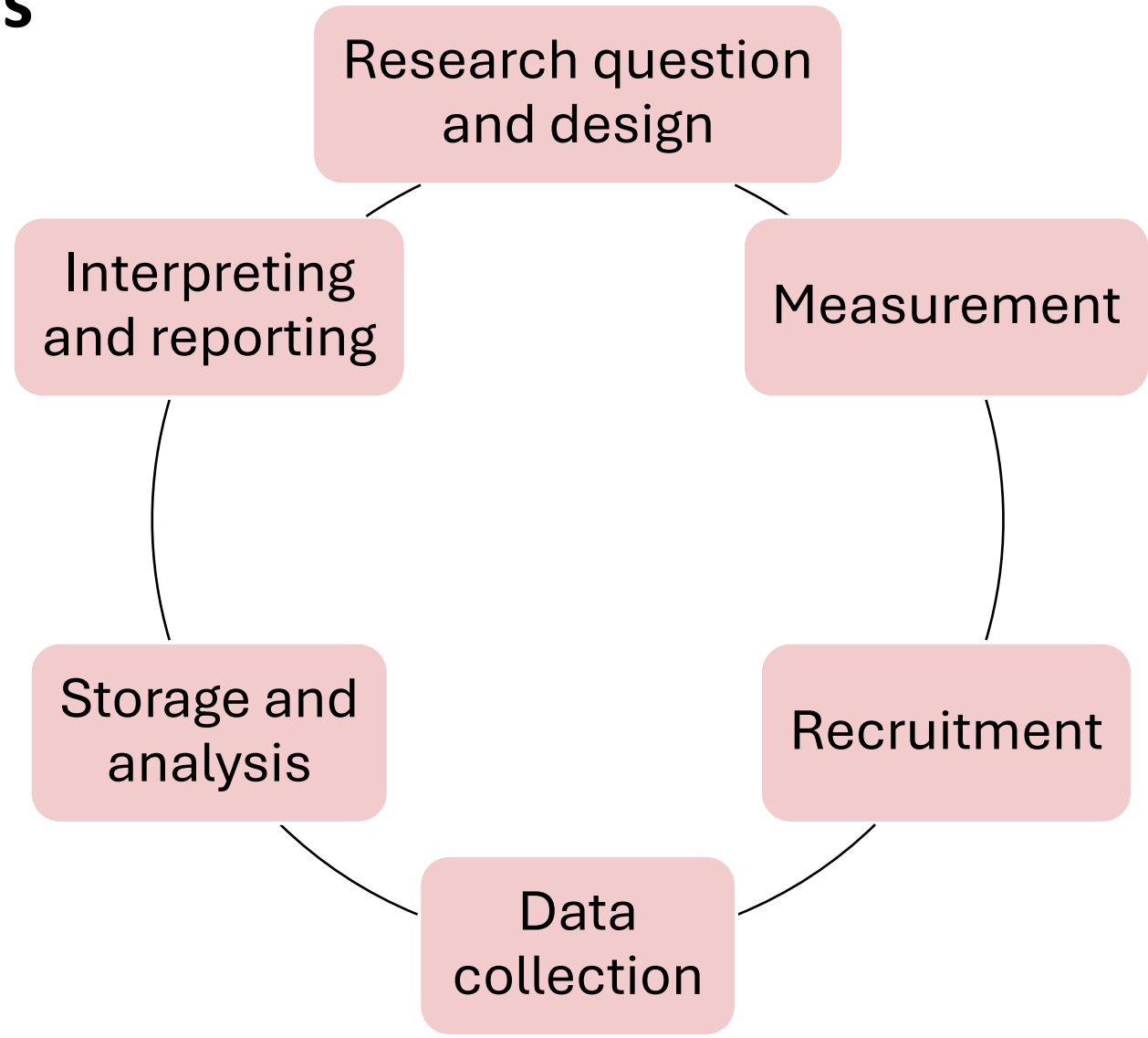
1. Understand the **core principles** of ethical research
2. Be aware of some **key ethical practices** used throughout the research cycle
3. Think critically about **who is included and represented** in research
4. Appreciate the wider **impact of how we interpret** and communicate our research findings

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Ethical responsibility runs through the whole research process



Four BPS principles of ethical research

Respect for autonomy, privacy and dignity

Scientific integrity

Social responsibility

Maximising benefit and minimising harm

British Psychological Society (2021). BPS Code of Human Research Ethics (2nd ed.). https://doi.org/10.53841/bpsrep.2021.inf180

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Informed consent

- What will I do?
- What are the risks and benefits?
- Can I change my mind?
- Why is the study being conducted?
- How will my data be used?

Meaningful informed consent involves providing full and accessible information so that they can decide

Debriefing and deception

- Participants' rights and autonomy come first
- Minimise risks and possible harm
- Withholding information ('deception') must be justified

Debriefing matters even when there is no deception

Using personal data responsibly

The UK General Data Protection Regulation (GDPR) and the Data Protection Act 2018.

Transparency	**Explain what data are collected and why**
Data minimisation	**Collect only what is necessary**
Security and confidentiality	**Protect data and limit access**

Protecting participant information

Most data from humans is **not** anonymous

Participant's name → **Participant ID 0012**

If a linking key still exists:

Pseudonymised ≠ anonymous

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Whose data are represented?

- Who can access the study?
- Who is included or excluded, intentionally or unintentionally?
- Whose data then enters the evidence base?

Building more inclusive neuroimaging practices

Special Initiative: 'Decolonising Research Methodologies and Practices at UCL'.

Dwaynica Greaves



Co-applicant / Co-PI

PhD candidate, Social-cognitive Neuroscience

Natalie Gunasekara



Research Assistant

PhD candidate, Medical Physics & Biomedical Engineering

Dr Isla Jones



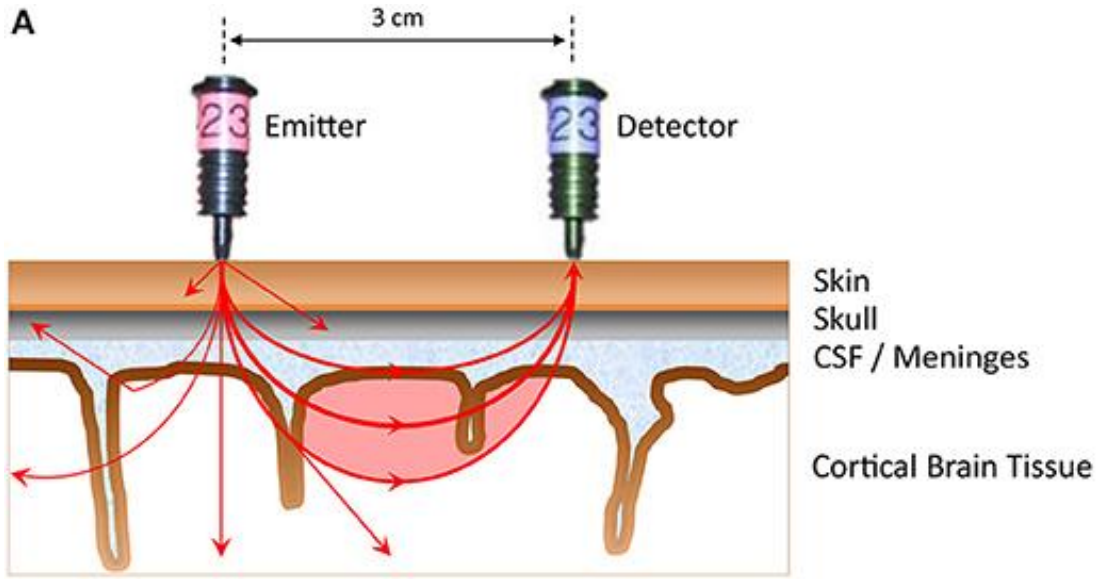
Collaborator

PhD in Social-Cognitive Neuroscience

https://equitablefnirsuk.wixsite.com/iefnirsuk

A technological issue that creates barriers

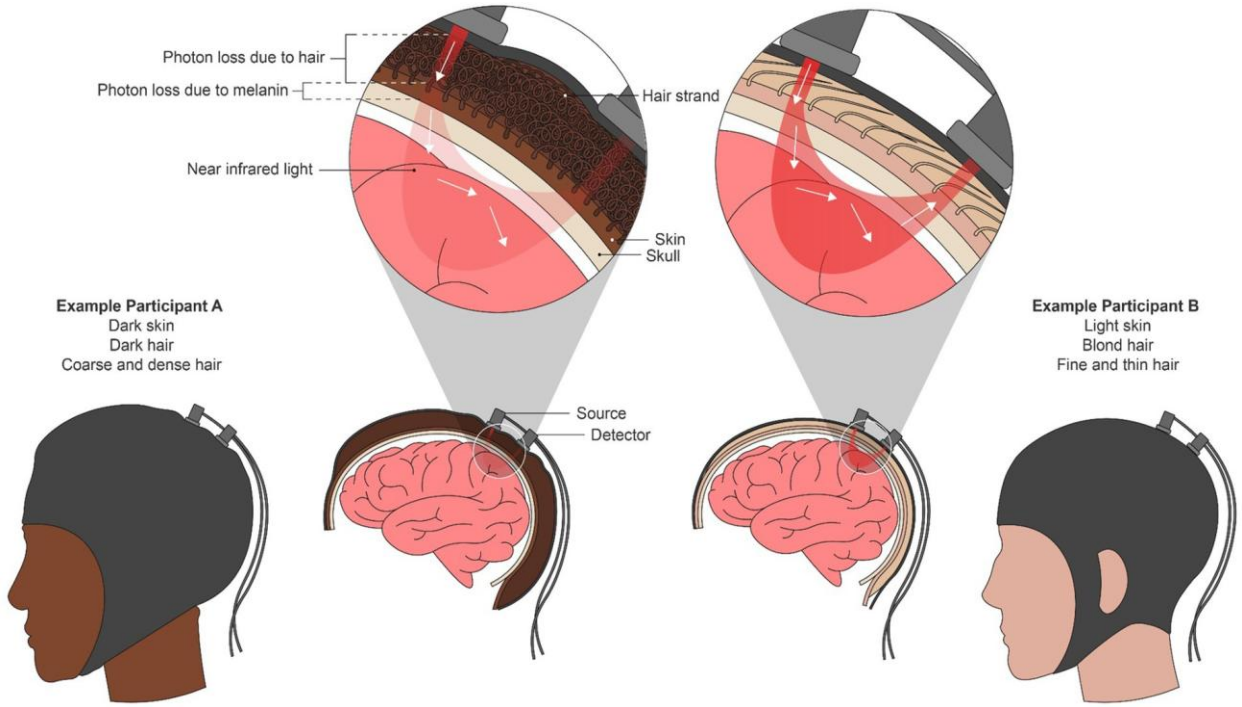
Functional near-infrared spectroscopy (fNIRS) uses light to measure brain activation



Soltanlou et al., 2018



fNIRS does not work the same way for everyone



Kwasa et al. (2023)

- **Optode-scalp contact** can vary depending on hair type and style
- **Light absorption** can be impacted by skin tone, hair colour and hair type
- **Global majority ethnic groups** tend to be excluded due to these physical characteristics

Yücel et al. (2025). Nat Hum Comm

Weakens science and perpetuates systemic marginalisation

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Inclusion is a core ethical and scientific issue

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Interpreting and reporting findings

E.g., Correlation does not establish causation

Finding:

Screen time and anxiety are positively correlated

→

Overclaim:

“Screen time causes anxiety”

How we interpret and communicate findings has consequences

Statistics don't just describe society, they can actively shape it

Karl Pearson and Francis Galton's historical role in eugenics research:

https://www.ucl.ac.uk/mathematical-physical-sciences/statistics-old/department-information/our-early-history

How we interpret and communicate findings has consequences

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References

- Kwasa, J., Peterson, H. M., Karrobi, K., Jones, L., Parker, T., Nickerson, N., & Wood, S. (2023). Demographic reporting and phenotypic exclusion in fNIRS. *Frontiers in Neuroscience, 17*, 1086208.
- Soltanlou, M., Sitnikova, M. A., Nuerk, H.-C., & Dresler, T. (2018). Applications of functional near-infrared spectroscopy (fNIRS) in studying cognitive development: The case of mathematics and language. *Frontiers in Psychology, 9*, 277.
- Yücel, M. A., Anderson, J. E., Rogers, D., Hajirahimi, P., Farzam, P., Gao, Y., Kaplan, R. I., Braun, E. J., Mukadam, N., Duwadi, S., Carlton, L., Beeler, D., Butler, L. K., Carpenter, E., Girnis, J., Wilson, J., Tripathi, V., Zhang, Y., Sorger, B., . . . Boas, D. A. (2025). Quantifying the impact of hair and skin characteristics on fNIRS signal quality for enhanced inclusivity. *Nature Human Behaviour, 9*, 2651–2668.