

## How does social information and reward influence decision making and learning in adolescents?

You are invited to take part in a research study. This sheet will tell you about our research and the choice you have to take part in it. Please ask us any questions at any time.

### What is a research study?

Research studies help us learn new things and test new ideas. By doing research, we can learn more about how the brain and body behave in specific situations. When you volunteer to take part in this research study, you contribute to increasing understanding of how people develop.

### Why are we doing this research?

We study how learning and making decisions change as we get older. We know that learning to choose the best option is sometimes not easy, but we do not know how adolescents and adults differ in their strategy of making decisions. Studying the brain could give us clues about why some adolescents may make different decisions than adults. We want to use MRI to take pictures of the brains of adolescents and adults. This will help us answer questions about how and why everyone is different.

### What will happen during the study?

Pre-visit Screening – lasts about 15 minutes

The first part of the study involves speaking to the researcher in a video call with your parent or guardian. We will talk about the study and what will happen during your visit to the lab. We will go through some forms to make sure it is safe for you to be scanned. We will also show you a video of the scanner and what it looks like when someone is being scanned. We will also give you time to ask any questions.

Lab visit – *lasts about 2 hours*

During the lab visit, you will do an **MRI scan**. MRI stands for Magnetic Resonance Imaging. It is a method used to take images of the brain, using a large magnet and radio waves. The MRI scanner is a big, white machine, with a hole where the magnet is. The



magnetic field is very strong, so you must remove any metal objects from your body (for example, watches, jewellery, hair clips, glasses or coins) before entering the scanner room. The scanner is very noisy while taking the images, so we will give you some earplugs or headphones to block out the noise. You will lay on a comfortable bed, with a helmet over your head, and you will slowly move into the scanner. It is important that you stay still during the scan, because movement will distort the image.

Your MRI scan will be divided into two stages. In the first stage, you may watch a video or listen to music, while we take some pictures of the structure and activity of your brain at rest. This lasts about 15 minutes. In the next stage, which takes about 40 minutes, we will ask you to play a simple computer game in which you see different pictures on screen and make decisions about them. During this stage, we will take lots of pictures of your brain which we stitch together to make a movie of where the blood is flowing, this tells us which brain regions are working the hardest and using the most energy. We will explain exactly what to do before each scan starts.

You will be in the MRI scanner for no more than 1.5 hours. You can speak to us in between and take breaks whenever you wish. If you want to stop the scan and come out, you can use the call button and we will take you out straight away.

### [What are the advantages/disadvantages of taking part?](#)

Taking part will not help you personally, but we hope you'll find having an MRI scan interesting. Also, we hope that the results of this research will help us to better understand how the brain shapes decision making in adolescents and adults.

### [10 important things to know...](#)

1. You can choose if you want to take part in the study or not.
2. We will explain everything that will happen during each visit before we start.
3. During the study we collect information about you (age, sex etc) and research data (your decisions, answers to the Revised Children's Anxiety and Depression Scale, Autism Quotient and ADHD questionnaires and your brain scan). The questionnaires will ask how often a series of statements happen to you. Examples from the Revised Children's Anxiety and Depression Scale include: 'I worry about things', 'I have trouble sleeping', 'I have problems with my

appetite' and 'I think about death'. Examples from the Autism questionnaire include: 'I am willing to take risks' and 'I prefer to do things with others rather than on my own'. Examples from the ADHD questionnaire include: 'How often do you have problems remembering appointments or obligations?' and 'How often do you feel restless or fidgety'. No one will know your answers.

4. Your data and your rights to it are legally protected and your name is not stored with your data.
5. Your data is very valuable so we may use it again to ask different research questions. We may also share it with other researchers across the world. Your name is never shared.
6. There is a very small chance that you could be identified (by yourself or another person) based on a brain scan. We try to reduce this chance by removing the face from the scan before sharing the data.
7. The results of the study will be written up as a research paper.
8. The study has been organised by Dr MaryAnn Noonan, a lecturer in Psychology. It is funded by the University of York and has been reviewed by Research Ethics Committee of the York Neuroimaging Centre.
9. If you are unhappy with any part of the study, please speak to one of the researchers, staff or your parent/guardian. If you would like to make a formal complaint, please email [registrar-and-secretary@york.ac.uk](mailto:registrar-and-secretary@york.ac.uk).
10. You will be given £15 per hour, in gift vouchers, for participating in this study.

## Finding out more

You can always find out more by asking us questions:

**Researcher:** MaryAnn Noonan

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**Tel:** 01904 321037

## Support services

Some of the questions in this study ask about symptoms of depression and anxiety. If you feel that you need support with mental health issues here are some sources of support:

- Your GP can help you get support and therapy from the NHS
- A school nurse or mental health leader at school
- TalkingSpace run psychoeducational courses and offers access to remote or CBT, mindfulness based therapies and individual therapy  
[www.talkingspaceplus.org.uk](http://www.talkingspaceplus.org.uk)
- Samaritans offer a safe place to talk: [www.samaritans.org](http://www.samaritans.org)

- MoodGym [www.moodgym.anu.edu.au](http://www.moodgym.anu.edu.au)
- Mood Juice [www.moodjuice.scot.nhs.uk](http://www.moodjuice.scot.nhs.uk)
- Childline [www.childline.org.uk](http://www.childline.org.uk)