

Information Sheet for Parents

Preschool Brain Imaging and Behaviour Project (PIP)

We would like to tell you about our new research study at the Institute of Psychiatry, Psychology & Neuroscience, King's College London to see if you and your child may be interested in taking part. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please feel free to ask us (by phone or email, see the contact details at the bottom of this Information Sheet) if there is anything that is not clear or if you would like more information.



What is the purpose of the study?

This is the first Europe-wide study on brain development in preschoolers. Our first goal is to **better understand variability in brain development in a broad range of children from different backgrounds**. We then want to see how these differences in brain development are related to a child's social, emotional, behavioural and cognitive development.

Our second goal is to use this information to **better understand the impact of differences in brain development on the emergence of neurodevelopmental conditions**, such as autism spectrum disorder, ADHD, developmental delay and epilepsy. We hope that in the future these discoveries might aid in earlier diagnosis and improved support that would improve outcomes for children and young people with different neurodevelopmental conditions.



Who is the research team? How is the project being funded?

The local team at King's College London is led by **Dr Eva Loth**, Senior Lecturer in Psychology. **Dr Amy Goodwin** is a postdoctoral researcher and the Europe-wide PIP project coordinator. **Anne Fritz** and **Julia Koziel** are Research Assistants, and Julia is also involved in the development of new touchscreen tablet games. **Dr Jennifer Cooke** and **Dr Greg Pasco** are experienced postdoctoral researchers and **Prof Tony Charman** a world-renowned expert in autism and neurodevelopmental conditions.

This study is carried out as part of the AIMS-2-TRIALS and CANDY projects. AIMS-2-TRIALS is currently the largest project focused on autism in the world. It is funded by the Innovative Medicines Agency, which includes contributions from the European Union as well as those from autism charities (Simons Foundation, Autism Speaks, and Autistica) and the pharmaceutical industry. PIP will be conducted in 5 study sites across Europe,

including King's College London, Radboud University Medical Centre Nijmegen in the Netherlands, the Karolinska Institute in Sweden, Ghent University in Belgium and the Assistance Publique-Hôpitaux de Paris (APHP) in France. CANDY stands for co-occurring Analysis of Neurodevelopmental Disorders and Epilepsy. It is funded by the European Commission Horizon 2020 and focused on ADHD, developmental delay and epilepsy.



Why have we been invited to take part?

We are recruiting:

- Children with typical development from the age of 2 ½ - 4 ½ years,
- Children with autism from the age of 3 - 4 ½ years,
- Children with epilepsy from the age of 3 - 4 ½ years,
- Children with developmental delay from the age of 3 - 4 ½ years, and
- Children with ADHD from the age of 4 - 5 ½ years.



How long will we be in the study?

Ideally we would like to see your child at three time points, with around 1 year between each visit. You do not have to decide at this point whether you and your child would like to stay involved in the study in the future.



What exactly does study participation involve?



1. Telephone screening call to ensure that this study is a good fit for you

Please contact us by email if after reading this information, you feel you might be interested in participating in this research. A researcher from our team will then arrange a telephone call at a time that suits you. If you would like to participate, we will also go through a screening form with you on the phone to make sure that your child is eligible to take part in this research; including whether he or she would be able to have a brain scan (e.g., is noise sensitive, deep/light sleeper, absence of metal implants etc.).



2. Remote assessments

During the COVID-19 lockdown, we are carrying out remote assessments. They include:

a. On-line questionnaires

We will send you login details to complete some on-line questionnaires at home in your own time. These questionnaires ask about your son/daughter's behaviour, development and temperament, medical history (you and your child), environment, and sleep patterns. You may start filling in some questionnaires, and take breaks flexibly whenever it suits you. You may complete the questionnaires over a few days if this is more convenient. Time to complete the questionnaires varies somewhat from person to person, but on average it will take about 2 to 3 hours.

b. Games on a Smartphone or Touchscreen Tablet

We will ask your son/daughter to play some games on a touchscreen tablet. Although these tasks are game-like, they were designed to measure children's attention, memory, processing of emotions or understanding of social situations.

We will send you instructions on how to download the App on your smartphone or tablet. Each task includes an animated cartoon, demonstrations, practice trials and the task itself and is tailored to your child's pace. We also send you some guidance on how to play the games with your child.

c. Interviews by videoconferencing

We will ask about your child's behaviour in everyday situations, his/her medical history, family psychiatric history, and may conduct a clinical interview on autism. These interviews will usually take around 2-3 hours to complete, and will be completed at a time that is convenient for you. They do not need to be completed in one go.

You will be only asked to consent online for these remote parts of our project. However, we hope you will give us permission to contact you again in future after the COVID-19 lockdown. We will then ask if you are interested in visiting us at King's College London with your child. Below is an overview of what happens during these visits.



3. Two visits to meet our research team

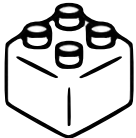
We will ask you and your child to come and visit us on 2 occasions. The study day is all about your child being a little brain explorer for the day! The researcher will draft a schedule that is tailored to you and your child's preferences and the visit will include:



- **Parent-child free play:** We will ask you to play with your child as naturally as possible for about 10 mins. A set of toys is provided. We ask for your permission to video-record this.



- Using a 'gold-standard' method, we will carry out some **structured play and other activities** which allows us to assess your child's social and communication abilities.



- **Developmental level:** We will assess your child's language, motor and learning using measures widely used by child psychologists.



- Some tasks use **eye-tracking:** This is a bit like a computer screen, where the child will watch short videos. We will follow your child's gaze so that we can better understand the type of things that attract his or her attention.



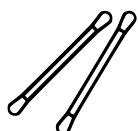
- **EEG:** Next, usually after lunch, we will do an EEG session. EEG is a technique that records the brain's electrophysiological activity. For this, we need to use a special cap, which looks like a swimming cap, and put some gel in to it to make it work. EEG recording has no adverse side-effects.



- **MRI scan:** In the evening, or on a separate day, we will ask you and your child to come back for an MRI brain scan. MRI uses a magnetic field to take images of the brain. It is safe and non-invasive as long as your child has no metal in their body (e.g., surgery pins). We will do this scan while your child is asleep.

At the end of the first visit, we will show you and your child a mock scanner to familiarise you both with the equipment and procedure. Your child can also practice lying down in the scanner. We will also send you the noises that the MRI scanner makes (by either email or on a CD if you prefer), a video and a comic book strip that we have developed to explain MRI scanning to children.

During the scan, you can be in the scanner room with your child. We have a special MRI spaceship tent that creates a comfortable atmosphere. We also have some soft toy space friends that your child can play with. You can lie on a second gurney next to your child. A member of our team will also be in the scanner room. The scan itself will take about 20-30 minutes but we plan 2 hours for the entire session. This includes time it may take your child to fall sleep.



- **Saliva sample:** Finally, we would like to ask for your permission to obtain a saliva sample from your child for genetic analyses. This would be done by gently wiping a cotton wool bud on the inside of your child's cheek and asking / allowing your child to suck the end of the cotton wool bud. We can let you do it, or one of the research team can help if you prefer. We will also ask for your permission to obtain a saliva sample from you.



Do I and my child have to take part?

Participation is completely voluntary. You should only take part if you want to and choosing not to take part will not disadvantage you in anyway. Once you have read the information sheet, please contact us if you have any questions that will help you make a decision about taking part. If you decide to take part, we will ask you to sign a consent form and you will be given a copy of this consent form to keep.



Will we get paid for study participation?

1. We will refund you for your travel expenses for in-person visits.
2. If you travel from far we will arrange and pay for an overnight stay in a comfortable hotel.
3. You will receive a £25 gift voucher for completion of the remote assessments as compensation for your time and energy. You will receive a £50 gift voucher for each in-person visit as compensation for your time and energy, as well as a gift for your child.



What are the possible risks of taking part?

As long as all safety procedures are followed there are no known risks associated with MRI scanning. We will conduct a thorough screening to ensure that your child has no metal inside their body (e.g., surgery pins) or suffers from claustrophobia. The machine is noisy when it is acquiring images and we therefore make sure your son/daughter has ear-plugs when he/she is being scanned. The noise has not been reported to have any side

effects. We will send you some ear-plugs, and sound tapes and ask you to practice with your child falling asleep at home wearing them a few days before the MRI scan.

None of our other measures involve a known risk to yourself or your child. However, if you or your child do not enjoy the experience or prefer not to answer certain questions you are welcome to stop this part of the assessment or participation altogether.



What are the possible benefits of taking part?

This is a research study and is not designed to replace a clinical assessment. However, we hope this study will help to identify the link between brain development, brain function, psychology and children's abilities and functioning. This will be important in the future to improve early diagnosis and for the development of future therapies.

We will send volunteer families annual newsletters that summarise our research. We also plan to set up webinars to inform parents, teachers, clinicians and others interested in autism about the progress of our project. These webinars will be free, open to everyone and will give you the opportunity to ask any questions you may have about our project.



Will I get any feedback on my child's test results?

This research study is not a clinical assessment. If you'd like, we can send you a brief summary of your child's results on some standardised tests of cognitive and social development.

A radiologist will routinely inspect all brain scans. In the event that new information related to your child's health is revealed in the MRI brain scan, we will contact your GP. Your GP will then inform you. Please note that your child will not be able to participate in this study if you are not willing to give GP details or do not want to be informed about any such findings. If no actionable anomalies are found, you will not be given feedback on your child's brain scan.

Genetic analyses will be conducted to answer research questions about neurodevelopmental conditions. Genetic analyses will not be conducted for other general health conditions (for example, risk to develop a particular type of cancer). If you would like to receive feedback on your or your child's genetic analyses via a clinical geneticist (in relation to neurodevelopmental and neuropsychiatric conditions), please indicate this in the consent form. It is up to you whether or not you wish to receive this feedback. Before you can receive any feedback, you will be required to consult with a clinical geneticist.

Please note that all our assessments, including both the MRI brain scan and genetic analyses are carried out for research purposes and are not intended as clinical screeners or medical tests.



Will our data be kept confidentially?

For confidentiality, data will be stored in a pseudonymized (coded) fashion. This means as soon as you and your child are enrolled into the study, you will be assigned a unique, secure code. This code allows different pieces of information that we collect about you and your child in the PIP study to be associated with each other. Data from all assessments will be labelled with this code and stored separately from any personal data that you give us, such as your name. No names will be used when the research is written up for publication.



Data sharing

Sharing of scientific data among researchers helps to speed the rate of progress enormously.

Once initial quality control checks are done locally at King's College London, all the data will be sent in a pseudonymized (coded) fashion to our central database. The central database is located at the Institut Pasteur, Paris, France. On the central database it will be put together with information collected at other European institutions who are participating in the PIP study. AIMS-2-TRIALS and CANDY consortium partners from all participating institutions will then be able to access the combined pseudonymized (coded) PIP study data in the central database. Your personal data will not be sent to the central database. The central database has access restrictions that are carefully monitored by the database management team at the Institut Pasteur, Paris, France. Before data is sent outside the UK, we will also make sure that a data transfer agreement is in place to ensure that data continues to be held in compliance with UK data protection standards (GDPR). Data will be retained on the central data base indefinitely.

The questionnaire data that you give us will be entered directly into a secure database at the Institut Pasteur, Paris, France in a pseudonymized (coded) fashion. We will ask for your permission to store your child's date of birth in the questionnaire database. If you do not wish for us to store your child's date of birth in the questionnaire database then please indicate this in the consent form. After initial quality control checks are done at the Institut Pasteur, Paris, France, your questionnaire data will be sent to the central database where it can be accessed by other AIMS-2-TRIALS and CANDY consortium partners. Your child's date of birth will not be sent to central database.

Finally, we will also ask whether you are willing for your and your child's data to be shared in a pseudonymized (coded) fashion **beyond** AIMS-2-TRIALS and CANDY consortium partners. This may include academic institutions, not for profit organisations or charities, or industry companies. In the consent form, we will ask you about this separately for your and your child's genetics data (saliva), and data from the other study assessments.

If you choose not to share your data beyond the AIMS-2-TRIALS and CANDY consortium partners, this decision will not affect your participation in any way. We will flag that your data must not be further shared.

All data sharing will be done in accordance with our Data Sharing and Consortium Principles and our Code of Practice which can be found on our website. If you would like further information about our Data Sharing Principles then please contact the PIP Research Team at King's College London (using the contact details at the bottom of this information sheet).



Data Protection Statement

Your personal data will be processed in accordance with the General Data Protection Regulation 2016 (GDPR). If you would like more information about how your data will be processed in accordance with GDPR please visit the link below:

<https://www.kcl.ac.uk/research/support/research-ethics/kings-college-london-statement-on-use-of-personal-data-in-research>

The data controller for this project will be King's College London (KCL). The University will process your personal data for the purpose of the research outlined above. The legal basis for processing your personal data for research purposes under GDPR is a 'task in the public interest'.

You can provide your consent for your personal data to be stored at King's College London by completing the consent form that has been provided to you. This includes your and your child's name, contact information, and the details that you provide in the eligibility screening interview with a PIP researcher.

We also ask for your permission to inform your child's family doctor (GP) of your participation. We may ask your family doctor for a copy of your child's medical records including information on his/her medical history or treatments received in the past. Only researchers from King's College London or from regulatory authorities will have access to the clinical records.

A small number of individuals at King's College London will have access to both your personal data and study assessment data. This is necessary to check whether the study is being conducted in a good and reliable manner and to be able to notify you and your child's GP in case of any incidental findings resulting from your child's MRI brain scan. Persons who have access to your data for review are: the local committee that monitors the safety of the study, the data controller at King's College London working for the primary investigator of the PIP study, and the King's College London PIP research team named at the bottom of this information sheet. They will keep your data confidential.

In exceptional circumstances, there are legal obligations which might override your confidentiality. Following local codes of ethics and conduct, we may breach confidentiality in exceptional circumstances under which there appears sufficient evidence to raise serious concern about your and/ or you son/ daughter's safety. We might also encourage you and/ or your son/ daughter to seek support.

You have the right to access information held about you. Your right of access can be exercised in accordance with the General Data Protection Regulation. You also have other rights including rights of correction, erasure, objection, and data portability. Questions, comments and requests about your personal data can also be sent to the King's College London Data Protection Officer Mr Albert Chan info-compliance@kcl.ac.uk. If you wish to lodge a complaint with the Information Commissioner's Office, please visit www.ico.org.uk.



Videotapes

We will ask for permission from you for some of the assessments with you/your child in this study to be videotaped. Videotapes in the study will be used for research purposes only (for example for data coding and quality monitoring of this research). Video recordings will not be shared with a wider audience or used for any purpose other than research without you first being re-contacted for consent. Only researchers involved in the PIP study will watch these videotapes.



What if we change our mind about taking part?

You are free to withdraw at any point of the study, without having to give a reason. Withdrawing from the study will not affect you in any way. We will delete your data if you withdraw before your and your child's data is sent to the central database. This includes questionnaire data, clinical/behavioural data, EEG data, eye tracking data, touch screen tablet data, MRI data, and saliva samples. **However, any data and research results already shared with other investigators or in publications cannot be destroyed, withdrawn, or recalled.**

We will ask for permission to store your personal data (like name and contact details) at King's College London so that we are able to contact you in the future to see if you are interested in returning for follow up visits. In the consent form, we will ask for your permission to be contacted in the future about: 1) follow up visits for the PIP study, and 2) associated research projects. If you choose to withdraw from the study we will not retain any personal data (like names, contact details) that you have given us thus far. You can withdraw your personal data at any time by contacting the PIP study team (pip.brainexplorers@kcl.ac.uk).



What will happen to the results of the study?

The results of this study will be published in scientific journals. We also aim to give regular updates on our website, host webinars, and send newsletters to families. For more information on the AIMS-2-Trials PIP study and the researchers involved in the project, visit our website: www.aims-2-trials.eu



Who should I contact for further information?

If you have any questions or require more information about this study, please contact us using the following contact details:

PIP Research Team at KCL

Dr Eva Loth, Dr Amy Goodwin, Dr Jennifer Cooke, Dr Greg Pasco,
Professor Tony Charman, Julia Koziel, and Anne Fritz

Phone: 0207 848 0956

Email: pip.brainexplorers@kcl.ac.uk

Address: PO23, Department of Forensic and Neurodevelopmental Sciences, Institute of Psychiatry, Psychology and Neuroscience, King's College London, De Crespigny Park, Denmark Hill, London SE5 8AF



What if I have further questions, or if something goes wrong?

If this study has harmed you in any way or if you wish to make a complaint about the conduct of the study you can contact King's College London using the details below for further advice and information:

The Chair: Mr. James Patterson, Senior Research Ethics Officer rec@kcl.ac.uk



Follow-up visits

We hope you and your child will enjoy the experience in this project and that you may be willing to come back in a year's time. You do not need to take a decision about this right now but we hope you will give us your permission to contact you again.

Thank you for reading this information sheet and for considering taking part in this research.