

Information Sheet

Study title: Non-drug training for reducing AD/HD symptoms in a school setting

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This is an invitation to participate in a new study which will evaluate a non-drug treatment for children with AD/HD or AD/HD symptoms.

What is the aim of the study?

The aim of the study is to evaluate an innovative training program implemented within a school setting. We are interested in understanding the effect of the program on a broad range of outcomes known to be associated with AD/HD, including brain activity, memory/impulse-control ability, behaviour at home and school, sleep patterns, self-regulation ability, and psychological needs, compared to a waitlist control group.

This innovative training involves computerized exercises designed to improve specific cognitive functions (e.g. memory, attention, impulse-control, relaxation). Improving these functions can reduce AD/HD behaviours. Previously, our research has focused on implementing this program in children's homes, supervised by parents. In the present study we will look at the effectiveness of implementing the program in small groups in the school setting, with training sessions supported by a School Psychologist. We use the University-owned Focus Pocus training software to deliver the neurocognitive training.

What will your child do?

As part of this study your child will undertake the following tasks:

- A pre-treatment 30-minute assessment of brain activity and memory/impulse-control ability, and sleep and psychological needs questionnaires. This will take place at Shell Cove Public School (either at lunchtime or may require your child to be removed from class for 30 minutes at a time agreed by their teacher) and will be supervised by the School Psychologist.
- A 'treatment' condition involving 6-7 weeks of software-based training at Shell Cove Public School during allocated school time across one school term. Training involves 20 x 20-minute sessions (approx. 3 per week). This will take place at Shell Cove Public School (either at lunchtime or may require your child to be removed from class for 30 minutes at a time agreed by their teacher) and will be supervised by the School Psychologist.
- A post-treatment 30-minute assessment of brain activity and memory/impulse-control ability, and sleep and psychological needs questionnaires. This will take place at Shell Cove Public School (either at lunchtime or may require your child to be removed from class for 30 minutes at a time agreed by their teacher) and will be supervised by the School Psychologist.
- If allocated to the 'waitlist' condition: they will additionally complete the 30-minute pre- and post-treatment assessments 8 weeks apart in one school term, prior to starting the 'treatment' condition in the following term. This will take place at Shell Cove Public School (either at lunchtime or may require your child to be removed from class for 30 minutes at a time agreed by their teacher) and will be supervised by the School Psychologist.

Some examples of the types of items in the questionnaires your child will complete include:

1. Make a rating on the statement "In a normal day I mostly have to do what I am told"
2. Answer the question "After you fell asleep, did you wake up during the night?"
3. Make a rating on the statement "I have no problems doing my usual activities"

What will you do?

As part of this study you will undertake the following tasks:

- a) Pre-treatment - complete 3 online questionnaires about your child. This will take 15-20 minutes.
- b) Post-treatment - complete 3 online questionnaires about your child. This will take 15-20 minutes.
- c) Consent to your child's teacher completing a 40-item online questionnaire (approx.. 7 minutes) about your child pre-treatment and post-treatment. This is the same questionnaire as one of the 3 questionnaires you will complete, with an example question shown at 1 below.
- d) If your child is allocated to the 'waitlist' condition: you and your child's teacher will complete the pre- and post-treatment questionnaires in one term (8 weeks apart), and again in the following term when your child progresses to the 'treatment' condition.

Some examples of the types of items in the questionnaires you will complete include:

1. Make a rating on "Often has difficulty maintaining alertness, orienting to requests, or executing directions"
2. Make a rating on the statement "People my child are with each day take care of his/her feelings"
3. Make a rating on the statement "[my child] Waits their turn in activities".

Important things to consider

- After completion of part a (pre-treatment online questionnaires), eligibility for participation will be determined by the research team, who will inform you (via email or phone) about the outcome of this screening process.
- Participation in the study is voluntary and you or your child can choose to withdraw at any stage.
- Your child will be randomly assigned to a treatment or waitlist condition in the first school term. If your child is allocated to the waitlist condition, they will progress to the treatment condition in the following school term.
- All data obtained will be used only for the purposes of this study and will not be made available to any persons other than the research team. Confidentiality is assured and no individual will be identifiable. The data may be considered at a group level to examine the effects of the different treatments and this may be written for publication in a scientific journal if deemed appropriate by the researcher. If you or your child choose to withdraw your consent to participate, your data will be destroyed and not included in any group analyses.
- The Focus Pocus software was designed by Professor Stuart Johnstone.
- If you do not wish for your child to participate, please note that treatment as usual involves the following:
 - Students with a disability or specific learning difficulty are supported within the mainstream classroom in a variety of ways as determined by their needs, recommendations from health professionals and learning assessments and in line with NESAs guidelines. Reasonable adjustments can be made to the curriculum and the learning and teaching environment to enable access to educational content and to improve the educational outcomes of students with a disability or learning difficulty. The school aims to work collaboratively with the student, parents/carers, health and other professionals to decide the most appropriate support to suit the individual learning needs of our students. For students with ADHD commonly used adjustments include but are not limited to: Explicit and systematic instructions; scaffolding and modelling; Verbalisation of attained knowledge; Targeted literacy and numeracy support with SLSO's and Learning and Support teachers; SLSO support in the classroom as well as collaborative teaching with LaSTs; Peer assisted learning; Alternative equipment and furnishings; Adjustments to lesson material, Individual education plans; Behaviour management plans.

The Focus Pocus software

A Focus Pocus training session takes only 15-20 minutes to complete. The training consists of 14 simple and fun games that are very easy to play. At the end of each training session children are rewarded with the chance to play a “boss game” which is just for fun, where they battle a “boss” wizard using spells and items unlocked during training. Some screenshots from the games are shown below. There are memory, impulse-control, and neurofeedback games. The memory games required holding small amounts of information in mind and then using it to complete the task (e.g. locating a certain book on a bookshelf, and holding its location in memory to not look in that place again). The impulse control games require a tap/press to certain images (e.g. anything blue in colour) and do tap/pressing to images of any other colour. The neurofeedback games involve using brain activity recorded from the NeuroSky Mindwave device to control the game (e.g. using a score representing attention focus to control the a magic wand battle).



The device we use to measure brain activity (and drive some of the games!)

All children in the study will use the NeuroSky Mindwave device (see picture below) for the pre- and post-treatment assessment sessions. Additionally, children will wear the device during the training as some of the games are controlled using “brain power” (e.g. attention level). This device is very safe. **The electrodes on this device receive tiny electrical signals that the brain generates at all times. The device does not generate electricity or radiation and will not harm your child. Your child will experience no discomfort and the skin is not penetrated.**

The NeuroSky Mindwave (right) is worn like a set of headphones. Small dry sensors rests against the forehead and another is in the earlobe clip. The device measures the brain’s electrical activity.



Benefits of Participation

Your child will undertake neurocognitive training, an approach that has been shown to reduce AD/HD symptoms and improve behaviour.

Risks and burdens of participation

The treatment will be delivered by a registered School Psychologist and therefore there are likely to be few risks of participation. If your child becomes anxious during any part of the study the psychologist will address this using evidence-based approaches. There is a time commitment involved for your child, particularly during the treatment condition, however this will occur during school time and so will not burden them beyond their usual school day.

If you have any questions about this research please email or call Professor Stuart Johnstone.

If you would like your child to participate in this research please email or call Professor Stuart Johnstone.

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This project has been approved by the UOW Social Sciences HREC (ethics protocol number 2020/404). If you have any complaints about the conduct of the study please contact the Complaints Officer, University of Wollongong/Illawarra Area Health Service Human Research Ethics Committee on 02 4221 4457 or email ethics@uow.edu.au. Your child's participation in this research is entirely voluntary. They can refuse to participate and are free to withdraw from the research, at any time. Their refusal to participate or withdrawal of consent will not affect any relationship with Shell Cove Public School or the School of Psychology at the University of Wollongong.