

Information Sheet

Study title: Comparing behaviour-management and clinician-assisted neurocognitive training to reduce symptoms in children with AD/HD

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This is an invitation to participate in a new study which will compare a newly-developed clinician-assisted neurocognitive treatment for children with AD/HD against treatment-as-usual involving behaviour-management.

What is the aim of the study?

The aim of this study is to compare a newly-developed clinician-assisted neurocognitive treatment for children with AD/HD against treatment-as-usual involving behaviour-management. While both treatment approaches have been shown to result in AD/HD symptom reductions and improved behaviour, they do so in very different ways. We are interested in understanding the effects of each treatment on a broad range of outcomes, such as brain activity, executive function ability, behaviour at home and school, sleep patterns, self-regulation ability, and psychological needs. This study will reveal information about (a) which treatment leads to the largest symptom reductions and the most improved behaviour, and (b) how each treatment leads to reduced symptoms and improved behaviour.

Behaviour-management approaches provide education, coaching, and support for parents or other significant adults such as teachers (Eyberg et al., 2008) to modify patterns of reinforcement in the environment around the child to increase desirable behaviours (e.g. following instructions, completing a task) and, through extinction, decrease typical AD/HD behaviours (Webster-Stratton et al., 2011). The primary reinforcer is the adult-child connection through specific praise, complemented by extrinsic rewards (e.g., earning a privilege, receipt of a small, child-nominated treat).

Neurocognitive 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. To date, this has been a child-focussed intervention. In the current study we will look at an enhanced version which involves positive behaviour support from parents. 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 executive function ability, and sleep and psychological needs questionnaires. This will take place at Evolve Psychological and Assessment Services in Unanderra.
- Either 9-weeks of in-clinic sessions and homework in the behaviour management treatment group, **OR** 9-weeks of neurocognitive training (25 x 20 minute session, some in-clinic and some at-home) in the

neurocognitive treatment group. In-clinic sessions will take place at Evolve Psychological and Assessment Services in Unanderra. Approximate parent/child time commitment across the 9 week is 18 hours.

- A post-treatment 30 minute assessment of brain activity and executive function ability, and sleep and psychological needs questionnaires. This will take place at Evolve Psychological and Assessment Services in Unanderra.

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:

- Pre-treatment - complete 3 questionnaires about your child. This will take 15-20 minutes.
- Provide your child's teacher's email address so that we can request they complete a 40-item questionnaire about your child pre-treatment and post-treatment.
- Either 9-weeks of in-clinic sessions and between-session activities with your child in the behaviour management treatment group, **OR** 9-weeks of some in-clinic and some at-home contact with the clinician and supervision of your child as they undertake neurocognitive training in the neurocognitive treatment group. Approximate parent/child time commitment across the 9 week is 18 hours.
- Post-treatment - complete 3 questionnaires about your child. This will take 15-20 minutes.

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

- Participation in the study is voluntary.
- Your child will be randomly assigned to one of the two treatment conditions after you consent to their participation in the study. You are not able to choose which treatment your child will undertake.
- For those in the neurocognitive treatment group, you will be loaned a computer and all required hardware/software needed for the neurocognitive training. Telephone support will be available for any technical issues.
- If the neurocognitive training treatment is effective it will be made available to participants in the behaviour management treatment group after the trial is complete.
- The neurocognitive approach was designed by the researcher, and the in-clinic adaption was designed in consultation with psychologists at Evolve Psychological and Assessment Services. Psychologists from

Evolve will deliver both the behaviour management and neurocognitive interventions. Evolve Psychological and Assessment Services have a research contract with the University of Wollongong to develop assessment software used for the pre- and post-treatment assessment in this study.

- 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 is 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

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:



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 in the neurocognitive treatment group will wear the device during their 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 rest 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 either behaviour-management (treatment as usual) or neurocognitive training. Both of these treatment approaches have been shown to reduce AD/HD symptoms and improve behaviour.

Risks and burdens of participation

Both interventions will be delivered by registered clinical psychologists 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 large time commitment involved in participation in this study and it must be acknowledged that this may place significant burden on your and your child's time over the 11 week study period.

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 2018/400). 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, and he/she can refuse to participate, and is free to withdraw from the research, at any time. His/her refusal to participate or withdrawal of consent will not affect any relationship with Evolve Psychological and Assessment Services or the School of Psychology at the University of Wollongong.