



## What is Cogmed Working Memory Training (CWMT)?

Cogmed is an evidence-based program that helps individuals improve attention by training working memory. Working memory is the brain's ability to hold and process information about what one is doing at the present moment.

Cogmed was developed by Dr. Torkel Klingberg and colleagues at the Karolinska Institute in Sweden in 2002. Since then, it has been extensively studied and published in numerous peer-reviewed journals, including the *Journal of Child Psychology and Psychiatry* and *Science*. Cogmed was acquired by Pearson, a leader in assessment and educational technology, in 2010.

Cogmed training is designed to expand working memory capacity by taking advantage of the brain's ability to repair, build, and strengthen cells and systems when a specific skill is trained. The computer based program uses exercises designed to challenge different types of working memory with a complex internal adjustment algorithm designed to keep the trainee working at the edge of his or her ability.

Information on current and past studies can be found at [www.cogmed.com/research](http://www.cogmed.com/research).

## Who is an appropriate candidate for CWMT?

Cogmed is for children and adults whose deficits in working memory are having a negative impact on their lives. This is mostly true for people with:

- ADHD (working memory deficits are often a core symptom of ADHD)
- Age-related decline in working memory
- Brain injury or stroke (often affects working memory)
- Cancer (loss of working memory is often seen among cancer survivors)

- Primary deficits in working memory (often seen with learning disabilities)
- School children with low working memory (of unknown cause)

## 1) Working Memory Deficits and ADHD

ADHD is characterized by a failure to obtain normal age related gains in working memory. This failure to achieve maturational gains is thought to be one of the major reasons ADHD students have progressively greater difficulty compensating for the disorder.

Cogmed Working Memory Training has repeatedly been shown to result in statistically significant improvements in working memory with subsequent gains in other executive functions, behavioral measures and academic performance.

## 2) School children with low working memory

Children with low working memory commonly struggle to keep up with the academic challenges of school. Many of these children have diagnosed learning disabilities. A recent study showed that children who tested in the bottom 15% on working memory assessments were able to largely normalize their working memory capacity after five weeks of Cogmed training. Six months later, these students were showing significant improvement in math.

## 3) Normal Aging

For adults, normal aging is associated with a 5 to 10% decline in working memory every decade. Cogmed training has been shown to improve working memory and to result in improved self-reported cognitive functioning. Cogmed training has been shown to improve working memory in older adults, ages 60 to 70 years, and to result in decreased reports of cognitive problems.

## 4) Stroke

Significant decreases in working memory are common following stroke. These changes are correlated not only with memory and attention problems, but have been shown to predict the extent of recovery of motor function. Cogmed training has been shown to significantly increase working memory and attention, and to decrease cognitive problems.

## How is Cogmed Working Memory Training structured?

**Initial Contact** – Dr. Hook is available by phone and/or email to answer questions regarding training, and whether Cogmed Working Memory Training would be an appropriate option for you or your child.

**Start-up session** – Once you have committed to the training, Dr. Hook will explain the structure of the program, review the exercises, explain how to access the performance review information, and provide the software for the program. She will also provide the system assigned username and password, explain how to access technical support, assist with planning and structuring training, answer any additional questions and provide written documentation of the information that was discussed. If the trainee is a child, both the child and all adults who will be supervising training must attend the appointment.

**Five to six weeks of training with weekly contact** – Training is designed to take place five days per week for five weeks. The specific days and times are decided by the trainee and/or his or her family. When necessary, it is possible to divide one session into multiple sessions, even over multiple days. Supervision is done by monitoring the training data stored on the main server each time the program synchronizes.



**Access to the Cogmed training web** - Dr. Hook will be able to review and monitor the results of each day's training online.

**Wrap-up report** - After the training is completed, the trainee, or his or her parent, will complete rating scales and other tasks. This information will be used in the preparation of the wrap up report.

**Cogmed Working Memory Training - Extension Training** - When the 25 sessions are completed, the trainee or trainee's parent may request an additional five full training days, and/or 100 half-sessions of training to use over a 12-month period. This optional extended training is free, but the original license expires no later than 14 months after start-up.

**Follow-up session after 6 months** - the trainee and his/ her parents will meet briefly with Dr. Hook six months after training is completed for additional post-test measures.

*Note:* Increasing working memory capacity provides the foundation for using and/or building working memory dependent skills. It does not train those skills directly. We recommend that trainees, and/or their parents, consider professional guidance as they work to acquire new skills, to use previously existing skills more consistently, and to eliminate old coping skills that have become barriers to change.

## Is Cogmed Working Memory Training appropriate for children?

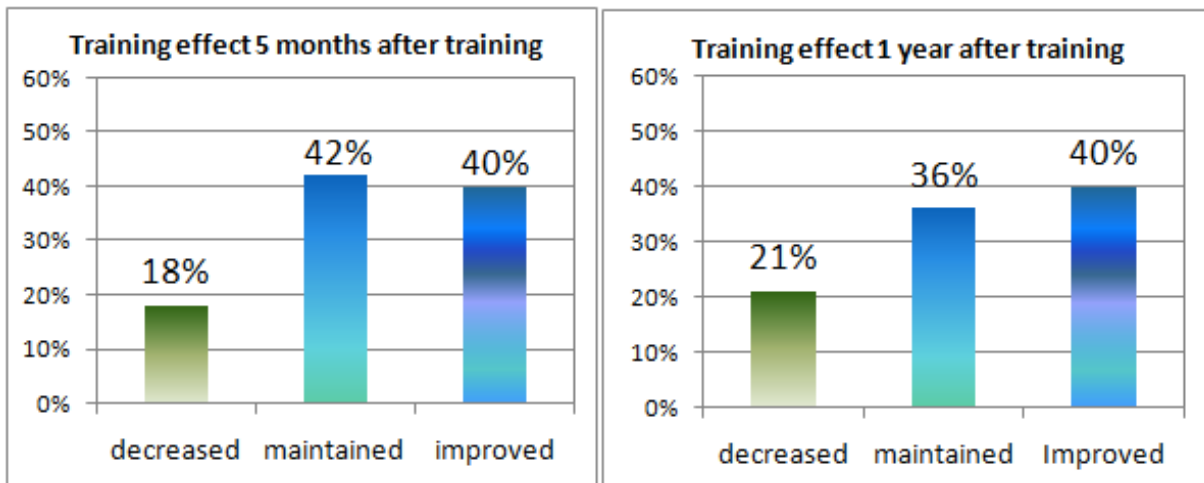
Yes, even preschool children may benefit from increasing their working memory via Cogmed training. Young children benefit the most when there is direct adult supervision of training. 8 out of 10 children show measurable improvement in:

- Improved ability to sustain attention
- Improved impulse control
- Better complex reasoning skills
- Better academic performance



## How do I know the benefits will last?

A one-year follow-up analysis of trainees confirms that results are well maintained. Of the 80% who have benefited from training:



**After 5 months, 82% reported maintained or improved benefits**

**After 1 year, 79% reported maintained or improved benefits**

## Who should *not* do CWMT?

While it would be impossible to predict all of the circumstances that might make training less effective, there are some circumstances in which CWMT is not recommended:

- People with photosensitive epilepsy may have seizures triggered by working in front of a computer. Anyone with a history of epilepsy should consult their neurologist for medical clearance prior to participating in training.
- People with photosensitive migraines. Some people have migraines that may be triggered or aggravated by working in front of a computer screen.
- People with carpal tunnel syndrome or other repetitive motion problems in their dominant hand and/ or arm. Cogmed training requires working with a mouse for an average of 30 to 45 minutes most days. This can trigger or worsen repetitive motion injuries.

## How much does Cogmed Working Memory Training cost?

**Individual adults or children - \$1500**  
***(includes software, technical support, consultation, and all components of the program - there are no additional charges)***

Costs are updated as developments are made in the program and delivery options. Those interested should always call to check on the latest pricing.

Cogmed Working Memory Training is done in the home without a provider present and so is not covered by insurance.

*Please note: Cogmed is a specific program for working memory deficits, not a comprehensive treatment for any condition. Other services, including diagnostic assessments, treatment, or consultation with parents and schools are not included in the Cogmed program. CWMT is not intended as a substitute for a health care provider's consultation or a substitute for medication that a doctor may have prescribed. Results may vary. Effects or results in the individual can never be guaranteed.*

## What do I do if I am interested in Cogmed?

- Try a free webinar: [www.cogmed.com/webinar](http://www.cogmed.com/webinar)
- Read the research and other info about Cogmed at: [www.cogmed.com](http://www.cogmed.com)
- All Cogmed appointments are booked directly by Dr. Hook.



**For more information or to schedule an appointment to begin training, contact Dr. Christine Hook at (910) 254-4545, ext 205 or [christinehook@me.com](mailto:christinehook@me.com).**