

# ADHD

EXPLAINED

FREE E-BOOK BY

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# I N T R O

ADHD is a genetic disorder. Scientists are currently disagreeing on whether it's something we are born with naturally, or if there is some sort of trauma triggering the ADHD gene.

For full disclosure, I believe it's natural, and has always been around. My 73 year old father has ADHD (and autism). Our way of thinking and our brains have been around for a long time. In fact I believe ADHDers were the inventors of our olden days. I think we were the explorers and adventurers, the ones that couldn't sit still. But I digress that's philosophical, not scientific.

# O U R   A D H D B R A I N S

## C H A P T E R 01

So, the thing that causes ADHD symptoms, is an imbalance in the neurotransmitters in the brain, which means it doesn't function as well as it could at times. There are also structural differences, such as reduced efficiency in reward pathways, meaning the dopamine doesn't travel as fast as it could. There is also a difference in how fast some parts of the brain are developed.

Those parts of the brain are towards the front of your head, and are all related to conscious thought and what we call "executive function".

Executive function is the planning, organising and short term memory. I.e. all those things that make your life easier to manage. This area of the brain is also responsible for the inhibition of inappropriate behaviours. So that explains all the times we've had our foot in our mouths!

Whilst most important brain pathways are working normally, the regions involved in attention, impulse control, and ability to respond to stimulation, are not fully active or developed. Some data says it takes our brains up to 35 years to develop, whilst a neurotypical persons brain is ready in around 20 years. It's important to remember that ADHD is widespread, and that we are just beginning to understand it properly.

NEUROTRANSMITTERS

Although ADHD is thought to be caused by many things, one important one is a chronic deficiency of neurotransmitters in our brains. Neurotransmitters are little chemical messengers that hang out in the space between neurons, and take the message from one to the next.

Scientists think that when serotonin is consistently low, that may trigger symptoms of ADHD. There are currently investigations that suggest serotonin may regulate behavioural domains of hyperactivity and impulsivity in ADHD.

We also have reduced dopamine production and fewer dopamine receptors, which together leads to an ineffective dopamine system.

A receptor is the receiver at the end of the neuron which is stimulated by the dopamine, and makes the neuron react.

When the neurons react, we feel or think something. Because we are both bad at making dopamine and have less of the receptors, we don't have all the benefits of dopamine, such as feeling calm or satisfied. These feelings are referred to as our reward system.

Nor-epinephrine is the third very important neurotransmitter in ADHD.

Norepinephrine has is a bit of a double edged sword, as on side it responds to stress by increasing our blood pressure and potentially making us anxious. On the flip side it also contributes to your brain's ability to store memories, helps you wake up, increases attention and focus, as well as supports emotional health.

All three neurotransmitters are important in our brains, and need to be balanced. Too much can also cause issues. People born with high dopamine are found to have schizophrenia.



## C H A P T E R

# 03

## M E D I C A T I O N S

So, how do the stimulant medications work? Well, there are two main stimulants prescribed today. Number 1 stimulates an increased release of dopamine from the brain. It also then stops the dopamine from being absorbed and broken down, when it's transferred its message, so it can be reused. Number 2 only stops the absorption and breakdown. Both of these

medications are also available as slow release and short release. Depending on your brain chemistry, you will react differently to all four options.

To summarise how the medications work, as the dopamine travel between neurons with its messages that create feelings and thoughts, the receiving neuron will automatically absorb it when it's done and break it down. The stimulants stops this absorption, and the dopamine can be reused. Therefore we feel better for longer as we get more use out of the little we can make.

Other medications that may be prescribed for ADHD are anti-depressants, as these will also impact serotonin and dopamine.

If you find one that works for you, stick to it. Remember, we are dealing with a dysfunction in the brain programming. This is not a temporary dip in neurotransmitters, but is ongoing.

NOTE: there is no natural supplement that will mimic a stimulants action exactly. We can enhance your dopamine production, and even the pathways between dopamine and nor-epinephrine, we can support neurotransmitter production, and regulate your nervous system but we cannot mimic amphetamines.

Depending on your overall health, natural medicine can help you live with your ADHD very happily.

This is especially true for children, as they respond so well to treatment.

Us adults have so many other layers of issues, it can sometimes take years to regain and reset our health.

For full disclosure, I take stimulants, and find they help tremendously. I do take a range of natural supplements in addition to my stimulants. I believe for me, that a combination is best. For example I found that my sleep actually improved when I started taking stimulants. Which is a contradiction to most peoples experience. I truly believe that is thanks to the supplements I'm taking, and how they supply all the nutrients my body needs to get the best effect of the medication. That does not mean I think you have to take stimulants. Many of my clients chose to not take stimulants, especially parents for their children. These clients have great results from my treatments.



My name is  
Caroline Kennedy,  
I am a Naturopath  
living with ADHD  
and I am autistic.

I am passionate about working with neurodivergent families who struggle with sleep and emotional and physical regulation such as hyper-activity, aggression and inattention, to assist them to achieve exceptional quality of life.

Did you like this e-book? Visit my website for more information about seeing me in clinic, or joining my program "Empowering Families".



# The Neurodivergent Naturopath

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