ADHD GUIDE

ADHD FACTS AND TREATMENT OPTIONS FOR ADULTS

UNIVERSITY of Prince Edward ISLAND

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ADHD MYTHS

ADHD IS NOT REAL

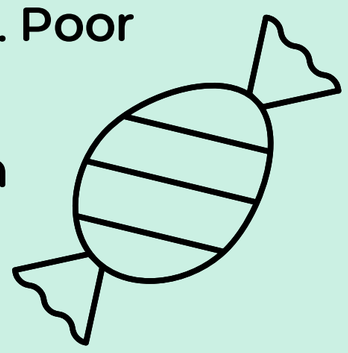
ADHD is a brain developmental disorder.
Its symptoms are inattention, hyperactivity, or both.

ADHD IS OVER-DIAGNOSED

ADHD prevalence is 5-9% of children and teenagers and 3-5% of adults. Rates of ADHD have been consistent over the past thirty years.

ALLERGIES, SUGAR AND FOOD ADDITIVES CAUSE ADHD

There is no evidence these things cause ADHD. Poor nutrition can have negative effects on overall brain and body function.

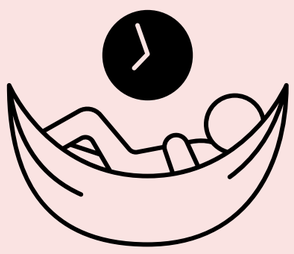


A TEST CAN DIAGNOSE ADHD

ADHD is diagnosed by a detailed assessment and questionnaires.

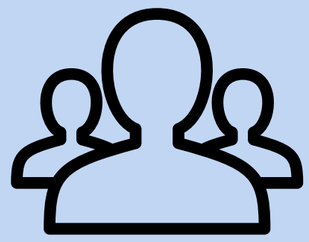
PEOPLE WITH ADHD ARE LAZY

People with ADHD can hyper focus on things they enjoy.
People may think they are uncaring
if they cannot
focus in other areas.



EVERYONE HAS ADHD

Everyone can have ADHD symptoms like losing focus.
People with ADHD have more persistent symptoms that can harm their lives.



WHAT IS ADHD?

Attention deficit hyperactivity disorder (ADHD)

Previously called ADD, ADHD is a lifelong brain developmental disorder.
Symptoms can include decreased attention, increased activity, or both.

INATTENTION

- ✓ Careless mistakes
- ✓ Difficulty focusing
- ✓ Trouble listening
- ✓ Difficulty following instructions
- ✓ Difficulty organizing
- ✓ Avoiding tough mental activities
- ✓ Losing things
- ✓ Distracted by surroundings
- ✓ Forgetful during daily activities

HYPERACTIVITY/IMPULSIVITY

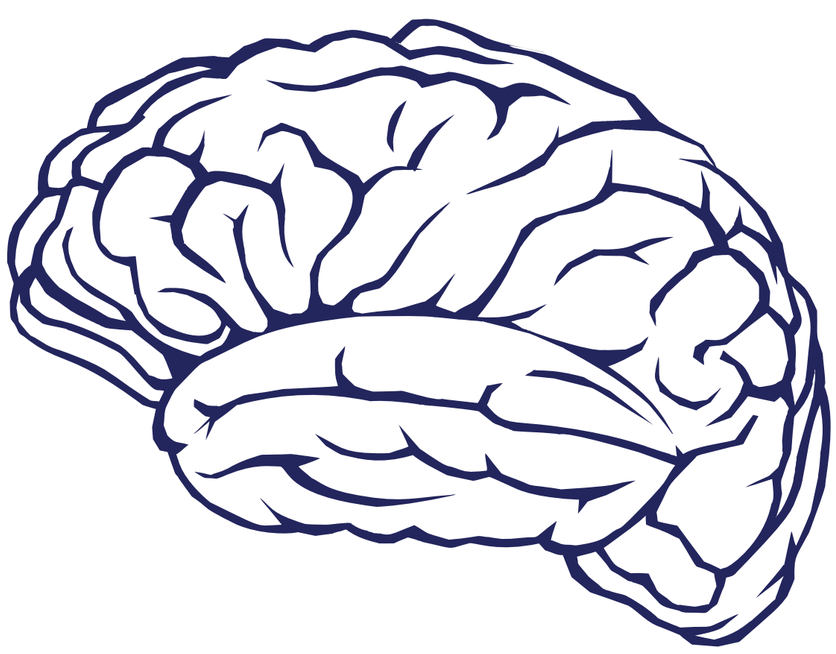
- ✓ Fidgeting
- ✓ Leaving seat
- ✓ Moving excessively
- ✓ Trouble doing something quietly
- ✓ Always on the go
- ✓ Talking excessively
- ✓ Blurting out answers
- ✓ Trouble waiting turn
- ✓ Interrupting

How it affects your life?

ADHD can affect adults in every aspect of their lives (not just when they are trying to focus).

ADHD can affect work, school, relationships, social life, personal habits, decision making, and emotions.

WHAT CAUSES ADHD?



Biologic Component

There have been correlations between a different brain structure and ADHD (i.e., smaller dorsolateral prefrontal cortex which regulates things such as planning, working memory and attention).

Genetic component

Many genes have been linked to ADHD and it is very heritable. Parents with ADHD have greater than 50% chance of having a child with it.

Key Point

ADHD affects your brain all the time and affects all aspects of your life. Managing it is also important outside of school or work.

Environmental Component

Environmental causes of ADHD are being researched. Examples of environmental causes could be exposure to toxins in the womb or high blood lead levels.

HOW IS AN ADHD BRAIN DIFFERENT?

How the brain communicates

There are millions of cells connected together in the brain called neurons. Neurons help control body functions and how we interact with the world around us. They communicate with each other through messengers called neurotransmitters.

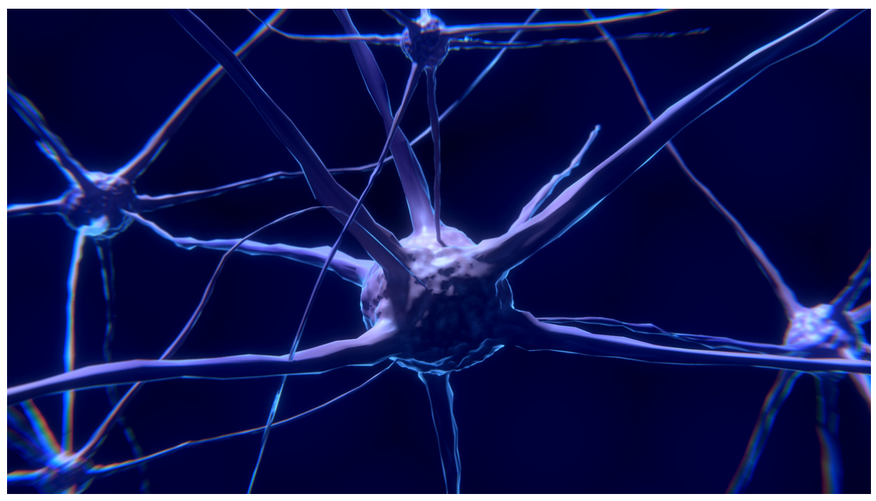
ADHD Brains

ADHD brains lack a neurotransmitter called norepinephrine. It is made within the brain. ADHD is the first condition that scientists discovered too little of a neurotransmitter and it is the first condition that medications helped correct the imbalance. Other conditions that have a lack of a neurotransmitter include anxiety, OCD, mood disorders, etc.

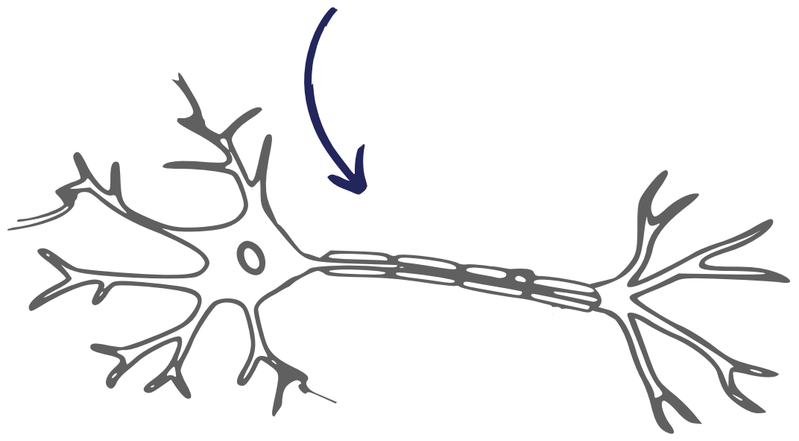
How Norepinephrine is made:

Dopa = Dopamine = Norepinephrine

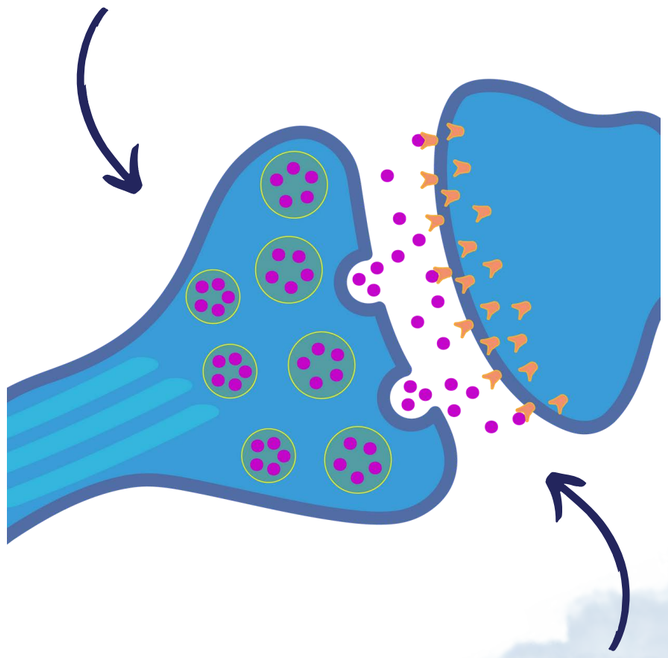
BUNDLE OF NEURONS INSIDE THE BRAIN:



ONE NEURON:

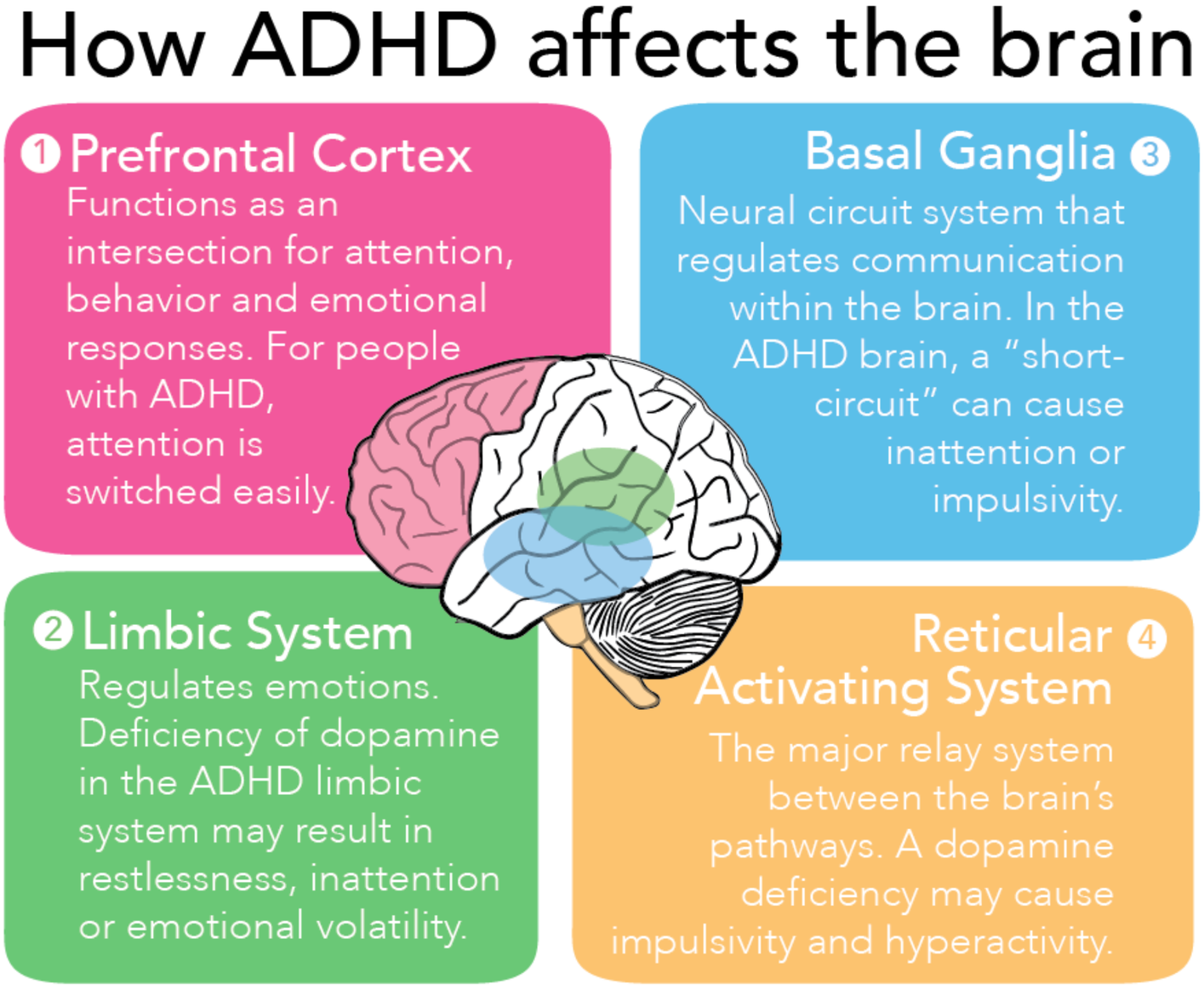


HOW NEURONS CONNECT:



NEUROTRANSMITTERS COMMUNICATING BETWEEN NEURONS

WHAT AREAS OF THE BRAIN ARE AFFECTED BY ADHD?



These areas communicate with each other. People with ADHD may have decreased norepinephrine in one area or all four. More research is needed to understand if one area or all four are affected in people with ADHD.

Source: The Appalachian Online

HOW DO MEDICATIONS WORK TO TREAT ADHD?

Stimulants:
Increase the levels of norepinephrine within the brain by helping the brain to create more.

Nonstimulants:
Decrease how fast norepinephrine is broken down.

Both medications increase norepinephrine so that the brain has more available to use to send messages.

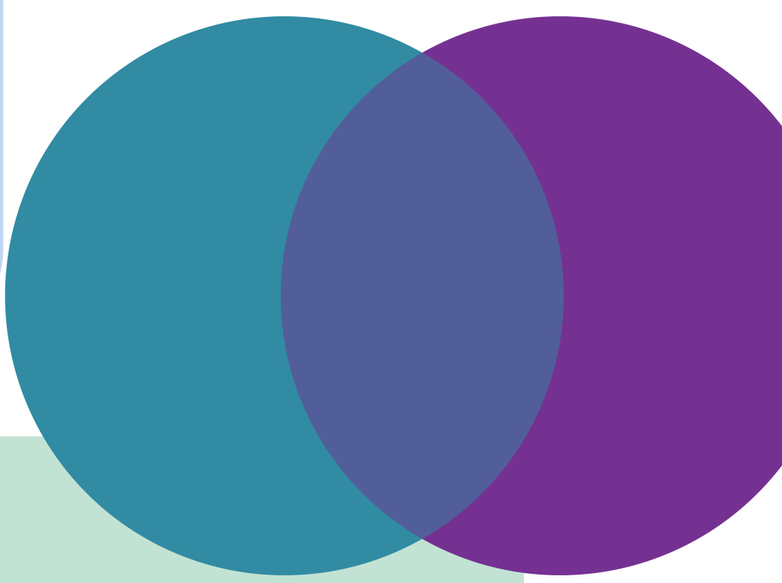
OVERLAPPING AND SYMPTOM MIMICKING CONDITIONS

Comorbid Conditions

85% of adults with ADHD meet the criteria for having another disease or condition.

These may include:

- Anxiety
- Depression
- Learning disabilities
- Oppositional defiant disorder
- Conduct disorder
- Bipolar disorder
- Substance use disorder
- Autism spectrum disorder
- Tic disorders
- Disruptive mood dysregulation disorder
- Borderline personality disorder
- Obsessive-compulsive disorder



Medical Conditions

Medical conditions may mimic symptoms of ADHD. They need to be considered as a cause for symptoms.

These may include:

- Hearing/vision issues
- Thyroid disorders
- Low blood sugar
- Severe anemia
- Lead poisoning
- Sleep disorders
- Fetal alcohol spectrum disorder
- Neurofibromatosis

ADHD TREATMENT OPTIONS

Psychosocial Treatments

Learning – Learning about symptoms and causes of ADHD.

Lifestyle changes – Ways to change school, work, home, and relationships. Ways to change thoughts, speaking and behavior.

Programs – Programs to learn about social skills, CBT therapy, and mindfulness.

Medications

Medications are used with treatments listed above. The best treatment is long-acting stimulants.

Medications are prescribed after a benefit versus risk analysis. Symptoms may cause harm in relationships, work, school, and increase accidental injuries if not treated.

ADHD MEDICATIONS

STIMULANT MEDICATION

Amphetamine Based

Adderall XR
Mixed Amphetamine Salts

Vyvanse
Lisdexamfetamine dimesylate (LDX)

Dexedrine
Dextroamphetamine (DEX) based products
Short acting and intermediate acting

Modafinil

Methylphenidate Based

Biphentin
Methylphenidate hydrochloride (MPH)
Controlled release

Concerta
Methylphenidate hydrochloride (MPH)
OROS tablets

Foquest
Methylphenidate hydrochloride (MPH)
Controlled release

Ritalin + Ritalin SR
Methylphenidate hydrochloride-based products
Short acting and intermediate acting

NON-STIMULANT MEDICATION

Alpha-2 Agonists

Intuniv XR
Guanfacine hydrochloride

Clonidine

Antidepressants

SNRI
Strattera
Atomoxetine

TCA
Imipramine

NDRI
Wellbutrin

Key Point

ADHD medications do not cause adverse effects often. However, if a medication is making you feel worse or not "your normal" contact your provider.

1st line medications in Canada

2nd line medications in Canada

3rd line medications in Canada

HOW TO DECIDE WHICH MEDICATION TO TAKE?

FAMILY MEMBERS

Do you have family members with a positive or negative reaction to ADHD medications?

COST

Do you have a private insurance plan? Do you qualify for a PEI drug program?

SYMPTOMS

Is there a specific time of the day or part of your life when you have the most symptoms?

SWALLOWING PILLS

Do you have trouble swallowing a pill?

BELIEFS

Do you have any negative beliefs about the medications? Do you have unrealistic expectations for medications?

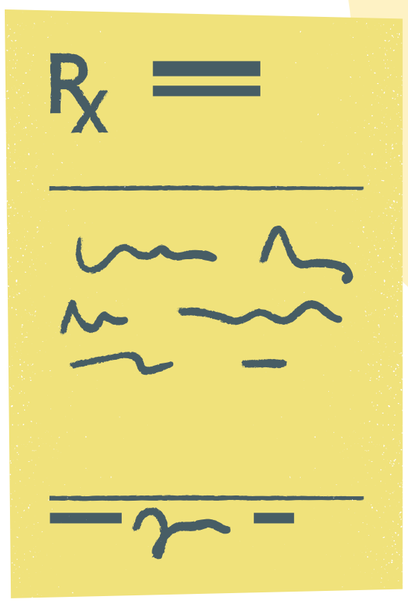
OTHER CONDITIONS

Do you have other conditions that could be contributing to symptoms? Are you talking any medications that can interact with ADHD Medications?

POSSIBLE SIDE EFFECTS

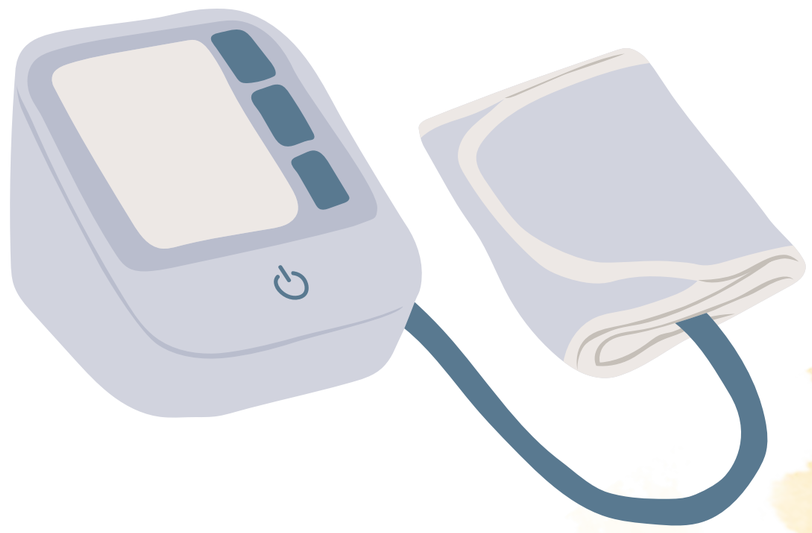
Possible Side Effects of ADHD Medications

- Decreased appetite
- Weight loss/gain
- Stomach aches/nausea/vomiting/diarrhea
- Dryness (skin/eyes/mouth)
- Thirst
- Sore throat
- Sleep trouble
- Tics
- Headache
- Muscle tension
- Fatigue
- Dizziness
- Sweating
- Agitation
- Excitability
- Irritability
- Over focus "zombie effect"
- Sadness
- Heart palpitations
- Blood pressure changes (significantly lower or higher)
- Frequent urination
- Sexual dysfunction
- Feeling worse or different when the medication wears off (rebound)



Key Point

Side effects mostly occur with a medication start or change. They usually disappear a few weeks after taking a consistent dose.



STOPPING OR CHANGING MEDICATIONS

Changing medications

Severe side effects are a reason to change a medication. Mild side effects may be managed by lowering the dose.

Medications may also be changed when a person taking them is not experiencing benefits even on a high enough dose.

Key Point

Your prescriber should monitor stopping or changing a medication. Speak to them before adjusting your medication.

Reducing or stopping medications

Medications may be decreased if a person taking them feels the dose has become "too high" after taking them for a while.

Sometimes prescribers may recommend a "drug holiday" or a period off a medication to see if it is still working. This may also be to see if side effects are caused by a particular medication. However, do not try stopping your medications alone. Some medications need to be decreased slowly to avoid dangerous side effects. Always take your medications as prescribed and ask your prescriber any questions you may have.

HOW DO YOU DECIDE WHAT TREATMENT IS BEST FOR YOU?

Other causes of Symptoms

Many other issues can overlap with ADHD symptoms. These may include trouble with learning, mood disorders, anxiety, and family tensions. It may take weeks of treatment to get to the "root issues" in work, school, relationships or emotions.

Key Point

It is necessary to implement lifestyle changes such as basic sleep, diet, and exercise habits to decrease ADHD symptoms.

Treatment Approach

Lifestyle changes and medications are both beneficial. This has been seen in research and by practitioners treating ADHD. Together they improve ADHD symptoms and the overall negative effects of ADHD.

PSYCHOSOCIAL TREATMENT BENEFITS

- Improves ADHD symptoms
- Improves behaviors
- Improves parenting skills
- Improves patterns of thinking
- Improves social skills

MEDICATION BENEFITS

- Improves focus
- improves self-regulation
- Decreases impulsivity
- Decreases hyperactivity

REFERENCES

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2. Russel, Q. (2019). [Picture of how ADHD affects the brain] The Appalachian. https://theappalachianonline.com/opinion-misbranded-and-misconceived-living-with-adhd-is-different-than-the-public-perceives/
3. Silver, Larry. (2022, July 13). ADHD Neuroscience 101. ADDitude. https://www.additudemag.com/adhd-neuroscience-101/