

Adult ADHD

A plain-English guide for you and your family

WHAT IS HAPPENING

Your brain has a control tower called the prefrontal cortex. It sits at the front of your skull and runs the show—deciding what to focus on, when to stop yourself, what comes next, and how long things will take. To do this job, it uses two main brain messengers: dopamine (which helps you lock onto the important thing and ignore everything else) and norepinephrine (which keeps your brain alert, awake, and ready to act). In ADHD, the control tower cannot keep enough of these messengers active in the tiny gap between nerve cells. The messengers get recycled too fast by pumps on the sending cell, or there are not enough landing spots—called receptors—on the receiving cell to catch the signal. So the spotlight that picks what to focus on never fully turns on, the brake that stops impulses never fully engages, and the mental scratch pad that holds instructions in your head erases itself too fast. You might start five tasks and finish none, lose your keys every single day, forget what someone said while they are still talking, miss deadlines even when you care deeply, or feel a constant need to move, tap, or fidget just to stay awake. This is not laziness, weak willpower, or a character flaw—it is a real wiring difference, often passed down in families, that makes attention, impulse control, memory, and time sense harder than they should be. The good news: medicines that boost dopamine and norepinephrine—like stimulants such as methylphenidate (brand names Ritalin, Concerta) or amphetamine (brand names Adderall, Vyvanse), or non-stimulants like atomoxetine (Strattera) or guanfacine (Intuniv)—plus coaching, routines, external reminders, and support, can restore much of that lost control and help you meet your goals, hold jobs, maintain relationships, and feel capable again.

What you might feel

- Trouble staying focused on tasks, easily pulled away by sounds or thoughts, often makes careless mistakes
- Forgets where things are, misses appointments, loses track of instructions even when trying hard to remember
- Acts or speaks without thinking: interrupts others, makes snap decisions, jumps into things without weighing the risks

- Restlessness or fidgeting: taps feet, shifts in the chair, feels an inner motor running all the time
- Messy space, jumping between tasks without finishing, trouble deciding what to do first
- Always late, guesses wrong how long things take, misses deadlines despite wanting to be on time
- Gets frustrated or annoyed quickly, snaps easily, takes a long time to calm down after getting upset
- Locks onto interesting activities so deeply that hours vanish—skips meals, loses sleep, ignores other responsibilities
- Trouble sitting through meetings or conversations, feels trapped or bored quickly, gets up to move around or finds excuses to leave
- Avoids paperwork, bills, or tasks with many steps; puts them off until the last minute or past the deadline

Call the doctor right away if...

- Attention trouble that starts for the first time after age 12 with no childhood signs—think thyroid disease (the thyroid gland in the neck controls how fast the body burns energy), sleep pauses in breathing (apnea) (breathing stops many times during sleep and starves the brain of oxygen), medication side effects, or drug use instead.
- Thoughts of suicide or deep sadness that does not lift—ADHD raises the chance of depression and acting on impulse without thinking through the outcome; check mood right away and get help urgently.
- Taking more stimulant medicine than prescribed, using someone else's pills, or mixing the medicine with alcohol or other drugs—this signals addiction risk and needs immediate help and close monitoring.
- Losing jobs over and over, getting arrested for impulsive choices, or racking up serious debt from snap decisions—the person needs close support, case management, and monitoring to prevent bigger harm.
- Active drug or alcohol problem right now—stimulant ADHD medicines (like amphetamine or methylphenidate) can make cravings worse, raise blood pressure dangerously, or trigger relapse; treat the addiction first or switch to a non-stimulant ADHD medicine like atomoxetine or bupropion.

What the care team will do

- Screen for suicidal thoughts using a direct question such as 'Have you thought about hurting yourself?' and escalate immediately to psychiatry or emergency department if the answer is yes
- Check blood pressure and heart rate before each stimulant dose and teach the patient to report chest pain, racing heart, or shortness of breath right away
- Ask about sleep duration, snoring, and daytime sleepiness; refer patients with possible sleep pauses in breathing (apnea) for a sleep study before starting stimulants
- Review every medication, supplement, and over-the-counter pill the patient takes and flag any substance that slows the brain or mimics ADHD symptoms
- Teach the patient to take stimulant medication at the same time every morning with food and to never double a dose if one is missed
- Help the patient set up external structure: alarms for medication and appointments, a single spot for keys and wallet, and a written daily schedule broken into 15-to-30-minute blocks
- Screen for substance use at every visit using nonjudgmental questions and urine drug screens when appropriate; coordinate care with addiction services if use is active
- Document baseline weight and appetite, then recheck monthly; notify the provider if the patient loses more than 5 pounds or skips meals regularly

Medicines you may be given — and why

Methylphenidate

In adults with ADHD, two brain chemicals run too low in the prefrontal cortex (the front part of your brain that plans, organizes, decides, and stops you from acting on every impulse). Those chemicals are dopamine (controls attention, motivation, and holding back impulses) and norepinephrine (keeps you alert and focused). Methylphenidate blocks the pumps (called transporters) that normally pull dopamine and norepinephrine back into storage. When those pumps are blocked, both chemicals stay longer in the synapse (the tiny gap between nerve cells where signals jump). More chemical in the gap means a stronger, clearer signal. The result: better focus, less impulsivity, and stronger working memory (the ability to hold information in your mind while you use it, like keeping a phone number in your head while you dial).

Amphetamine (mixed amphetamine salts or lisdexamfetamine)

Amphetamines work like methylphenidate but with a second action. They block the dopamine and norepinephrine transporters (the vacuum pumps that pull these chemicals back into

storage), AND they enter the nerve ending and push stored dopamine and norepinephrine OUT into the synapse (the gap between nerve cells). This double action—blocking reuptake and forcing release—floods the synapse with both chemicals, creating a very strong, clear signal in the prefrontal cortex (the brain's control center for focus, planning, and impulse control). That signal boosts attention, motivation, impulse control, and working memory. Lisdexamfetamine (Vyvanse) is a prodrug (an inactive form) that the body slowly converts into active amphetamine in the blood, giving a smooth, long-lasting effect with lower abuse potential.

Atomoxetine

Atomoxetine blocks the norepinephrine transporter (the pump that pulls norepinephrine back into nerve endings for storage) in the prefrontal cortex (the brain's control center for focus, planning, and impulse control). By blocking that pump, atomoxetine keeps norepinephrine in the synapse (the gap between nerve cells) longer, which strengthens the signal for attention and impulse control. Unlike stimulants, atomoxetine does NOT raise dopamine much, so it does NOT cause euphoria, does NOT worsen anxiety as often, and has NO abuse potential. It takes 4 to 6 weeks to reach full effect because the brain needs time to adjust its receptor sensitivity (the receiving nerve cells become more responsive to the norepinephrine that is now staying in the synapse longer). Atomoxetine is the first choice if the person has active substance use disorder, high anxiety, tics, or cannot tolerate stimulant side effects.

Guanfacine (extended-release)

In ADHD, the prefrontal cortex (the brain's control center for focus, planning, and impulse control) is flooded with too much noisy norepinephrine signaling, which overwhelms the nerve cells and makes it hard to filter out distractions. Guanfacine activates alpha-2A receptors (a type of brake receptor) on the nerve endings that release norepinephrine. When those brake receptors turn on, they tell the nerve ending to release LESS norepinephrine, which quiets the background noise and lets the important signals come through more clearly. The result is calmer focus, better impulse control, and less emotional reactivity. Guanfacine works slowly—it takes 2 to 4 weeks to see improvement—and is especially helpful for people with ADHD plus high anxiety, tics, or trouble sleeping, because it does NOT raise heart rate or blood pressure and actually has a mild calming effect.

Bupropion

Bupropion blocks the reuptake pumps (transporters) for both norepinephrine (the brain chemical that keeps you alert and focused) and dopamine (the chemical that controls attention, motivation, and reward) in the prefrontal cortex (the brain's control center for planning and impulse control) and in deeper reward circuits (the parts of the brain that drive motivation and pleasure). By keeping both chemicals in the synapse (the gap between nerve cells) longer, bupropion strengthens the signal for attention, motivation, and mood. Bupropion is a second-line or add-on choice for ADHD—it is NOT as strong as stimulants—but it is very useful when

the person also has depression, low energy, or nicotine dependence, because it lifts mood, boosts motivation, and reduces cigarette cravings at the same time. It takes 2 to 4 weeks to see full benefit.

Where this information comes from

- American Psychiatric Association DSM-5-TR (2022)
- AAP ADHD Clinical Practice Guideline (2019)
- CADDRA Canadian ADHD Practice Guidelines (2020)
- CHADD evidence summaries

Last reviewed: 2026-07-07