

# High Use of Anticholinergic Drugs Linked to Increased Cardiovascular Disease Risk

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May 14, 2026

## STORY AT-A-GLANCE

- › Common medications with anticholinergic effects — including certain allergy drugs, sleep aids, and antidepressants — interfere with acetylcholine, a chemical your nervous system uses to regulate heart rhythm, blood pressure, and other automatic body functions
- › A large study following 508,273 adults for about 14 years found that higher use of these medications was linked to significantly greater risk of cardiovascular problems such as heart failure, abnormal heart rhythms, heart attacks, and strokes
- › Researchers observed a clear dose-response pattern: the more frequently these medications were used, the higher the risk of heart disease, with the highest exposure group showing roughly a 71% increase in cardiovascular events
- › A separate long-term study tracking 21,636 adults found that people taking several anticholinergic medications had increased risk of developing cardiovascular disease and significantly higher death rates compared with those who took none
- › Reducing reliance on anticholinergic medications and supporting metabolic health may help lower the drug burden on your heart and nervous system; further research is needed to confirm whether these lifestyle changes directly reduce cardiovascular risk

The medications filling your medicine cabinet may be quietly undermining your heart. A broad class of drugs known as anticholinergics — found in everyday treatments for allergies, depression, bladder problems, motion sickness, and sleep disorders — block

acetylcholine, a chemical messenger your nervous system uses to keep your heart rhythm steady, your blood pressure stable, and your digestion moving.

When those signals are suppressed for years, your heart loses one of its most important stabilizers – the system that keeps it calm when your body is under stress. Many people don't realize how common these medications are, or that taking more than one at a time compounds the effect.

Two large population studies show, however, that the cardiovascular consequences of this cumulative drug burden are serious and follow a clear pattern: the more exposure you accumulate, the greater your risk of heart failure, arrhythmias, heart attacks, and strokes.

Once scientists began analyzing long-term medication exposure across hundreds of thousands of people, the link between anticholinergic drugs and heart disease became impossible to ignore. The first major study offers a clear picture of how this drug burden translates into measurable heart risk over time.<sup>1</sup>

## **Higher Anticholinergic Drug Exposure Linked to Steadily Increasing Heart Disease Risk**

A study published in BMC Medicine followed 508,273 residents of Stockholm who were age 45 or older and had no history of major cardiovascular disease at the start of the research.<sup>2</sup> Scientists monitored their health records from January 2008 through December 2021 to see whether the cumulative use of anticholinergic medications was associated with future heart problems.

Researchers measured each participant's exposure using defined daily doses, a standardized way of calculating how much medication a person receives each year. During a median follow-up period of 14 years, investigators recorded 118,266 cardiovascular events, giving them a powerful dataset to analyze long-term risk patterns.

The results revealed a clear pattern: as anticholinergic drug use increased, so did the likelihood of cardiovascular disease. Higher levels of anticholinergic exposure remained significantly associated with cardiovascular events even after adjusting for lifestyle habits, medical conditions, and other risk factors. This means the association held up even when smoking, physical activity, health conditions, and demographic differences were considered.

- **Risk climbed step-by-step as drug exposure increased** – Scientists documented a strong dose-response relationship, meaning the risk rose steadily with higher medication use.

The highest exposure group – people who accumulated 365 doses or more per year – had roughly a 71% higher risk of cardiovascular events compared with those who didn't take these medications. This step-by-step increase makes the pattern easy to understand: the more exposure accumulated, the greater the risk became.

- **Certain heart problems showed dramatically stronger associations** – Individuals in the highest exposure group had a risk of heart failure nearly three times higher than those with minimal exposure. Arrhythmias – irregular heart rhythms that disrupt normal electrical signaling in the heart – also increased sharply. These rhythm disturbances raise the risk of stroke, heart failure, and sudden cardiac events.

Other conditions still showed elevated risk, including myocardial infarction (heart attack), cerebrovascular disease such as stroke, arterial disease, and venous thromboembolism. Although the increases varied by condition, every cardiovascular subtype displayed a measurable rise in risk with greater anticholinergic drug burden.

- **Anticholinergic drugs disrupt your heart's natural nervous system control** – These medications interfere with the parasympathetic nervous system, the branch of your autonomic nervous system responsible for slowing the heart and stabilizing circulation. When this system becomes blocked, heart rate increases, and blood pressure rises.

That imbalance also reduces **heart rate variability** – the natural beat-to-beat variation that signals a healthy and adaptable heart. When heart rate variability drops, it's a warning sign – your cardiovascular system is losing its ability to respond to what your body needs moment to moment. Your heart becomes less flexible and less capable of adjusting to stress.

- **These medications were first recognized for harming brain function** – Researchers note that anticholinergic drug burden was originally studied because of its negative impact on cognition in older adults. Your brain relies on acetylcholine for memory, learning, digestion, and muscle control. When this signaling pathway becomes suppressed, people often experience dry mouth, constipation, blurred vision, and urinary retention. The larger concern appears with long-term exposure.

Studies repeatedly link prolonged use of anticholinergic drugs – especially older antihistamines and certain psychiatric medications – with faster cognitive decline and a **higher risk of dementia in aging adults**.<sup>3</sup> Because these drugs suppress the same chemical system that supports memory, the brain gradually loses one of its key communication signals.

- **Blocking acetylcholine also interferes with inflammation control and heart metabolism** – Your body normally uses a system called the cholinergic anti-inflammatory pathway to regulate immune responses. Acetylcholine activates this pathway, helping keep inflammation under control. High anticholinergic burden suppresses that signaling pathway, which correlates with elevated inflammatory activity – a well-known driver of cardiovascular disease.

Research also suggests the heart may contain its own cholinergic signaling network inside heart muscle cells. This system may help regulate electrical conduction, control heart rhythm, and support cardiac energy metabolism. When anticholinergic drugs interfere with this signaling system, some evidence suggests the heart may become more vulnerable to rhythm disturbances.

# Higher Use of Anticholinergic Medications Linked to Significantly Greater Heart Disease Risk

The BMC Medicine study made the cardiovascular pattern clear – but a second large study published in Age and Ageing reveals something the first one didn't track: how anticholinergic drug use connects to overall mortality.<sup>4</sup>

Researchers tracked 21,636 adults between the ages of 40 and 79 for over a decade to see how these medications affect long-term health.<sup>5</sup> At the beginning of the study, participants completed health questionnaires, listed the medications they used, and underwent physical exams.

Researchers then followed their medical records, watching for heart disease and deaths, and calculated how many medications each person used that interfere with acetylcholine. People who used more of these medications had much worse outcomes. Compared with people who took none of them, those taking several had far higher rates of heart disease and death during the years that followed.

- **Heart disease became much more common as the number of these medications increased** – About 14% of people who didn't take these medications developed cardiovascular disease during the study. But in the group with the highest exposure, nearly half – about 49% – developed heart disease during the follow-up years.
- **Death rates also rose as medication use increased** – Among people who didn't take these medications, about 10.8% died during the study period. That number climbed steadily as medication use increased. Death rates reached 23.4% among people taking small amounts, 27.8% among those taking moderate amounts, and 33.7% among those taking the most.

Even after researchers accounted for factors like smoking, blood pressure, physical activity, and existing illnesses, the link remained strong. People taking several of these medications had a much higher risk of both death and heart disease.

- **Even adding one or two medications noticeably increased risk** – Every two-point increase in exposure was associated with a 29% higher relative risk of death and a 40% higher relative risk of cardiovascular disease in this study population. Each additional medication that interfered with acetylcholine pushed the risk higher. For someone taking several prescriptions, this becomes important because every added medication shifts the long-term health picture.

Participants using several of these drugs were more likely to smoke, exercise less, and have health conditions such as asthma, chronic lung disease, diabetes, or previous heart problems. They also tended to have slightly higher blood pressure and body weight. However, even after researchers adjusted for these factors in their analysis, the connection between these medications and worse cardiovascular outcomes remained strong.

- **These drugs interfere with a branch of your nervous system that normally helps regulate heart rhythm and blood flow** – This system keeps your heart steady and adaptable. When medications block those signals, your heart becomes more vulnerable to rhythm disturbances and sudden changes in blood pressure. Researchers also noted that these drugs reduce heart rate variability. Lower heart rate variability is strongly linked to a higher risk of cardiovascular problems.
- **Inflammation and immune disruption add another layer of risk** – The same signaling system also helps control inflammation in your body. When these medications block that system, your body loses part of its natural anti-inflammatory control. As inflammation rises, the environment inside your body becomes more favorable for heart disease to develop.

The researchers also noted that blocking these signals destabilizes circulation during physical stress, which increases the likelihood of heart rhythm problems and reduced blood flow to the heart.

# Lower Your Anticholinergic Drug Exposure to Protect Your Heart and Nervous System

Anticholinergic drug exposure often builds quietly over time. Many people take these medications without realizing how widely they appear across common treatments – especially allergy drugs like **Benadryl**, **sleep aids**, and certain antidepressants. Yet the more often you use these drugs, the more they interfere with your nervous system and increase cardiovascular risk.

The goal is to reduce reliance on medications that block these signals while supporting your body so the symptoms they were meant to treat improve naturally. If you're taking these medications regularly, especially for allergies or sleep problems, shifting toward root-cause solutions may lower your dependence on drugs that interfere with heart rhythm and autonomic balance. These practical steps may help support your nervous system and cardiovascular health.

One important caution before making any changes: if you're currently taking prescription anticholinergic medications, including tricyclic antidepressants, bladder medications, or antipsychotics, don't stop them abruptly. Sudden discontinuation can cause withdrawal symptoms, rebound effects, or a return of the condition being treated, sometimes worse than before. Work with your physician to develop a gradual tapering plan that reduces your anticholinergic exposure safely.

- 1. Identify every anticholinergic medication in your routine** – Start by writing down every prescription, over-the-counter medication, and sleep aid you use regularly. Antihistamines, nighttime cold medicines, bladder drugs, and certain antidepressants all contribute to anticholinergic burden. When several of these appear together, the effects stack.
- 2. Avoid routine use of anticholinergic drugs and prioritize natural symptom relief** – Instead of relying on medications that suppress your nervous system, shift toward lifestyle strategies that address the root cause of the symptoms.

For **sleep problems**, restore your circadian rhythm with morning sunlight exposure within the first hour of waking and limit blue light from screens for at least two hours before bed.

For **overactive bladder** symptoms, ask your doctor about pelvic floor strengthening exercises and bladder retraining techniques. For **depression**, consider regular physical activity, which research consistently links to improved mood. The goal isn't simply replacing one pill with another but addressing the underlying factors that contribute to symptoms.

- 3. If you rely on allergy medications, address the immune triggers instead of masking symptoms** – Many antihistamines carry anticholinergic effects. If you struggle with **chronic allergies**, begin with an elimination diet to identify what triggers your immune response. Remove common irritants for a short period, then reintroduce them one at a time so you learn which foods or exposures spark symptoms.

Strengthen your body's natural **histamine** control through nutrition. Increase vitamin C-rich foods such as citrus fruits, kiwi, and red peppers to support histamine breakdown. Add quercetin-rich foods like onions, apples, and berries, which stabilize the cells that release histamine. Shift away from processed foods and toward whole foods – fresh fruit, root vegetables, and grass fed meat – to calm immune reactivity.

- 4. Strengthen cellular energy production to stabilize your nervous system** – Your autonomic nervous system and heart rely heavily on **mitochondrial energy production**. Prioritize regular sunlight exposure to support cellular energy.

Eat sufficient carbohydrates – about 250 grams daily for most adults – so your cells have enough fuel to produce energy efficiently. When carbohydrate intake drops too low, your mitochondria struggle to process energy cleanly, creating a biochemical bottleneck that strains your metabolism and nervous system.

**5. Build a lifestyle that helps reduce your reliance on medications** – Restore healthy sleep through natural light exposure and consistent sleep timing. Cut back on processed foods and **seed oils** (such as soybean, canola, and corn oil), which promote chronic low-grade inflammation that makes allergies worse and stresses your cardiovascular system.

Move your body daily with walking and other gentle exercise to support circulation and nervous system balance. When your lifestyle supports metabolic health, immune stability, and proper circadian rhythm, the underlying conditions that drive medication use may improve, and your cardiovascular system may operate with less stress.

## **FAQs About Anticholinergic Drugs and Heart Disease**

**Q: What are anticholinergic drugs and why are they commonly used?**

**A:** Anticholinergic drugs block acetylcholine, a chemical messenger your nervous system uses to control many automatic functions in your body. These medications appear in treatments for allergies, sleep problems, bladder conditions, depression, and motion sickness. Common examples include older antihistamines like diphenhydramine (Benadryl). Because they're used across many types of medications, people often take more than one without realizing it.

**Q: How do anticholinergic drugs affect my heart?**

**A:** These medications interfere with your parasympathetic nervous system, which normally helps regulate heart rhythm and blood pressure. When this control system is suppressed, heart rate rises, and your heart becomes less stable during physical stress. Research shows that higher use of these drugs is associated with increased risk of heart failure, abnormal heart rhythms, heart attacks, and strokes.

**Q: Does taking more than one anticholinergic medication increase the risk?**

**A:** Yes. Large population studies show a clear dose-response pattern – meaning the more frequently these medications are used or the more of them taken together, the higher the risk of cardiovascular disease. In one study, people with the highest exposure had roughly a 71% higher risk of cardiovascular events.<sup>6</sup>

**Q: Do anticholinergic drugs affect brain health as well?**

**A:** Yes. These medications were originally studied because of their effects on memory and cognition. Acetylcholine plays a central role in learning and memory, so blocking it interferes with brain communication. Long-term use of strong anticholinergic medications has been linked to faster cognitive decline and a higher risk of dementia in older adults.

**Q: How can I lower my exposure to anticholinergic medications?**

**A:** Start by reviewing all prescription and over-the-counter medications you use, since many allergy drugs, sleep aids, and cold medicines contain anticholinergic ingredients. Focus on addressing the underlying causes of symptoms instead of relying on these drugs long term. Improve sleep through consistent sunlight exposure and circadian rhythm habits, strengthen immune balance with whole foods, and support metabolic health with daily movement and adequate carbohydrate intake.

*This article is for informational purposes only and does not constitute medical advice. Consult a qualified health care provider before making changes to your health regimen.*

**Sources and References**

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- <sup>1, 2, 6</sup> BMC Medicine February 28, 2026
- <sup>3</sup> JAMA Internal Medicine 2019;179;(8):1084-1093
- <sup>4, 5</sup> Age and Ageing 2014 Nov 27;44(2):219–225