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Explainer  
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**It's a bird! It's a plane! It's... a baseless conspiracy theory. Here's what you need to know about the chemtrails conspiracy.**

**What are chemtrails?**

First and foremost, chemtrails don't exist.

But Suzanne Maher disagrees. Maher is the founder of [chemtrails awareness group Bye Bye Blue Sky](#). According to her website, chemtrails are toxic compounds sprayed into the atmosphere to “direct and control our weather for military purposes and global domination.” She sees the evidence in the wisps of white exhaust from planes criss-crossing the blue sky, lingering, and dissipating into a thin cover of clouds. According to chemtrail believers, this exhaust is laden with compounds like aluminum, barium, and strontium that's intentionally being pumped into the atmosphere.



*Maher's billboard on display in Woodstown, New Jersey. Photo by Sharon LePere.*

In reality, [the trails left behind airplanes](#) are just condensation, or contrails. When hot, moist engine exhaust hits cold, high-altitude air, condensation forms, the same way you can see your breath in the air on a cold day.

## **What exactly is the chemtrail conspiracy, and where does it come from?**

People are drawn to the chemtrails theory for a variety of reasons. Some think the chemicals are controlling the weather. Others think they're controlling our minds. Regardless of the specifics, chemtrail believers see a sinister government plot in the clouds.

The most popular and recent version of the theory posits that the chemicals are being sprayed into the atmosphere to block out the sun and slow global warming. This idea might sound familiar if you've heard of solar geoengineering. David Keith, a leading geoengineering researcher at Harvard, is investigating the potential of [albedo modification](#); his team proposes that injecting sulfate compounds into the atmosphere to reflect some sunlight back into space, like chemtrails allegedly do, could save us from climate disaster. But their work so far is entirely speculative; there is no active testing or implementation of albedo modification. Keith also reminds chemtrail believers that "[the Internet is filled with people who are completely sure about stuff that just isn't true.](#)"

Still, a 2016 study in *Nature* reported that [20-30% of Americans](#) thought the chemtrails theory was "somewhat true."

The most compelling conspiracy theories always have a grain of truth. The U.S. started experimenting with cloud seeding in 1946. [Cloud seeding](#) introduces compounds to the atmosphere to induce precipitation, but nowhere near the scale that chemtrail believers would have you think. A [1996 paper from the U.S. Air Force](#) speculated about how weather manipulation could be used as a military tactic. Though this work was purely speculative, [internet forums](#) of the late 90s became the breeding grounds for accusations that large scale weather control was already underway.

## **How did this theory gain traction?**

Open platforms like YouTube, Facebook, and Twitter make information (and misinformation) accessible to everyone with an internet connection.

Despite scientists emphatically rejecting the chemtrails theory, the majority of popular [YouTube videos about climate modification](#) actually embrace and spread the conspiracy theory. Facebook groups and Twitter help circulate false information about chemtrails. Most people don't scroll through their feeds with a critical lens. Many take such misinformation at face value.

The Trump era did wonders for fake news and the conspiracy-minded; widespread mistrust of the government and media makes people susceptible to believing in a sinister plot to control the masses. On the left, die-hard environmentalists are quick to believe that the government is destroying the planet. Instead of following predictable party lines, [chemtrails unite people from all walks of life](#).

Even though the evidence against chemtrails is overwhelming, many Americans still believe in them. That has consequences.

### **What are the dangers of the chemtrails conspiracy?**

The most immediate consequence of the chemtrail conspiracy theory affects legitimate geoengineering researchers. Chemtrail theorists have hijacked the terminology of geoengineering research because of the similarities in proposed albedo modification projects and the alleged implementation of chemtrails.

Geoengineering is already controversial. The effects of albedo modification are under researched, and a lot of people, including climate scientists, worry about interfering with environmental processes. The chemtrails theory asserts that large-scale geoengineering projects are already underway, recklessly endangering our health and our planet. This misguided belief has contributed to anti-geoengineering sentiment and researchers like Keith are stuck cleaning up the mess.

The chemtrails conspiracy theory is also a gateway to general mistrust and paranoia. If the government and scientists are conspiring to secretly control the global climate, what else could they be hiding?

Perhaps the most dangerous part of the theory is how it mirrors the fundamental truth of climate change in a terrifying fun house sort of way. By continuing our reliance on fossil fuels, the government and corporations really are pumping toxic compounds into the atmosphere that are harming our planet and our health. By focusing their energy on the fake plot, conspiracists misdirect action away from the real problem.

### **How can conspiracy theories be countered?**

Swaying hardcore chemtrail believers is hard— maybe even impossible. Mainstream reporting on the science that disproves the chemtrails conspiracy takes an overwhelmingly condescending tone, which only strengthens the conviction of conspiracy believers. Dedicated believers like Maher only seem to double down when faced with criticism.

Still, the chemtrails theory might have had its day in the sun. Google searches for chemtrails peaked during the 2016 election cycle, and the uptick this year is mostly attributed to Lana Del Rey's new album, Chemtrails Over The Country Club.

Like many of us, geoengineering researchers hope that we can restore our trust in science. Staving off climate disaster requires innovative solutions and early geoengineering studies show a lot of promise. It might not even work, but I prefer an optimistic future to a false reality.