

Flight attendants keep getting sick. It's likely because of their uniforms.

Delta is the latest airline to be sued by its in-flight staff over allegedly illness-inducing uniforms.

By Rae Nudson | Jul 16, 2019, 8:00am EDT



Flight attendants from Delta, American, and Alaska Airlines have sued their employers over illness they say is related to their uniforms. | Getty Images/iStockphoto

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Rashes, blisters, and hair loss have all been reported. So has vomiting, migraines, and shortness of breath. All of these — and more — are symptoms reported by flight attendants after their airlines got new uniforms. But no one knows why.

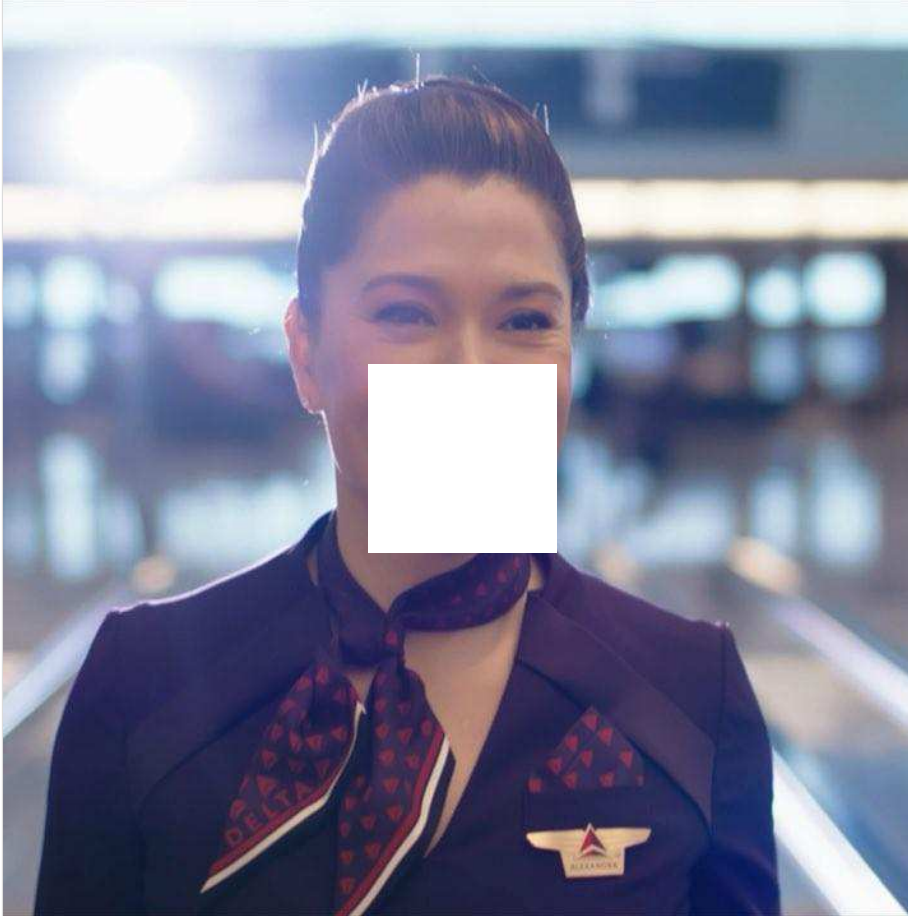
Delta is the latest airline to have flight attendants report health issues possibly related to their uniforms, and employees at the airline filed a lawsuit in May against the manufacturer, Lands' End. But flight attendants have been battling **health issues** that have appeared after an airline instituted new uniforms for years. And for years, airlines have said their uniforms are safe.

Meanwhile, flight attendants and others are working to discover the cause of their symptoms and the identity and total number of chemicals present in their uniforms, all of which can be difficult to ascertain. Until the cause can be identified — or until airlines start listening to employees and moving quickly after their complaints — it's likely employees will continue to face symptoms. And it's likely that flight attendants will keep heading to court, where they've historically needed to go to get policy changed by their employers.

Complaints about uniforms possibly causing illness aren't new

The **problem** was first reported after employees at Alaska Airlines got new uniforms toward the end of 2010 and beginning of 2011. Flight attendants began to report rashes and eye irritation, and documented hives, blisters, and scaly patches, according to a 2012 National Institute for Occupational Safety and Health (NIOSH) report looking into the issue. In 2013, flight attendants at Alaska Airlines filed a lawsuit against the manufacturer of the uniforms, Twin Hill, and the airline recalled the uniforms in 2014. In October 2016, Twin Hill won the lawsuit, with the court claiming there was no reliable evidence the injuries were caused by the uniforms.

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Then in 2016, shortly after flight attendants at American Airlines got new uniforms, also manufactured by Twin Hill, they began to show symptoms as well. Flight attendants reported rashes, blisters, open sores, and swelling. According to a 2018 NIOSH report appendix, there were no skin disorder complaints in the company's Occupational Safety and Health Administration logs in 2015 — before the new uniforms. In 2016, there were 87 skin disorder entries, and 83 of those were reported to be related to the uniforms. Skin symptoms were the most common complaints, but flight attendants also described vomiting, migraines, shortness of breath, and hair loss, among other symptoms. In September 2017, American Airlines employees filed a lawsuit against Twin Hill.

In May 2018, Delta employees started wearing new uniforms, manufactured by Lands' End. Soon thereafter, flight attendants recorded health issues they suspected came from their uniforms. Flight attendants filed a lawsuit against the manufacturer on May 22 this year. (Lands' End said it doesn't comment on pending litigation.)

According to Delta, fewer than 1 percent of employees wearing the new uniforms have reported issues. But the exact number and the portion of those employees who are flight attendants is unclear. An **article** in the Guardian by Mike Elk in April detailed flight attendants' experiences with rashes, shortness of breath, and hair loss. Images in the article show red, blistered skin. Delta flight attendants don't have a union, and many flight attendants may be reluctant to speak up for fear of losing their jobs, Elk wrote. In

June, Delta began testing wearing untreated uniforms with some employees who have reported health issues, but when those uniforms may be available to a wider group and who will be allowed to wear them and for how long is not yet clear.

Flight attendants may be particularly vulnerable

A research **group** at Harvard that studies flight attendants' health found that there is a relationship between flight attendants' health issues and the new uniforms they wore. The research group happened to be studying the health of a cohort of flight attendants at Alaska Airlines when the airline got its new uniforms. The **study** showed a significant increase of physical ailments after the uniforms were worn, and then a decrease after those uniforms were recalled in 2014.

But exactly what's causing the health issues will require more testing. "It's unlikely that there's one specific smoking gun type of a chemical that's causing these issues, but it's likely to be a unique combination," said Irina Mordukhovich, a research associate at Harvard T.H. Chan School of Public Health.

Mordukhovich and her colleague Eileen McNeely, the main author of the report, said flight attendants' working conditions may make them particularly vulnerable to chemicals present in their uniforms, and that flight attendants' reactions may be acting as a warning bell for others.

These working conditions include engine exhaust, long periods in recycled air, and disrupted circadian rhythms. Flight attendants are also wearing their uniforms for long periods of time, during long flights or delays, so their exposure to chemicals in their uniforms could be greater than that of other workers, even at the same airline, who wear uniforms for a shorter time or have a different working environment. Flight attendants' physical activity during their work can also lead to sweating, which can cause certain chemicals to leach onto the skin and cause a reaction.

"If you want to see if something is harmful, then you put it to the test of those most vulnerable. And that's why people study occupational exposures, because they have this chronic, long-term exposure, and they will be the first to show signs," McNeely says.

What could be causing these symptoms?

Chemicals like formaldehyde, a known carcinogen, have been used in clothing **manufacturing** to make clothes wrinkle resistant since around the 1950s, when permanent press fabric was created by chemist **Ruth Benerito**. But over the past few decades, use of formaldehyde has decreased dramatically.

The US doesn't have strong regulations about the types of chemicals that can be used in clothing manufacturing, but other countries do. With the advent of regulations worldwide, manufacturers in the US have used less formaldehyde over the past few decades, along with other chemicals that are regulated in other regions, in order to sell or make their products in those areas. "Because of global marketing, as soon as one country — or better yet, a bunch of countries — limit use of a chemical, then even companies in the US start taking it out," said Susan Nedorost, a dermatologist and director of the dermatitis program at University Hospitals Cleveland Medical Center.

Because natural fabrics wrinkle more than synthetic fabrics, formaldehyde-releasing resins would mostly be used on natural fabrics, like cotton or linen, to make them wrinkle-free. But Nedorost says formaldehyde-releasing resins are now typically only seen in vintage clothing — and in uniforms. "Sometimes uniforms are made to be distributed only in the United States, where there's no regulation. And if you're an employer, you want your employees to look quite crisp — meaning wrinkle-free — and the formaldehyde-releasing textile resins are less expensive," she said.

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THERE WERE NO SKIN DISORDER COMPLAINTS BEFORE THE NEW UNIFORMS. IN 2016, THERE WERE 87 SKIN DISORDER ENTRIES.

Now, Nedorost says, she's much more likely to see patients with issues related to disperse dyes. She says disperse dyes are used on synthetic fabrics that aren't made from plants, like nylon, polyester, and acrylic. These fabrics don't hold on to dye as well

as natural fibers do, and sometimes the dye can leach onto skin and cause the wearer to have a reaction.

Typically, Nedorost says, a piece of clothing wouldn't use both formaldehyde-releasing resins and disperse dyes because they are used on different kinds of fabrics. But formaldehyde and disperse dyes may collide on uniforms, where different types of fabrics, dyes, and anti-wrinkle and anti-stain resins could all be present, though she said this is not common.

Formaldehyde was one of the chemicals identified in certain pieces of each of these three airlines' uniforms, but all were found to be below the level that OEKO-TEX deemed as harmful, which is 75 parts per million. The OEKO-TEX Association is a worldwide organization made up of institutes that test for harmful substances and certifies that use of chemicals is below a limit that typically causes harm and below limits of regulations around the world.

As use of formaldehyde-releasing resins in clothing has decreased over the years, the use of other chemicals has increased. When the Standard 100 by OEKO-TEX was formed in 1992, it tested for 100 chemicals. Now, the Standard 100 tests for more than 350 chemicals, says Ben Mead, managing director of Hohenstein, a founding member of the OEKO-TEX Association and its representative in the US.

American Airlines announced in September 2018 that it will use Standard 100 certification in development of its new uniforms, which are set to launch next spring. (American Airlines has also said it will use Lands' End as a supplier, instead of Twin Hill. In the meantime, American Airlines said in a statement that it has provided alternatives for anyone concerned with wearing the current uniform, including non-wool uniforms, an off-the-shelf option from a different supplier, and authorization to purchase replacement garments at retail stores or wear old uniforms.)

OEKO-TEX testing asserts that each individual chemical is below harmful levels. But OEKO-TEX doesn't account for the effect of the accumulation or combination of chemicals. "There's been a lot of questions asked, and people looking into it from a toxicologist standpoint, how does all of that work together. And it's still a big unknown answer," Mead says.

So are there problems for flight attendants because of the formaldehyde, the disperse dyes, a different, yet-to-be-determined chemical, or a specific combination of chemicals?

This question is proving difficult to answer.

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The NIOSH report that looked at American Airlines came to no specific conclusion on what caused the symptoms, but it did say it's possible that textile chemicals or irritant properties in the uniforms caused skin symptoms. And the appendix of the report said, "There is evidence in the literature that subthreshold concentrations of irritants can have an additive effect on the skin. For example, if the skin is exposed to only one of these irritants, no visible changes are seen, but if exposed to several, the skin may develop an irritant response."

To complicate the issue, both allergies and irritants likely wouldn't affect 100 percent of a population. With an allergy, the immune system is interacting with a substance, says Joel DeKoven, a dermatologist and associate professor at Sunnybrook Health Sciences Centre in Toronto. With an irritant, he says, the substance can irritate skin without having an immunological response. In both scenarios, individuals may have different reactions. Someone may become allergic to nickel, and another person might not, and someone may be more sensitive to an irritant than someone else. And just because there is no reaction one day doesn't mean that a person wouldn't develop an allergy or sensitivity the next.

Dean of the School of Public Health at the University of Maryland and former US Deputy Surgeon General Boris Lushniak said that accumulation can be an important factor — for example, wearing the same clothing every day. The accumulative exposure can prime your body for getting the substance into your system, he says. "And all of a sudden, my body starts behaving as if this is an intruder. So just because you weren't allergic to something two weeks ago doesn't mean that all of a sudden it's off your list of suspects."

So a full list of chemicals present in the uniforms, even if they are each below the limits known to cause harm, may not be enough information to find out what's causing symptoms for flight attendants. And individuals may be reacting differently to different

substances or combinations of substances, which could be exacerbated by their unique working conditions.

Why does this keep happening?

Flight attendants are making complaints and filing lawsuits in an attempt to get their employers to recognize the issue and protect their safety, all while not being able to prove the cause of their symptoms. And because reactions aren't the same across the entire flight attendant population after the new uniforms are instituted, it becomes easier for airlines to say that uniforms aren't the issue.

And flight attendants aren't just battling legal issues. They are also facing sexism that has long been a part of the industry and that can make it harder for them to be taken seriously. "We're still a majority of females in this job. And so it's basically shut up or quit," says Heather Poole, a flight attendant and plaintiff in the lawsuit American Airlines employees filed against Twin Hill. "When you have a pretty job, that's the kind of attitude. You don't have a right to complain. You should smile and be thankful."

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Historically, flight attendants are part of what is known as a pink-collar profession, which is heavily dominated by women, says Phil Tiemeyer, an associate professor of history at Kansas State University. "Pink-collar professions have suffered in two ways. One, they've been lower-paying with fewer job protections than other professions, and, two, they've been very susceptible to

being used for what you call branding purposes," Tiemeyer says.

In the early decades of passenger flight, airlines would mainly hire women to be flight attendants, claiming that women were uniquely qualified to provide service and charm, Kathleen Barry wrote in her 2007 book *Femininity in Flight: A History of Flight Attendants*. Certain airlines would also fire female flight attendants once they turned 32, or once they got married, to keep their workforce young, single, and beautiful. These young, beautiful, mostly white flight attendants were historically used as a way to attract affluent white male customers and to portray that airline travel was safe enough for women. It took flight attendants challenging these practices in court in the '60s and '70s before hiring practices and employment policies at airlines were changed.

Today, new uniforms can become visual branding for airlines. A news release from Delta on May 29, 2018, the day employees companywide started wearing their new uniforms, said, "This collection makes a strong brand statement, elevating Delta from the look of a traditional U.S. carrier and introducing glamour and sophistication while offering the ease of machine-washable care for the carrier's always on-the-go employees."

Once again, flight attendants have found themselves navigating legal battles, workers' rights, branding, and sexism. And while these legal issues drag on, flight attendants keep getting sick, with some even beginning to take taking EpiPens to work. Poole wonders how many people have to get sick before this issue is taken seriously. "I'd like to know, so I can alert everybody that we finally hit the magic number that proves that we're not hysterical. And that we actually have been poisoned."

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