There are no cures for the common cold

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Americans catch an estimated 1 billion colds each year. And by this time of year, as weary cold sufferers line up at local pharmacies, it may not sound surprising that Americans spend at least $4.2 billion annually on over-the-counter cough and cold medications - and even more on alternative therapies.

Yet here are the dirty little secrets about the common cold: Nothing cures it. And most popular remedies have little to no real effect on symptoms.

"In a nutshell, there's nothing that works," says physician Aaron Glatt, a spokesman for the Infectious Disease Society of America. "There's a tremendous industry out there, and some people really swear by them. But there really aren't great studies to show any benefit."

Some remedies have been more rigorously tested than others. In a petri dish, many appear promising. When tested in humans, however, cold remedies tend to fizzle out, Glatt says.

And there's just not enough rigorously performed research to know whether folksy remedies - such as hot tea, garlic or chicken soup - have any effect, say pediatricians Rachel Vreeman and Aaron Carroll, authors of "Don't Swallow Your Gum! Myths, Half-Truths and Outright Lies About Your Body and Health." That's partly because big drug companies tend not to invest in studies of common foods or products that people can buy anywhere.

"When it comes to over-the-counter therapies, they're pretty cheap, so people will buy them anyway," Carroll says. "But if they don't work, you shouldn't be surprised."

Yet he adds, "if tea makes you feel better, go ahead. If a warm blanket and a pillow makes you feel better, do it."

In some cases, however, even over-the counter drugs can have serious side effects. In children, cough and cold remedies are not only ineffective, but can also be harmful, Vreeman and Carroll say. That's why manufacturers no longer sell these drugs for kids under age 4.

Because colds go away on their own in about a week, improving a little each day after symptoms peak, it's easy to believe that favorite medicines - rather than time - should get the credit, says James Taylor, a pediatrics professor at the University of Washington whose research has been funded by the National Center for Complementary and Alternative Medicine, or NCCAM, at the National Institutes of Health.

Cold sufferers are so desperate for help that even placebos can make people feel better about a third of the time, says Glatt.

There's no objective way to assess whether something makes someone feel less congested or sneezy, Taylor says. So researchers have to rely on imprecise measurements, such as asking people to rate their symptoms on a scale. And many studies are of such poor quality as to be unreliable, he says. Patients shouldn't put a lot of stock in a single study, because results may be a fluke. Doctors usually wait until findings have been replicated before endorsing new treatments.

USA Today asked experts to summarize the evidence for some of the most commonly used over-the-counter and alternative remedies.

In the lab, these over-the-counter drugs look like a winner.

Decongestants shrink dilated blood vessels in the nose, which should provide relief for that stuffed-up feeling, says Elizabeth Funderbunk, a spokeswoman for the Consumer Healthcare Products Association.

In the real world, however, their effects are modest at best.

A single dose of a nasal decongestant reduces adults' symptoms by 6 percent, according to a 2007 Cochrane Systematic Review. Additional doses reduced symptoms by just 4 percent. While a 1998 study found that antihistamines slightly reduce sneezing or a runny nose, another review found they offer little to no relief for overall cold symptoms or coughs.

To reduce the risk of side effects, it's best to take the lowest dose possible - such as found in nasal sprays, says Sidney Wolfe, director of Public Citizen's Health Research Group. He prefers antihistamine nasal sprays because they contain 25 to 50 times less medication than pills. Even then, people shouldn't use nasal sprays for more than a few days, because overuse can actually increase congestion. Wolfe also advises avoiding products that treat multiple symptoms, because they typically provide much more medication than people really need, increasing the risks without adding to their benefits.

Nobel Prize winner Linus Pauling popularized the idea of taking high doses of vitamin C to prevent colds. A variety of recent studies have shown this is just wishful thinking, however, Vreeman and Carroll say.

A review of studies with a total of 11,000 people found that taking 200 milligrams or more of vitamin C a day didn't reduce the chance of getting a cold, and it reduced the duration of a cold only by a matter of hours. The only people who got any protection against colds from

vitamin C were those whose bodies were under extreme stress, such as soldiers in sub-arctic conditions, according to the NCCAM.

Echinacea, an herb, has been used for years as a folk remedy, Taylor says. Scientists have been intrigued by echinacea because of laboratory studies suggesting that some constituents decrease inflammation, while others appear to boost the immune system.

But improving immunity in a human being is far more complicated than in a petri dish, says Wendy Weber, a program officer at NCCAM. She notes that there are three species of echinacea that are used medicinally, and concentrations can vary from bottle to bottle.

Three studies funded by NCCAM concluded that echinacea was no better than a placebo for treating or preventing a cold. While doctors continue to research echinacea, Weber says there isn't yet enough evidence to prescribe it. And although echinacea is the most commonly used herbal supplement in children, studies also show it can slightly increase kids' risk of rash.

Although research has produced mixed results on zinc, a new analysis suggests that these supplements offer some help - if people can stand them.

In a research review of 15 studies published last week in The Cochrane Library, taking zinc lozenges or syrup within 24 hours after the beginning of symptoms cut short people's colds by about one day.

Although the review suggests that these zinc products might also make cold symptoms less severe, Vreeman notes that the quality of the studies wasn't very strong - suggesting that future research could come up with a different conclusion.

"One of the big challenges with this research is that they have a hard time making a placebo that people actually believe in," Vreeman says. "The bad taste of zinc, and the fact that it often makes people feel nauseous, are common, and tend to make it clear who is getting the zinc and who is getting the placebo."

Vreeman notes that many people may decide that the treatment is worse than putting up with a cold for one more day.

Some forms of zinc also pose serious risks.

The Food and Drug Administration in 2009 warned consumers not to use any intranasal zinc products because of concerns that it can make people lose their sense of smell.

Generations have turned to hot tea with honey to soothe a sore throat.

One study, in which children over age 2 were given up to 2 teaspoons of honey before bedtime, found that honey did help reduce coughing. But Weber notes that additional studies are needed. She says honey should never be given to children under age 1 because of the risk of botulism. And while many people like honey cough drops, Weber notes that they can be a choking hazard to babies and toddlers.

In a recent study in *Pediatrics*, children with cough and cold symptoms improved the most when their parents rubbed their chests with Vicks VapoRub, rather than with a placebo ointment. But those benefits could be due to the placebo effect, says Daniel Frattarelli, a doctor and spokesman for the American Academy of Pediatrics.

Because of VapoRub's strong fragrance, parents could tell if they were using the real thing or a placebo, even though researchers did their best to "blind" parents to which treatment they were using, according to the

study, funded by manufacturer Procter & Gamble. Still, there were no serious side effects, suggesting that the ointment isn't dangerous, says Frattarelli.

Even many doctors tell patients to treat congestion by using humidifiers, taking steamy showers or using small pitchers or plastic squeeze bottles to flush salty water through their nasal passages.

While these treatments seem safe, there's also no data that they relieve symptoms, Glatt says.

When using a humidifier, doctors suggest cool mist, rather than hot steam, which can scald small children.

"I'm not aware of any studies showing a humidifier can help (children) to sleep" when congested, Glatt says. "But I'm never going to argue with a parent who tells me that it does."