

"The thing about taking risks is, if it's really a risk, you really can fail. It's only a pretend risk if you really can't fail."

— Connie Britton

I expect that most observant beekeepers are aware of the Center for Disease Control and Prevention (CDC)'s recommendation that honey not be given to infants under 1 year of age. We can purchase warning labels to that effect to put on our honey jars, although there is no requirement to do so. However, I'm not certain that beekeepers universally understand the reason for the honey warning. In fact, I've heard well-meaning people spew nonsense such as that the concern is over infants not having fully-mature throat muscles that can swallow viscous honey. Ironically, I've also heard beekeepers recommend rubbing honey inside of a baby's mouth to do... something... I was so astonished at the basic suggestion that I didn't hear what it was supposed to address.

Why does the government not want babies to have honey? Is the concern valid? Is it a death sentence to give honey to a baby that is under a year old? I'm not a medical doctor and I am not giving medical advice, but let's look at this issue and see what the excitement is about.

Infant botulism

The reason for concern is a bacteria called *Clostridium botulinum*. When eaten in sufficient quantity, *C. botulinum* spores colonize in a baby's large intestine and produce botulinum toxin. This is the same bacteria that causes the food-borne botulism that we commonly fear, but in food-borne botulism, the live bacteria are active in the food itself and the botulinum toxin is eaten along with it. With infant botulism, the spores are dormant until they begin reproducing in the host's large intestine. It is at that point that the toxin is created.

The human body is a wondrous thing and modern science only has tiny hints as to how most of it works. But we do know that once a



This infant is suffering from paralysis due to infant botulism. Was that because of eating honey? Maybe not, but maybe so. Want to take a chance with your kid? Photo: CDC

human-child's digestive system reaches about six months to a year old, it has developed the ability to render harmless the spores of *C. botulinum* and many similar beasties.

Where is it?

C. botulinum spores exist all over the place in soil and dust. The CDC says that it is in your home: in the carpet, on countertops and elsewhere, even after cleaning. Research indicates that most cases of infant botulism come from babies swallowing microscopic dust particles that carry the spores. Maybe they get those by licking something they picked up from the floor (babies do that sort of thing). In cases where the source is environmental, the CDC says that there is nothing that can be done to prevent exposure to *C. botulinum* spores.

But in about a third of cases,¹ hospitalized infants had consumed honey prior to becoming ill. Many other suspect foods have been extensively evaluated, including corn syrup, but honey is the only one that has shown both this

¹ Stephen S. Arnon, et al., Honey and other environmental risk factors for infant botulism, The

Journal of Pediatrics, Volume 94, Issue 2, 1979, pp 331-336.

strong correlation as well as the ubiquitous presence of spores in the product (about 10% of randomly-selected honey samples had spores present).

What problems does it cause?

Botulism toxin blocks the transmission of nerve signals to muscles so the muscles cannot contract. This expresses itself as weakness and loss of muscle tone, causing constipation, difficulty feeding and weak crying. The effects on feeding and breathing are the most concerning. Fortunately, with proper clinical treatment, babies can expect full and complete recovery.

How widespread is it?

It is important to note that infant botulism is rare. In 2019, there were only 143 cases reported in the United States.² A third of those were in California; none were in North Carolina. There isn't any reason to be unduly anxious about an infant contracting the disease.

What's the bottom line?

It is very unlikely that a child will get infant botulism from eating your honey, largely because it is very unlikely that a child will get infant botulism, period. That's fortunate, because the CDC says that there is nothing that can be done to prevent it in most cases. But while honey doesn't generally cause infant botulism, it is true that when infants do get the disease, it is sometimes traced back to a correlation with honey. For example, in 2018, honey pacifiers sold in Mexico were the suspected cause of four cases of infant botulism in Texas.³ That's why the CDC says that the only way to reduce the risk of infant botulism at all is to avoid feeding honey to infants.



This efficient label combines granulation information with an infant warning. Such labels are not required but many beekeepers use them to educate the public. Source: Bailey Bee Supply

Since honey isn't a necessary nutrient for infants, why expose them to any risk? The same logic applies to Zippo lighters – I don't give them to infants under one year of age because they don't really have any good use for them. The result from giving one to an infant could only be either neutral or harmful.

We beekeepers can take some consolation in the fact that the CDC explicitly recommends giving honey to children between one and four years old instead of over-the-counter remedies for cough and sore throat. The next time we share the infant warning, let's also point parents to CDC's honey recommendation for older preschoolers!⁴

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² Center for Disease Control and Prevention, "National Botulism Surveillance Summary, 2019", <https://www.cdc.gov/botulism/php/national-botulism-surveillance/2019.html>

³ Center for Disease Control and Prevention, "Honey Pacifiers Suspected in Texas Infant Botulism Cases" November 16, 2018,

<https://www.fda.gov/food/alerts-advisories-safety-information/honey-pacifiers-suspected-texas-infant-botulism-cases>

⁴ Do note, however, that any health claims printed on a product label must satisfy strict FDA requirements. It is best to leave those off of our honey label.