

## Science



## IT'S JUST A PINCH!

A TIMELINE OF ALL THE AWESOME VACCINES YOU GET

BY CHELSEA LEU · ILLUSTRATION BY GIULIO BONASERA

**THESE DAYS**, when you hear people talking about “the vaccine,” there’s no doubt what they’re referring to — the Covid-19 vaccine is on everyone’s mind. But when you think about it, *all* the vaccines you receive at the doctor’s office are pretty incredible. And they were thrilling news stories in their time too.

By your late teens, you’ll probably have received

vaccines that teach your body’s immune system to recognize and fight off more than a dozen diseases. Many of them won’t ring a bell to you. But they used to sicken and kill a lot of people. Ever heard of diphtheria? Probably not — in 2018, there was only one case of it in the entire country. In the early 1900s, though, it was a leading cause of death for children. “Thanks to vaccines,

in the U.S. polio, diphtheria and tetanus are now just diseases we learn about in textbooks,” says Perri Klass, a professor of journalism and pediatrics at New York University. “That’s an unbelievable gift.” So next time your doctor tells you you’ve got a shot coming, surprise her by saying thank you. And read on to learn about all the vaccines doctors recommend for kids.

## AGE: BIRTH

## HEPATITIS B

Your very first vaccine! Babies are typically vaccinated against the hepatitis B virus within a day of being born. This is important, because the virus can be transmitted by the baby’s mother — who might not know she’s infected — and can cause serious and even life-threatening health problems.

## AGE: 2 MONTHS

## ROTAVIRUS

## HAEMOPHILUS INFLUENZAE TYPE B

## PNEUMOCOCCAL DISEASE

## DIPHTHERIA, TETANUS AND PERTUSSIS

A three-for-one deal: One shot gives you a dose of protection against all three of these potentially fatal bacterial diseases. Diphtheria covers the inside of your throat with a bluish-white coating that makes it hard to breathe. Tetanus causes seizures and muscle spasms. Pertussis, a.k.a. whooping cough, causes severe coughs and can infect your lungs.

## POLIO

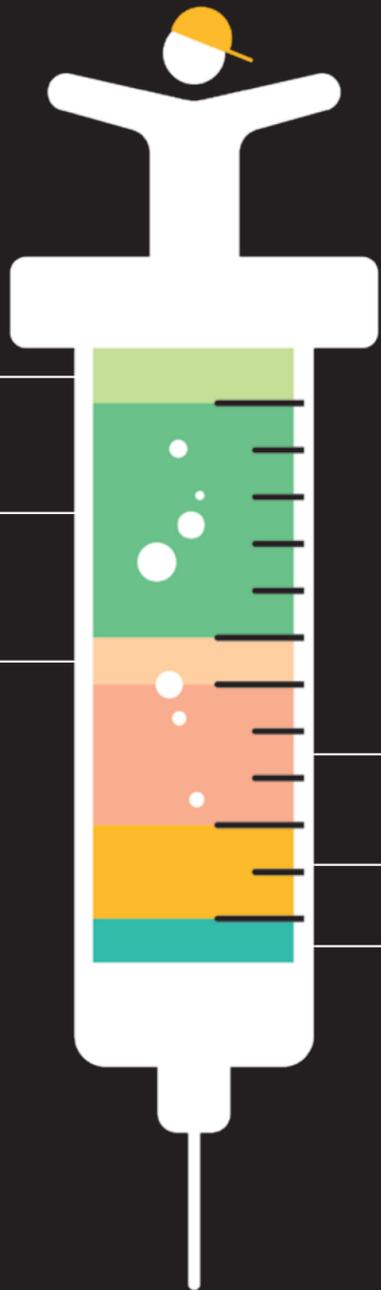
People used to be terrified of polio. In 1952 alone, the disease killed more than 3,000 people and paralyzed 21,000 in the United States. (The virus that causes polio can destroy nerves in your spine.) During outbreaks, parents wouldn’t let their children out to play, and certain towns even banned kids under 16 from entering. In 1955, when an effective vaccine was announced, the news made the front page of *The New York Times*.

**A NOTE:** If you’re reading this timeline and thinking, I know I’ve gotten more shots than this — you’re correct! We’re only showing the first time you’ll be vaccinated against each disease. Very often, vaccines require several doses, and in some cases you’ll need boosters. For example, kids typically get five doses of tetanus/diphtheria/pertussis vaccine before turning 7, followed by a booster around 11 years old — and every 10 years after that!

## AGE: 6 MONTHS

## THE FLU

The flu shot is a bit different from the other vaccines you get, because the influenza virus itself changes constantly. That means that scientists usually update the vaccine before each flu season, and that you should get a flu shot every single year. This may end up being the case with the Covid vaccine too, though it’s too early now to say.



## AGE: 12 MONTHS

## HEPATITIS A

## MEASLES, MUMPS AND RUBELLA

Most kids used to contract measles, a disease that covers you with a rash and can, in some cases, lead to fatal complications. But by 2000, the disease was declared eliminated in the United States thanks to the vaccine. Unfortunately, measles made a recent comeback, because a growing number of parents chose not to have their kids vaccinated. In 2019, there were 1,282 cases here — the highest number in nearly 30 years.

## CHICKENPOX (OR VARICELLA)

If you ask your parents if they had chickenpox as a kid, they’ll probably say yes. That’s because the vaccine was only introduced in the 1990s. Parents even used to organize “chickenpox parties,” where healthy kids were exposed to sick ones on purpose. The idea was that because the symptoms are usually milder in young people, it was better to get it over with as a kid. But chickenpox can lead to rare but dangerous complications — and the itchy red blisters it causes aren’t exactly fun. So count yourself lucky to be among the first generations to not have to go through it.

## AGE: 11 YEARS

## HUMAN PAPILLOMAVIRUS

## MENINGOCOCCAL DISEASE TYPES A, C, W AND Y

## AGE: 16 YEARS

## MENINGOCOCCAL DISEASE TYPE B

Congratulations on your last vaccine! You are now protected against 16 diseases that have plagued countless people throughout history. (This last shot prevents meningitis, in which the tissues around your brain and spinal cord are infected, and one type of sepsis, in which bacteria get into your blood and destroy other organs.) That doesn’t mean there won’t be any more needles in your future. With some vaccines, your immunity decreases over time, so you’ll still need to get booster shots every so often. And in certain circumstances, like if you travel to another country, your doctor might recommend you be vaccinated for other diseases. And of course, once it has been approved for kids, you’ve got the Covid vaccine to look forward to! ♦

## HOW ANIMALS SHOW THEY’RE HAPPY

BY LAUREL NEME

**SMILE**, and folks know you’re happy. But what about a whale? Or an octopus? They’re a little harder to read. After all, it’s not as if we can ask an animal how it’s feeling. What researchers can do is observe animals in situations in which they’re expected to feel relaxed and content and then see how they behave. Here’s how five different creatures put out positive vibes.



## OCTOPUSES CHANGE COLOR

You might already know that many octopuses can change color to blend into their surroundings, like chameleons. But when it comes to the giant Pacific octopus, the largest of the hundreds of octopus species, its skin color also reflects its mood. When it’s excited or angry, the pigment-filled sacs beneath the surface of its skin turn a fiery red; when it’s relaxed, they fade to white.



## KESTRELS TUMBLE

Just like you, many animals tend to be playful when they’re in a good mood. For birds of prey like the kestrel, a tiny falcon species, that might involve an aerial performance. Craig Newman, who rescues injured birds for an organization in Vermont called Outreach for Earth Stewardship, recalls that once when he released a healed kestrel, it celebrated by flying high in the sky and then tumbling down, stopping just feet above the ground — over and over and over.



## BELUGAS BLOW BUBBLES

In the world of a beluga whale, not all bubble-blowing is equal. Scientists who spent eight years studying belugas at a Canadian zoo identified different types of bubbles that the whales would blow, depending on how they felt. Sudden bursts indicated alarm. But when the whales were happy — for instance, when they were playing — they’d blow rings from their mouth, or slow dribbles from their blowholes.



## ELEPHANTS WAG THEIR TAILS

If you should ever need to quickly assess an elephant’s mood, here’s a trick: Check its tail. As with dogs, an elephant who is happy and relaxed will wag its tail slowly from side to side. (Other good signs might be flapping ears and soft, half-closed eyes.) On the other hand, a tail that’s stiff and raised horizontal to the ground usually means an anxious elephant.



## ORANGUTANS CRACK UP

Humans share 97 percent of our DNA sequence with orangutans. So it’s not surprising that we also share a way of expressing delight. Orangutans “will collapse in a helpless, giggling heap if tickled,” says Ian Singleton, conservation director of the Sumatran Orangutan Conservation Program in Indonesia. They’re very ticklish under the arms and chin — just like us. ♦

## WHY WE FEEL BETTER AFTER A GOOD CRY

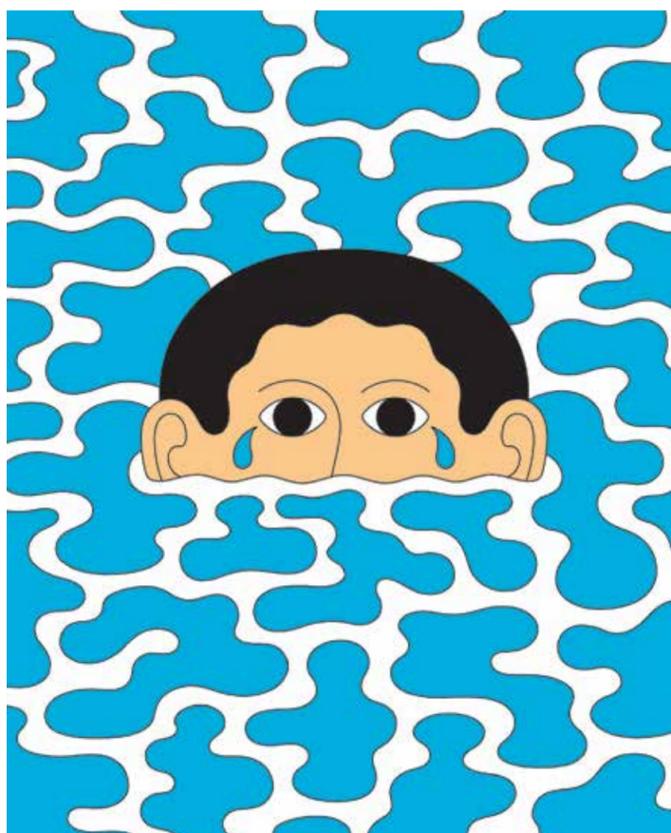
BY SUSAN COSIER · ILLUSTRATION BY DOMINIC KESTERTON

**THINK BACK TO** the last time you got really upset. Your heart pounded in your chest. Your breath sped up. And even if you tried to stop them, the tears started flowing. But then, something strange happened. After a few minutes of bawling your eyes out, you actually felt ... better. That’s because as much as we associate tears with sadness, a good cry can actually be soothing. It’s science.

Part of the calming effect is biological. When we get stirred up, our bodies go into “fight or flight” mode. Our hearts pump, we breathe heavily and our eyes produce tears in some cases. That act of crying signals that we’ve reached peak emotion, and our body is beginning to calm down. That’s when the part of our nervous system that’s responsible for our bodies’ “rest and

digest” activities kicks into gear, slowing our heart rate down and returning breathing to normal. At this point, you may feel relief, says Lauren Bylsma, who studies emotion and depression at the University of Pittsburgh. Crying may also spur our bodies to release chemicals that serve as mood-boosters.

Beyond the biological explanation, there’s also a social element to the feel-good effects of a good cry. Think about it: When we let ourselves sob in front of people who care about us, it’s a way of letting them know we could use a hug and some comfort. And that’s a good thing. “Crying can be a healthy expression of emotion,” Bylsma says. So the next time you feel the waterworks coming on, instead of trying your best to hold them back, just let them flow. ♦



**SCIENTISTS SUCCESSFULLY CLONED AN ENDANGERED BLACK-FOOTED FERRET AND NAMED HER ELIZABETH ANN. THE HOPE IS THAT CLONING WILL HELP THE SPECIES RECOVER.**

## Food

# YOU CAN COOK, TOO

MICHELLE OBAMA, THE HOST OF 'WAFFLES + MOCHI,' TALKS TO NYT KIDS ABOUT THE NEW SHOW

INTERVIEW BY NIKHIL LUTHRA, 12



On "Waffles + Mochi," Busy (the bee), Mochi and Waffles help Michelle Obama run her supermarket. Inset: Nikhil Luthra interviewing Obama over Zoom on March 10.

**LET'S SAY YOU DREAM** of becoming a chef someday. But you've got a problem: You don't know much about food and how to prepare it. (Seriously, is a tomato a fruit or a vegetable?) That's the predicament of the main characters in a new food-adventure show on Netflix, called "Waffles + Mochi." Waffles? She's part yeti, part frozen waffle, and she and her best friend, Mochi (a strawberry ice-cream dessert), leave the Land of Frozen Food to get jobs at a supermarket owned by ... Michelle Obama! Throughout the series, the friends travel to different countries to learn all about 10 ingredients that changed the world, including salt, rice and pickles. To find out more, The New York Times for Kids sent Nikhil Luthra, a 12-year-old from Massachusetts, to talk with Obama earlier this month over Zoom. Their conversation, which has been lightly edited and condensed, follows.

## What inspired you to work on the show?

When I was first lady, I worked on "Let's Move!," an entire initiative focused on making sure that kids were eating healthy and getting exercise. I've continued that work, so this concept spoke to all the things that I care about: kids, good food and fun! That was the most important thing. It's not all just serious talk about vegetables.

## How did your childhood inform your opinion on food and eating?

When I was growing up, I have to admit, I was a picky eater. There were more foods that I didn't like than ones I did like. So that helped me to

understand that kids' palates can evolve, because mine certainly did. I would only eat peanut butter and jelly for breakfast, and I did that until I went to college. But now here I am. There is very little that I do not enjoy eating. The only thing that really hits that list — that both I and my husband don't like very much — is beets.

**Speaking of all these ingredients, how did the people working on this show decide which ones made the cut?** Our goal is to have many, many seasons of "Waffles + Mochi," and we've only touched on a handful of ingredients and foods in the first one. Also, it's more than just food.

Each episode lands with a message about friendship and accepting other people and trying new things. The mushroom episode is about "don't judge a book by its cover." Just because something looks strange and weird doesn't mean that it won't taste good if you know how to work with it.

**A main topic of "Waffles + Mochi" is trying new foods. Was there a food that you didn't like as a kid that you do now?** Oh, gosh, yes: brussels sprouts. I'm from a generation that just didn't have a ton of chefs. Rarely did you go out to eat at a restaurant. You usually ate at home. And

a lot of people really didn't know how to cook vegetables. We steamed the life out of them. Can you imagine brussels sprouts being cooked to an inch of their life? It was horrible! Now we've learned that if you blanch that sharp flavor out of them before you actually cook them, they taste *amazing*. So brussels sprouts are now among my favorite vegetables. That's something that parents have to understand: You can't just force kids to eat vegetables. We have to find ways to actually make vegetables taste good.

**Healthful food is one thing, but price can be another. Less-healthy food can often be**

**cheaper. How do we make nutritious food more affordable?** Sometimes processed food and fast food feel quicker and cheaper, but some of that is because people need to learn how to work with real food. Buying a whole chicken is a lot cheaper than buying parts, but if you don't know how to cut up a whole chicken, it can be intimidating. The issue of accessibility is also a problem. There are many communities that are food deserts, where they don't have access to any produce. That's a policy issue. But we have to start getting people wanting and demanding these kinds of foods in their communities at an affordable price. ♦

## THE FOOD THAT MAKES ME HAPPIEST IS...



### TORTELLINI!

Doesn't everything taste better when love is one of the ingredients in the recipe? For me it does, and tortellini certainly make me the happiest.

My grandmother Ancella put care and love into preparing daily handmade tortellini. As a kid I was often hiding from my older brothers under the kitchen table while she was rolling out golden sheets of pasta dough. I would wait until she turned her head, steal a couple of tortellini, then pop them into my mouth and chew slowly until the flavor was drawn out. These stolen moments remain a magical memory. And it is the reason the kitchen has

always been an enchanted place for me. Today watching my son, Charlie, make tortellini completes this perfect circle of love. *Massimo Bottura, Italian chef and guest on "Waffles + Mochi"*



### FRESH-BAKED BREAD!

Lots of foods make me happy, from perfectly braised oxtails to fresh crunchy vegetables and a good dip sauce. But if I am looking for a food that makes me feel like a kid again: fresh-baked bread! There is nothing better than a warm Parker House roll or biscuit right out of the oven with butter and jam. Something like that

takes me right back to my happy place. *Mashama Bailey, American chef and guest on "Waffles + Mochi"*



### BIBIBAP!

It was love at first bite. It's a little bit of everything, and the bursts of all different flavors are unforgettable. The first time I saw the server bring out the sizzling stone pot and crack an egg onto the food, and it instantly fried? *Wow*. I love cooking it with my family, too. Each of us makes bibimbap our own way, customizing it with different proteins, vegetables and spice levels. I can never wait to dig in with my chopsticks. *Nikhil Luthra, 12* ♦

## A SMASHING SUCCESS

BY SAMIN NOSRAT, AMERICAN CHEF AND GUEST ON 'WAFFLES + MOCHI'

**SURE**, this salad is crunchy and refreshing, but even more important, it's really fun to make! You get to smash the cucumbers to crack open their skin, then tear them into pieces so all of their crags can better absorb the dressing. This special technique is traditional in the Sichuan Province of China, where this salad is usually dressed with chile oil and topped with mouth-numbing Sichuan peppercorns. Try it out that way if you're feeling spicy and adventurous!

### SMASHED-CUCUMBER SALAD

TOTAL TIME: 40 minutes  
ACTIVE TIME: 10 minutes

#### INGREDIENTS:

1 pound Persian cucumbers (about 7), rinsed and ends trimmed  
1 teaspoon fine sea salt  
3 tablespoons rice vinegar, seasoned or unseasoned  
1 tablespoon sugar  
1 small garlic clove, finely grated or pounded to a fine paste, then combined with a pinch of salt

2 teaspoons toasted sesame seeds or chopped toasted peanuts  
2 tablespoons roughly chopped cilantro leaves

**1. PLACE** cucumbers in a gallon-size resealable plastic bag, and seal. Use a rolling pin or small skillet to gently smash cucumbers until flattened and splitting lengthwise. Use your hands to split cucumbers along seams, tear into rough 1-to-1½-inch pieces. Transfer to a large bowl.

**2. IN A SMALL BOWL**, whisk together salt, vinegar, sugar and garlic, until sugar is dissolved. Add to cucumbers, and toss to coat. Refrigerate for 20 to 30 minutes, or up to 3 hours.

**3. TO SERVE**, drain cucumbers, discarding excess dressing. Taste cucumbers, and adjust salt if needed, then spoon onto a rimmed plate in a generous mound. Sprinkle with sesame seeds or peanuts, and top with cilantro. Serve immediately.

Serves 2 to 4. ♦

U.S. SCHOOLS WILL PROVIDE FREE BREAKFASTS AND LUNCHES TO ALL KIDS WHO NEED THEM THROUGHOUT THE SUMMER.