CGI illustrations by Peter Crowther

THE HOT ZONE

Is it possible that everything we thought we knew about treating fevers could turn out to be wrong? BY HOLLY PEVZNER

WE'VE ALL BEEN THERE. It's the middle of the night. You hear a cry from your child's room. He's sweaty and scared. Your heart races as you grab the thermometer: 102 degrees. You reach for the pill bottle. It's what you do. It's what I did when that hot and teary baby was my own. And it's what my friend Reija Eden, 34, did when her 2-month-old son's temperature edged past the 101-degree mark a few years back. "I thought something was terribly wrong," says the California-based jewelry designer. She gave him Tylenol, as so many of us have done over the decades.

But that was one of the last times Eden treated her children's fevers with an over-the-counter medication. "When my second child had a fever at a year old, I didn't give her a thing," she says. "I watched her and breast-fed her to keep her hydrated. Eventually the fever broke." Unlike Eden, I had never hesitated to turn to my medicine cabinet in the face of a fever.

TREATING A FEVER WITH MEDICINE CAN INTERFERE WITH YOUR BODY'S ABILITY TO FIGHT THE VIRUS. BY SCALING BACK YOUR NATURAL DEFENSES, YOU PROLONG THE WAR ON BUGS.

Until last winter, that is, when the journal *Pediatrics* reported that the use of acetaminophen, the active ingredient in Tylenol, could have contributed to a significant increase in childhood asthma cases worldwide. Even a once-a-month dosage, the report said, may set the stage for problems.

As if I weren't spooked enough already, this news landed in my inbox the very same week that another report, from the Roswell Park Cancer Institute, in Buffalo, New York, found that a body at a heightened temperature actually fights off ills better and faster than does a body at normal temperature. Had I been hurting my children by medicating their fevers away? And had I been doing the same thing to myself every time I got sick and swallowed a Tylenol for the sake of making it to nursery school pickup on time? I was determined to find out.

TEMPERATURE RISING

A human's oral body temperature ranges from 97 to 99 degrees, and anything over 100.4 is technically a fever. "After an infection, you produce chemicals called cytokines," explains Elizabeth A. Repasky, a coauthor of the Roswell Park study. "Those chemicals set off a reaction that tells your brain to increase your body's temperature set point." Voilà: Your metabolism quickens and produces a fever. The heat gives the immune system a leg up by activating its cells. In addition, the lie-around-on-the-couch feeling you get with a fever lets your body funnel its energy into fighting off the invader.

"A fever itself is not dangerous," states Lawrence D. Rosen, M.D., chair of the American Academy of Pediatrics (AAP) Section on Complementary and Integrative Medicine. "It's what's *behind* the fever that could be a cause for concern."

THE FEAR FACTOR

Shivers, sweat, lack of energy—the hallmarks of fever certainly *feel* sinister. So it's no surprise that we respond to it with fear. In fact, a 2010 study in *Clinical Pediatrics* found that 73 percent of parents were "very concerned" about the potential danger of a fever. Their No. 1 worry: seizure, followed by fear of death. But according to the National Institute of Neurological Disorders and Stroke, there's no evidence that fever-lowering meds will reduce your child's risk of febrile seizure anyway. The reaction is usually a young body's response to a sudden spike in temperature. Seizures occur in just 3 to 5 percent of children 6 months to 5 years old, and most aren't associated with long-term harm.

The *Clinical Pediatrics* study also found that parents hit the panic button when their child's temperature reaches 100 degrees. And even before the thermometer registers that number, two-thirds of parents dole out fever reducers. "True, anything over 100 degrees in a baby under three months old requires a call to the doctor," says the AAP's Rosen. "But in adults and children four months and older, a temperature increase of a few degrees over the baseline is unlikely to be dangerous."

JUST SAY NO?

Emergency room staff may reach for the pills as well. "Health care providers feel pressure to 'do something' to treat illnesses," Rosen says. "A fever is a symptom, not an illness, but we live in a symptom-treatment medical system, not a health-promoting one."

And drugs do treat the symptoms admirably: "They'll certainly help you feel more comfortable," says Jennifer Lowry, M.D., a specialist in pediatric pharmacology at Children's Mercy Hospitals and Clinics, in Kansas City, Missouri. Over-the-counter fever reducers bring down your temperature by stifling the formation, release, or synthesis of inflammatory chemicals in the body, switching off the "get feverish" signal.

But, ironically, your quest for comfort may result in your suffer-

ing longer. "Treating a fever with medicine can actually interfere with your body's ability to fight off the infection," says Todd Patton, a family physician based in Mineola, New York. By scaling back your natural defenses, you prolong the war on bugs.

While there's no direct evidence that fever reducers permanently hamper immune-system development, it's possible that reaching into the medicine cabinet can have lasting effects. Take the news that got me worried in the first place, the *Pediatrics* article suggesting a link between acetaminophen use and asthma. "It's possible that the drug changes the body's chemistry in ways that encourage inflammation in the airways," says study author John McBride, M.D. "Acetaminophen may not be entirely safe," he warns, "particularly for those at risk of developing asthma."

Another problem with the fever reducer: More than 40 percent of caregivers misuse it with kids, according to the 2010 survey, usually erring on the side of overmedication. In high doses, the drug can reduce beneficial antioxidants in the liver, leading to serious damage of the organ, Patton says.

Other fever reducers—things like ibuprofen and naproxin—can cause stomach ulcers and kidney damage. And a recent study published in the *Canadian Medical Association Journal* demonstrated that the risk of miscarriage was 2.4 times greater among women who took prescription fever reducers such as ibuprofen even *once* during the first 20 weeks of pregnancy. Plus, in kids younger than 14, aspirin can cause Reye's syndrome, a disease that can lead to liver failure. "Aspirin should not be used to treat fevers in children, especially those with viral illness like the flu," concludes pediatric pharmacologist Lowry.

GOING THE MED-FREE ROUTE

If it's beginning to sound like another one of those damned-if-you-do, damned-if-you-don't situations (over-the-counter fever reducers come with potentially scary side effects, but fevers themselves leave you feeling like dirt), take heart: There are natural ways to lower your temperature when the heat becomes too much to bear. "One of the fastest ways for older kids and adults to bring down a fever is to remove clothing while staying at room temperature," Patton says. (Avoid cool baths, which can trap body heat and actually raise your internal temperature.)

Homeopathic remedies can be helpful as well. "With these, you're mounting a response against the underlying cause of the fever," says Eric Udell, N.D., cofounder of the Arizona Natural Health Center, in Tempe. Some options include homeopathic treatments of ferrum phosphoricum (iron phosphate), aconite, and belladonna. You will need the help of a naturopath or a homeopathic expert to select the right treatment, Udell adds.

Perhaps the best guiding principle is one that my friend Reija Eden learned from her pediatrician: "Treat the child, not the fever." After my exhaustive research, I'm on board with this. I'll stock up on the homeopathic stuff and keep fever reducers in my back pocket just in case. And I'll call the doctor if I feel truly worried—but I suspect I'll worry a lot less now. +

SHOULD YOU PICK UP THE PHONE?

Sometimes a fever *does* call for a visit to the doctor, says Todd Patton, a family physician in Mineola, New York. Seek medical advice if…

1 **You experience a sudden onset of a 101-degree fever accompanied by dry cough, fatigue, and muscle aches. (You should be evaluated for influenza within 48 hours.)**

2 **You have a fever without any other symptoms that lasts for three or more days.**

3 **You develop a fever two to three days after surgery.**

4 **You develop a fever and are immunosuppressed because of HIV/AIDS, diabetes, cancer, kidney failure, or another condition.**

5 **You have a fever with abdominal pain, vomiting, chest pain, or rash.**

6 **Your child has a fever and is 3 months old or younger.**

7 **Your child has a febrile seizure.**