

# WHAT IS INFLAMMATION?

## AND WHY DOES IT MATTER FOR CHILD DEVELOPMENT?

The immune system defends the body against infection and other challenges that can cause harm. One of the most important parts of the immune system's response is inflammation.

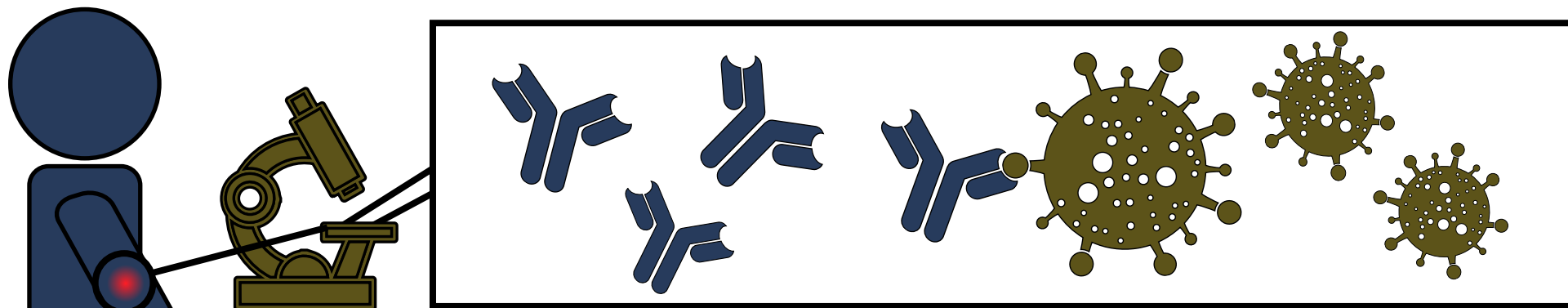
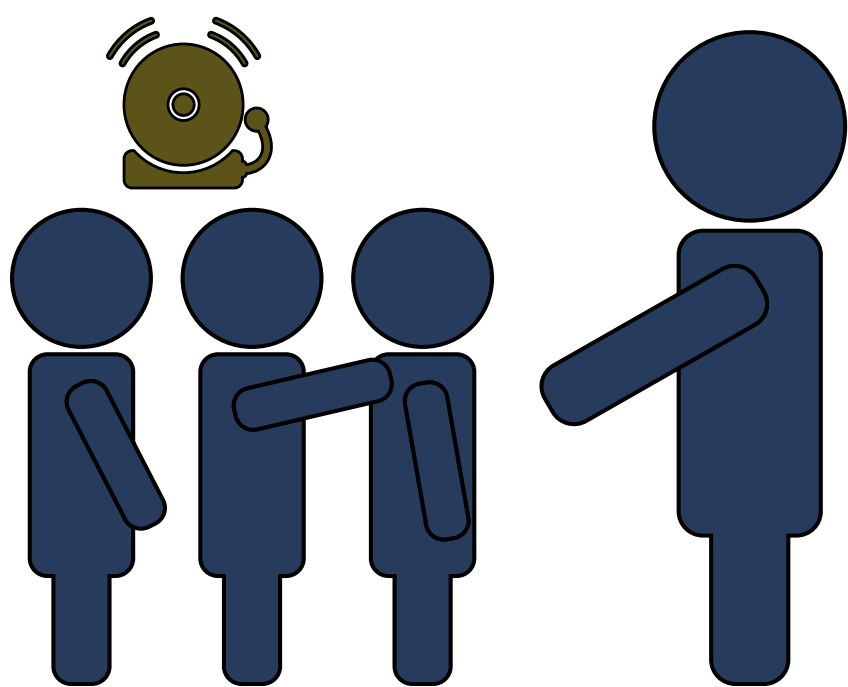


Illustration of y-shaped antibody cells finding and attaching to viruses.

Inflammation is a process where our immune cells attack invading bacteria or viruses, clear out the tissue destruction they cause, and begin the repair process. Outside of the body, inflammation can cause redness, swelling, heat, and pain. Other factors can trigger inflammation, too, including toxins, pollens, and even some kinds of stress.

## SHORT-TERM VS. LONG-TERM INFLAMMATION

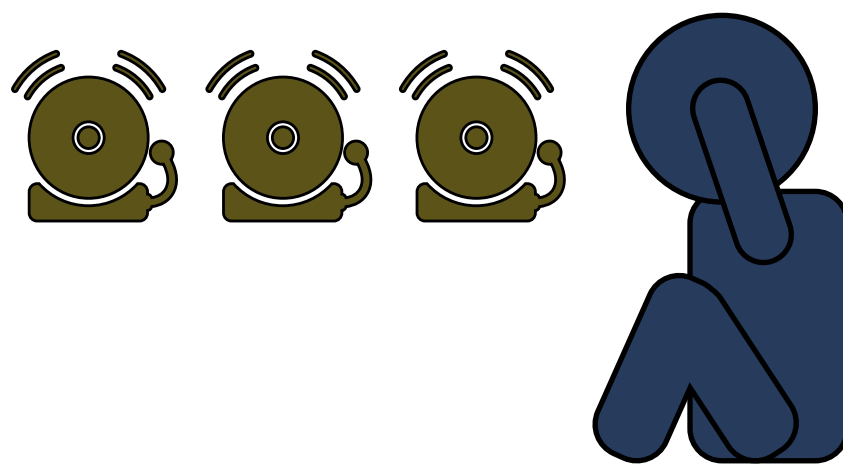
An “acute” inflammatory reaction is short-term, and can be triggered by an infection, or by experiencing, witnessing, or perceiving an immediate threat. This short-term response causes immune cells to “go to their battle stations.” We need this reaction to survive.



“Acute” inflammation is similar to a fire drill. Brief activation of stress response systems, followed by a return to balance, builds resilience. For a baby, this kind of reaction could be caused by hearing a sudden loud noise, a scare, or noticing the absence of a caregiver who soon returns to soothe. It's like a fire drill that prepares children for an emergency but then restores order after a short time.

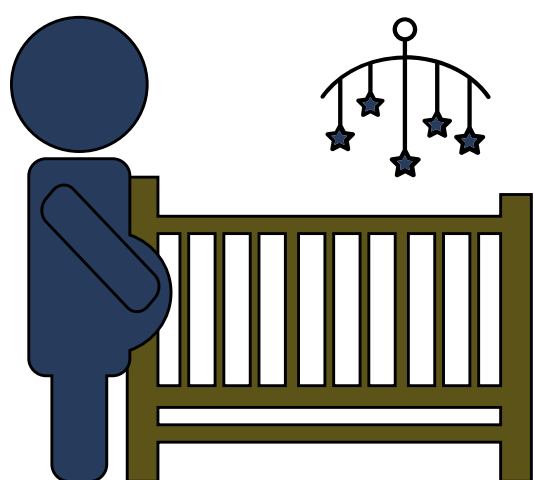
“Chronic” inflammation may be experienced over an extended period of time in environments that cause prolonged stress. Imagine if a child heard fire alarms nonstop for days, weeks, or months.

This prolonged physiological reaction puts inflammatory substances in constant contact with multiple organs, which can disrupt them over time. Ongoing abuse or neglect, deep poverty, the stresses of systemic racism, or long-term exposure to pollution can lead to chronic inflammatory responses. And these responses can lead to or worsen conditions such as cardiovascular disease, diabetes, depression, and asthma.



## TURNING OFF THE FIRE ALARMS

We can all help to turn off the constant fire alarms of chronic inflammation. Doing so can improve children's lifelong health and could even dramatically reduce the need for costly treatments for a wide range of health conditions. A healthier society and lower health care costs benefit us all.



We can support responsive relationships between children and their caregivers, advocating for things like paid family leave.



We can support strengthening core life skills that give children and their caregivers the tools to regulate and manage their environments.



We can reduce sources of stress by strengthening policies that help build wellbeing by addressing income, nutrition, housing, and medical needs.