

## Body's immune response may be factor in Alzheimer's risk

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.**

Inflammation occurs when the body rallies to defend itself against invading microbes or to heal damaged tissue. The walls of the capillaries dilate and grow more porous, enabling white blood cells to flood the damaged site. As blood flows in and fluid leaks out, the region swells, which can put pressure on surrounding nerves, causing pain; inflammatory molecules may also activate pain fibres. The heat most likely results from the increase in blood flow.

The key white blood cell in inflammation is called a macrophage, and for decades it has been a subject of study in my hematology laboratory and in many others. In recent years researchers have come to understand that macrophages are able to assemble, within themselves, specialized platforms that pump out the dozens of molecules that promote inflammation. These platforms, called inflammasomes, are like pop-up factories—quickly assembled when needed and quickly dismantled when the crisis has passed.

For centuries, scientists have debated whether inflammation is good or bad for us. Now we believe that it's both: too little, and microbes fester and spread in the body, or wounds fail to heal; too much, and nearby healthy tissue can be degraded or destroyed. Lately, several lines of research have revealed that low-level inflammation can simmer quietly in the body, in the absence of overt trauma or infection, with profound implications for our health. Using advanced technologies, scientists have discovered that heart attacks, diabetes, and Alzheimer's disease may be linked to smoldering inflammation, and some researchers have even speculated about its role in psychiatric conditions.

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