

## A new twist on child abuse

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Charles Dickens' 1838 novel *Oliver Twist* has been called a textbook case of child abuse. The young hero is beaten again and again, locked up in the dark, and starved—for both food and affection. His world is a world of cruelty and alcoholism and crime and domestic violence, and he shows many predictable consequences of such harshness: passivity, fragile self-esteem, depression, delinquency.

Dickens was ahead of his time in sounding the alarm about the mistreatment of children. Indeed, the word “Dickensian” is used today to describe the crushing poverty and social dysfunction that can damage the mental health of the young. But Oliver may have paid a toll even worse than the Victorian scribe imagined. His chaotic world most likely scarred him at the most basic molecular level, damaging him severely enough to trigger chronic disease and early death.

That's the conclusion from two University of British Columbia psychological scientists, who have been studying how harsh childhood experiences get “under the skin”—with medical consequences coming sometimes decades later. Gregory Miller and

Edith Chen suspected that abuse and neglect might actually compromise children's immune systems in lasting ways. Specifically, they wondered if emotional stresses in early life might lead to exaggerated inflammatory response to germs. Inflammatory response is a normal and essential part of the immune response to microbial threat, but chronically elevated inflammation has been linked to disease. They tested their idea in the laboratory.

The scientists recruited 135 young women—between 15 and 19 years old—and explored their family histories up to age 14. Most came from well-educated families, but some had experienced significant violence, threats, insults and more; others had not experienced such harshness. The researchers wanted to compare the immune function of the more and less fortunate young women. So, on three separate occasions over the next 18 months, the psychologists took blood samples from the teenagers, which they tested for two known indicators of heightened inflammatory response.

When they crunched all the data together, the results were clear and disturbing. As reported [on-line in the journal \*Psychological Science\*](#), the teenagers who had been reared in difficult circumstances showed not only a greater inflammatory reaction—but also one that increased over time. If sustained, the scientists say, this upward trend could put young people on an irreversible path toward chronic diseases of aging. Perhaps most alarming, even teenagers from moderately harsh families showed these danger signs. In other words, it doesn't take a Dickensian childhood to trigger unhealthy molecular changes with lifelong consequences.