Taming chronic inflammation may reduce illness, save lives

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Scientists from 22 institutions, including UCLA, are recommending early diagnosis, prevention and treatment of severe chronic inflammation to reduce the risk of chronic disease and death worldwide.

The group of international experts, which also includes scientists from the National Institutes of Health, Stanford University, Harvard Medical School, Columbia University Medical Center and University College London, point to inflammation-related diseases as the cause of 50 percent of all deaths worldwide.

Inflammation is a naturally occurring response by the body's immune system that helps fight illness and infection. When inflammation is chronic, however, it increases the risk of developing potentially deadly diseases.

In a perspective article, published in the journal *Nature Medicine*, the authors describe how persistent and severe inflammation in the body plays a key role in heart disease, cancer, diabetes, kidney disease, non-alcoholic fatty liver disease, and autoimmune and neurodegenerative disorders.

Future research should focus on identifying ways to better diagnose and treat severe chronic inflammation, according to the authors. Doing so may not only extend life, but also help reduce chronic disease worldwide and improve health, they said.

Senior author George Slavich, director of the UCLA Laboratory for Stress Assessment and Research, said it is important to make people aware of the risk factors for chronic inflammation, which include obesity, physical inactivity, social isolation, chronic stress and inadequate or poor sleep.

"Chronic inflammation is influenced by many social, environmental and lifestyle factors," said Slavich, who is also a research scientist at the Norman Cousins Center for Psychoneuroimmunology at UCLA. "If we make people aware of these risk factors, our hope is that individuals will reduce the factors that apply to them."

Slavich said research should focus on identifying new biomarkers or substances in the body that will enable doctors to screen for and better diagnose and treat severe chronic inflammation. Currently, just a few biomarkers are known to indicate inflammation, such as elevated levels of C-reactive protein, a protein found in blood plasma. Slavich said there are potentially hundreds of other substances in the body's immune system that may indicate chronic inflammation, but they have yet to be identified.

"It's also important to recognize that inflammation is a contributor not just to physical health problems, but also mental health problems such as anxiety disorders, depression, PTSD, schizophrenia, self-harm and suicide," Slavich said. "This is a substantial public health crisis."

More information: David Furman et al. Chronic inflammation in the etiology of disease across the life span, *Nature Medicine* (2019). DOI: 10.1038/s41591-019-0675-0

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