

Self-isolation may increase susceptibility to COVID-19

July 8 2020



Credit: CC0 Public Domain

Months of self-isolation and social distancing have taken their toll. Sheldon Cohen, the Robert E. Doherty Professor of Psychology at Carnegie Mellon University, has produced a body of research that suggests that interpersonal stressors many are experiencing during quarantine are associated with an increased vulnerability to upper

respiratory viruses and perhaps coronavirus. A summary of his work is available online in the July 8 issue of *Perspectives on Psychological Science*.

"We know little about why some of the people exposed to the coronavirus that causes COVID-19, are more likely to develop the disease than others. However, our research on [psychological factors](#) that predict susceptibility to other respiratory viruses may provide clues to help identify factors that matter for COVID-19," said Cohen.

Cohen has spent his career examining the impact of different behavioral, social and psychological factors on the development of upper respiratory illnesses. Through a series of viral challenge studies, he examined how such factors can affect whether or not healthy adults exposed to respiratory viruses become ill. His work has focused on eight viral strains that cause a common cold (rhinovirus types 2, 9, 14, 21, 39 and Hanks, as well as respiratory syncytial virus and corona virus 229E) and two that cause influenza (A/Kawasaki/86 H1N1; and A/Texas/36/91).

"The focus on the pandemic up until now has been changing behaviors to avoid exposure to the [virus](#)," said Cohen. "In our work, we intentionally exposed people to cold and influenza viruses and studied whether psychological and [social factors](#) predict how effective the immune system is in suppressing infection, or preventing or mitigating the severity of [illness](#)."

Cohen's work has pointed to the importance of social and psychological factors in the development of infection and illness. This work may hold clues to the health implications of the on-going quarantine.

To slow the spread of coronavirus, many communities issued stay-at-home measures, increasing interpersonal [stressors](#), like loneliness, loss of employment and familial conflict. According to Cohen, these stressors

may be powerful predictors of how a person will respond if exposed to coronavirus.

In a series of studies, he found participants experiencing interpersonal stressors had a greater chance of developing an upper respiratory illnesses when exposed to cold viruses. Cohen believes interpersonal stressors might play a similar role in response to the coronavirus causing COVID-19, increasing a person's vulnerability to infection and illness.

In addition, both social and psychological stressors increased the production of cytokines, molecules that promote inflammation in response to infection. In Cohen's work, psychological and social stressors were associated with an overproduction of pro-inflammatory cytokines in response to cold and influenza viruses. In turn, this excess of inflammation was associated with an [increased risk](#) of becoming ill. Similarly, research on COVID-19 has shown that producing an excess of pro-inflammatory cytokines is associated with more severe COVID-19 infections suggesting the hypothesis that a stress-triggered excessive cytokine response might similarly contribute to excessive inflammation and symptoms in COVID-19.

While social and psychological stressors increase susceptibility, Cohen's work also indicates that [social integration](#) and [social support](#) offer a protective shield against respiratory infection and illness.

"If you have a diverse social network (social integration), you tend to take better care of yourself (no smoking, moderate drinking, more sleep and exercise)," said Cohen. "Also if people perceive that those in their social network will help them during a period of stress or adversity (social support) then it attenuates the effect of the stressor and is less impactful on their health."

The article is titled, "Psychosocial Vulnerabilities to Upper Respiratory

Infectious Illness: Implications for Susceptibility to Coronavirus Disease 2019 (COVID-19)."

More information: Sheldon Cohen. Psychosocial Vulnerabilities to Upper Respiratory Infectious Illness: Implications for Susceptibility to Coronavirus Disease 2019 (COVID-19), *Perspectives on Psychological Science* (2020). DOI: 10.1177/1745691620942516

Provided by Carnegie Mellon University

Citation: Self-isolation may increase susceptibility to COVID-19 (2020, July 8) retrieved 24 December 2022 from <https://medicalxpress.com/news/2020-07-self-isolation-susceptibility-covid-.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.