Tired of being alone: How social isolation impacts our energy

April 4 2023

Credit: Annie Spratt (Unsplash)

Eight hours without social contact can lead to a reduction in energy similar to eight hours without food. In a study conducted in the lab as well as during the COVID-19 lockdowns, participants reported higher levels of tiredness after eight hours of social isolation. The results suggest that low energy may be a basic human response to a lack of

social contact. The study conducted at the University of Vienna and published in *Psychological Science* also showed that this response was affected by social personality traits of the participants.

If we do not eat for an extended period, a series of biological processes ensue that create a craving sensation we recognize as hunger. As a social species, we also need other people to survive. Evidence shows that a lack of social contact induces a craving response in our brains comparable to hunger, which motivates us to reconnect. The related "social homeostasis" hypothesis suggests that there is a dedicated homeostatic system that autonomously regulates our need for social contact. However, we know very little about the psychological responses to social isolation. Moreover, we do not know how these findings translate to the social isolation we experience in our daily lives, including the unique context of the COVID-19 lockdowns.

A group of scientists led by Giorgia Silani from the University of Vienna investigated the effects of social isolation using comparable methodology across two contexts: in the laboratory and at home during COVID-19 lockdown. For the study, 30 female volunteers came into the lab on three separate days, spending eight hours without social contact or without food or with both social contact and food. Multiple times throughout the day, they indicated their stress, mood, and fatigue, while physiological stress responses, such as heart rate and cortisol, were recorded by the scientists.

In order to validate the results of the laboratory study, the results were compared with measurements from a study conducted during the lockdown in Austria and Italy in spring 2020. From this study, they used data from 87 participants who had spent at least an eight-hour period in isolation and whose stress and behavioral effects were assessed with the same measurements several times a day for seven days.

"In the lab study, we found striking similarities between social isolation and food deprivation. Both states induced lowered energy and heightened fatigue, which is surprising given that food deprivation literally makes us lose energy, while social isolation would not," first authors Ana Stijovic and Paul Forbes said. This result is further supported by the validation with data obtained during the lockdowns—participants who lived alone during the lockdown and who were generally more sociable also reported lower energy on days on which they were isolated, compared to days on which they had social interactions.

The authors propose that lowered energy may be a part of our homeostatic response to a lack of social contact and a potential precursor of some more detrimental effects of long-term social isolation. "It is well-known that long-term loneliness and fatigue are related, but we know little about the immediate mechanisms that underlie this link. The fact that we see this effect even after a short period of social isolation suggests that low energy could be a 'social homeostatic' adaptive response, which on the long run can become maladaptive," explains Silani.

The study also found that contextual and personality factors modulated the effect of social isolation on fatigue; therefore, future studies will need to identify individuals who are most at risk from the effects of isolation.

More information: Ana Stijovic et al, Homeostatic Regulation of Energetic Arousal During Acute Social Isolation: Evidence From the Lab and the Field, *Psychological Science* (2023). DOI: 10.1177/09567976231156413

Provided by University of Vienna