

# Increased risk suicide death associated with hospitalization for infection

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Being hospitalized with infection was associated with an increased risk of suicide death and the highest risk of suicide was among those individuals with hepatitis and HIV or AIDS, according to a study published online by *JAMA Psychiatry*.

While psychological predictors of suicide have been studied extensively, less attention has been paid to the effect of biological factors, such as infection.

Helene Lund-Sørensen, B.M., of Copenhagen University Hospital, Denmark, and coauthors used Danish nationwide registers to investigate associations between infectious diseases and the risk of death by suicide.

All individuals 15 or older living in Denmark from 1980 through 2011 were included, resulting in study population of more than 7.2 million individuals. A history of infection was defined as one or more infection diagnoses since 1977. Infections were grouped into categories, including pathogen (i.e. bacterial, viral, others) and infection type (i.e. sepsis, hepatitis, genital, central nervous system, HIV or AIDS, etc.).

Among the more than 7.2 million individuals, there were 809,384 (11.2 percent) hospitalized with infection during follow-up. There were 32,683 suicides during follow-up and of those 7,892 (24.1 percent) individuals had been previously diagnosed with infection during hospitalization.

Study results suggest hospitalization with infection was linked to a 42 percent higher risk of suicide death compared to those individuals without infection. Also, the more infections and the longer the treatment, the higher the apparent risk for death by suicide, according to the results.

While there may be several potential causal links between infection and suicide, this study cannot conclusively show causality. The authors suggest their findings support literature linking infections, proinflammatory cytokines and inflammatory metabolites to increased risk of suicidal behavior. They also note that an association between infection and suicide could also be an epiphenomenon or be impacted by other factors. The psychological effect of being hospitalized with a severe infection might affect the risk of suicide.

The authors note several study limitations, including the inability to determine whether the hospital treatment itself or disability due to severe infection might explain some of the risks for suicide and whether other risk factors for suicide, such as depression, may be associated with self-care issues and therefore linked to the incidence and severity of infections.

"Our findings indicate that infections may have a relevant role in the pathophysiological mechanisms of [suicidal behavior](#). Provided that the association between infection and the risk of death by suicide was causal, identification and early treatment of infections could be explored as a public health measure for prevention of suicide. Still, further efforts are needed to clarify the exact mechanisms by which [infection](#) influences human behavior and risk of suicide," the study concludes.

(*JAMA Psychiatry*. Published online August 10, 2016. [DOI: 10.1001/jamapsychiatry.2016.1594](#). Available pre-embargo to the media at <http://media.jamanetwork.com>.)

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## **Editorial: Ascertaining Whether Suicides Are Caused by Infections**

"Strengthening the case for a possible causal role of infections in the pathogenic process that leads to suicide, these researchers show that an increased risk of suicide was associated with the length of treatment and with an increasing number of hospitalizations with infections.

Individuals with seven or more infections had an [increased risk of suicide](#) of almost 300 percent," write Lena C. Brundin, M.D., Ph.D., and Jamie Grit, B.Sc., of the Van Andel Research Institute, Grand Rapids, Mich., in a related editorial.

(*JAMA Psychiatry*. Published online August 10, 2016. [DOI: 10.1001/jamapsychiatry.2016.1470](#). Available pre-embargo to the media at <http://media.jamanetwork.com>.)

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