

Asymptomatic infection helps norovirus to spread in Indonesia

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Norovirus, also referred to as the "winter vomiting bug", is the most common cause of acute gastroenteritis in humans. A Japanese research team has shown that norovirus is significantly present in the stools of healthy volunteers in Indonesia who are asymptotically infected with the virus. This suggests that asymptomatic infection is a source of norovirus outbreaks, and sheds light on the transmission mode of the virus.

We already knew that infected asymptomatic people are important in transmitting the [norovirus infection](#), but the details of this process were unclear. When norovirus infects humans it breeds in the intestine, and researchers predicted that the virus spreads by transferring from asymptomatic people to infants and the elderly. In Japan and Europe the norovirus infection spreads during the winter season, but scientists had not investigated how it is transmitted in the subtropical climate of Indonesia.

Our team collected stool samples from [healthy volunteers](#) in the city of Surabaya, Indonesia, and performed epidemiological analysis on the norovirus genome in the samples. We collected 512 samples from 18 healthy, asymptomatic volunteers over one year (2015- 2016). Among these samples, 14 (2.7%) tested positive for norovirus. The positive samples all belonged to genogroup GII. After further analysis, norovirus strains composed of recombinant variations of the virus were detected, showing that of the 7 positive individuals, 2 had been repeatedly infected with the same strain or different strains. From these results it is clear that

asymptomatic individuals are infected with norovirus at a high rate, and these healthy individuals are an important source of [norovirus outbreaks](#) in Indonesia.

The team will now analyze examples of norovirus infection within the families of the symptomatic carriers, and use this data to identify the virus factors and host factors that are key in converting the norovirus infection from [asymptomatic individuals](#) to symptomatic infections. We also plan to analyze the genome families of the epidemic strains, the transmission methods for norovirus infection in sub-tropical Indonesia, and clarify how this affects norovirus infection in Japan.

More information: Takako Utsumi et al. Occurrence of norovirus infection in an asymptomatic population in Indonesia, *Infection, Genetics and Evolution* (2017). [DOI: 10.1016/j.meegid.2017.08.020](https://doi.org/10.1016/j.meegid.2017.08.020)

Provided by Kobe University

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