

Climate change is likely to increase the occurrence of stomach bugs, researchers predict

January 7 2013, by Anthony King



We can blame all sorts of things on the weather. But a stomach bug? It seems unlikely. Yet, scientists say greater quantities of rainfall and bigger storms will lead to more stomach upsets in parts of Europe. "Increases in precipitation in some countries, due to climate change, will affect waterborne outbreaks of disease," Apostolos Vantarakis of the University of Patros, Greece, tells youris.com.

Storms and persistent rainfall can lead to [sewage overflows](#), which

releases water with bacteria and viruses into our waterways. Ingesting this water while swimming or engaging in other water sports can make people sick. People may think bacteria are the cause of such illnesses, but viruses are the more likely culprits. "In my opinion most of the outbreaks [of stomach bug] are caused by viruses," Vantarakis says. "Yet we don't know a lot about these viruses."

Vantarakis is involved in an EU funded project, called [Viroclime](#). It aims at upgrading tools for tracking harmful viruses from human sewage in Europe's waters and help weight up [health risks](#). The project has been monitoring virus levels in five environmentally sensitive sites in Spain, Hungary, Greece, Sweden and Brazil.

Two families of viruses are used as alarm signals of increased risk of [waterborne diseases](#). The first, whose most infamous representative is the winter vomiting bug, belongs to the noroviruses family. The second type belongs to the adenoviruses family. "The evidence of waterborne disease from [adenovirus](#) is a little less clear, but we suspect they cause infection and disease," remarks Mark Sobsey, a [virologist](#) from the University of North Carolina, USA, a leading expert in the field, who is not connected to the project.

Until now, experts have often been in the dark about sickness caused by waterborne viruses. Unlike automobile accidents and their [health consequences](#), we have very poor surveillance for waterborne [viral disease](#) from recreational exposure, notes Sobsey. "If we had better data, which EU project Viroclime can gather, and we analyse the data using a health risk-based approach, we could get better estimated disease burdens from recreational water exposures," Sobsey adds. However, he says: "virus testing is still difficult, expensive and time consuming and is not widely done by public or private industry," in drinking water, let alone recreational water.

Documenting the level of harmful viruses in water also has implications in a wider context. It could help assess the impact of various climate change scenarios and contribute to health protection measures. "If we have certain virus levels under current conditions, we will be able to say what those levels will be under new climate change conditions," explains Peter Wyn-Jones, lead scientist of the project at Aberystwyth University in Wales, UK. Health services can then prepare to address potential health threats. Spotting contaminated water sooner will, for example, allow authorities to close beaches and prevent stomach bugs in [water](#) lovers.

Such approach could also pinpoint where exactly greater level of stomach illnesses are likely to occur by exploiting the link with rain levels. "It is increasingly becoming clear that [climate change](#) will also impact on human health more indirectly," concurs climatologist Clare Goodess, of the University of East Anglia, in the UK, "such indirect impacts include possible increases in viral waterborne pathogens in regions of increasing precipitation." Indeed, "for health-related impacts, changes in extremes may be more important than changes in average conditions," she adds, "so it is of concern that increases in the intensity of heavy precipitation are projected across Europe, with the strongest signals in Northern Europe particularly in winter."

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