

Anti-vaccination activists using new scientific breakthroughs on beneficial microbes to fight their cause

March 7 2019



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Anti-vaccination activists are capitalising on radical new scientific insights into the beneficial effects of microbes in the human body,

according to new research from the London School of Economics and Political Science.

The genomic sciences, which use information from DNA to develop new ways to treat, cure, or prevent the thousands of diseases, are "driving a transformation in our understanding of microbes and [human health](#) as it not only shows that microbes can be good for us but that they are an integral part of the [human body](#)", according to Dr. Stephan Guttinger, Research Associate at LSE's Centre for Philosophy of Natural and Social Science.

Dr. Guttinger, who has studied the so-called "anti-vaxxers" online propaganda on websites and blogs, found that they are arguing that this research provides more evidence that vaccines are unnecessary and are interfering in the body's natural immune system. He quotes a typical article from an anti-vaxxer website which uses scientific research which showed the beneficial effects of the norovirus in mice to say "vaccinations may deprive the body of favourable immune-modulating effects of some viral infections".

Dr. Guttinger, who has a background in biochemistry, explains that they are twisting the facts of these scientific breakthroughs to further their cause: "Polio, diphtheria, measles or viral encephalitis have no positive immune-modulating effects on the human body, and no scientist claims that these [microbes](#) might be good for health. Hence, vaccines against them will protect the human body and not deprive it of beneficial agents."

Facebook and Amazon have recently attracted criticism from health experts and politicians for enabling the spread of propaganda and providing fund-raising platforms for anti-vaccination groups. Many are operating on Facebook in closed groups, where members have to be approved in advance. By barring access to others, they are able to serve

undiluted misinformation without challenge while advocating unfounded alternative treatments such as high doses of vitamin C.

Dr. Guttinger's paper concludes: "There are many more examples where new findings from microbiome research are used by anti-vaccination activists to question the need for and safety of vaccination efforts. It is clear that the overall conclusions of these articles are not supported by current research. But the crucial point is probably not so much whether these arguments can withstand fact-checking and evidence. What matters is the way in which they play on and misuse recent developments in the life sciences to attack public health policies and the very idea of vaccination itself."

He calls for a more concerted effort by scientists and public health experts to tackle misinformation from [anti-vaxxers](#): "To counter the propaganda by anti-vaccine activists, the research and public health communities have to adjust their communication. Arguing that vaccines are safe and the most efficient public health intervention to combat infectious diseases is no longer just a question of providing more data on the safety of specific vaccines. It has to expand to discuss a broader view of human biology, the body's microbiomes and their role in health and disease to reassert that while not all bugs are bad, some are and vaccines help to protect us against these."

Dr. Guttinger's paper, The anti-vaccination debate and the microbiome. How paradigm shifts in the life sciences create new challenges for the vaccination debate is published in the latest edition of *European Molecular Biology Organization Reports*.

More information: Stephan Guttinger. The anti-vaccination debate and the microbiome, *EMBO reports* (2019). [DOI: 10.15252/embr.201947709](https://doi.org/10.15252/embr.201947709)

Provided by London School of Economics (LSE)

Citation: Anti-vaccination activists using new scientific breakthroughs on beneficial microbes to fight their cause (2019, March 7) retrieved 23 April 2024 from <https://medicalxpress.com/news/2019-03-anti-vaccination-activists-scientific-breakthroughs-beneficial.html>

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