

# Changes to science syllabus could help improve vaccine uptake, new study concludes

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Researchers are calling for urgent changes to the GCSE science curriculum to help equip learners with sufficient scientific literacy to be able to identify reliable sources and inform their future vaccination decision-making process.

A recent study from the University of Portsmouth has uncovered new

insights on the factors affecting immunization hesitancy in a British population sample. Results showed a direct relationship between [vaccine confidence](#) and science education levels.

Through a survey of nearly 400 participants, researchers aimed to investigate whether science literacy levels and standpoint on social and political matters are associated with different levels of vaccine confidence and COVID-19 concern.

Participants were asked how much they agreed with statements such as:

- Vaccines are safe
- I think vaccines should be a compulsory practice
- Vaccines are beneficial for our health and well-being

The study found that participants who studied science up to GCSE level were more hesitant than those with both lower and higher science educational levels.

Dr. Alessandro Siani, Associate Head (Students) of the School of Biological Sciences at the University of Portsmouth says that "it is possible that participants who had not studied science at [secondary school](#) might recognize their lack of knowledge on the topic and tend to seek expert advice on vaccines from qualified personnel such as healthcare workers. However, those who have taken GCSE science exams might overestimate their competence in the field and 'do their own research', not always with the right results."

This study also revealed that participants' levels of concern with the COVID-19 pandemic varied significantly with both their science

education level and [political views](#). 100 percent of participants with the lowest level of science education (primary or lower secondary) agreed with the statement "I am concerned with the current pandemic," whereas participants who studied science at the postgraduate level were the most likely to disagree with it.

Participants with neutral/centrist political views expressed lower confidence than those with a libertarian social stance or a left-wing economic stance. A higher concern with the COVID-19 pandemic was associated with lower levels of science education, libertarian social views, and left-wing economic views.

Dr. Siani says that "a lack of trust in vaccines had already been identified as one of the top ten threats to global health, even before the COVID-19 pandemic brought the subject of immunization to the frontpage of worldwide news outlets. At a time when many countries are still under the grip of the COVID-19 pandemic and limited vaccine uptake is hindering the global efforts to overcome the current crisis, this study provides important insights into the factors underpinning vaccine confidence and pandemic concern. Considering that the majority of the population do not pursue further scientific studies after [secondary education](#), the observation that participants who studied science up to GCSE level show the highest level of [vaccine](#) hesitancy should be a cause for concern."

Researchers conclude that school curricula should not only be designed to teach students accurate and up-to-date scientific notions, but also to equip them with the tools to understand the [scientific method](#), avoid misinformation and seek for reliable, evidence-based scientific sources. Ensuring that topics of critical public health relevance are adequately covered in secondary school curricula could help improve scientific literacy and trust in vaccinations as well as in the healthcare workers that administer them.

The research was published in the *Journal of Preventive Medicine and Hygiene*.

**More information:** Alessandro Siani et al, Political views and science literacy as indicators of vaccine confidence and COVID-19 concern, *Journal of Preventive Medicine and Hygiene* (2022). [DOI: 10.15167/2421-4248/jpmh2022.63.2.2320](https://doi.org/10.15167/2421-4248/jpmh2022.63.2.2320)

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