

Meningococcus B vaccine prevents disease with 79 per cent effectiveness in under-18s

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Meningococcus group B, the most prevalent strain of meningococcal infection, is prevented with 79 per cent effectiveness in children and young adults inoculated with the 4CMenB vaccine, also known as

Bexsero, according to a new collaborative study from researchers in Portugal and the UK and led by the University of Bristol which evaluated the vaccine's performance in a real-world setting. The findings are published today [1 December] in the *Journal of the American Medical Association (JAMA)*.

In 2015, the UK was the first country in the world to offer the [4CMenB vaccine](#) free after recommendations from the Joint Committee on Vaccination and Immunization (JCVI) that it should be included in the childhood immunization schedule. Following the vaccine's UK roll-out, reductions in meningococcus group B disease cases have been observed in vaccine-eligible age groups but until now, no studies have conclusively demonstrated its effectiveness over time in the real-world using comparison of vaccination rates among cases with closely matched controls.

In this case-control study, a team led by Adam Finn, Professor of Paediatrics and Director of the Bristol Children's Vaccine Centre at Bristol Medical School, assessed the 4CMenB vaccine's effectiveness by analyzing the immunization and medical records of 117 [children](#) and [young people](#) across 31 pediatric hospitals in Portugal who had the disease between 2014 and 2019. In Portugal, [medical records](#) are linked electronically to immunization records and contain the details of all vaccinations including those that are not in the country's national immunization program and only available through private clinics as was the 4CMenB vaccine over this period.

Ninety-eight children with lab-confirmed invasive meningococcal disease were included of whom 69 had group B and were old enough to have been fully immunized. Only seven per cent of this group had received the right number of vaccine doses as compared to 23 per cent of control children who did not have the disease—an observed effectiveness of nearly 80 per cent. Similar results were obtained when

all strains of meningococcus were included in the analysis, raising the possibility that the vaccine may provide broader protection than against group B alone.

Of 11 children with meningococcal infection who had received at least one dose of the 4CMenB vaccine, all survived, and none were left with related disabilities. In contrast, among the remaining 87 cases who were unvaccinated, seven died and 16 suffered long term injuries, suggesting that the vaccinated cases may have been partially protected.

Professor Finn said, "Although rare, meningococcus group B infection can become life-threatening within hours and can cause long-term disabilities. Young children in particular are more at risk and may die or be seriously harmed even with top quality hospital treatment. This important new study confirms that 4CMenB offers children a very high level of protection against suffering severe outcomes from this potentially deadly infection."

More information: FMP Rodrigues et al. Association of use of a Meningococcus Group B Vaccine with Group B Invasive Meningococcal Disease Among Children in Portugal. *JAMA*. [DOI: 10.1001/jama.2020.20449](https://doi.org/10.1001/jama.2020.20449)

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