

Vaccines safe for majority of immunosuppressed children, find scientists

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Both inactivated and live-attenuated vaccines generally produce an adequate immune response and are safe to use in children suffering with autoimmune diseases treated with all but the most potent

immunosuppressants, according to a research review.

The team from The University of Manchester and Manchester University NHS Foundation Trust examined 37 [original articles](#): 25 studied the inactivated vaccines influenza; hepatitis A virus; hepatitis B virus; and human papillomavirus. And 12 studied the live-attenuated vaccines of varicella zoster virus; measles, mumps, and rubella.

The study, published in *Expert Reviews of Vaccines*, had no external Pharma funding.

Low-dose steroids and biologics were found to have no significant ill effects on the immune response of vaccines, the study concluded.

Co-author Dr. Peter Arkwright, a senior Lecturer from The University of Manchester and Consultant Pediatric Immunologist at Royal Manchester Children's Hospital—part of Manchester University NHS Foundation Trust—says the review should provide patients and clinicians with the confidence to ensure that these children do receive their scheduled vaccinations.

The research team, which included Professor Ray Borrow Professor of Vaccine Preventable Diseases at The University of Manchester, did find weak evidence of reduced efficacy of live vaccines in patients receiving high dose steroid and the chemotherapy drug cyclophosphamide.

Dr. Arkwright said: "Children with autoimmune diseases such as Crohn's Disease, Lupus and juvenile arthritis often require treatment with immunosuppressants. Though the prevention of infection is crucial in these patients, there have long been ongoing concerns from clinicians about the efficacy and safety of vaccination, particularly live-attenuated viral vaccines. The evidence shows that that both live and inactive vaccines are safe and effective and so hope this study will address those

concerns. Children treated with [immunosuppressive drugs](#) for [autoimmune diseases](#) should receive vaccines to protect them from [vaccine-preventable diseases](#). However, we do argue that patients taking high-dose steroids and pulse cyclophosphamide should avoid live viral vaccines."

Though the protection given by vaccines was adequate, antibody concentrations can be lower in patients taking immunosuppressants.

The team therefore argue patients on these drugs might require added booster vaccines in the future to ensure protection is maintained.

More information: Hiu Nam Tse et al. Immune Response and Safety of Viral Vaccines in Children with Autoimmune Diseases on Immune Modulatory Drug Therapy, *Expert Review of Vaccines* (2021). [DOI: 10.1080/14760584.2021.1875825](#)

Provided by University of Manchester

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