Clinical guidelines

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The 2022 ACR vaccination guideline: a call-to-action

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Among the limited quality and quantity of evidence on vaccination use in individuals with rheumatic and musculoskeletal diseases, a new guideline, developed with a rigorous methodology, provides useful support to clinicians and patients in making health-related decisions. Most recommendations are conditional, serving as a call to action for further research.

Refers to Bass, A. R. et al. 2022 American College of Rheumatology guideline for vaccinations in patients with rheumatic and musculoskeletal diseases. *Arthritis Care Res.* **75**, 449–464 (2023).

Bass, A. R. et al. 2022 American College of Rheumatology guideline for vaccinations in patients with rheumatic and musculoskeletal diseases. *Arthritis Rheumatol.* https://doi.org/10.1002/art.42386 (2023).

Morbidity and mortality due to vaccine-preventable illnesses is higher among individuals with rheumatic and musculoskeletal diseases (RMD) than in the general population. This risk, which is probably explained by both disease-related immune dysfunction and the use of immunosuppressive medication, highlights the relevance of vaccination as part of the care of people with RMDs. Unfortunately, limited evidence exists on the risk of infection and vaccine benefit in specific RMD subpopulations (such as the risk of herpes zoster infection in young patients with RMD and the long-term benefits of vaccination). In the context of insufficient evidence, guidelines can support clinicians and patients to make health-related decisions, foster future relevant research, and help patients to influence public policy[1]. The ACR has now released a guideline for vaccinations in adults and children with RMD[2,3].

The guideline development process followed current guideline standards and involved various stakeholders (including adult and paediatric individuals with RMDs) and a methodologist[2,3]. The recommendations were informed by a remarkably broad systematic review of evidence, filling nearly 1,000 pages and freely available as supplementary information, followed by an assessment of the benefits and harms of alternative care options by a group of rheumatology experts. The major advantage to using this explicit methodology is transparency. For every recommendation, the underlying evidence can be traced back, and the interested clinician or academic can then judge for themselves the relevance of the recommendation to a particular situation or question. This clinical practice guideline, together with those from the Advisory Committee on Immunization Practices[4,5] and the American Academy of Pediatrics[6], aims to optimize the care of individuals with RMDs (that is, improve the quality of clinical decisions and potential health outcomes), increase implementation of the best scientific evidence, reduce inappropriate variation in practice promoting consistency of care, and improve efficiency[1].

A fundamental challenge in the development of the ACR guideline was the limited quality and quantity of evidence to inform best practices on vaccination in people with RMDs. This was further complicated by the 'indirectness' of various evidence, as data on the risk of infection or vaccine responses generated in other immunocompromised populations (such as those with solid or haematological malignancies, recipients of solid-organ transplants, or individuals with primary immunodeficiency or HIV infection) might not be easily extrapolated to individuals with RMDs. Moreover, the risk of certain infections and individual vaccine responses can vary and are influenced by several factors including the specific RMD diagnosis, treatment, type of immunosuppression, age, presence of comorbidities, access to healthcare resources and therapeutics, previous vaccination and local community transmission of infection. The fact that not all immunocompromised populations 'are equal' in terms of risk of severe disease and response to a vaccine was a reality uncovered by the COVID-19 pandemic[7]. What remains to be quantified is how lessons from COVID-19 apply to influenza, pneumococcal disease, herpes zoster, and other vaccine-preventable diseases. Understanding what promotes the risk and sequelae of infections in immunocompromised hosts, and what modulates their responses to and clinical benefits from immunizations will not only inform future vaccine guidelines, but also help to optimize resources, prioritize efforts and interventions to high-risk RMD subgroups, and individualize clinical decisions.

> "A fundamental challenge in the development of the ACR guideline was the limited quality and quantity of evidence"

Most recommendations from the ACR vaccination guideline are conditional, denoting a low or very low level of evidence, with uncertainty about the balance of benefits versus harms[2,3]. This emphasizes the relevance of incorporating patient preferences as part of the decision-making but also greatly complicates the provision of appropriate information to individuals. The fact that recommendations are conditional confounds the effort to provide a set of 'rules' to guide decisions. To properly use this guideline, understanding the 'conditions' under which the recommendation might need to be modified becomes necessary, which is greatly aided by the availibility of the evidence tables. It is also important to note instances in which the recommendations are based on 'common sense' alone, with almost no evidence.

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In addition to the recent vaccination guidelines, understanding the barriers to vaccine uptake from the perspective of individuals with RMDs, and implementing specific strategies to address them is crucial[8,9]. Vaccine-hesitancy, vaccine-avoidance and vaccine-refusal have increased since the COVID-19 pandemic and are amplified by misinformation promoted by social media platforms[10]. Rheumatologists and other health-care providers have the privilege of being the most trusted sources of healthcare advice for individuals with RMD[8]. The pandemic has stimulated much research into the immunogenicity, efficacy, and safety concerns after COVID-19 vaccination, and this knowledge may inform successful vaccination programmes more broadly. Interventions and strategies targeted at individuals with RMDs and their health-care providers that facilitate access to vaccination, disseminate and strengthen confidence in vaccine recommendations, and educate on vaccine-preventable diseases and the risks and benefits of vaccines might aid the appropriate use of the ACR vaccination guideline. Although we applaud the efforts that led to the development of this guideline, we need to work to generate the required data so that future iterations of these recommendations are based on higher certainty and direct evidence.

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Competing interests

The authors declare no competing interests.