



T21RS statement regarding COVID-19 booster vaccination for individuals with Down syndrome.

Analysis of various data sources collected during the COVID-19 pandemic has established that individuals with Down syndrome are at increased risk for both hospitalisation and mortality after infection with SARS-CoV-2. Adults with Down syndrome were amongst the highest risk groups for mortality. Furthermore, there have been concerns that, when admitted to hospital during peak infection periods and when demands on resources are high, people with disabilities and long-term conditions may not be prioritised for access to scarce resources such as respiratory ventilation or intensive care beds.

It has been the clinical experience of many Down syndrome clinics in different countries that COVID-19 vaccines can be safely given to children (from age 12) and adults with Down syndrome. There are also reasonable indications that full vaccination offers significant protection against the poor outcomes associated with infection in people with Down syndrome. However, based on our understanding of the immune response in Down syndrome, including reduced numbers of and differences in memory B cell responses, and previously published studies on the immunological response of those with Down syndrome to other vaccines, their antibody response to vaccination may be less robust when compared to peers without Down syndrome.

We therefore recommend that individuals with Down syndrome should be amongst those prioritised for booster vaccination for persistent production of antibodies against COVID19 antigen. There have been some indications of additional benefit by combining vaccines from different sources (e.g. Pfizer and Moderna, or Moderna and AstraZeneca) to promote better immune responses based upon studies in the general population, but any booster is preferable to none.

Selected references/ further reading:

Susceptibility to COVID-19 in Down syndrome -
<https://link.springer.com/article/10.1007%2Fs12017-021-08651-5>

Immune dysregulation associated with Down syndrome -
<https://www.frontiersin.org/articles/10.3389/fimmu.2021.621440/full>

T21RS surveys of COVID-19 in Down syndrome, including side effects of vaccines -
<https://www.t21rs.org/results-from-covid-19-and-down-syndrome-survey/>

Defective B-cell memory in patients with Down syndrome -
<https://www.sciencedirect.com/science/article/abs/pii/S0091674914009701>