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 (age varying by country) and adults with Down syndrome. That experience is backed by the results from theT21RS international survey, where parents and clinicians reported relatively minor side effects, similar to those observed in the general population (1). There are also reasonable indications that full vaccination offers significant protection against the poor outcomes associated with infection in people with Down syndrome. Preliminary work has shown that the antibody response to the COVID-19 vaccine in adults with Down syndrome is robust, although less than in those without Down syndrome (2,3). This suggests that, similar to those without Down syndrome, subsequent vaccine doses may be needed. Research by members of the T21RS and by others is ongoing to further define the immune response over longer periods of time.

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.

Refences cited:

1) https://mdpi-res.com/d_attachment/vaccines/vaccines-10-00530/article_deploy/vaccines-10-00530-v2.pdf?version=1648783714

2) https://pubmed.ncbi.nlm.nih.gov/35461998/

3) https://pubmed.ncbi.nlm.nih.gov/35160144/

Selected references/ further reading:

Medical vulnerability of individuals with Down syndrome to severe COVID-19:
https://www.thelancet.com/pdfs/journals/eclinm/PIIS2589-5370(21)00049-3.pdf

COVID-19 in Children with Down Syndrome
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8584980/pdf/jcm-10-05125.pdf

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://w w w.frontiersin.org /articles/10.3389/fimmu.2021.621440/full

Defective B-cell memory in patients with Down syndrome -

https://w w w.sciencedirect.com/science/article/abs/pii/S0091674914009701

Summary infographs of the T21RS survey results are also available at https://www.t21rs.org/results-from-covid-19-and-down-syndrome-survey/

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