



Should Children be Vaccinated Against SARS-CoV-2?

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On December 19, 2019 the Public Health Department of China reported a new strain of coronavirus SARS-CoV-2 that was responsible for Severe Acute Respiratory Distress Syndrome and was later also found to be responsible for acute myocarditis, arrhythmias and sudden death [1,2]. The death rate in adults was initially 8.8% and today is about 0.4% in the United States. In children however, the death rate in children with SARS-CoV-2 has been on average 0.011%, but when we look at the death rate due to SARS-CoV-2 this has been only 0.011%. The current death rate is 0.004% about the same as the death rate from the common flu. Yet, even these numbers in children may be an overestimation as the number of deaths in children with SARS-CoV-2 do not distinguish between death by SARS-CoV-2 and deaths with SARS-CoV-2. The fact that adults remain more susceptible than children can be explained by the fact that deficits in the adaptive immune system are responsible for deaths from SARS-CoV-2. The adaptive immune system is strongest when a child and linearly weakens until the age of 60-65 when it exponentially decreases [1]. The decrease in death over time from SARS-CoV-2 in all age groups is related to the fundamental theorem in microbiology that as a deadly microbe evolves it becomes less deadly but easier to pass. This is what we have seen with this virus. The virus is quickly evolving to be a standard cold virus which is the rule for coronaviruses. Additionally, as the virus evolves the vaccines become less and less effective unless a new specific vaccine is made. There are two main reasons it is argued from a patient centered view that a child should be vaccinated according to those support the vaccination of children 1) is that the vaccine protects against SARS-CoV-2 infection, and 2) that it protects against serious disease [4]. The first reason is fictitious as vaccines have never prevented infection but, have always lowered the odds against the development of serious disease. Yet children serious disease is exceptionally rare and only seems to develop in children already suffering from serious pulmonary, heart or immunodeficiency. The SARS-CoV-2 vaccines are also not risk free, as sudden death, myocarditis, stroke, embolisms, Guillain Barre Syndrome are associated with them. From an adult study in Qatar the death rates are estimated to be about thirty -three people out of a

million die from the vaccines [5]. In the United States 33.5 million children have been vaccinated giving an estimate that 1005 children have died from SARS-CoV-2 vaccine in the short term. However, this figure may underestimate vaccine related deaths as children seem to have more serious adverse side effects from the vaccine than adults especially myocarditis [6]. It is estimated from studies performed in Italy and Saudi Arabia that 60 - 69% of children will suffer from short term adverse reactions to SARS-CoV-2 vaccination [7,8]. The long terms effects of vaccination in children are completely unknown. At this time, the evidence does not support vaccinating children COVID unless they are immunocompromised, have severe heart, pulmonary disease or related disorders.

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