

# SELECTED VACCINE MYTHS VERSUS EVIDENCE



## Whole cell pertussis vaccine causes "brain damage" / „encephalopathy “



Re analyses of cohorts and case series found no causal link between whole cell pertussis vaccine and permanent “encephalopathy”; earlier associations were largely due to coincidental onset of conditions specifically inherited sodium-channel diseases (SCN) like Dravet syndrome.

### Example references

1. Miller E, Andrews N, Stellitano L, et al. Encephalopathy after whole cell pertussis or measles vaccination: lack of evidence for a causal association in a retrospective case control study. *Pediatr Infect Dis J.* 2006;25(9):768-773.
2. AlSaif S, Umair M, AlFadhel M. Biallelic SCN2A Gene Mutation Causing Early Infantile Epileptic Encephalopathy: Case Report and Review. *J Cent Nerv Syst Dis.* 2019 May 15;11:1179573519849938. doi: 10.1177/1179573519849938. PMID: 31205438; PMCID: PMC6537489.

## Measles vaccination causes autism



Large population based studies show no link between measles containing vaccines and autism. The original small study suggesting a link was based on fraud to make money.

### Example references

1. Taylor LE, Swerdfeger AL, Eslick GD. Vaccines are not associated with autism: an evidence based meta analysis of case control and cohort studies. *Vaccine.* 2014;32(29):3623-3629
2. Offit PA. *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure.* New York, NY: Columbia University Press; 2008

## Measles vaccines cause encephalitis



Measles **infection** clearly causes encephalitis; measles-vaccination-associated encephalitis – in case it would be causal at all – would be so rare that it is undetectable above background incidence in large studies.

### Example references

1. Miller E, Farrington CP, Andrews NJ, Stowe J, Taylor B. Measles vaccine and neurological events. *Lancet.* 1997;349(9053):730-731.
2. Offit PA. *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure.* New York, NY: Columbia University Press; 2008

## Hepatitis B vaccination causes multiple sclerosis



Multiple large cohort and case-control studies show no increased risk of MS after hepatitis B vaccination.

### Example references

1. Sestili C, Grazina I, La Torre G. HBV vaccine and risk of developing multiple sclerosis: a systematic review and meta-analysis. *Hum Vaccin Immunother.* 2021;17(7):2273-2278. doi:10.1080/21645515.2018.1528835.

## MMR vaccines cause Crohn's disease



High quality studies find no association between MMR vaccination and Crohn's disease or other inflammatory bowel diseases.

### Example references

1. Davis RL, Kramarz P, Bohlke K, et al. Measles mumps rubella and other measles containing vaccines do not increase the risk for inflammatory bowel disease: a case control study from the Vaccine Safety Datalink project. *JAMA Pediatr.* 2001;155(3):354-359.
2. Offit PA. *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure.* New York, NY: Columbia University Press; 2008

## Polio vaccination causes infertility



No biologically plausible mechanism and no epidemiologic evidence that polio vaccines impair fertility.

### Example references

1. Yaqub O, Castle Clarke S, Sevdalis N, Chataway J. Attitudes to vaccination: a critical review. *Soc Sci Med.* 2014;112:1-11.

## COVID 19 vaccination causes infertility



Mechanistic and epidemiologic data do not support a link; fertility outcomes and pregnancy rates are similar in vaccinated and unvaccinated individuals.

### Example references

1. Zaçe D, La Gatta E, Petrella L, Di Pietro ML. The impact of COVID 19 vaccines on fertility: a systematic review and meta analysis. *Vaccine.* 2022;40(42):6023-6034. doi:10.1016/j.vaccine.2022.08.083.