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The Science

Children's Health Defense
Generation 1: CDC’s Unpublished Verstraeten Study on Hep B Showed Dramatic Increased Risk of Autism (7.6X), Sleep Disorders (5X), Speech Disorders (2.1X) and Neurodevelopmental Disorders (1.8X)

Verstraeten, Thomas M., MD, NIP, Division of Epidemiology and Surveillance, Vaccine Safety and Development Branch, Mailstop E-61, 770-636-8327. EIS Class Year of Entry: 1999
No previous EIS Conference presentations
Mackel Award consideration: No
Number of abstracts submitted: 2, priority this abstract: 1
Strong preference for poster presentation: No

Thomas M. Verstraeten, R. Davies, D. Gu, F DeStefano

Increased risk of developmental neurologic impairment after high exposure to thimerosal-containing vaccine in first month of life.

Background: Concern has risen on the presence of the ethylmercury containing preservative thimerosal in vaccines. We assessed the risk for neurologic and renal impairment associated with parent exposure to thimerosal-containing vaccine using automated data from the Vaccine Safety Datalink (VSD). VSD is a large linked database from four health maintenance organizations in Washington, Oregon and California, containing immunization, medical visit and demographic data on over 1,000,000 infants born between 1988 and 1992.

Methods: We categorized the cumulative ethylmercury exposure from thimerosal-containing vaccines after one month of life and assessed the subsequent risk of degenerative and developmental neurologic disorders and renal disorders before the age of six. We applied proportional hazards models adjusting for infant year of birth, and gender, excluding premature babies.

Results: We identified 206 children with degenerative and 2702 with developmental neurologic disorders, and 310 with renal disorders. The relative risk (RR) of developing a neurologic development disorder was 1.8 (95% confidence intervals [CI] = 1.1-2.8) when comparing the highest exposure group at 1 month of age (cumulative dose > 25 μg) to the unexposed group. Within this group we also found an elevated risk for the following disorders: autism (RR 7.6, 95% CI=1.8-31.5), nonorganic sleep disorder (RR 5.0, 95% CI=1.6-15.9), and speech disorders (RR 2.1, 95% CI=1.1-4.0). For the neurologic degenerative crenal impairment, further confirmatory studies are needed.

CDC UNPUBLISHED DATA OBTAINED BY FOIA

"The relative risk (RR) of developing a neurologic development disorder was 1.8 (95% confidence intervals [CI] = 1.1-2.8) when comparing the highest exposure group at 1 month of age (cumulative dose > 25 μg) to the unexposed group. Within this group we also found an elevated risk for the following disorders: autism (RR 7.6, 95% CI=1.8-31.5), nonorganic sleep disorder (RR 5.0, 95% CI=1.6-15.9), and speech disorders (RR 2.1, 95% CI=1.1-4.0)."
DTP and Tetanus Vaccinations Increase the Odds of Allergies (1.63X) in Children

Published Feb 2000

“The odds of having had any allergy-related respiratory symptom in the past 12 months was 63% greater among vaccinated subjects than unvaccinated subjects. Conclusions: DTP or tetanus vaccination appears to increase the risk of allergies and related respiratory symptoms in children and adolescents.”
Hepatitis B Vaccines Increase the Odds for Special Education by 8.63X

Boys Receiving Special Education in Vaccinated vs. Unvaccinated Sample

Proportion Receiving Special Education Services

“The odds of receiving EIS were approximately nine times as great for vaccinated boys (n=46) as for unvaccinated boys (n=7) after adjustment for confounders.”
Hepatitis B Vaccines in Male Newborns Increased the Odds of Autism 3X

Relative Odds Autism Diagnoses in Male Newborns Vaccinated with Hep B vs. Unvaccinated

“Boys vaccinated as neonates had threefold greater odds for autism diagnosis compared to boys never vaccinated or vaccinated after the first month of life. Non-Hispanic white boys were 64% less likely to have autism diagnosis relative to nonwhite boys. Findings suggest that U.S. male neonates vaccinated with the hepatitis B vaccine prior to 1999 (from vaccination record) had a threefold higher risk for parental report of autism diagnosis compared to boys not vaccinated as neonates during that same time period. Nonwhite boys bore a greater risk.”
“There was no statistically significant difference in the risk of confirmed seasonal influenza infection between recipients of TIV or placebo.”

“TIV recipients had higher risk of confirmed non-influenza respiratory virus infection.”

Published Mar 2012
“DTP vaccinations were associated with increased infant mortality even though there was no vaccine-induced herd immunity. When unvaccinated controls were normal children who had not yet been eligible for vaccination, mortality was 5 times higher for DTP-vaccinated children.”

“All currently available evidence suggests that DTP vaccine may kill more children from other causes than it saves from diphtheria, tetanus, or pertussis.”

Table 3: Mortality rate and hazard rate (HR) for children from 3 months of age until first examination without vaccination or 6 months of age. Natural experiment.

<table>
<thead>
<tr>
<th>Age group 3–5 months</th>
<th>Unvaccinated (N = 651)</th>
<th>DTP (OPV) (N = 462)</th>
<th>DTP only (N = 101)</th>
<th>HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality rate (deaths/person-years)</td>
<td>4.5 (5/111.4)</td>
<td>17.4 (11/631)</td>
<td>35.2 (5/142)</td>
<td>5.00 (1.63)</td>
</tr>
<tr>
<td>HR (95% CI) DTP vs unvaccinated</td>
<td>10.0 (2.61–38.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
“Vaccination (i.e., receipt of one of more of the recommended vaccines) was significantly associated with NDD, while preterm birth without vaccination was not. Preterm birth coupled with vaccination, however, was associated with a synergistic increase in the odds of NDD, suggesting the possibility that vaccination could precipitate adverse neurodevelopmental outcomes in preterm infants. These results provide clues to the epidemiology and causation of NDD but question the safety of current vaccination programs for preterm infants.”
Vaccination Increases Risk of Allergic Rhinitis (30X), Allergy (3.1X), ADHD (4.2X), Autism (4.2X), Eczema (2.9X), Learning Disability (5.2X) and Neurodevelopmental Disorders (3.7X)

Abstract:

Vaccinations have prevented millions of infectious illnesses, hospitalizations and deaths among U.S. children, yet the long-term health outcomes of the vaccination schedule remain uncertain. Studies have been commissioned by the U.S. Institute of Medicine to address this question. The study aimed to compare vaccinated and unvaccinated children on a broad range of health outcomes, and to determine whether an association is found between vaccination and neurodevelopmental disorders (NDD). If one, there might be significant adverse outcomes for unvaccinated children. A cross-sectional study of 386 children enrolled with a protocol designed to assess health outcomes from birth to age 12 years with health-related factors, birth history, vaccination, neurodevelopmental disorders, medication use, and health services. NDDs, a defined diagnostic measure, was defined as having one or more of the following three closely-related diagnoses: learning disability, Autism Spectrum Hyperactivity Disorder, and Autism Spectrum Disorder. A convenience sample of 467 children were included, of which 21 (4.9%) were unvaccinated. Vaccinated children were less likely to be vaccinated than unvaccinated children. Vaccination was associated with higher rates of ADHD, allergies, and NDD. Adjusted analyses further revealed significant associations between vaccination and NDD. These findings are consistent with previous studies and suggest that vaccination may be a risk factor for NDD. Further research is needed to determine the underlying mechanisms and potential interventions to reduce the risk of NDD in vaccinated children.

Published April 2017

“In this pilot study of vaccinated and unvaccinated homeschool children, reduced odds of chickenpox and whooping cough were found among the vaccinated, as expected, but unexpectedly increased odds were found for many other physician-diagnosed conditions.”
Vaccination Increases Type I Diabetes 3X

Type I Diabetes Incidence per 100,000 Prior to and After Expansion of Vaccination Schedules

Finland
41/100,000
14/100,000
12/100,000

U.K.
19/100,000

“The identification of clusters of cases of Type I diabetes occurring in consistent temporal patterns allowed a link between the hemophilus vaccine and Type I diabetes... there are also clusters of cases of Type I diabetes occurring 2-4 years post-immunization with the pertussis, MMR and BCG vaccines.”
“Pediatric vaccines were associated with a statistically significant increased risk of type 1 diabetes in 12 of 21 endpoints in the general population.”
Raw CDC Data Shows Vaccination on Time with MMR Increased Odds of Autism 3.64X

Odds of Autism for MMR Vaccine Before and After 36 Months of Age

Press Release, August 2014: “I regret that my coauthors and I omitted statistically significant information in our 2004 article published in the journal Pediatrics. The omitted data suggested that African American males who received the MMR vaccine before age 36 months were at increased risk for autism.” – Dr. William Thompson, CDC senior vaccine safety scientist
Thimerosal-Containing Hepatitis B Series Increases Odds of Autism 3.39X

"It was observed that cases diagnosed with an ASD were significantly more likely than controls to receive increased organic-Hg from Thimerosal-containing hepatitis B vaccine administered within the first, second, and sixth month of life."
A cross-sectional study of the relationship between reported human papillomavirus vaccine exposure and the incidence of reported asthma in the United States.

Abstract

OBJECTIVES: Asthma is a chronic disorder that affects persons of all ages impacting the quality of their lives. This cross-sectional hypothesis-testing study evaluated the relationship between human papillomavirus vaccine and the risk of an incident asthma diagnosis in a defined temporal period post-vaccination.

Methods: The 2015-2016 National Health and Nutrition Examination Survey data were examined for a group of 63,034,237 weighted persons between 9 and 25 years old in Statistical Analysis Software.

Results: Reported incident asthma significantly clustered in the year of reported human papillomavirus vaccination. When the data were separated by gender, the effects observed remained significant for males but not females.

Conclusion: The results suggest that human papillomavirus vaccination resulted in an excess of 261,475 asthma cases with an estimated direct excess lifetime cost of such persons being US$42 billion. However, it is unclear what part of the vaccine and/or vaccine medium may have increased an individual’s susceptibility to an asthma episode, whether the asthma diagnosis represented one asthma episode or if it chronic, and how much therapeutic support was needed (if any) and for how long, which would impact cost. Despite the negative findings in this study, routine vaccination is an important public health tool, and the results observed need to be viewed in this context.

“The results suggest that human papillomavirus vaccination resulted in an excess of 261,475 asthma cases with an estimated direct excess lifetime cost of such persons being US$42 billion.”
Thimerosal-Containing Hepatitis B Series Increases Odds of Premature Puberty 2.1X

*Abstract*
Studies suggest a relationship between exposure to endocrine disruptors, such as mercury (Hg), and premature puberty. Hg exposure from Thimerosal-containing hepatitis B vaccine, administered at specific intervals within the first six months of life, and the child’s long-term risk of being diagnosed with premature puberty (ICD-9 code: 259.1), was retrospectively examined using a hypothesis-testing longitudinal case-control design on prospectively collected data in the Vaccine Safety Datalink (VSD). Cases diagnosed with premature puberty were significantly more likely to have received increased exposure to Hg from hepatitis B vaccines preserved with Thimerosal given in the first month after birth (odds ratio (OR) = 1.800), first two months after birth (OR = 1.768), and first six months after birth (OR = 2.090), compared to control subjects. When the data were separated by gender, the effects remained among females but not males. Female cases, as compared to female controls, were significantly more likely in a dose-dependent manner to have received a greater exposure to Hg from hepatitis B vaccines preserved with Thimerosal, given in the first six months after birth (OR = 1.0281 per μg Hg). The results of this study show a dose-dependent association between increasing organic Hg exposure from Thimerosal-containing hepatitis B vaccines administered within the first six months of life and the long-term risk of the child being diagnosed with premature puberty.

*Keywords:* ethylmercury, mercury, merthiolate, premature puberty, thimerosal

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“The results of this study show a dose-dependent association between increasing organic Hg exposure from Thimerosal-containing hepatitis B vaccines administered within the first six months of life and the long-term risk of the child being diagnosed with premature puberty.”
MMR Vaccine Increases Risk of Crohn’s Disease 3.01X and Ulcerative Colitis 2.53X

Is measles vaccination a risk factor for inflammatory bowel disease?

Abstract
Measles virus may persist in intestinal tissue, particularly that affected by Crohn's disease, and early exposure to measles may be a risk factor for the development of Crohn's disease. Crohn's disease and ulcerative colitis occur in the same families and may share a common etiology. In view of the rising incidence of inflammatory bowel disease (Crohn's disease and ulcerative colitis), we examined the impact of measles vaccination upon these conditions. Prevalences of Crohn's disease, ulcerative colitis, coeliac disease, and peptic ulceration were determined in 3845 people who had received live measles vaccine in 1964 as part of a measles vaccine trial. A longitudinal birth cohort of 11,407 subjects was one unvaccinated comparison cohort, and 2541 partners of those vaccinated was another. Compared with the birth cohort, the relative risk of developing Crohn's disease in the vaccinated group was 3.01 (95% CI 1.45-6.23) and of developing ulcerative colitis was 2.53 (1.16-5.68). There was no significant difference between these two groups in coeliac disease prevalence. Increased prevalence of inflammatory bowel disease, but not coeliac disease or peptic ulceration, was found in the vaccinated cohort compared with their partners. These findings suggest that measles virus may play a part in the development not only of Crohn's disease but also of ulcerative colitis.

Risk of Crohn’s Disease and Ulcerative Colitis After MMR Vaccine

“These findings suggest that measles virus may play a part in the development not only of Crohn's disease but also of ulcerative colitis.”
A cross-sectional study of the relationship between infant Thimerosal-containing hepatitis B vaccine exposure and attention-deficit/hyperactivity disorder.

Abstract

Attention-deficit/hyperactivity disorder (ADHD) is characterized by a marked pattern of inattention and overactivity-impulsivity that is inconsistent with developmental level and interferes with normal functioning in at least two settings. This study evaluated the hypothesis that infant Thimerosal-containing hepatitis B vaccine (T-HepB) exposure would increase the risk of an ADHD diagnosis. This cross-sectional study examined 2363 infants between 13 and 19 years of age from the combined 1999-2003 National Health and Nutrition Examination Survey (NHANES) by analyzing demographic, immunization, socioeconomic, and health-related variables using the SAS system. Three doses of T-HepB exposure in comparison to no exposure significantly increased the risk of an ADHD diagnosis using logistic regression (adjusted odds ratio=1.98). Spasmam's risk (Risk:0.04467, 2X2 contingency table (rate ratio=1.8033) statistical modeling even when considering other covariates such as gender, race, and socioeconomic status. Current health status outcomes selected on a prior basis to not be biologically plausibly linked to T-HepB exposure showed no relationship with T-HepB. The observed study results are biologically plausible and supported by numerous previous epidemiological studies. Because the NHANES data is collected on a cross-sectional basis, it is not possible to describe a direct cause-effect relationship between exposure to T-HepB and an ADHD diagnosis. During the decade from 1991 to 2001 that infants were routinely exposed to T-HepB in the United States (US), an estimated 1.3-2.5 million children were diagnosed with ADHD with excess lifetime costs estimated at US $350-$660 billion as a consequence of T-HepB. Although Thimerosal use in the HepB has been discontinued, Thimerosal remains in the HepB in developing countries. Routine vaccination is an important public health tool to prevent infectious diseases, but every effort should be made to eliminate Thimerosal exposure.

“During the decade from 1991 to 2001 that infants were routinely exposed to T-HepB (thimerosal containing HepB) in the United States (US), an estimated 1.3-2.5 million children were diagnosed with ADHD with excess lifetime costs estimated at US $350-$660 billion as a consequence of T-HepB.”
Highest Levels of Thimerosal Exposure Increase Autism Risk 11.35X

**GENERATION ZERO**

Thomas Verstraeten’s First Analyses of the Link Between Vaccine Mercury Exposure and the Risk of Diagnosis of Selected Neuro-Developmental Disorders Based on Data from the Vaccine Safety Datalink: November-December 1999

Safe Minds
September 2004

**ONE MONTH EXPOSURE: SUMMARY ANALYSIS OF FIVE NDDs**
Comparison to Control Diagnoses Epilepsy and Febrile Seizures

Relative risk of disorder

- Autism (11.35)
- Sleep disorders (4.64)
- ADD (3.96)
- Mix of 9 NDDs (2.38)
- Speech/language (1.95)

- Statistically significant increased risk from vaccine mercury exposure

**Highest Level of Exposure Versus No Exposure**

- Autism: 11.35X
- Sleep Disorders: 4.64X
- ADD: 3.96X
- Speech/Language: 1.95X

- Highest Exposure
- No Exposure

**CDC UNPUBLISHED DATA OBTAINED BY FOIA**

“Autism risks were the highest of all the diagnostic codes, with a relative risk at one month of 11.35 between the high and zero exposure groups.”
Two H1N1-Containing Influenza Vaccines Prior to and During Pregnancy Increases Miscarriage Odds by 7.7X

Odds of Miscarriage Within 28 Days of H1N1-Containing Influenza Vaccine in Women Receiving the Same Vaccine in the Previous Year

Miscarriage Risk
- Two H1N1 Vaccines
- No Exposure

“SAB (spontaneous abortion) was associated with influenza vaccination in the preceding 28 days. The association was significant only among women vaccinated in the previous influenza season with pH1N1-containing vaccine.”
H1N1 Influenza Vaccine Increases Risks of Bell’s Palsy (1.34X), Paraesthesia (1.25X) and Inflammatory Bowel Disease (1.25X) in High Risk Patients

**Risks of Various Disorders Within 45 Days of H1N1 Influenza Vaccine**

- **Bell's Palsy**: 1.34X, 1X, 1.25X, 1.25X
- **Paraesthesia**: 1X, 1X, 1X, 1X
- **IBD**: 1X, 1X, 1X, 1X

**Influenza Vaccine** vs **No Exposure**

“Relative risks were significantly increased for Bell's palsy, paraesthesia, and inflammatory bowel disease after vaccination, predominantly in the early phase of the vaccination campaign.”
HPV Vaccination Increases Odds of Memory Impairment (1.23X) and Involuntary Movement (1.53X)

“Based on our analysis using data from the Nagoya City surveillance survey, a possible association between HPV vaccination and distinct symptoms such as cognitive impairment or movement disorders exists.”
Thimerosal Containing Triple HepB Series in the First Six Months of Life Increases Odds of Emotional Disturbances by 2.37X

Odds of Emotional Disturbances After Exposure to Thimerosal Containing Triple HepB Series

“The results show a significant relationship between mercury exposure from Thimerosal-containing childhood vaccines and the subsequent risk of an emotional disturbances diagnosis.”
HPV Vaccine Increases the Risk of Celiac Disease by 1.56X

Risk of Celiac Disease Diagnosis After HPV Vaccination

Celiac Disease Risk

- HPV Vaccine
- No Exposure

“Relative Risks for celiac disease were increased for both the period any time after vaccination (RR 1.56, 1.29–1.89), the first 179 days (1.54, 1.16–2.03) and the more than 180 days after vaccination period (1.58, 1.22–2.05).”
The H1N1 and Seasonal Influenza Vaccines Both Given During Pregnancy Increase Fetal Loss by 11.4X Compared to the Seasonal Influenza Vaccine Only

Rate of Fetal Loss in Women Receiving Both the H1N1 and Seasonal Flu Vaccines

Because of the order of magnitude increase in fetal-loss report rates, from 6.8 fetal-loss reports per million pregnant women vaccinated in the single-dose 2008/2009 season to 77.8 in the two-dose 2009/2010 season, further long-term studies are needed to assess adverse outcomes in the surviving children.
Swine Flu Vaccine (Pandemrix) Increases Rate of Narcolepsy in Swedish Children by 25X

“The incidence of narcolepsy was 25 times higher after the vaccination compared with the time period before. The children in the postvaccination group had a lower age at onset and a more sudden onset than that generally seen.”
“Among women who received Tdap at anytime during pregnancy, 6.1% were diagnosed with chorioamnionitis compared with 5.5% of unexposed women. After adjusting for site, receipt of 1 or more other vaccines in pregnancy and the propensity score, the adjusted relative risk (RR) was 1.19 (95% CI, 1.13–1.26).”
First Dose of Rotavirus Vaccine (Rotarix) Increases Intussusception Odds by 5.8X

“An increased risk of intussusception 1 to 7 days after the first dose of RV1 was identified among infants in Mexico with the use of both the case-series method (incidence ratio, 5.3; 95% confidence interval [CI], 3.0 to 9.3) and the case-control method (odds ratio, 5.8; 95% CI, 2.6 to 13.0).”
Measles Vaccination Versus Measles Infection Increases the Odds of Atopy (Allergy) by 2.8X

“17 (12.8%) of 133 participants who had had measles infection were atopic compared with 33 (25.6%) of 129 of those who had been vaccinated and not had measles”
Higher Exposure to Thimerosal from Infant Vaccines Increases the Odds of Motor Tics (2.19X) and Phonlic Tics (2.44X) in Boys

“Among boys, higher exposure to mercury from birth to 7 months was associated with ... a higher likelihood of motor and phonlic tics, as reported by the children’s evaluators.”
Delaying the First Three DPT Vaccine Doses Reduces Asthma Risk by 61%

“Among 11,531 children who received at least 4 doses of DPT, the risk of asthma was reduced to (1/2) in children whose first dose of DPT was delayed by more than 2 months. The likelihood of asthma in children with delays in all 3 doses was 0.39 (95% CI, 0.18-0.86).”
Exposure to Higher Levels of Thimerosal in Infant Vaccines Before 13 Months of Age Increases the Rate of Premature Puberty by 6.45X

Rate of Premature Puberty Diagnosis After Exposure to 100 Additional Micrograms Mercury in Thimerosal Containing Vaccines (TCVs)

“Significantly increased (P<0.0001) rate ratios were observed for premature puberty for a 100 µg difference in Hg exposure from TCVs in the birth-7 months (rate ratio=5.58) and birth-13 months (rate ratio=6.45) of age exposure windows. By contrast, none of the control outcomes had significantly increased rate ratios with Hg exposure from TCVs.”
“The incidence of type 1 diabetes in persons 0-19 years old living in Christchurch rose from 11.2 cases per 100,000 children annually in the years before the immunization program, 1982-1987, to 18.1 cases per 100,000 children annually ($P = .0008$) in the years following the immunization, 1989-1991.”
DTP Vaccination Increases Mortality by 2.45X in Girls Previously Receiving the BCG (Tuberculosis) Vaccine

“In seven studies of BCG-vaccinated children, DTP vaccination was associated with a 2.54 (95% CI 1.68–3.86) increase in mortality in girls (with no increase in boys [ratio 0.96, 0.55–1.68]). The ways in which the female and the male immune systems may respond differently to vaccinations in infants are only beginning to be studied.”
Higher Number of Vaccine Doses Prior to One Year of Age Increases Infant Mortality by 1.83X

"Using the Tukey-Kramer test, statistically significant differences in mean IMRs (infant mortality rates) were found between nations giving 12–14 vaccine doses and those giving 21–23, and 24–26 doses."
One Dose of the DTP Vaccine Increases Infant Mortality by 1.84X

"One dose of diphtheria, tetanus, and pertussis vaccine was associated with a mortality ratio of 1.84 (1.10 to 3.10) and two to three doses with a ratio of 1.38 (0.73 to 2.61) compared with children who had received no dose of these vaccines."
Early DTP Vaccination in Girls Increased Infant Mortality by 5.68X

Abstract

BACKGROUND: Studies from low-income countries have suggested that diphtheria-tetanus-pertussis (DTP) vaccine provided after Bacterio Cattel Gueym (BGG) vaccination may have a negative effect on female survival. The authors examined the effect of DTP in a cohort of low birthweight (LBW) infants.

METHODS: 2529 LBW newborns were visited at 2, 6 and 12 months of age to assess nutritional and vaccination status. The authors examined survival until the 6-month visit for children who were DTP vaccinated and DTP unvaccinated at the 2-month visit.

RESULTS: Two-thirds of the children had received DTP at 2 months and 50 deaths occurred between the 2-month and 6-month visits. DTP vaccinated children had a better anthropometric status for all indices than DTP-unvaccinated children. Small mid-arm circumference (MUC) was the strongest predictor of mortality. The death rate ratio (DRR) for DTP-vaccinated versus DTP-unvaccinated children differed significantly for girls (DRR = 2.45; 95% CI 1.39 to 4.45) and boys (DRR = 0.53; 95% CI 0.32 to 1.26; p = 0.019, homogeneity test). Adjusting for MUC, the overall effect for DTP-vaccinated children was 2.62 (95% CI 1.34 to 5.09; DRR was 5.68; 95% CI 1.83 to 17.7) for girls and 1.28 (95% CI 0.65 to 2.97) for boys (p = 0.923, homogeneity test). While anthropometric indices were a strong predictor of mortality among boys, there was little or no association for girls.

CONCLUSION: Surprisingly, even though the children with the best nutritional status were vaccinated early, early DTP vaccination was associated with increased mortality for girls.

“Surprisingly, even though the children with the best nutritional status were vaccinated early, early DTP vaccination was associated with increased mortality.”
"Among girls, those who received both BCG and DTP experienced higher mortality than those who received only one of the two vaccines (hazards ratio 2.4; 95% confidence interval 1.2–5.0)."
The introduction of diphtheria-tetanus-pertussis vaccine and child mortality in rural Guinea-Bissau: an observational study.

Abstract

BACKGROUND: and objective Previous studies from areas with high mortality in West Africa have not found diphtheria-tetanus-pertussis (DTP) vaccine to be associated with the expected reduction in mortality, a few studies suggesting increased mortality. We therefore examined mortality when DTP was first introduced in rural areas of Guinea-Bissau in 1984-1997. Setting Twenty villages in four regions have been followed with biannual examinations since 1979.

SUBJECTS: In all, 1567 children aged 2-6 months. Design Children were weighed when attending the bi-annual examinations and they were vaccinated whenever vaccines were available. DTP was introduced in the beginning of 1984, one polio vaccine later that year. We examined mortality for children aged 2-6 months who had received DTP and compared them with children who had not been vaccinated because they were absent, vaccines were not available, or they were sick.

MAIN OUTCOME MEASURE: Mortality over the next 6 months from the day of examination for vaccinated and unvaccinated children.

RESULTS: Prior to the introduction of vaccines, children who were absent at a village examination had the same mortality as children who were present. During 1984-1997, children receiving DTP at 2-6 months of age had higher mortality over the next 6 months, the mortality rate ratio (MRR) being 1.82 (95% CI: 1.04; 3.20) compared with DTP-unvaccinated children, adjusting for age, sex, season, period, and region. The MRR was 1.01 (95% CI: 0.95, 1.04) for the first dose of DTP and 4.36 (95% CI: 1.28, 14.9) for the second and third dose. DTP was associated with significantly lower mortality (MRR = 0.63; 95% CI: 0.36, 1.03), the MRR for DTP and ECO being significantly increased. Following subsequent visits and further vaccinations with DTP and measles vaccine, there was no difference in vaccination coverage and subsequent mortality between the DTP-vaccinated group and the initially DTP-unvaccinated group (MRR = 1.06; 95% CI: 0.70, 1.64).

CONCLUSIONS: In low-income countries with high mortality, DTP as the last vaccine received may be associated with slightly increased mortality. Since the pattern was reversed for ECO, the effect is unlikely to be due to higher-risk children having received vaccination. The role of DTP in high-mortality areas needs to be clarified.

“The MR (mortality rate) was 1.81 (95% CI: 0.95, 3.45) for the first dose of DTP and 4.36 (95% CI: 1.28, 14.9) for the second and third dose.”
Vaccination increases the risk of asthma (11.4X) and hay fever (10X) in children with no family history of those disorders.

"In multiple regression analyses there were significant (P<.0005) and dose dependent negative relationships between vaccination refusal and self-reported asthma or hay fever only in children with no family history of the condition and, for asthma, in children with no exposure to antibiotics during infancy."
Vaccination with DTP simultaneously with measles vaccine or DTP after measles vaccine increased risk of death (2.59X)

“Children who had received DTP simultaneously with MV or DTP after MV had significantly higher mortality (MRR=2.59 [1.32–5.07]) compared with children having MV-only as their most recent vaccination.”
Hepatitis B Vaccination Increases the Odds (3.1X) of a Multiple Sclerosis Diagnosis

“The OR of MS for vaccination within 3 years before the index date compared to no vaccination was 3.1 (95% CI 1.5, 6.3). No increased risk of MS was associated with tetanus and influenza vaccinations.”
70% of SIDS Deaths Occur Within Three Weeks of DPT Vaccination

A recent report of eight DPT-associated cot deaths in Tennessee, and knowledge of four sudden deaths within 3% to 19 hours of inoculation in Nevada (in three infants and one 3-year-old child) stimulated a study on the relationship of SIDS to DPT immunization in over 200 randomly reported SIDS cases. Preliminary data on the first 70 cases studied shows that 3/4 had been immunized prior to death. DPT #1, 2, and 3 were administered on the average at ages 2, 4, and 6 months, respectively. In the DPT SIDS group, 6.5% died within 12 hours of inoculation; 13% within 24 hours, 26% within 3 days, and 37%, 61%, and 70% within 1, 2, and 3 weeks, respectively. Significant SIDS clustering occurred within the first 2 or 3 weeks of DPT #1, 2, 3, or 4. The age range of the DPT group was 58 days to 3 years (mean age, 3 months); for the non-DPT group, 17 to 172 days (mean age, 2 months). SIDS frequencies peaked at age 2 months in the non-DPT group, and there was a bimodal peak occurrence at 2 and 4 months in the DPT group. DPT #1 and 2 were associated with more SIDS than #3 or 4 (ratio 90:11:4:3). Males and females were equally affected. Cot death occurred maximally in the fall/winter season in the non-DPT group, but was nonsensical in the DPT group. Deaths occurred most often in sleep in healthy allergy-free infants following brief periods of irritability, crying, lethargy, upper respiratory tract symptoms, and sleep disturbance. Autopsy findings in both groups were typical of SIDS (e.g., petechiae of lung, pleura, pericardium, and thymus; vascular congestion).

April 1982 NEUROLOGY NY 20:58:1 A510

Potential benefits: a need for reevaluation and possible modification of current vaccination procedures is indicated by this study.

"In the DPT SIDS group, 6.5% died within 12 hours of inoculation; 13% within 24 hours, 26% within 3 days, and 37%, 61%, and 70% within 1, 2, and 3 weeks, respectively."
Netherlands Fully Vaccinated Versus Unvaccinated Study, 2004

The NVKP (Nederlandse Vereniging Kritisch Prikken) [in English: Dutch Association for Conscientious Vaccination] is an independent association made up of therapists, doctors and parents, amongst others. The NVKP’s aim is freedom of choice for parents when it comes to vaccinating their children, based on honest, comprehensive and independent information. We view the current ‘one size fits all’ vaccination policy with great concern. The NVKP is therefore urging the adoption of more thorough independent research by representatives from different disciplines.

NVKP
PO Box 1106
4700 BC Roosendaal
The Netherlands

Information number: 0900 - 2020171
Email: info@nvkp.nl
Website: www.nvkp.nl

The survey:
The NVKP survey was conducted in the Netherlands in the latter half of 2004 with the parents of 635 children, and involved both members and non-members of the NVKP. The survey was geographically distributed over the entire country, and the postal codes of the respondents are known. We asked the parents to fill in a questionnaire with questions about the health of their child or children. All parents were subsequently approached for supplementary information and were asked to answer control questions. The personal details of all the participating parents and children are known. Questionnaires that were not filled out properly or questionnaires from parents who did not react to our request for supplementary information and/or control questions were not included in the results.

Questionnaires from the parents of children that were not vaccinated in the normal way – that is, not entirely in accordance with Dutch Vaccination Programmes (RVP) – and questionnaires from the parents of children that were not entirely unvaccinated were also excluded from this survey.

"The NVKP survey was conducted in the Netherlands in the latter half of 2004 with the parents of 635 children, and involved both members and non-members of the NVKP."
“The NVKP survey was conducted in the Netherlands in the latter half of 2004 with the parents of 635 children, and involved both members and non-members of the NVKP.”
Netherlands Fully Vaccinated Versus Unvaccinated Study, 2004

The NVKP survey was conducted in the Netherlands in the latter half of 2004 with the parents of 635 children, and involved both members and non-members of the NVKP.

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Netherlands Fully Vaccinated Versus Unvaccinated Study, 2004

"The NVKP survey was conducted in the Netherlands in the latter half of 2004 with the parents of 635 children, and involved both members and non-members of the NVKP."
January 2020 Pentagon Study Shows Influenza Vaccination Increases Risk of Coronavirus by 36%

"Vaccine derived virus interference was significantly associated with coronavirus and human metapneumovirus."

Wolff 2020 Vaccine
https://doi.org/10.1016/j.vaccine.2019.10.005
Influenza Vaccination Increases the Risk of Non-Influenza Viral Respiratory Infections by 4.4X

We randomized 115 children to trivalent inactivated influenza vaccine (TIV) or placebo. Over the following 9 months, TIV recipients had an increased risk of virologically confirmed non-influenza infections (relative risk: 4.40; 95% confidence interval: 1.31-14.8). Being protected against influenza, TIV recipients may lack temporary non-specific immunity that protected against other respiratory viruses.

Cowling et al. 2012 Clinical Infectious Diseases DOI: 10.1093/cid/cis307

“Over the following 9 months, TIV recipients had an increased risk of virologically confirmed non-influenza infections (relative risk: 4.40; 95% confidence).” “In TIV recipients there were 4 detections with both rhinovirus and coxsackie/echovirus, and 1 detection with both coxsackie/echovirus and coronavirus NL63.”
Influenza Vaccination Increases Risk of Acute Viral Respiratory Infections by 4.8X

ABSTRACT

Background: A barrier to influenza vaccination is the misperception that the inactivated vaccine can cause influenza. Previous studies have investigated the risk of acute respiratory illness (ARI) after influenza vaccination with conflicting results. We assessed whether there is an increased rate of laboratory-confirmed ARI in post-influenza vaccination periods.

Methods: We conducted a cohort sub-analysis of children and adults in the MeSAIC community surveillance study from 2013 to 2016. Influenza vaccination was confirmed through city or hospital registries. Cases of ARI were ascertained with two-weekly text messages to household to identify members with ARI symptoms. Nasal swabs were obtained from all participants and analyzed for respiratory pathogens using multiplex PCR. The primary outcome measure was the hazard ratio of laboratory-confirmed ARI in individuals post-vaccination compared to other time periods during three influenza seasons.

Results: Of the 599 participants, 68.8% were children, 30.2% were adults. Each study season, approximately half received influenza vaccine and one third experienced ≥1 ARI. The hazard of influenza in individuals during the 14-day post-vaccination period was similar to unvaccinated individuals during the same period (HR 0.96, 95% CI [0.60, 1.52]). The hazard of non-influenza respiratory pathogens was higher during the same period (HR 1.65, 95% CI [1.14, 2.38]); when stratified by age the hazard remained higher for children (HR 1.71, 95% CI [1.16, 2.53]) but not for adults (HR 0.88, 95% CI [0.21, 3.69]).

Conclusion: Among children there was an increase in the hazard of ARI caused by non-influenza respiratory pathogens post-influenza vaccination compared to unvaccinated children during the same period. Potential mechanisms for this association warrant further investigation. Further research could investigate whether medical decision-making surrounding influenza vaccination may be improved by acknowledging patient experiences, counseling regarding different types of ARI, and correcting the misperception that all ARI occurring after vaccination are caused by influenza.

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Rikin et al. 2018 Vaccine
https://doi.org/10.1016/j.vaccine.2018.02.105

“Among children there was an increase in the hazard of ARI caused by non-influenza respiratory pathogens post-influenza vaccination compared to unvaccinated children during the same period.”
Influenza Vaccination Increases the Risk of Non-Influenza Viral Lung Infections in Children by 55%

**Background:** The Western Australian Influenza Vaccine Effectiveness study commenced in 2008 to evaluate a new program to provide free influenza vaccine to all children aged 6 to 59 months. We aimed to assess the protective effect of inactivated influenza vaccination in these children.

**Methods:** We conducted a prospective case-control study in general practices and a hospital emergency department, testing all eligible patients for influenza and a range of other common respiratory viruses. Influenza vaccine effectiveness (VE) against laboratory-confirmed influenza was estimated with cases defined as children with an influenza-like illness who tested positive and controls as those with an influenza-like illness who tested negative for influenza virus. We calculated VE using the adjusted odds ratio from multivariate logistic regression. As a surrogate marker for adequate specimen collection, we explored the difference in VE point estimates defining controls as children in whom another respiratory virus was detected.

**Results:** A total of 75 children were enrolled from general practices and 214 through the emergency department, with 12 (27%) and 36 (17%), respectively, having laboratory-confirmed influenza. Using all the influenza-negative controls, the adjusted VE was 58% (95% confidence interval, 9–81). When controls were limited to those with another virus present, the adjusted VE was 68% (95% confidence interval, 26–86).

**Conclusions:** VE estimates were higher when controls included only those children with another respiratory virus detected. Testing for other common respiratory viruses enables the control group to be restricted to those for whom an adequate sample is likely.

“Within the control group, there was a higher percentage of full vaccination among children who tested positive for another respiratory virus compared with those who tested negative.”

Kelly et al. 2011 Pediatric Infectious Disease Journal DOI: 10.1097/INF.0b013e318201811c
Influenza Vaccination Increases the Rate of Non-Influenza “Influenza-Like Infections” in Children by 1.6X

Epidemiology of respiratory viral infections in children enrolled in a study of influenza vaccine effectiveness

Alexa Dierig, Leon G. Heron, Stephen R. Lambert, Jiehui Kevin Yin, Julie Leask, Maria Yui Kwan Chow, Theo P. Sloots, Michael D. Nissen, Iman Ridda, Robert Booy

Background: Influenza-like illness (ILI) results in a high annual morbidity in young children. We report the epidemiology of ILIs in children who participated in an influenza vaccine effectiveness study during the 2010 Southern Hemisphere influenza season in Sydney, Australia.

Methods: Children aged 6-48 months were prospectively recruited from child care centers (CCCs). We classified them as fully vaccinated, partially vaccinated and unvaccinated according to their receipt of unadjuvanted vaccines containing influenza A (H1N1)pdm09. For 13 weeks commencing 30 July 2010, parents reported when their child developed an ILI (fever ≥37.5°C, one or more respiratory symptoms) and collected nose/throat swabs for multiplex respiratory virus polymerase chain reaction (PCR) testing. Health impacts were assessed by telephone interview at enrollment and two weeks after each ILI.

Results: There were 124 ILIs reported in 105 of 381 enrolled children. Swabs were taken in 177 ILIs. 170 viruses were identified from 133 swabs. Adenoviruses and rhinoviruses were most frequently identified. 41% of swabs yielded multiple viruses. No virus was associated with more severe symptoms, although rhinovirus-related ILIs lasted longer. Nose swabs had a higher virus detection rate than throat swabs. Influenza-vaccinated children were 1.6 times (P = 0.001) more likely than unvaccinated children to have a non-influenza ILI.

Conclusion: Adenoviruses and rhinoviruses were the most common viruses causing ILI. Swabs taken by parents are an effective method for sample collection. Influenza-like illness was more common in children vaccinated against influenza in this observational study, but prior health-seeking behavior may have contributed to this difference.

Keywords: Children, influenza, respiratory viral infections.

“Influenza-vaccinated children were 1.6 times (P = 0.001) more likely than unvaccinated children to have a non-influenza ILI.”

Dierig et al. 2014 Influenza and Other Respiratory Viruses DOI: 10.1111/irv.12229
Vaccinated Children Have a 5.9X Greater Risk of Pneumonia and a 3.8X Greater Risk of Ear Infections

Pilot comparative study on the health of vaccinated and unvaccinated 6- to 12-year-old U.S. children

Anthony R. Mawson*, Brian D. Hay, Azad R. Bhujwala and Jane Jacob

Abstract

Vaccinations have prevented millions of infectious illnesses, hospitalizations and deaths among U.S. children, yet the long-term health outcomes of the vaccination schedules remain uncertain. Studies have been commissioned by the U.S. Institute of Medicine to address this question. This study aimed to compare vaccinated and unvaccinated children on a broad range of health outcomes, and to determine whether an association found between vaccination and neurodevelopmental disorders (NDDs), if any, remained significant after adjustment for other measured factors. A cross-sectional study of cohorts of children educated at home was carried out in collaboration with home-schooled organizations in four U.S. states: Florida, Louisiana, Mississippi, and Oregon. Mothers were asked to complete an anonymous online questionnaire on the health of their 6-12 year-old children with respect to pregnancy-related factors, birth history, vaccinations, physician-diagnosed illnesses, medications used, and health services. NDD, a defined diagnostic measure, was defined as having one or more of the following: three closely-related diagnoses: a learning disability, Attention Deficit Hyperactivity Disorder, or Autism Spectrum Disorder. A convenience sample of 647 children was obtained, of which 383 (58%) were vaccinated. The vaccinated were less likely than the unvaccinated to have been diagnosed with attention deficit and hyperactivity, but more likely to have been diagnosed with nonverbal communication problems and ADHD."
Pandemrix Flu Shot Increases Odds of Narcolepsy by 14.4X in Children and Adolescents

Miller et al. 2013 British Medical Journal
doi: 10.1136/bmj.f794

“The increased risk of narcolepsy after vaccination with ASO3 adjuvanted pandemic A/H1N1 2009 vaccine indicates a causal association, consistent with findings from Finland.”
Influenza Vaccination Increases Inflammatory Response by 39% in Pregnant Women

Inflammatory responses to trivalent influenza virus vaccine among pregnant women.

title

Abstract

Objective: In the U.S., seasonal trivalent influenza virus vaccine (TIV) is currently universally recommended for all pregnant women. However, data on the maternal inflammatory response to vaccination is lacking and would better delineate the safety and clinical utility of immunization. In addition, for research purposes, vaccination has been used as a mild immune trigger to examine in vivo inflammatory responses in nonpregnant adults. The utility of such a model in pregnancy is unknown. Given the clinical and empirical justifications, the current study examined the magnitude, time course, and variance in inflammatory responses following seasonal influenza virus vaccination among pregnant women.

Method: Women were assessed prior to and at one day (n=15), two days (n=16), or approximately one week (n=21) following TIV. Serum interleukin (IL)-6, tumor necrosis factor (TNF)-α, C-reactive protein (CRP), and macrophage migration inhibitory factor (MIF) were determined by high sensitivity immunoassay.

Results: Significant increases in CRP were seen at one and two days post-vaccination (p<0.05). A similar effect was seen for TNF-α, for which an increase at two days post-vaccination approached statistical significance (p=0.08). There was considerable variability in magnitude of response, coefficients of variation for change at two days post-vaccination ranged from 122% to 728% with the greatest variability in IL-6 responses at this time point.

Conclusion: Trivalent influenza virus vaccination elicits a measurable inflammatory response among pregnant women. There is sufficient variability in response for testing associations with clinical outcomes. As adverse perinatal health outcomes including pre eclampsia and preterm birth have an inflammatory component, a tendency toward greater inflammatory responding to immune triggers may predict risk of adverse outcomes, providing insight into biological mechanisms underlying risk. The inflammatory response elicited by vaccination is substantially milder and more transient than seen in infectious illness, arguing for the clinical value of vaccination. However, further research is needed to confirm that the mild inflammatory response elicited by vaccination is benign in pregnancy.

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PMID: 21542263 PMCID: PMC3254810 DOI: 10.1016/j.vaccine.2011.09.039

Influenza Vaccination Increases Inflammatory Markers After Vaccination

<table>
<thead>
<tr>
<th>Protein</th>
<th>Relative Increase in Levels of Inflammatory Marker Proteins</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-reactive Protein</td>
<td>After Vaccination: 1.39, Prior to Vaccination: 1.08</td>
</tr>
<tr>
<td>TNF-alpha</td>
<td>After Vaccination: 1.1, Prior to Vaccination: 1.08</td>
</tr>
<tr>
<td>MIF</td>
<td>After Vaccination: 1.08, Prior to Vaccination: 1.08</td>
</tr>
</tbody>
</table>

“In sum, this study demonstrates that trivalent influenza virus vaccine (TIV) elicits a measurable inflammatory response during pregnancy, and that considerable variability is seen between women in the magnitude of this response.”
Influenza Vaccination Increases Inflammatory Response by 173% and Induces Platelet Activation and Cardiac Imbalance

“Influenza-related effects of adjuvant influenza A vaccination on platelet activation and cardiac autonomic function.

Lanza G.1, 2, , Barone R., 3, , Carfini G.4, , Pizzolato G.5, , Dossena R.6, , Mattioli P.7, , Nota G.6, 7, , Dossena F.8, , Ghirlanda B.9, 7, and Chea F.10

Abstract

BACKGROUND: The inflammatory, platelet reactivity and cardiac autonomic function are important risk factors for cardiovascular events, but the relationship between these two risk factors is not clearly defined. In this study, we investigated the inflammatory effects of influenza A vaccination on platelet activation and cardiac autonomic function.

METHODS: We measured serum C-reactive protein (CRP) and interleukin-6 (IL-6) levels, macrophage-platelet aggregates (MPs), and macrocytoadhesive platelet receptor expression before and after adjuvant influenza A vaccination in 28 patients with type 2 diabetes (mean age 62.1 ± 6 years, 10 men). Twenty-four-hour Holter electrocardiogram was recorded 24 h before and after vaccination, heart rate variability (HRV) was assessed as a measure of cardiac autonomic function.

RESULTS: Inflammatory cytokines (IL-6, TNF-α) and macrophage-platelet receptor expression increased after vaccination. CRP was 26 ± 20 and 71 ± 57pd/L at 48 h before and after vaccination, respectively (p < 0.001). HRV parameters decreased after vaccination compared to baseline, with low variability amplitude showing the most significant change (346 ± 116 and 310 ± 102 ms at 48 h before and after vaccination, respectively, p = 0.02). A significant correlation was found between percentage changes in CRP levels and in most HRV variables, with the most significant correlations between changes in CRP levels and changes in standard deviation of all normal RR intervals (r = 0.43, p = 0.02).

CONCLUSIONS: Together with an inflammatory reaction, influenza A vaccine induced platelet activation and sympathovagal imbalance towards adrenergic predominance. Significant correlations were found between CRP levels and HRV parameters, supporting a pathophysiological link between inflammation and cardiac autonomic regulation. The vaccine-related platelet activation and cardiac autonomic dysfunction may transiently increase the risk of cardiovascular events.

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PMID: 26044358 DOI: 10.1111/j.1365-2962.2010.02285.x

Lanza et al. 2011 J Intern Med

“Together with an inflammatory reaction, influenza A vaccine induced platelet activation and sympathovagal imbalance towards adrenergic predominance... The vaccine-related platelet activation and cardiac autonomic dysfunction may transiently increase the risk of cardiovascular events.”
Influenza Vaccination Increases Susceptibility to and Damage Caused by Non-Target Flu Strains

Vaccine-Induced Anti-HA2 Antibodies Promote Virus Fusion and Enhance Influenza Virus Respiratory Disease

Surender Khurana, Crystal L. Loving, Jody Marischewitz, Lisa R. King, Phillip C. Gauger, Jamie Henningson, Amy L. Vincent, Hana Golding

Vaccine-induced disease enhancement has been described in connection with several viral vaccines in animal models and in humans. We investigated a swine model to evaluate mismatched influenza vaccine-associated enhanced respiratory disease (VAIRD) after pH1N1 infection. Vaccinating pigs with whole inactivated H1N2 (human-like) virus vaccine (WIV-H1N2) resulted in enhanced pneumonia and disease after pH1N1 infection. WIV-H1N2 immune sera contained high titers of cross-reactive anti-pH1N1 hemagglutinin (HA) antibodies that bound exclusively to the HA2 domain but not to the HA1 globular head. No hemagglutination inhibition titers against pH1N1 (challenge virus) were measured. Epitope mapping using phage display library identified the immunodominant epitope recognized by WIV-H1N2 immune sera as amino acids 22 to 77 of pH1N1-HA2 domain, close to the fusion peptide. These cross-reactive anti-HA2 antibodies enhanced pH1N1 infection of Macin-Darby canine kidney cells by promoting virus membrane fusion activity. The enhanced fusion activity correlated with lung pathology in pigs. This study suggests a role for fusion-enhancing anti-HA2 antibodies in VAIRD, in the absence of receptor-blocking virus-neutralizing antibodies. These findings should be considered during the evaluation of universal influenza vaccines designed to elicit HA2 stem-targeting antibodies.

Khurana et al. 2013 Sci Translational Med
DOI: 10.1126/scitranslmed.3006366

"Vaccinating pigs with whole inactivated H1N2 (human-like) virus vaccine (WIV-H1N2) resulted in enhanced pneumonia and disease after pH1N1 infection."
"In assessing the effectiveness of the TIV for preventing hospitalization with influenza in all subjects, there was an overall trend towards higher rates of hospitalization in subjects who got the TIV as compared to the ones who did not get the TIV (OR: 2.97, CI: 1.3, 6.7)."
Multiple Vaccinations Given Simultaneously Increases Odds of Cardiac Events in Premature Infants by 3.62X

Objective: To determine the incidence of cardiorespiratory events and abnormal C-reactive protein (CRP) level associated with administration of a single vaccine or multiple separate vaccines simultaneously.

Study design: Prospective observational study on 239 preterm infants at ≥2 months of age in the neonatal intensive care unit (NICU). Each infant received either a single vaccine or multiple vaccines on one day. CRP levels and cardiorespiratory manifestations were monitored for 3 days following immunization.

Results: Abnormal elevation of CRP level occurred in 88% of infants administered multiple vaccines and up to 70% of those given a single vaccine. Overall, 16% of infants had vaccine-associated cardiorespiratory events within 48 hours postimmunization. In logistic regression analysis, abnormal CRP values were associated with multiple vaccines (OR, 18.77; 95% CI 5.10-64.77) and severe intraventricular hemorrhage (IVH) (OR, 2.28; 95% CI 1.02-5.13). Cardiorespiratory events were associated marginally with receipt of multiple injections (OR, 3.62; 95% CI 0.99-13.25) and significantly with gastroesophageal reflux (GER) (OR, 4.76; 95% CI 1.22-18.52).

Conclusion: CRP level is expected to be elevated in the 48 hours following immunization. In a minority of infants immunized, cardiorespiratory events were associated with presumed need for intervention. Underlying medical conditions and possibly multiple injections are associated with cardiorespiratory events. Precautionary monitoring following immunizations is warranted. (J Paediatr 2007;145:167-72)


“Cardiorespiratory events were associated marginally with receipt of multiple injections (OR, 3.62; 95% CI 0.99-13.25) and significantly with gastroesophageal reflux (GER) (OR, 4.76; 95% CI 1.22-18.52).”
Vaccination before 1 year of age was associated with increased odds of developmental delays (odds ratio, OR= 2.18, 95% CI 1.47–3.24), asthma (OR = 4.49, 95% CI 2.04–9.88) and ear infections (OR=2.13, 95% CI 1.63–2.78).
Vaccination before 1 year of age was associated with increased odds of developmental delays (odds ratio, OR= 2.18, 95% CI 1.47–3.24), asthma (OR = 4.49, 95% CI 2.04–9.88) and ear infections (OR=2.13, 95% CI 1.63–2.78).
Vaccination During the First Year of Life Increases the Odds of Ear Infections by 2.13X

Hooker and Miller, SAGE Open Medicine 2020
https://doi.org/10.1177/2050312120925344

“Vaccination before 1 year of age was associated with increased odds of developmental delays (odds ratio, OR= 2.18, 95% CI 1.47–3.24), asthma (OR = 4.49, 95% CI 2.04–9.88) and ear infections (OR=2.13, 95% CI 1.63–2.78).
Vaccination During the First Year of Life Increases the Odds of Gastrointestinal Disorder by 2.48X

Analysis of health outcomes in vaccinated and unvaccinated children: Developmental delays, asthma, ear infections and gastrointestinal disorders

Brian S Hooker and Neil Z Miller

Abstract

Objective: The aim of this study was to compare the health of vaccinated versus unvaccinated pediatric populations.

Methods: Using data from three medical practices in the United States with children born between November 2005 and June 2015, vaccinated children were compared to unvaccinated children during the first year of life for later incidence of developmental delays, asthma, ear infections and gastrointestinal disorders. All diagnoses utilized International Classification of Diseases-9 and International Classification of Diseases-10 codes through medical chart review. Subjects were a minimum of 3 years of age, stratified based on medical practice, year of birth and gender and compared using a logistic regression model.

Results: Vaccination before 1 year of age was associated with increased odds of developmental delays (OR = 2.18, 95% CI 1.47–3.24), asthma (OR = 4.49, 95% CI 2.06–9.88) and ear infections (OR = 2.15, 95% CI 1.68–2.78). In a case-control analysis, subjects were grouped by number of vaccine doses received in the first year of life. Higher odds ratios were observed in Quatran 3 and 4 (where more vaccine doses were received) for all four health conditions considered, as compared to Quatran 1. In a temporal analysis, developmental delays showed a linear increase as the age cut-offs increased from 6 to 12 to 18 to 24 months of age (ORs = 1.55, 2.18, 2.92 and 3.31, respectively). Slightly higher ORs were also observed for all four health conditions when time permitted for a diagnosis was extended from 3 years of age to 5 years of age.

Conclusions: This study only allowed for the calculation of unadjusted observational associations; higher CIRs were observed within the vaccinated versus unvaccinated group for developmental delays, asthma and ear infections. Further study is necessary to understand the full spectrum of health effects associated with childhood vaccination.

Hooker and Miller, SAGE Open Medicine 2020
https://doi.org/10.1177/2050312120925344

“Statistical significance was seen for gastrointestinal disorders when... additional time was permitted for a diagnosis.”
Vaccination With the Hepatitis B Vaccine Series Increases the Odds of Liver Problems in Children 294%

Fisher and Eklund, Epidemiology 1999
https://insights.ovid.com/pubmed?pmid=10230847

“Hepatitis B vaccinated children had an unadjusted odds ratio of 2.94 and an age-adjusted odds ratio of 2.35 for liver problems compared with non-hepatitis B vaccinated children in the 1993 National Health Interview Survey.”
Polio Vaccine Increases the Risk of Crohn’s Disease by 228% and Ulcerative Colitis by 348%

**Vaccination and Risk for Developing Inflammatory Bowel Disease: A Meta-Analysis of Case-Control and Cohort Studies**

Guillaume Pineton de Chambrun,1,2,3* Luc Dauchet,1,4 Corinne Gourier-Roussel,1,4 Antoine Cortot,1,4,5 Jean-Frédéric Colombel,6 and Laurent Payrin-Biruel7

This article has an accompanying continuing medical education activity on page e50. Learning Objective Upon completion of this activity, succeeded learners will be able to discuss the implications of vaccination and environmental factors in the development of inflammatory bowel disease.

**BACKGROUND & AIMS:** Environmental factors may play a key role in the pathogenesis of inflammatory bowel disease (IBD). Whether vaccination is associated causally with IBD is controversial. We performed a meta-analysis of case-control and cohort studies on the association between vaccination and the risk for IBD.

**METHODS:** Studies and abstracts investigating the relationship between vaccination and subsequent risk for developing IBD were reviewed. Childhood or adult immunizations with any vaccine type, at any dose, and with any vaccine schedule were used as inclusion criteria.

**RESULTS:** Eleven studies were included in the systematic review and meta-analysis: 8 case-control studies and 3 cohort studies. Studied vaccines were: bacille Calmette-Guérin, vaccines against diphtheria, tetanus, poliovirus, hepatitis B, influenza, measles, mumps, and the combined measles, mumps, and rubella vaccine. Only a few details about vaccine type or route of administration were found in studies. Overall, there was no association between childhood immunization and risk for developing IBD: bacille Calmette-Guérin, relative risk (RR) of 1.64 (95% confidence interval [CI], 0.78-3.49); diphtheria, RR of 1.04 (95% CI, 0.80-1.34); tetanus, RR of 1.07 (95% CI, 0.67-1.72); poliovirus, RR of 1.06 (95% CI, 0.89-1.25); hepatitis B, RR of 1.07 (95% CI, 0.53-1.97). An analysis of studies reporting the number of vaccinated people found no association between childhood vaccination and risk for developing IBD (RR, 1.00 [95% CI, 0.91-1.10]).

**CONCLUSIONS:** Subgroup analysis for Crohn's disease (CD) and ulcerative colitis (UC) found an association between the poliomyelitis vaccine and risk for developing CD (RR, 2.28; 95% CI, 1.12-4.63) or UC (RR, 3.48; 95% CI, 1.2-9.71). The RR of developing IBD after H1N1 vaccination was 1.04 (95% CI, 0.69-1.53).

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Pineton de Chambrun et al., Clin Gastroenterol Hepatol 2015
http://dx.doi.org/10.1016/j.cgh.2015.04.179

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“Subgroup analysis for Crohn’s disease (CD) and ulcerative colitis (UC) found an association between the poliomyelitis vaccine and risk for developing CD (RR, 2.28; 95% CI, 1.12-4.63) or UC (RR, 3.48; 95% CI 1.2-9.71).”
Vaccination in non-Persian Gulf War Veterans Increases Odds of Neurological and Pain Symptoms

Prevalence and Patterns of Gulf War Illness in Kansas Veterans: Association of Symptoms with Characteristics of Person, Place, and Time of Military Service

Lea Steele

Gulf War veterans have reported health problems that they attribute to their military service, but little is understood about the nature or extent of these conditions. To determine whether Kansas Gulf War veterans are affected by excess health problems, a population-based survey of 1,548 veterans who served in the Persian Gulf War (PGW) and 482 veterans who served elsewhere (non-PGW) was conducted in 1998. Gulf War illness, defined as having chronic symptoms in at least six domains, occurred in 54% of PGW veterans, 12% of non-PGW veterans who reported receiving vaccines during the war, and 4% of non-PGW veterans who did not receive vaccines. The prevalence of Gulf War illness was lowest among PGW veterans who served on board ship (21%) and highest among those who were in Iraq and Kuwait (42%). Among PGW veterans who served away from battlefields, Gulf War illness was least prevalent among those who deployed the region prior to the war (9%) and most prevalent among those who deployed in June or July of 1991 (41%). Observed patterns suggest that excess mortality among Gulf War veterans is associated with characteristics of their wartime service, and that vaccines used during the war may be a contributing factor. Am J Epidemiol 2000;152:992–1002.

fatigue syndrome; chronic; Persian Gulf syndrome; risk factors; symptoms and general pathology; veterans

Steele, Am J Epidemiol 2000

“Gulf War Illness, defined as having chronic symptoms in three of six domains, occurred in 34% of PGW veterans, 12% of non-PGW veterans who reported receiving vaccines during the war and 4% of non-PGW veterans who did not receive vaccines.”
Vaccination Increases Odds of Gulf War Illness 260%

Unwin et al., The Lancet 1999

"Vaccination against biological warfare and multiple routine vaccinations were associated with CDC multisymptom syndrome in the Gulf War cohort."
Multiple Vaccination During Deployment Increases Odds of Gulf War Illness 500% and Fatigue 340%

Role of vaccinations as risk factors for ill health in veterans of the Gulf war: cross sectional study
Matthew Hotopf, Anthony David, Lisa Hull, Khalid Istrail, Catherine Unwin, Simon Wessely

Abstract
Objectives: To explore the relation between ill health after the Gulf war and vaccines received before or during the conflict. To test the hypothesis that such ill health is limited to military personnel who received multiple vaccines during deployment and that pesticide use modifies any effect.
Design: Cross sectional study of Gulf war veterans followed for 6 to 8 years after deployment.
Setting: UK, armed forces.
Participants: Military personnel who served in the Gulf and who still had their vaccine records.
Main outcome measures: Multisystem illness as classified by the Centers for Disease Control and Prevention; fatigue; psychological distress; post-traumatic stress reaction; health perception; and physical functioning.
Results: The response rate for the original survey was 70.4% (n=3284). Of these, 28% (923) had vaccine records. Receipt of multiple vaccines before deployment was associated with only one of the six health outcomes (post-traumatic stress reaction). By contrast, five of the six outcomes (all but post-traumatic stress reaction) were associated with multiple vaccines received during deployment. The strongest association was for the multisymptom illness increase the likelihood that they suffered long term health consequences. The first was that for UK (but not US) service personnel personal pain was used as an adjuvant to stimulate the immune response to anthrax vaccine. The second was that multiple vaccines were given simultaneously. This reflected the need to keep the personnel up to date with routine vaccines to protect them from infectious diseases such as cholera and typhoid, which were potential health hazards during deployment, and to protect them from the threat of biological warfare agents—namely plague and anthrax. The third aspect was that many of the vaccines were given after the personnel were deployed. Keel and Zurnia suggested that deployment was a stress which would in itself lead to increased circulating corticosteroids, and this too would influence cytokine profiles. Finally, they speculated that there might have been an interaction between the vaccine regimen and postvaccination fever or pain syndrome—especially encephalomyelitis postvaccination in the Gulf to cause a T2 cytokine-promoting effect.
We have previously reported on a large (n=3284) cohort study of male Gulf war veterans who were compared with non-deployed service personnel and veterans of peacekeeping duties in Bosnia. We found increased rates of ill health for all health outcomes in those who served in the Gulf. Among many other significant findings, in the absence of a randomised controlled trial, these data are consistent with a specific relation between multiple vaccinations given during deployment and later ill health.

Hotopf et al., BMJ 2000

"Among veterans of the Gulf war there is a specific relation between multiple vaccinations given during deployment and later ill health."
Vaccinated children at 4.5X as likely to be seen by their practitioner for fevers as compared to unvaccinated peers.

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“All RIOV (Relative Incidence of Office Visits) were >1, indicating increased risk of office visit for a specific outcome, except seizure, urticaria, and dermatitis.”
Vaccinated children are 3.6X as likely to be seen by their practitioner for anemia as compared to unvaccinated peers.


“All RIOV (Relative Incidence of Office Visits) were >1, indicating increased risk of office visit for a specific outcome, except seizure, urticaria, and dermatitis.”
Vaccinated Children at 2.9X as likely to be seen by their practitioner for gastroenteritis as compared to unvaccinated peers


“All RIOV (Relative Incidence of Office Visits) were >1, indicating increased risk of office visit for a specific outcome, except seizure, urticaria, and dermatitis.”
Children receiving 4 to 5 vaccines are 1.5X more likely to be diagnosed with asthma as compared to those children receiving one vaccine.

“Our results, which should be cautiously interpreted, suggest that the prevalence of asthma, wheeze and eczema among children at 12 months of age might be related to the amount of inactivated vaccine exposure before 6 months of age.”