

Bibliographie Syndrome de Guillain Barré et vaccination contre la grippe

Effectuée les 12-13-14-15 novembre 2009

Documents CDC USA

<http://www.cdc.gov/FLU/about/qa/gbs.htm>

<http://www.cdc.gov/vaccinesafety/Vaccines/gbsfactsheet.html>

<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5201a1.htm> :

Vaccination with swine influenza vaccine is known to increase the risk for Guillain-Barré syndrome (/30--34/). Reports of Guillain-Barré syndrome after any vaccination are considered serious and followed up by VAERS to obtain additional information. An increase in reports of Guillain-Barré syndrome after the receipt of influenza vaccine was noted in VAERS data by week 29 of the 1993--94 influenza season (/35/). The number of reports increased from 23 during 1991--92 to 40 during 1992--93 and to 80 during 1993--94 (Figure 5 <<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5201a1.htm#fig5>>). These findings raised concerns regarding a possible increase in vaccine-associated risk for Guillain-Barré syndrome. A study was initiated to investigate the VAERS signal (/35/). The study documented that the relative risk of Guillain-Barré syndrome after influenza vaccination, adjusted for age, sex, and vaccine season was 1.7 (95% confidence interval = 1.0--2.8). However, no increase occurred in the risk of vaccine-associated Guillain-Barré syndrome from 1992--93 to 1993--94. For the two seasons combined, the adjusted relative risk of 1.7 indicated that slightly >1 additional case of Guillain-Barré syndrome occurred per 1 million persons vaccinated against influenza. This risk is less than the risk from severe influenza, which can be prevented by the vaccine. In addition, no correlation existed between the number of Guillain-Barré syndrome reports received in VAERS and influenza vaccine doses administered (Figure 5 <<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5201a1.htm#fig5>>). The annual number of Guillain-Barré syndrome reports has been low and stable during the previous four influenza seasons when the net doses of influenza vaccine distributed increased substantially. This finding reflects data compared with the 1993--94 influenza season in which VAERS received the highest numbers of Guillain-Barré syndrome reports in a single influenza season. This example indicates that VAERS is useful in preliminary evaluation of rare adverse events when the relation to vaccination is uncertain.

Interrogation PubMed

1.

[Minerva Med.](#) 1956 Feb 17;47(14):450-8.

[Two cases of polyradiculoneuritis caused by influenza virus B.]

[Article in Italian]

[MULE F](#), [SEDATI P](#), [BALBO G](#).

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[Related articles](#)

2.

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[MeSH Terms](#)

MeSH Terms:

- [Influenza, Human/complications*](#)

3.

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[Guillain-Barre polyradiculoneuritis and influenza virus]

[Article in French]

[Bertrand A](#), [Janbon F](#), [Clot J](#), [Milane J](#), [Bosc E](#).

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[Related articles](#)

[MeSH Terms](#)

MeSH Terms:

- [Adult](#)
- [Aged](#)
- [Humans](#)
- [Influenza, Human/complications*](#)
- [Male](#)
- [Orthomyxoviridae/isolation & purification](#)
- [Polyradiculopathy/complications*](#)
- [Polyradiculopathy/etiology](#)

4.

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[Postinfluenzal, chronic Guillain-Barre syndrome with oligoclonic gammopathy and generalized amyloidosis]

[Article in German]

[Krüger H](#), [Franke M](#).

PMID: 4141508 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [English Abstract](#)

MeSH Terms:

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- [Polyradiculopathy/immunology](#)
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Substances:

- [Antigens, Viral](#)
- [Immunoglobulin G](#)
- [gamma-Globulins](#)

5.

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[Article in German]

[Krüger H](#), [Franke M](#).

PMID: 4141509 [PubMed - indexed for MEDLINE]

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- [Middle Aged](#)
- [Polyradiculopathy/complications*](#)
- [Polyradiculopathy/etiology](#)
- [gamma-Globulins*](#)

Substances:

- [gamma-Globulins](#)

6.

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[Article in Czech]

[Novák M.](#)

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[Related articles](#)

[Publication Types, MeSH Terms](#)

Publication Types:

- [Case Reports](#)
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MeSH Terms:

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- [Female](#)
- [Humans](#)
- [Influenza, Human/complications*](#)
- [Male](#)
- [Polyradiculopathy/etiology*](#)

7.

[Cas Lek Cesk.](#) 1975 Oct 31;114(44):1352-5.

[A contribution to the aetiopathogenesis of the Guillain--Barré syndrome (author's transl)]

[Article in Czech]

[Novák M](#), [Filipiová V](#), [Kulková H](#).

PMID: 1182757 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms](#)

Publication Types:

- [English Abstract](#)

MeSH Terms:

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- [Influenza, Human/complications](#)

- [Male](#)
- [Middle Aged](#)
- [Mycoplasma Infections/complications](#)
- [Polyradiculopathy/etiology*](#)

8.

[Am J Law Med.](#) 1977-1978 Winter;3(4):425-45.

The swine flu immunization program: scientific venture or political folly?

[Wecht CH.](#)

The author of this Article, an internationally recognized coroner perhaps best known among laymen for his incisive and tenacious criticism of the Warren Commission report on the Kennedy assassination, turns his attention to the federal government's 1976--1977 Swine Flu Immunization Program. Dr. Wecht contends that although this program may have been viewed by its key proponents as having great public health importance, or perhaps even political value, its creation and continuation nevertheless were scientifically unjustified. Furthermore, he contends, the federal government failed to inform the public adequately of important facts about the program's origins and progress, and it mismanaged the program in several important respects. Among the topics he discusses are swine flu's epidemiological history (including the 1976 Fort Dix outbreak that propelled swine flu into the national consciousness); the key elements leading to the government's decision to immunize; the government's failure to reevaluate the program seriously as problems arose; the shortcomings of the federal swine flu statute; the inadequacy of the government's investigation of the deaths of three persons in Pittsburgh within a few hours after being vaccinated (a matter that was of immediate concern to the author in his role as Coroner of Allegheny County, Pennsylvania); the long-delayed termination of the program following the emergence of a possible statistical link between the immunizations and an increase in the incidence of the Guillain-Barré Syndrome; the financial and human costs of the program; and the need for calmer, more objective decision making in future situations where immunization of the general populace is being considered.

PMID: 206136 [PubMed - indexed for MEDLINE]

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- [National Health Programs*/legislation & jurisprudence](#)
- [Polyradiculopathy/etiology](#)
- [United States](#)
- [Vaccination*/adverse effects](#)

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The Guillain-Barré Syndrome and swine influenza vaccination.

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PMID: 616087 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adult](#)
- [Cranial Nerves](#)
- [Facial Paralysis/etiology](#)
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- [Paralysis/etiology](#)
- [Polyradiculopathy/etiology*](#)
- [Sex Factors](#)
- [Vaccination/adverse effects*](#)

Substances:

- [Influenza Vaccines](#)

10.

[MMW Munch Med Wochenschr.](#) 1977 May 20;119(20):705-10.

[Neurological complications after influenza vaccination (author's transl)]

[Article in German]

[Ehrengut W](#), [Allerdist H](#).

The clinical aspects and differential diagnosis of 11 neural complications following influenza vaccination (Guillain-Barré syndrome, serogenetic polyneuritis, encephalomyelitis) are discussed. Etiopathogenetically a hypersensitivity to components in the serum must be taken into consideration, as a case with anaphylactoid reaction shows. The incubation period of the remaining cases (beginning only after the 4th day post vaccination) is on the other hand consistent with the assumption of a pathomechanism rather like that of serum sickness. The number of influenza vaccinations previously administered in the individual case bears no relation to the neurological disturbances described. Vaccines of different manufacture can, in the same way, provoke these rare inoculation complications (frequency: 1 case per 0.7-1.3 mio vaccinations). The indication for influenza vaccinations is not limited by these occurrences.

PMID: 406554 [PubMed - indexed for MEDLINE]

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- [Male](#)
- [Middle Aged](#)
- [Polyneuropathies/etiology](#)
- [Polyradiculopathy/etiology](#)

Substances:

- [Influenza Vaccines](#)

11.

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Guillain-Barré syndrome and influenza vaccine.

[No authors listed]

PMID: 861642 [PubMed - indexed for MEDLINE]

PMCID: 1606905

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

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- [Humans](#)
- [Hypersensitivity](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculopathy/etiology*](#)

Substances:

- [Influenza Vaccines](#)

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Guillain-Barre syndrome after administration of killed vaccines.

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[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Child](#)
- [Humans](#)
- [Influenza A virus/immunology](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculopathy/etiology*](#)
- [Risk](#)
- [Vaccination](#)

Substances:

- [Influenza Vaccines](#)

13.

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[Ehregut W](#).

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PMCID: 1607767

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Publication Types:

- [Letter](#)

MeSH Terms:

- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculopathy/etiology*](#)

Substances:

- [Influenza Vaccines](#)

14.

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Epidemiology of Guillain-Barré syndrome.

[Schoenberg BS](#).

The only measures of morbidity for Guillain-Barré syndrome in well-defined populations in the continental United States come from Olmsted County, Minnesota, and San Joaquin County, California. The estimated incidence rates are between 1 and 2 cases per 100,000 population per year. Despite the hazards of generalizing from such small samples, these are the only estimates available. Large case series have suggested that the syndrome is more common in males, that it may occur at any age, and that it is frequently associated with some

antecedent infection. Only two case-control comparisons have been carried out which reveal an association between Guillain-Barré syndrome and an infection 1 month prior to onset of neurological symptoms. A recent survey of four states in the United States revealed that the risk of Guillain-Barré syndrome among individuals receiving immunization against influenza A/New Jersey is 7.3 times the risk among the nonvaccinated. Aside from these investigations and one study linking Guillain-Barré syndrome and high antibody titers to cytomegalovirus, adequate epidemiologic studies to test suggested etiologic hypotheses have not yet been carried out. The rarity of the condition and the variations in its clinical presentation and course pose certain problems for epidemiologic investigations. Strategies for overcoming these difficulties are discussed.

PMID: 369322 [PubMed - indexed for MEDLINE]

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- [Polyradiculoneuropathy/etiology](#)
- [Sex Factors](#)
- [United States](#)
- [Virus Diseases/complications](#)

Substances:

- [Influenza Vaccines](#)

15.

[Cas Lek Cesk.](#) 1978 Jan 27;117(4):97-101.

[On virus aetiology in Guillain-Barré syndrome (author's transl)]

[Article in Czech]

[Novák M](#), [Kulková H](#).

PMID: 204413 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [English Abstract](#)

MeSH Terms:

- [Antibodies, Viral/analysis](#)
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- [Herpesviridae Infections/complications](#)
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- [Influenza, Human/complications](#)
- [Paramyxoviridae Infections/complications](#)
- [Polyradiculopathy/etiology*](#)
- [Virus Diseases/complications*](#)

Substances:

- [Antibodies, Viral](#)

16.

[Pa Med.](#) 1978 Apr;81(4):47-8, 50-2.

Relationship studied in Pennsylvania. Guillain-Barré syndrome and influenza immunization.

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PMID: 634621 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
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- [Male](#)
- [Middle Aged](#)
- [Pennsylvania](#)
- [Polyradiculopathy/epidemiology*](#)

Substances:

- [Influenza Vaccines](#)

17.

[Aust N Z J Psychiatry](#). 1978 Jun;12(2):127-32.

Conversion reactions simulating Guillain-Barré paralysis following suspension of the swine flu vaccination program in the U.S.A.

[Reismann JL](#), [Singh B](#).

The association of Guillain-Barré Syndrome as a possible complication of swine flu inoculation created the potential for conversion reactions simulating this syndrome. Upon termination of the swine flu vaccination program, a study was initiated in a prepaid health plan to identify and categorize such patients. An estimated 8000 adults were vaccinated and it was hypothesized that a large number of these patients would present to the health plan with conversion symptoms. However, only seven patients met the criteria and they were compared to two control groups (inoculated and uninoculated). The patients with conversion symptoms did show similarities to those previously described in the literature: all were female, of lower educational level, and had great concern with health problems. Other speculations as to why these patients had conversion reactions were made.

PMID: 278603 [PubMed - indexed for MEDLINE]

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[Publication Types, MeSH Terms](#)

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- [Research Support, U.S. Gov't, Non-P.H.S.](#)

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- [Conversion Disorder/diagnosis*](#)
- [Conversion Disorder/epidemiology](#)
- [Conversion Disorder/psychology](#)
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- [Influenza A virus](#)
- [Influenza, Human/prevention & control*](#)
- [Middle Aged](#)
- [New York](#)
- [Polyradiculopathy/diagnosis*](#)
- [Vaccination/adverse effects*](#)

18.

[Can Med Assoc J](#). 1978 Jun 24;118(12):1528-30.

Surveillance of the swine influenza vaccination program at the Royal Military College, Kingston.

[Rohrer JW](#), [Hamilton GG](#).

In a prospective study symptoms appearing in a previously healthy population within 6 weeks after inoculation with monovalent swine influenza vaccine (A/New Jersey/76) were tabulated. Of the 703 persons (ranging in age from 17 to 55 years) participating in the follow-up 54% reported experiencing symptoms, usually within 24 hours of vaccination; the symptoms were usually minor and none of the participants displayed evidence of Guillain-Barré syndrome.

PMID: 657050 [PubMed - indexed for MEDLINE]

PMCID: 1818103

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- [Middle Aged](#)
- [Military Medicine](#)
- [Ontario](#)
- [Prospective Studies](#)

Substances:

- [Influenza Vaccines](#)

19.

[Neurology](#). 1978 Jul;28(7):725-6.

Recurrent Guillain-Barré syndrome following influenza vaccine.

[Seyal M](#), [Ziegler DK](#), [Couch JR](#).

Two patients recovered from an attack of Guillain-Barré syndrome and then had a second attack of this disease, with a shorter latent period, following monovalent influenza vaccination. These cases suggest that an attack of Guillain-Barré syndrome may result in greater risk of future episodes of the syndrome in conjunction with exposure to influenza or other vaccinations.

PMID: 566873 [PubMed - indexed for MEDLINE]

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- [Polyradiculopathy/etiology*](#)
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- [Vaccination/adverse effects](#)

Substances:

- [Influenza Vaccines](#)

20.

[Am J Clin Pathol](#). 1978 Jul;70(1 Suppl):146-52.

Review of existing vaccines for influenza.

[Meyer HM Jr](#), [Hopps HE](#), [Parkman PD](#), [Ennis FA](#).

The problems of producing and distributing influenza vaccines are described as well as effectiveness and adverse reactions. It appears that Guillain-Barré (GBS) is likely to be encountered with the use of any of the inactivated influenza vaccines.

PMID: 685887 [PubMed - indexed for MEDLINE]

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MeSH Terms:

- [Antibodies, Viral/biosynthesis](#)
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- [Technology, Pharmaceutical](#)
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Substances:

- [Antibodies, Viral](#)
- [Antigens, Viral](#)
- [Hemagglutinins](#)
- [Influenza Vaccines](#)
- [Neuraminidase](#)

21.

[Lancet](#). 1978 Sep 16;2(8090):636.

Guillain-Barré syndrome.

[Morris JA](#), [Young BG](#).

PMID: 80564 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Letter](#)

MeSH Terms:

- [Humans](#)
- [Influenza Vaccines/adverse effects](#)
- [Multiple Sclerosis/etiology](#)
- [Polyradiculoneuropathy/etiology*](#)

Substances:

- [Influenza Vaccines](#)

22.

[Am J Epidemiol](#). 1979 Aug;110(2):105-23.

Guillain-Barre syndrome following vaccination in the National Influenza Immunization Program, United States, 1976--1977.

[Schonberger LB](#), [Bregman DJ](#), [Sullivan-Bolyai JZ](#), [Keenlyside RA](#), [Ziegler DW](#), [Retalliau HF](#), [Eddins DL](#), [Bryan JA](#).

Because of an increase in the number of reports of Guillian-Barre syndrome (GBS) following A/New Jersey influenza vaccination, the National Influenza Immunization Program was suspended December 16, 1976 and nationwide surveillance for GBS was begun. This surveillance uncovered a total of 1098 patients with onset of GBS from October 1, 1976, to January 31, 1977, from all 50 states, District of Columbia, and Puerto Rico. A total of 532 patients had recently received an A/New Jersey influenza vaccination prior to their onset of GBS (vaccinated cases), and 15 patients received a vaccination after their onset of GBS. Five hundred forty-three patients had not been recently vaccinated with A/New Jersey influenza vaccine and the vaccination status for 8 was unknown. Epidemiologic evidence indicated that many cases of GBS were related to vaccination. When compared to the unvaccinated population, the vaccinated population had a significantly elevated attack rate in every adult age group. The estimated attributable risk of vaccine-related GBS in the adult population was just under one case per 100,000 vaccinations. The period of increased risk was concentrated primarily within the 5-week period after vaccination, although it lasted for approximately 9 or 10 weeks.

PMID: 463869 [PubMed - indexed for MEDLINE]

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- [Polyradiculoneuropathy/etiology*](#)
- [Sex Ratio](#)
- [Time Factors](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

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Guillain-Barré syndrome: the swine influenza virus vaccine incident in the United States of America, 1976-77: preliminary communication.

[Langmuir AD](#).

PMID: 552571 [PubMed - indexed for MEDLINE]

PMCID: 1436986

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MeSH Terms:

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Substances:

- [Influenza Vaccines](#)
- [Myelin Proteins](#)

24.

[Mt Sinai J Med.](#) 1980 Mar-Apr;47(2):190-1.

Guillain-Barré syndrome following trivalent influenza vaccine in an elderly patient.

[Brooks R, Reznik A.](#)

PMID: 6967162 [PubMed - indexed for MEDLINE]

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[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Case Reports](#)

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- [Aged](#)
- [Female](#)
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- [Influenza Vaccines/adverse effects*](#)
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Substances:

- [Influenza Vaccines](#)

25.

[Am J Epidemiol.](#) 1980 Mar;111(3):270-8.

Illness after influenza vaccination reported through a nationwide surveillance system, 1976-1977.

[Retailliou HF, Curtis AC, Storr G, Caesar G, Eddins DL, Hattwick MA.](#)

In 1976, the Center for Disease Control coordinated nationwide surveillance for illnesses after influenza vaccination as part of an effort to vaccinate the nation against influenza A/New Jersey/76. For the 48,161,019 persons vaccinated in 1976, a total of 4733 reports of illness were received which included reports of 223 deaths. When Guillain-Barré syndrome was reported in vaccine recipients, an investigation was begun to examine this possible association. Other than the Guillain-Barré syndrome and rare cases of anaphylaxis, no serious illnesses were causally associated with influenza vaccination by this type of surveillance. Widespread underreporting of illness and death in the passive phase of this surveillance system, however, impaired the ability to draw conclusions about reactions to vaccine from the reports of illness received.

PMID: 7361749 [PubMed - indexed for MEDLINE]

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- [Aged](#)
- [Communicable Disease Control/methods](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)

- [Middle Aged](#)
- [Morbidity*](#)
- [Polyradiculoneuropathy](#)
- [Retrospective Studies](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

26.

[JAMA](#). 1980 Jun 27;243(24):2490-4.

Guillain-Barré syndrome in recipients of A/New Jersey influenza vaccine.

[Marks JS](#), [Halpin TJ](#).

In late 1976, when 32% of the eligible population of Ohio received the A/New Jersey influenza (swine flu) vaccine, systematic contact of neurologists was used to evaluate the possible association of Guillain-Barré syndrome (GBS) with receipt of the vaccine. The overall rate of GBS was significantly higher among vaccine recipients (13.3/10(6)) than in nonrecipients (2.6/10(6)). Peak time of onset was two to three weeks after receiving the vaccine, and cases among vaccinees were less likely to have a history of antecedent infection than were cases in unvaccinated persons. Even when the effect of one highly associated vaccine lot was removed, an elevated risk of GBS remained in vaccinees regardless of manufacturer or vaccine type (bivalent or monovalent). Systematic surveillance is needed for rare serious reactions from all vaccines.

PMID: 6247520 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms](#), [Substances](#)

MeSH Terms:

- [Humans](#)
- [Influenza A virus/immunology](#)
- [Influenza Vaccines/adverse effects*](#)
- [Influenza Vaccines/standards](#)
- [Ohio](#)
- [Orthomyxoviridae Infections/prevention & control*](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Polyradiculoneuropathy/immunology](#)
- [Risk](#)

Substances:

- [Influenza Vaccines](#)

27.

[Mil Med](#). 1980 Aug;145(8):561-2.

Landry-Guillain-Barré syndrome following influenza A/New Jersey/76 vaccine: case report.

[Postic B](#), [Delaney JF](#), [Miller RA](#).

PMID: 6774293 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Case Reports](#)

MeSH Terms:

- [Humans](#)
- [Influenza A virus/immunology*](#)
- [Influenza A virus/isolation & purification](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Polyradiculoneuropathy/immunology](#)

Substances:

- [Influenza Vaccines](#)

28.

[Neurology](#). 1980 Sep;30(9):929-33.

Fatal Guillain-Barré syndrome after the national influenza immunization program.

[Keenlyside RA](#), [Schonberger LB](#), [Bregman DJ](#), [Bolyai JZ](#).

Fifty-eight fatal cases of Guillain-Barré syndrome (GBS) were reported during the 1976 to 1977 National Influenza Program: Thirty-two (58%) of these patients had received the A/New Jersey influenza vaccine. The mean interval from vaccination to onset was 3.9 weeks, and the incidence of preceding illness in vaccinated or unvaccinated patients was similar. Fifty-eight percent had at least one chronic disease before onset. The clinical features were similar in vaccinated and unvaccinated patients. Most deaths followed medical complications of respiratory paralysis: Fifteen had pneumonia, 29 (83%) died suddenly, 15 had sudden arrhythmias or hypotension, and 7 had myocardial infarction or pulmonary embolus.

PMID: 6252515 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms](#), [Substances](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Female](#)
- [Humans](#)
- [Influenza A virus/immunology*](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Orthomyxoviridae Infections/prevention & control](#)
- [Polyradiculoneuropathy/diagnosis](#)
- [Polyradiculoneuropathy/etiology](#)
- [Polyradiculoneuropathy/mortality*](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

29.

[Ann Neurol](#). 1981;9 Suppl:31-8.

Guillain-Barré syndrome: its epidemiology and associations with influenza vaccination.

[Schonberger LB](#), [Hurwitz ES](#), [Katona P](#), [Holman RC](#), [Bregman DJ](#).

The epidemiology of Guillain-Barré syndrome (GBS) and the associations of GBS with influenza vaccination are described based on review of three types of epidemiological data: case-control studies, incidence rate studies of GBS in well-defined populations, and surveillance data from a sentinel neurologist surveillance system of GBS in the United States. These data indicate that the crude annual incidence rate of GBS per 100,000 people ranges from 0.6 to 1.9 in different populations in widely scattered areas of the world. In general, incidence rates are higher with advancing age until about 75 years, higher for men than women, and higher for whites than blacks. No specific HLA antigen has been significantly associated with GBS in general, although HLA AW 30 and AW 31 have been associated with chronic relapsing polyneuritis. Important trigger agents of GBS include nonspecific respiratory and gastrointestinal infections and cytomegalovirus infection. Influenza infection and influenza vaccinations are not generally important trigger agents. A major exception to this is the occurrence of just under 1 excess case of GBS per 100,000 A/New Jersey influenza vaccinations administered in the United States, 1976-1977. A significant excess risk of GBS was not observed after administration of influenza vaccine in 1978-1979 and 1979-1980. The differences between the contents of and immunological reaction to A/New Jersey influenza vaccine and the more recent influenza vaccines deserve further study.

PMID: 7224614 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms](#), [Substances](#)

MeSH Terms:

- [Adolescent](#)

- [Adult](#)
- [Aged](#)
- [Child](#)
- [Child, Preschool](#)
- [Epidemiologic Methods](#)
- [Female](#)
- [Humans](#)
- [Infant](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Polyradiculoneuropathy/etiology](#)
- [Risk](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

30.

[N Engl J Med](#). 1981 Jun 25;304(26):1557-61.

Guillain-Barré syndrome and the 1978-1979 influenza vaccine.

[Hurwitz ES](#), [Schonberger LB](#), [Nelson DB](#), [Holman RC](#).

An ongoing surveillance program was intensified to determine whether an increased risk of acquiring vaccine-related Guillain-Barré syndrome (GBS) (similar to that observed after vaccination with the A/New Jersey swine-influenza vaccine in 1976) existed for the approximately 12.5 million adults (greater than or equal to 18 years old) vaccinated in the 1978-1979 influenza campaign. In the contiguous United States (excluding Maryland) 544 cases of GBS with onset between September 1, 1978, and March 31, 1979, were reported, including 12 adults who had been vaccinated within eight weeks before the onset of GBS and 393 who had not. The relative risk of vaccine-associated GBS for adults reported in this surveillance was 1.4 (95% confidence limits, 0.7 to 2.7)--significantly below the risk (6.2) associated with A/New Jersey vaccine for the equivalent eight-week period. In contrast to the A/New Jersey vaccine, the 1978-1979 influenza vaccine was not associated with a statistically significant excess risk of GBS.

PMID: 7231501 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Child](#)
- [Child, Preschool](#)
- [Epidemiologic Methods](#)
- [Female](#)
- [Humans](#)
- [Infant](#)
- [Influenza A virus/immunology](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/epidemiology](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Risk](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

31.

[Arch Neurol](#). 1982 Jan;39(1):21-4.

Guillain-Barré syndrome in the US Army.

[Johnson DE](#).

Using the US Army's operational reporting system, the medical records of soldiers with Guillain-Barré syndrome were retrieved and compared with reported incidence figures from the 1976 national influenza immunization program. Military personnel sustained an incidence of disease approximately 50% higher than unvaccinated civilians but less than 25% of the rate attributed to civilian vaccinees.

PMID: 7055443 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adult](#)
- [Age Factors](#)
- [Continental Population Groups](#)
- [Female](#)
- [Humans](#)
- [Influenza Vaccines/therapeutic use](#)
- [Male](#)
- [Military Medicine*](#)
- [Military Personnel](#)
- [Polyradiculoneuropathy/diagnosis](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Polyradiculoneuropathy/prevention & control](#)
- [United States](#)
- [Vaccination](#)

Substances:

- [Influenza Vaccines](#)

32.

[J Neuroimmunol](#). 1982 Aug;3(1):27-41.

Late onset of Guillain-Barré syndrome.

[Poser CM](#), [Behan PO](#).

The Guillain-Barré syndrome (GBS) usually occurs within one month of the precipitating cause. It is the purpose of this paper to show that typical cases may, however, appear weeks to months later. We have reviewed the collected data on these cases and suggest that they provide evidence which is in favour of a humoral, rather than a cell-mediated, aetiology for GBS.

PMID: 6124552 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Case Reports](#)

MeSH Terms:

- [Adult](#)
- [Antigen-Antibody Complex/immunology](#)
- [Encephalomyelitis, Acute Disseminated](#)
- [Encephalomyelitis, Autoimmune, Experimental/etiology](#)
- [Humans](#)
- [Immunity](#)
- [Immunity, Cellular](#)
- [Infection/complications](#)
- [Influenza Vaccines/adverse effects](#)
- [Macrophages/immunology](#)

- [Male](#)
- [Neuritis, Autoimmune, Experimental/etiology](#)
- [Polyradiculoneuropathy/etiology*](#)

Substances:

- [Antigen-Antibody Complex](#)
- [Influenza Vaccines](#)

33.

[Ann Neurol](#). 1982 Aug;12(2):119-28.

Neurological complications of immunization.

[Fenichel GM](#).

Vaccines prepared from whole, killed organisms (pertussis and possibly influenza) may cause neurological allergic reactions producing encephalopathy. These reactions are characterized by acute, monophasic demyelinating processes and occur with no greater frequency than 1 per 100,000 vaccine recipients; onset is within 4 days of immunization, and recovery is usually complete. No evidence suggests that these vaccines produce an insidious, progressive encephalopathy. Only with the swine influenza program of 1976 has Guillain-Barré syndrome appeared to follow immunization. Vaccines prepared from live-attenuated viruses (measles, mumps, rubella, and trivalent oral poliovirus) can cause symptomatic viral infection of the nervous system, including measles encephalitis, which occurs in 1 of 1,000,000 vaccine recipients; rubella neuritis, in less than 1 of 10,000 recipients; and paralytic poliomyelitis, in 1 of 3,000,000 vaccine recipients or their close contacts. A cause-and-effect relationship between immunization and brachial plexus neuritis, acute transverse myelitis, and cranial neuropathies has been suggested but never proved.

PMID: 6751212 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Comparative Study](#)
- [Review](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Brachial Plexus](#)
- [Brain Diseases/etiology](#)
- [Child](#)
- [Cranial Nerve Diseases/etiology](#)
- [Diphtheria Toxoid/adverse effects](#)
- [Female](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects](#)
- [Male](#)
- [Measles Vaccine/adverse effects](#)
- [Middle Aged](#)
- [Mumps Vaccine/adverse effects](#)
- [Myelitis, Transverse/etiology](#)
- [Nervous System Diseases/etiology*](#)
- [Optic Neuritis/etiology](#)
- [Pertussis Vaccine/adverse effects](#)
- [Poliovirus Vaccine, Oral/adverse effects](#)
- [Polyradiculoneuropathy/etiology](#)
- [Rubella Vaccine/adverse effects](#)
- [Tetanus Toxoid/adverse effects](#)
- [United States](#)
- [Vaccines/adverse effects*](#)

Substances:

- [Diphtheria Toxoid](#)
- [Influenza Vaccines](#)
- [Measles Vaccine](#)
- [Mumps Vaccine](#)
- [Pertussis Vaccine](#)
- [Poliovirus Vaccine, Oral](#)
- [Rubella Vaccine](#)
- [Tetanus Toxoid](#)
- [Vaccines](#)

34.

[JAMA](#). 1982 Aug 13;248(6):698-700.

Guillain-Barré syndrome in the United States, 1979-1980 and 1980-1981. Lack of an association with influenza vaccination.

[Kaplan JE](#), [Katona P](#), [Hurwitz ES](#), [Schonberger LB](#).

An ongoing surveillance program was intensified during the 1979-1980 and the 1980-1981 influenza seasons to determine whether an increased risk of acquiring Guillain-Barré syndrome (GBS) within eight weeks after influenza vaccination existed for adults in the United States who received influenza vaccine, when compared with adult who had not been vaccinated recently. Five hundred twenty-eight cases of GBS with onset between Sept 1 and March 31, including seven following recent vaccination, were reported by participating neurologists in 1979-1980; 459 cases, including 12 following recent vaccination, were reported in 1980-1981. The relative risk of acquiring GBS following influenza vaccination--0.6 in 1979-1980 and 1.4 in 1980-1981--was not significantly different from 1.0 in either season. These results suggest that there was no increased risk of acquiring GBS associated with the influenza vaccines administered during these seasons and that the causative "trigger agent" in the A/New Jersey (swine) influenza vaccine administered in 1976 has not been present in subsequent influenza vaccine preparations.

PMID: 7097920 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Age Factors](#)
- [Aged](#)
- [Disease Outbreaks/prevention & control*](#)
- [Female](#)
- [Humans](#)
- [Influenza A virus/immunology](#)
- [Influenza Vaccines/adverse effects*](#)
- [Influenza Vaccines/immunology](#)
- [Influenza, Human/prevention & control*](#)
- [Male](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Risk](#)
- [Seasons](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

35.

[Acta Neurol Scand](#). 1982 Oct;66(4):413-31.

Neurological complications of swine influenza vaccination.

[Poser CM](#).

The emphasis upon the remarkably large number of cases of Guillain-Barre syndrome which resulted from the 1976 National Swine Influenza immunization program in the U.S.A. has obscured the fact that other

neurological complications, involving the central nervous system also occurred. The anatomical distribution of lesions is almost identical with that seen following other types of vaccination: involvement of the brain, cerebellum, optic nerve, cranial nerves and spinal cord occurred with approximately the same frequency. 5 instances of the very rare subacute or chronic, progressive, post-vaccinal encephalopathy are described, a situation which is identical to the subacute and chronic forms of polyradiculoneuropathy. In a number of cases, in particular the myelopathies, a subclinical involvement of peripheral nerves was demonstrated by means of electrodiagnostic studies, illustrating the often overlooked fact that central nervous system involvement will mask peripheral nerve lesions. The etiological significance of the swine influenza vaccination was overlooked and completely erroneous diagnoses were established in a surprisingly large number of the 26 new cases reported here.

PMID: 6128862 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Cerebellar Diseases/etiology](#)
- [Child](#)
- [Chronic Disease](#)
- [Dementia/etiology](#)
- [Diagnosis, Differential](#)
- [Encephalomyelitis, Acute Disseminated/etiology](#)
- [Female](#)
- [Humans](#)
- [Influenza A virus](#)
- [Influenza Vaccines/adverse effects*](#)
- [Influenza, Human/prevention & control*](#)
- [Male](#)
- [Middle Aged](#)
- [Myelitis/etiology](#)
- [Nervous System Diseases/etiology*](#)
- [Optic Neuritis/etiology](#)
- [Polyneuropathies/etiology](#)
- [Polyradiculoneuropathy/etiology](#)

Substances:

- [Influenza Vaccines](#)

36.

[Neurology](#). 1983 Feb;33(2):150-7.

National surveillance for Guillain-Barré syndrome: January 1978-March 1979.

[Hurwitz ES](#), [Holman RC](#), [Nelson DB](#), [Schonberger LB](#).

Between January 1, 1978, and March 31, 1979, 1,034 cases of Guillain-Barré syndrome (GBS) were reported to the Centers for Disease Control by the 1,813 American Academy of Neurology sentinel physicians who participated in the national GBS surveillance program. A direct correlation was observed between increasing age and the age-specific attack (incidence) rates. Based on the cases observed and the total US population, age-adjusted attack rates were statistically higher in males (0.52 per 100,000) than in females (0.40). Rates for whites were 0.44 and those for blacks 0.28 per 100,000; although the difference is statistically significant, uncertainties as to the true denominators by race preclude acceptance of these differences as valid. Sixty-seven percent, or 682 of the patients, reported that they had had an antecedent illness within 8 weeks before onset of GBS, and among them the peak period of onset of GBS was in the second week after the onset of the prior illness. There were also 52 patients (5%) who had undergone surgery and 45 (4.5%) who had received vaccinations, both within the 8 weeks before onset of GBS. However, the high proportions of antecedent illness in these groups (45% of those operated and 53% of those vaccinated) made attribution of GBS to the

procedures tenuous. Risk of GBS in patients who reported receiving a swine influenza vaccination in 1976 was no greater than in those who reported that they did not receive this vaccine.

PMID: 6681655 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Child](#)
- [Child, Preschool](#)
- [Continental Population Groups](#)
- [Female](#)
- [Humans](#)
- [Infant](#)
- [Male](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [United States](#)

37.

[Neurology](#). 1983 May;33(5):633-7.

Guillain-Barré syndrome in the United States, 1978-1981: additional observations from the national surveillance system.

[Kaplan JE](#), [Schonberger LB](#), [Hurwitz ES](#), [Katona P](#).

During the period January 1978-March 1981, 2,575 cases of Guillain-Barré syndrome (GBS) were reported by participating neurologists in the national GBS surveillance system. The incidence of GBS was highest in the 50- to 74-year-old age group, but a lesser peak was observed in persons aged 15 to 35. The frequencies of antecedent respiratory (43%) and gastrointestinal (21%) illness exceeded frequencies of such illnesses in the US population (10 and 0.8%, respectively), based on survey data compiled by the National Center for Health Statistics; the differences in these frequencies of illness were similar in all seasons of the year, in males and in females, and in persons less than 6, 6 to 16, 17 to 44, and greater than 44 years of age. Nineteen percent of adult patients for whom information was available (67% of the total) reported receiving an A/New Jersey influenza vaccine in 1976, a lower percentage than would be expected on the basis of a survey conducted in that year. The data suggest that persons who received this vaccine have not been at increased risk and may even have been at decreased risk of acquiring GBS during the period covered by this study.

PMID: 6682501 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#)

Publication Types:

- [Comparative Study](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Child](#)
- [Female](#)
- [Gastrointestinal Diseases/complications](#)
- [Humans](#)
- [Male](#)
- [Middle Aged](#)
- [New Jersey](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Polyradiculoneuropathy/etiology](#)
- [Polyradiculoneuropathy/prevention & control](#)

- [Population Surveillance*](#)
- [Respiratory Tract Diseases/complications](#)
- [United States](#)
- [Vaccination/history](#)

☐ 38.

[Rev Infect Dis](#). 1983 Jul-Aug;5(4):723-36.

Summary of clinical trials of inactivated influenza vaccine - 1978.

[La Montagne JR](#), [Noble GR](#), [Quinnan GV](#), [Curlin GT](#), [Blackwelder WC](#), [Smith JI](#), [Ennis FA](#), [Bozeman FM](#).

This report summarizes the clinical trials of the A/USSR/77 (H1N1) influenza vaccines performed in 1978. A total of 2,091 subjects participated in these trials. The results of these clinical trials indicated that two doses of H1N1 viral antigen were necessary to produce serum titers of hemagglutinin-inhibiting (HAI) antibody of greater than 1:40 in 80% or more of the test subjects younger than 25 years of age, who were unlikely to have experienced natural infection during the earlier period of prevalence of H1N1 virus (1947-1957). Only one dose of the A/Texas/77 (H3N2) or B/Hong Kong/72 antigen was necessary to stimulate equivalent titers of HAI antibody in serum. Thus, previous natural exposure to H1N1 viruses primed individuals 26 years of age or older to respond to H1N1 antigens. No major differences in antigenicity were noted between whole-virus and split-virus vaccines. No differences in reaction indexes measuring systemic reactions were noted when vaccine types were compared. Only one vaccine was associated with a reaction index appreciably higher than that of placebo. The relatively uniform antibody responses observed were attributed to the newer methods of vaccine standardization introduced after the clinical trials in 1976. No cases of vaccine-related neurological problems, including Guillain-Barré syndrome, were found during these trials. Vaccines containing 7-21 micrograms of each viral antigen were antigenic and were well tolerated.

PMID: 6353529 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#), [Grant Support](#)

Publication Types:

- [Clinical Trial](#)
- [Research Support, Non-U.S. Gov't](#)
- [Research Support, U.S. Gov't, P.H.S.](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Child](#)
- [Child, Preschool](#)
- [Clinical Trials as Topic](#)
- [Female](#)
- [Hemagglutination Inhibition Tests](#)
- [Hemagglutination, Viral](#)
- [Humans](#)
- [Infant](#)
- [Infant, Newborn](#)
- [Influenza Vaccines/immunology](#)
- [Influenza Vaccines/pharmacology*](#)
- [Male](#)
- [Middle Aged](#)
- [Questionnaires](#)

Substances:

- [Influenza Vaccines](#)

Grant Support:

- [AI 42550/AI/NIAID NIH HHS/United States](#)
- [AI 62510/AI/NIAID NIH HHS/United States](#)
- [AI 62514/AI/NIAID NIH HHS/United States](#)
- etc

☐ 39.

[J R Soc Med.](#) 1983 Jul;76(7):620-1.

Adjustment of rates of Guillain-Barré syndrome among recipients of swine flu vaccine, 1976-1977.

[Greenstreet R.](#)

PMID: 6876058 [PubMed - indexed for MEDLINE]

PMCID: 1439115

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Letter](#)

MeSH Terms:

- [Humans](#)
- [Influenza A virus/immunology*](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Risk](#)
- [Statistics as Topic](#)
- [Viral Vaccines/adverse effects*](#)

Substances:

- [Viral Vaccines](#)

40.

[Med Sci Law.](#) 1984 Jan;24(1):61-7.

Estimation of the probability that Guillain-Barre syndrome was caused by the swine flu vaccine: US experience (1976-77).

[Greenstreet RL.](#)

PMID: 6700403 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Humans](#)
- [Influenza A virus](#)
- [Influenza Vaccines/adverse effects*](#)
- [Jurisprudence](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Probability](#)
- [United States](#)
- [Vaccination](#)

Substances:

- [Influenza Vaccines](#)

41.

[Neurology.](#) 1984 Feb;34(2):240-2.

HLA antigens in Guillain-Barré syndrome.

[Kaslow RA](#), [Sullivan-Bolyai JZ](#), [Hafkin B](#), [Schonberger LB](#), [Kraus L](#), [Moore MJ](#), [Yunis E](#), [Williams RM](#).

We compared Guillain-Barré syndrome (GBS) cases reported from cities in the United States in 1976-1977 with spouse or associate controls to detect possible HLA associations. HLA-A11 was somewhat less common among 92 cases than among 100 controls ($p = 0.04$). The 38 patients and 42 controls vaccinated against A/NJ/76 differed slightly in overall distribution of B locus antigens ($p = 0.06$), but the individual HLA-B antigen associations were more easily explained by chance. The 54 unvaccinated cases showed no apparent relation to HLA type. These findings should encourage further immunogenetic study of etiologically related GBS cases.

PMID: 6538019 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adolescent](#)

- [Adult](#)
- [HLA Antigens/analysis*](#)
- [Humans](#)
- [Influenza A virus/immunology](#)
- [Influenza, Human/prevention & control](#)
- [Polyradiculoneuropathy/immunology*](#)
- [Vaccination](#)

Substances:

- [HLA Antigens](#)

42.

[J Neuroimmunol](#). 1984 Feb;6(1):1-8.

Experimental neuritis induced by a mixture of neural antigens and influenza vaccines. A possible model for Guillain-Barré syndrome.

[Hjorth RN](#), [Bonde GM](#), [Piner E](#), [Hartzell RW](#), [Rorke LB](#), [Rubin BA](#).

We describe the development in rats of a possible model for Guillain-Barré syndrome (GBS): experimental neuritis (EN). The clinical symptoms, histopathology and the presence of antibody to nervous tissue are features that EN has in common with both GBS and experimental allergic neuritis (EAN), another GBS model. However, EN may be a more appropriate model than EAN for studying the role of autoimmune reactions in diseases such as GBS, which are triggered by various viruses or antigens, since EN depends on such agents being administered concomitantly with the syngeneic tissue.

PMID: 6707195 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms](#), [Substances](#)

MeSH Terms:

- [Animals](#)
- [Antigens/administration & dosage](#)
- [Autoimmune Diseases/immunology](#)
- [Disease Models, Animal*](#)
- [Female](#)
- [Influenza Vaccines/adverse effects](#)
- [Neuritis, Autoimmune, Experimental/chemically induced](#)
- [Neuritis, Autoimmune, Experimental/etiology*](#)
- [Neuritis, Autoimmune, Experimental/pathology](#)
- [Neurons/transplantation](#)
- [Polyradiculoneuropathy/immunology](#)
- [Rats](#)
- [Rats, Inbred F344](#)

Substances:

- [Antigens](#)
- [Influenza Vaccines](#)

43.

[Lancet](#). 1984 Feb 18;1(8373):394.

Influenza vaccination and Guillain-Barré syndrome.

[Knight RS](#), [Duncan JS](#), [Davis CJ](#), [Warlow CP](#).

PMID: 6141451 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Case Reports](#)
- [Letter](#)

MeSH Terms:

- [Aged](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)

- [Male](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Risk](#)
- [Vaccination/adverse effects](#)

Substances:

- [Influenza Vaccines](#)

44.

[Lancet](#). 1984 May 26;1(8387):1182.

Guillain-Barré syndrome and influenza vaccine.

[Winer JB](#), [Hughes RA](#), [Bradley GW](#), [Scadding JW](#).

PMID: 6144906 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Case Reports](#)
- [Letter](#)

MeSH Terms:

- [Aged](#)
- [Female](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Polyradiculoneuropathy/etiology*](#)

Substances:

- [Influenza Vaccines](#)

45.

[Am J Epidemiol](#). 1984 Jun;119(6):841-79.

An epidemiologic and clinical evaluation of Guillain-Barré syndrome reported in association with the administration of swine influenza vaccines.

[Langmuir AD](#), [Bregman DJ](#), [Kurland LT](#), [Nathanson N](#), [Victor M](#).

As a result of a court order, computerized summaries of approximately 1,300 cases reported as Guillain-Barré syndrome by state health departments to the Centers for Disease Control during the intensive national surveillance instituted following the swine influenza vaccination program in 1976-1977 became available for further study. Although the data were not uniformly adequate to confirm the diagnosis of Guillain-Barré syndrome, they were sufficient to enable classification according to extent of motor involvement. Vaccinated cases with "extensive" paresis or paralysis occurred in a characteristic epidemiologic pattern closely approximated by a lognormal curve, suggesting a causal relationship between the disease and the vaccine. Cases with "limited" motor involvement showed no such pattern, suggesting that this group included a substantial proportion of cases which were unrelated to the vaccine. The effect attributed to the vaccine lasted for at least six weeks and possibly for eight weeks but not longer. The relative risk of acquiring "extensive" disease over a six-week period following vaccination ranged from 3.96 to 7.75 depending on the particular baseline estimate of expected normal or endemic incidence that was chosen. Correspondingly, the number of cases that could be attributed to the vaccine over the six-week period ranged from 211 to 246, or very slightly higher over an eight-week period if the lowest baseline estimate was used. The total rate of Guillain-Barré syndrome cases attributed to prior use of the vaccine was 4.9 to 5.9 per million vaccinees.

PMID: 6328974 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Research Support, U.S. Gov't, Non-P.H.S.](#)

MeSH Terms:

- [Centers for Disease Control and Prevention \(U.S.\)](#)

- [Epidemiologic Methods](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculoneuropathy/diagnosis](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Polyradiculoneuropathy/physiopathology](#)
- [Risk](#)
- [Seasons](#)
- [Time Factors](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

46.

[Am J Epidemiol](#). 1984 Jun;119(6):880-9.

Guillain-Barré syndrome and its relationship to swine influenza vaccination in Michigan, 1976-1977.

[Breman JG](#), [Hayner NS](#).

Active surveillance to detect all patients with Guillain-Barré syndrome who had had onset of illness from July 1, 1976 through April 30, 1977 was undertaken in Michigan after indications that the syndrome might be associated with the National Influenza Immunization Program of 1976-1977. Hospital record room librarians, neurologists, and neurosurgeons reported the greatest number of cases; coded hospital discharge records were the best means of ascertaining case occurrence. This differed from national surveillance, which relied essentially on reports that neurologists and other clinicians sent to state epidemiologists and then to the Centers for Disease Control; hospital discharge lists were not systemically reviewed nationally. A total of 79 of the Michigan cases were in persons who had not received swine influenza vaccine, while 46 cases were in persons who had received it. For unvaccinated adults, the incidence of Guillain-Barré syndrome during the 10-month surveillance period was 0.36 cases per 10(6) person-weeks; for adults with onset within six weeks of vaccination, it was 2.31 cases per 10(6) person-weeks. After six weeks post-vaccination, the rate decreased to 0.17 cases per 10(6) person-weeks. The attributable risk for acquiring Guillain-Barré syndrome within six weeks after receiving swine influenza vaccine was 11.70 cases per 10(6) persons vaccinated.

PMID: 6731430 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Age Factors](#)
- [Aged](#)
- [Child](#)
- [Child, Preschool](#)
- [Epidemiologic Methods](#)
- [Female](#)
- [Humans](#)
- [Infant](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Michigan](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Polyradiculoneuropathy/etiology](#)
- [Seasons](#)

Substances:

- [Influenza Vaccines](#)

47.

[Lancet](#). 1984 Oct 13;2(8407):850-1.

Influenza and the Guillain-Barré syndrome.

[No authors listed]

PMID: 6148579 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Comparative Study](#)
- [Letter](#)

MeSH Terms:

- [Adolescent](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Polyradiculoneuropathy/etiology](#)
- [Risk](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

48.

[Tr Inst Im Pastera](#). 1985;63:78-81.

[Discovery of a possible connection between vaccination with inactivated chromatographic influenza vaccine and the development of the Guillain-Barré syndrome]

[Article in Russian]

[Gurtovoï MI](#).

PMID: 3843161 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms](#), [Substances](#)

MeSH Terms:

- [Adult](#)
- [Humans](#)
- [Influenza A virus](#)
- [Influenza Vaccines/adverse effects*](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/etiology*](#)

Substances:

- [Influenza Vaccines](#)

49.

[Am J Epidemiol](#). 1985 Apr;121(4):620-3.

Re: "An epidemiologic and clinical evaluation of Guillain-Barré syndrome reported in association with the administration of swine influenza vaccines".

[Mantel N](#).

PMID: 4014151 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Letter](#)

MeSH Terms:

- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Jurisprudence*](#)

- [Polyradiculoneuropathy/etiology*](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

50.

[Arch Neurol](#). 1985 Nov;42(11):1089-90.

Swine influenza vaccine and Guillain-Barré syndrome. Epidemic or artifact?

[Kurland LT](#), [Wiederholt WC](#), [Kirkpatrick JW](#), [Potter HG](#), [Armstrong P](#).

PMID: 2996473 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Centers for Disease Control and Prevention \(U.S.\)](#)
- [Humans](#)
- [Influenza A virus*](#)
- [Polyradiculoneuropathy/etiology*](#)
- [United States](#)
- [Viral Vaccines/adverse effects*](#)

Substances:

- [Viral Vaccines](#)

51.

[Riv Neurol](#). 1985 Nov-Dec;55(6):402-23.

[Acute polyradiculoneuropathy of Guillain-Barré. Critical review of potential etiopathogeneses]

[Article in Italian]

[Guadagnino M](#), [Petitto F](#).

The authors go over the etiopathogenetic hypothesis suggested, in the last years, a propos of the Guillain-Barré syndrome. They point out that about two-thirds of cases are preceded by infectious symptoms of the upper respiratory and alimentary tracts, with prevailing viral etiology. The nervous lesion, which characterize the histology of the illness, seems related to immunological change. In particular one must emphasize the possibility that the Guillain-Barré syndrome is an autoimmune disorder of delayed hypersensitivity, the laboratoristics model of which is constituted from experimental allergic neuritis.

PMID: 3008302 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [English Abstract](#)
- [Review](#)

MeSH Terms:

- [Acute Disease](#)
- [Adolescent](#)
- [Animals](#)
- [Antibodies/analysis](#)
- [Antigen-Antibody Complex/analysis](#)
- [Autoimmune Diseases/etiology](#)
- [Campylobacter Infections/complications](#)
- [Child](#)
- [Cytomegalovirus Infections/complications](#)
- [Female](#)
- [Gastrointestinal Diseases/complications](#)
- [Herpesviridae Infections/complications](#)
- [Herpesvirus 4, Human](#)
- [Humans](#)

- [Immune Sera/pharmacology](#)
- [Immunity, Cellular](#)
- [Influenza, Human/complications](#)
- [Nerve Fibers, Myelinated/pathology](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Polyradiculoneuropathy/immunology](#)
- [Polyradiculoneuropathy/pathology](#)
- [Pregnancy](#)
- [Rats](#)
- [Spinal Nerves/immunology](#)
- [Spinal Nerves/pathology](#)
- [T-Lymphocytes/immunology](#)
- [Virus Diseases/complications](#)

Substances:

- [Antibodies](#)
- [Antigen-Antibody Complex](#)
- [Immune Sera](#)

□ 52.

[Arch Neurol](#). 1985 Nov;42(11):1053-7.

Guillain-Barré syndrome. Clinicoepidemiologic features and effect of influenza vaccine.

[Beghi E](#), [Kurland LT](#), [Mulder DW](#), [Wiederholt WC](#).

A study of the epidemiologic and clinical features of Guillain-Barré syndrome in the population of Olmsted County, Minnesota, over the 46-year period 1935 through 1980 was conducted through the centralized diagnostic index maintained at Mayo Clinic, Rochester, Minn. A total of 48 cases were identified, giving an age- and sex-adjusted incidence of 1.8 per 100,000 person-years. The rate increased over time from 1.2 in the interval 1935 through 1956 to 2.4 in the interval 1970 through 1980. Males were affected more than females (age-adjusted rates of 2.3 and 1.2, respectively). The rate increased with age from 0.8 in those under 18 years old to 3.2 for those 60 years and older. Antecedent infectious diseases were reported in 65% of the cases. Implications with regard to the incidence of Guillain-Barré syndrome associated with the A/New Jersey/76 (swine flu) vaccine are discussed.

PMID: 4051833 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#), [Grant Support](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)
- [Research Support, U.S. Gov't, P.H.S.](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Female](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects](#)
- [Male](#)
- [Middle Aged](#)
- [Minnesota](#)
- [Polyradiculoneuropathy/diagnosis](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Polyradiculoneuropathy/etiology](#)

Substances:

- [Influenza Vaccines](#)

Grant Support:

- [NS-16308A/NS/NINDS NIH HHS/United States](#)
- [NS-17750/NS/NINDS NIH HHS/United States](#)

53.

[Ann Neurol](#). 1986 Jan;19(1):100-1.

Incubation period and severity of experimental allergic encephalomyelitis: analogy with swine-flu-vaccine-induced Guillain-Barré syndrome.

[Alvord EC Jr](#).

PMID: 3947033 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Letter](#)

MeSH Terms:

- [Animals](#)
- [Encephalomyelitis, Autoimmune, Experimental/physiopathology*](#)
- [Guinea Pigs](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects](#)
- [Polyradiculoneuropathy/etiology](#)
- [Polyradiculoneuropathy/physiopathology*](#)
- [Rabbits](#)

Substances:

- [Influenza Vaccines](#)

54.

[Arch Neurol](#). 1986 Oct;43(10):979-82.

Swine influenza vaccine and Guillain-Barré syndrome: lies, damn lies, and ...

[Alvord EC Jr](#).

PMID: 3753271 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Letter](#)

MeSH Terms:

- [Humans](#)
- [Influenza A virus*](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Research Design](#)

Substances:

- [Influenza Vaccines](#)

55.

[Neurology](#). 1987 Apr;37(4):685-8.

Risk factors for Guillain-Barré syndrome.

[Kaslow RA](#), [Sullivan-Bolyai JZ](#), [Holman RC](#), [Hafkin B](#), [Dicker RC](#), [Schonberger LB](#).

In 100 cases of Guillain-Barré syndrome (GBS) reported from 10 metropolitan areas to the Centers for Disease Control (CDC) after the 1976-77 influenza vaccination campaign and matched associate or spouse controls, we searched for risk factors for GBS other than A/New Jersey/1976 influenza vaccination and acute respiratory infection. The 47 vaccinated cases recalled influenza vaccination in past years less frequently than did controls (p less than 0.025). Cases and controls did not differ in the number of previous vaccinations or in interval from last vaccination. Cases also gave a history of allergy less frequently than controls. There were no other significant differences.

PMID: 3561781 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Epidemiologic Methods](#)
- [Humans](#)
- [Hypersensitivity/complications](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Risk](#)

Substances:

- [Influenza Vaccines](#)

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[Medicina \(Firenze\)](#). 1990 Apr-Jun;10(2):169.

[Influenza vaccination and polyradiculoneuritis of the Guillain-Barré type]

[Article in Italian]

[Pelosio A](#), [Galassi A](#), [Massini R](#), [Longhi C](#), [Marchetti P](#), [Recine U](#).

III Divisione Medica, Ospedale S. Spirito, Roma.

The Authors present a Guillain-Barré like case of polyradiculoneuritis occurring two weeks after the 1988-89 influenza vaccination. The existence of similar cases recently reported in the literature and their frequent association with swine influenza vaccination suggest the opportunity of a better epidemiological survey of similar cases.

PMID: 2273957 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Case Reports](#)
- [English Abstract](#)

MeSH Terms:

- [Aged](#)
- [Diagnosis, Differential](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Polyradiculoneuropathy/diagnosis](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Prognosis](#)

Substances:

- [Influenza Vaccines](#)

57.

[Am J Epidemiol](#). 1991 May 1;133(9):940-51.

Reassessment of the association between Guillain-Barré syndrome and receipt of swine influenza vaccine in 1976-1977: results of a two-state study. Expert Neurology Group.

[Safraneck TJ](#), [Lawrence DN](#), [Kurland LT](#), [Culver DH](#), [Wiederholt WC](#), [Hayner NS](#), [Osterholm MT](#), [O'Brien P](#), [Hughes JM](#).

Hospital Infections Program, Centers for Disease Control, Atlanta, GA.

Although the original Centers for Disease Control study of the relation between A/New Jersey/8/76 (swine flu) vaccine and Guillain-Barré syndrome (polyradiculoneuritis) demonstrated a statistical association and suggested a causal relation between the two events, controversy has persisted. To reassess this association, the authors obtained medical records of all previously reported adult patients with Guillain-Barré syndrome in Michigan and Minnesota from October 1, 1976 through January 31, 1977. To identify previously unreported hospitalized cases with onset of symptoms during this period, the authors surveyed medical care facilities. A group of expert neurologists formulated diagnostic criteria for Guillain-Barré syndrome and then reviewed the clinical records in a blinded fashion. Of the 98 adult patients from the original Centers for Disease Control study eligible for consideration, three were found to have been misclassified by date of onset and were excluded. Of the remaining 95, the 28 (29%) who did not meet the diagnostic criteria were equally distributed between the vaccinated group (18 of 60, 30%) and the unvaccinated group (10 of 35, 29%). In addition to the

67 remaining cases who met the diagnostic criteria, six previously unreported cases (three of whom had been vaccinated) were found and included in this analysis. The relative risk of developing Guillain-Barré syndrome in the vaccinated population of these two states during the 6 weeks following vaccination was 7.10, comparable to the relative risk of 7.60 found in the original study. These findings suggest that there was an increased risk of developing Guillain-Barré syndrome during the 6 weeks following vaccination in adults. The excess cases of Guillain-Barré syndrome during the first 6 weeks attributed to the vaccine was 8.6 per million vaccinees in Michigan and 9.7 per million vaccinees in Minnesota. No increase in relative risk for Guillain-Barré syndrome was noted beyond 6 weeks after vaccination.

PMID: 1851395 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Causality](#)
- [Centers for Disease Control and Prevention \(U.S.\)](#)
- [Diagnostic Errors](#)
- [Humans](#)
- [Incidence](#)
- [Influenza A virus*](#)
- [Influenza Vaccines/adverse effects*](#)
- [Michigan/epidemiology](#)
- [Minnesota/epidemiology](#)
- [Polyradiculoneuropathy/chemically induced](#)
- [Polyradiculoneuropathy/diagnosis](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Population Surveillance](#)
- [Risk Factors](#)
- [Time Factors](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)

58.

[Am J Epidemiol.](#) 1991 May 1;133(9):952-5.

Guillain-Barré syndrome and influenza vaccination in the US Army, 1980-1988.

[Roscelli JD](#), [Bass JW](#), [Pang L](#).

Department of Pediatrics, Tripler Army Medical Center, Honolulu, HI 96859-5000.

Comment in:

- [Am J Epidemiol.](#) 1992 Aug 1;136(3):374-6.

An increased incidence of Guillain-Barré syndrome (polyradiculoneuritis) occurred in individuals who received the A/New Jersey (swine) influenza vaccine in 1976-1977. A retrospective study encompassing the years 1980-1988 was conducted to determine if the US Army's mass influenza vaccination program has been associated with an increased incidence of Guillain-Barré syndrome in active duty soldiers during the study years. No temporally related increase in Guillain-Barré syndrome was found during the study years.

PMID: 2028981 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Causality](#)
- [Humans](#)
- [Incidence](#)
- [Influenza A virus*](#)
- [Influenza Vaccines/adverse effects*](#)

- [Military Personnel*](#)
- [Polyradiculoneuropathy/chemically induced](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Retrospective Studies](#)
- [Risk Factors](#)
- [Seasons](#)
- [United States/epidemiology](#)

Substances:

- [Influenza Vaccines](#)

59.

[Am J Epidemiol.](#) 1992 Aug 1;136(3):374-6.

Re: "Guillain-Barré syndrome and influenza vaccination in the US Army, 1980-1988".

[Ward DL.](#)

Comment on:

- [Am J Epidemiol. 1991 May 1;133\(9\):952-5.](#)

PMID: 1415156 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Comment](#)
- [Letter](#)

MeSH Terms:

- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Military Personnel*](#)
- [Polyradiculoneuropathy/epidemiology*](#)
- [Seasons*](#)

Substances:

- [Influenza Vaccines](#)

60.

[South Med J.](#) 1993 Jun;86(6):699-702.

Guillain-Barré syndrome due to swine influenza and neurologic damage due to DTP vaccines: the touch of statistics.

[Sepkowitz S.](#)

PMID: 8506498 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Brain Diseases/epidemiology](#)
- [Brain Diseases/etiology*](#)
- [Diphtheria-Tetanus-Pertussis Vaccine/adverse effects*](#)
- [Great Britain/epidemiology](#)
- [Health Policy](#)
- [Humans](#)
- [Influenza A virus*](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculoneuropathy/epidemiology](#)
- [Polyradiculoneuropathy/etiology*](#)
- [United States/epidemiology](#)
- [Vaccination/adverse effects*](#)

Substances:

- [Diphtheria-Tetanus-Pertussis Vaccine](#)
- [Influenza Vaccines](#)

61.

[J Infect Dis.](#) 1997 Aug;176 Suppl 1:S69-72.

Pandemic influenza: confronting a re-emergent threat. The 1976 experience.

[Dowdle WR.](#)

The Task Force for Child Survival and Development, Atlanta, Georgia 30307, USA.

The Swine Influenza Immunization Program began in January 1976 with an outbreak of swine influenza among trainees at Ft. Dix, New Jersey. The program ended in December 1976 after an increased incidence of Guillain-Barre syndrome was attributed to the vaccine. The issues and events of 1976 provide valuable lessons for the future. A thorough and objective review of the swine flu program should be a prerequisite for influenza pandemic planning. Strong consideration should be given to creating separate structures for risk assessment and risk management. Risk assessment estimates the probability of a pandemic, the options available for control, and the relative benefits of those options as situations change. Risk management is the political response to that assessment.

PMID: 9240699 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Humans](#)
- [Immunization](#)
- [Influenza A virus/immunology*](#)
- [Influenza Vaccines/immunology*](#)
- [Influenza, Human/epidemiology](#)
- [Influenza, Human/prevention & control*](#)
- [New Jersey/epidemiology](#)
- [Risk Assessment](#)
- [Risk Management](#)

Substances:

- [Influenza Vaccines](#)

62.

[Psychiatry Clin Neurosci.](#) 1997 Aug;51(4):181-4.

Influenza virus and neurological diseases.

[Hayase Y, Tobita K.](#)

Department of Virology, Jichi Medical School, Tochigi, Japan.

Influenza viruses rarely cause acute encephalopathy. Post-influenzal encephalitis, which occurs a few weeks after recovery from influenza is thought to be an autoimmune process associated with demyelination and vasculopathy. It has been suggested that Economo lethargic encephalitis followed by postencephalitic Parkinsonism was associated with the influenza A epidemic of 1918 (Spanish flu). The incidence of Reye's syndrome has markedly decreased due to the avoidance of salicylates in the treatment of influenza or varicella. One inactivated flu vaccine is thought to have caused Guillain Barre syndrome due to molecular mimicry between viral protein and myelin, which triggered autoimmune responses. The persistence of influenza virus genes in neural cells as one of the causes of chronic degenerative diseases of the central nervous system by inducing apoptosis of the host cells is yet to be proven.

PMID: 9316161 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms](#)

Publication Types:

- [Review](#)

MeSH Terms:

- [Encephalitis, Viral/diagnosis*](#)
- [Humans](#)
- [Influenza, Human/diagnosis*](#)
- [Parkinson Disease, Postencephalitic/diagnosis](#)

- [Polyradiculoneuropathy/diagnosis](#)
- [Reye Syndrome/diagnosis](#)

☐ 63.

[MMWR Recomm Rep](#). 1998 May 1;47(RR-6):1-26.

Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). Centers for Disease Control and Prevention.

[No authors listed]

These recommendations update information concerning the vaccine and antiviral agents available for controlling influenza during the 1998-99 influenza season (superseding MMWR 1997;46[No. RR-9:1-25]). The principal changes include a) information about the influenza virus strains included in the trivalent vaccine for 1998-99, b) more detailed information about influenza-associated rates of hospitalization, and c) updated information on the possible relationship between Guillain-Barre syndrome and influenza vaccination.

PMID: 9590726 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

Publication Types, MeSH Terms, Substances

Publication Types:

- [Guideline](#)
- [Practice Guideline](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Amantadine/adverse effects](#)
- [Amantadine/contraindications](#)
- [Amantadine/therapeutic use](#)
- [Antiviral Agents/adverse effects](#)
- [Antiviral Agents/contraindications](#)
- [Antiviral Agents/therapeutic use](#)
- [Child](#)
- [Child, Preschool](#)
- [Humans](#)
- [Immunization Programs](#)
- [Infant](#)
- [Influenza A virus/immunology](#)
- [Influenza B virus/immunology](#)
- [Influenza Vaccines/administration & dosage*](#)
- [Influenza Vaccines/adverse effects](#)
- [Influenza Vaccines/contraindications](#)
- [Influenza, Human/drug therapy](#)
- [Influenza, Human/epidemiology](#)
- [Influenza, Human/prevention & control*](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/chemically induced](#)
- [Rimantadine/adverse effects](#)
- [Rimantadine/contraindications](#)
- [Rimantadine/therapeutic use](#)
- [Vaccination/standards*](#)
- [Vaccines, Inactivated](#)

Substances:

- [Antiviral Agents](#)
- [Influenza Vaccines](#)
- [Vaccines, Inactivated](#)
- [Rimantadine](#)

- [Amantadine](#)

□ 64.

[Neurology](#). 1998 Oct;51(4):1110-5.

The spectrum of antecedent infections in Guillain-Barré syndrome: a case-control study.

[Jacobs BC](#), [Rothbarth PH](#), [van der Meché FG](#), [Herbrink P](#), [Schmitz PI](#), [de Klerk MA](#), [van Doorn PA](#).

Department of Neurology, Erasmus University, Rotterdam, The Netherlands.

OBJECTIVE: To determine which antecedent infections are specifically associated with the Guillain-Barré syndrome (GBS). **BACKGROUND:** Infections with many agents have been reported preceding GBS. Some infections are related to specific clinical and immunologic subgroups in GBS. Most agents were reported in case reports and uncontrolled small series of GBS patients only, and their relation to GBS and its subgroups remains unclear. **METHOD:** A serologic study for 16 infectious agents in 154 GBS patients and 154 sex- and age-matched controls with other neurologic diseases. Acute phase, pretreatment samples were used from clinically well-defined GBS patients. The seasonal distribution of serum sampling in the GBS and control group was the same. **RESULTS:** Multivariate analysis showed that in GBS patients, infections with *Campylobacter jejuni* (32%), cytomegalovirus (13%), and Epstein-Barr virus (10%) were significantly more frequent than in controls. *Mycoplasma pneumoniae* infections occurred more often in GBS patients (5%) than in controls in univariate analysis. Infections with *Haemophilus influenzae* (1%), parainfluenza 1 virus (1%), influenza A virus (1%), influenza B virus (1%), adenovirus (1%), herpes simplex virus (1%), and varicella zoster virus (1%) were also demonstrated in GBS patients, but not more frequently than in controls. *C. jejuni* infections were associated with antibodies to the gangliosides GM1 and GD1b and with a severe pure motor form of GBS. Cytomegalovirus infections were associated with antibodies to the ganglioside GM2 and with severe motor sensory deficits. Other infections were not related to specific antiganglioside antibodies and neurologic patterns. **CONCLUSIONS:** Recent infections with *C. jejuni*, cytomegalovirus, Epstein-Barr virus, and *M. pneumoniae* are specifically related to GBS. The variety of infections may contribute to the clinical and immunologic heterogeneity of GBS.

PMID: 9781538 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)

MeSH Terms:

- [Adenoviridae Infections/epidemiology](#)
- [Adenoviridae Infections/immunology](#)
- [Antibodies, Bacterial/blood](#)
- [Antibodies, Viral/blood](#)
- [Bacterial Infections/epidemiology](#)
- [Bacterial Infections/immunology*](#)
- [Campylobacter Infections/epidemiology](#)
- [Campylobacter Infections/immunology](#)
- [Campylobacter jejuni](#)
- [Case-Control Studies](#)
- [Cytomegalovirus Infections/epidemiology](#)
- [Cytomegalovirus Infections/immunology](#)
- [Epstein-Barr Virus Infections/epidemiology](#)
- [Epstein-Barr Virus Infections/immunology](#)
- [Female](#)
- [Gangliosides/immunology](#)
- [Haemophilus Infections/epidemiology](#)
- [Haemophilus Infections/immunology](#)
- [Haemophilus influenzae](#)
- [Humans](#)
- [Incidence](#)
- [Influenza A virus](#)
- [Influenza B virus](#)

- [Influenza, Human/epidemiology](#)
- [Influenza, Human/immunology](#)
- [Male](#)
- [Pneumonia, Mycoplasma/epidemiology](#)
- [Pneumonia, Mycoplasma/immunology](#)
- [Polyradiculoneuropathy/immunology](#)
- [Polyradiculoneuropathy/microbiology*](#)
- [Polyradiculoneuropathy/virology*](#)
- [Seroepidemiologic Studies](#)
- [Virus Diseases/epidemiology](#)
- [Virus Diseases/immunology*](#)

Substances:

- [Antibodies, Bacterial](#)
- [Antibodies, Viral](#)
- [Gangliosides](#)

☐ 65.

[N Engl J Med](#). 1998 Dec 17;339(25):1797-802.

The Guillain-Barré syndrome and the 1992-1993 and 1993-1994 influenza vaccines.

[Lasky T](#), [Terracciano GJ](#), [Magder L](#), [Koski CL](#), [Ballesteros M](#), [Nash D](#), [Clark S](#), [Haber P](#), [Stolley PD](#), [Schonberger LB](#), [Chen RT](#).

Department of Epidemiology and Preventive Medicine, School of Medicine, University of Maryland, Baltimore 21201, USA.

Comment in:

- [N Engl J Med](#). 1998 Dec 17;339(25):1845-6.

BACKGROUND: The number of reports of influenza-vaccine-associated Guillain-Barré syndrome to the national Vaccine Adverse Event Reporting System increased from 37 in 1992-1993 to 74 in 1993-1994, arousing concern about a possible increase in vaccine-associated risk. **METHODS:** Patients given a diagnosis of the Guillain-Barré syndrome in the 1992-1993 and 1993-1994 influenza-vaccination seasons were identified in the hospital-discharge data bases of four states. Vaccination histories were obtained by telephone interviews during 1995-1996 and were confirmed by the vaccine providers. Disease with an onset within six weeks after vaccination was defined as vaccine-associated. Vaccine coverage in the population was measured through a random-digit-dialing telephone survey. **RESULTS:** We interviewed 180 of 273 adults with the Guillain-Barré syndrome; 15 declined to participate, and the remaining 78 could not be contacted. The vaccine providers confirmed influenza vaccination in the six weeks before the onset of Guillain-Barré syndrome for 19 patients. The relative risk of the Guillain-Barré syndrome associated with vaccination, adjusted for age, sex, and vaccine season, was 1.7 (95 percent confidence interval, 1.0 to 2.8; P=0.04). The adjusted relative risks were 2.0 for the 1992-1993 season (95 percent confidence interval, 1.0 to 4.3) and 1.5 for the 1993-1994 season (95 percent confidence interval, 0.8 to 2.9). In 9 of the 19 vaccine-associated cases, the onset was in the second week after vaccination, all between day 9 and day 12. **CONCLUSIONS:** There was no increase in the risk of vaccine-associated Guillain-Barré syndrome from 1992-1993 to 1993-1994. For the two seasons combined, the adjusted relative risk of 1.7 suggests slightly more than one additional case of Guillain-Barré syndrome per million persons vaccinated against influenza.

PMID: 9854114 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#), [Grant Support](#)

Publication Types:

- [Research Support, U.S. Gov't, P.H.S.](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Adverse Drug Reaction Reporting Systems](#)
- [Aged](#)
- [Aged, 80 and over](#)

- [Data Collection](#)
- [Female](#)
- [Humans](#)
- [Influenza Vaccines/administration & dosage](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Polyradiculoneuropathy/epidemiology](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Risk](#)
- [United States/epidemiology](#)

Substances:

- [Influenza Vaccines](#)

Grant Support:

- [U50/CCU 300860-10/PHS HHS/United States](#)

66.

[N Engl J Med.](#) 1998 Dec 17;339(25):1845-6.

Influenza vaccination and the Guillain-Barré syndrome.

[Ropper AH, Victor M.](#)

Comment on:

- [N Engl J Med. 1998 Dec 17;339\(25\):1797-802.](#)

PMID: 9854122 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Comment](#)
- [Editorial](#)

MeSH Terms:

- [Humans](#)
- [Infection/complications](#)
- [Influenza Vaccines/adverse effects*](#)
- [Polyradiculoneuropathy/etiology*](#)
- [Risk Factors](#)
- [Viral Vaccines/adverse effects](#)

Substances:

- [Influenza Vaccines](#)
- [Viral Vaccines](#)

67.

[J Autoimmun.](#) 2000 Feb;14(1):1-10.

Vaccination and autoimmunity-'vaccinosis': a dangerous liaison?

[Shoenfeld Y, Aron-Maor A.](#)

Department of Internal Medicine B, Sheba Medical Center, Tel Hashomer, Israel. shoefel@post.tau.ac.il

The question of a connection between vaccination and autoimmune illness (or phenomena) is surrounded by controversy. A heated debate is going on regarding the causality between vaccines, such as measles and anti-hepatitis B virus (HBV), and multiple sclerosis (MS). Brain antibodies as well as clinical symptoms have been found in patients vaccinated against those diseases. Other autoimmune illnesses have been associated with vaccinations. Tetanus toxoid, influenza vaccines, polio vaccine, and others, have been related to phenomena ranging from autoantibodies production to full-blown illness (such as rheumatoid arthritis (RA)). Conflicting data exists regarding also the connection between autism and vaccination with measles vaccine. So far only one controlled study of an experimental animal model has been published, in which the possible causal relation between vaccines and autoimmune findings has been examined: in healthy puppies immunized with a variety of commonly given vaccines, a variety of autoantibodies have been documented but no frank autoimmune illness was

recorded. The findings could also represent a polyclonal activation (adjuvant reaction). The mechanism (or mechanisms) of autoimmune reactions following immunization has not yet been elucidated. One of the possibilities is molecular mimicry; when a structural similarity exists between some viral antigen (or other component of the vaccine) and a self-antigen. This similarity may be the trigger to the autoimmune reaction. Other possible mechanisms are discussed. Even though the data regarding the relation between vaccination and autoimmune disease is conflicting, it seems that some autoimmune phenomena are clearly related to immunization (e.g. Guillain-Barre syndrome). The issue of the risk of vaccination remains a philosophical one, since to date the advantages of this policy have not been refuted, while the risk for autoimmune disease has not been irrevocably proved. We discuss the pros and cons of this issue (although the temporal relationship (i.e. always 2-3 months following immunization) is impressive). Copyright 2000 Academic Press.

PMID: 10648110 [PubMed - indexed for MEDLINE]

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Publication Types, MeSH Terms, Substances

Publication Types:

- [Review](#)

MeSH Terms:

- [Animals](#)
- [Arthritis/etiology](#)
- [Autistic Disorder/etiology](#)
- [Autoimmune Diseases/etiology](#)
- [Autoimmune Diseases/immunology](#)
- [Autoimmunity*](#)
- [BCG Vaccine/adverse effects](#)
- [Child](#)
- [Diabetes Mellitus/etiology](#)
- [Disease Models, Animal](#)
- [Dogs](#)
- [Guillain-Barre Syndrome/etiology](#)
- [Hepatitis B Vaccines/adverse effects](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects](#)
- [Lupus Erythematosus, Systemic/etiology](#)
- [Measles Vaccine/adverse effects](#)
- [Measles-Mumps-Rubella Vaccine](#)
- [Multiple Sclerosis/etiology](#)
- [Mumps Vaccine/adverse effects](#)
- [Rubella Vaccine/adverse effects](#)
- [Vaccination/adverse effects*](#)
- [Vaccines, Combined/adverse effects](#)

Substances:

- [BCG Vaccine](#)
- [Hepatitis B Vaccines](#)
- [Influenza Vaccines](#)
- [Measles Vaccine](#)
- [Measles-Mumps-Rubella Vaccine](#)
- [Mumps Vaccine](#)
- [Rubella Vaccine](#)
- [Vaccines, Combined](#)

□ 68.

[Eval Rev.](#) 1999 Dec;23(6):619-47.

The swine flu vaccine and Guillain-Barré syndrome. A case study in relative risk and specific causation.

[Freedman DA, Stark PB.](#)

University of California, Berkeley, USA.

Epidemiologic methods were developed to prove general causation: identifying exposures that increase the risk of particular diseases. Courts often are more interested in specific causation: On balance of probabilities, was the plaintiff's disease caused by exposure to the agent in question? Some authorities have suggested that a relative risk greater than 2.0 meets the standard of proof for specific causation. Such a definite criterion is appealing, but there are difficulties. Bias and confounding are familiar problems; individual differences must be considered too. The issues are explored in the context of the swine flu vaccine and Guillain-Barré syndrome. THE CONCLUSION: There is a considerable gap between relative risks and proof of specific causation.

PMID: 10662072 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Causality*](#)
- [Guillain-Barre Syndrome/epidemiology](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Immunization Programs/legislation & jurisprudence*](#)
- [Influenza A virus](#)
- [Influenza Vaccines/adverse effects*](#)
- [Liability, Legal*](#)
- [Male](#)
- [Middle Aged](#)
- [Models, Statistical](#)
- [Risk](#)
- [United States/epidemiology](#)

Substances:

- [Influenza Vaccines](#)

69.

[Neurology](#). 2000 Aug 8;55(3):452-3.

Influenza vaccine and the risk of relapse of Guillain-Barré syndrome.

[Wijdicks EF](#), [Fletcher DD](#), [Lawn ND](#).

Mayo Clinic and Foundation, Department of Neurology, Rochester, MN 55905, USA. wijde@mayo.edu

PMID: 10932292 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Case Reports](#)

MeSH Terms:

- [Guillain-Barre Syndrome/epidemiology*](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Recurrence](#)
- [Risk Factors](#)

Substances:

- [Influenza Vaccines](#)

70.

[Pol Merkur Lekarski](#). 2000 May;8(47):360-1.

[Vaccination against influenza and Guillain-Barre syndrome: are there any relations?]

[Article in Polish]

[Wiercińska-Drapała A](#), [Grzeszczuk A](#), [Wasilewski K](#), [Prokopowicz D](#).

Kliniki Obserwacyjno-Zakaźnej Akademii Medycznej w Białymstoku.

Influenza, a disease known for centuries, continues to be a major medical problem throughout the world with substantial economical and health impact. The risk of death related to influenza is higher among individuals over 65 years of age and those with chronic diseases. Vaccination against influenza was successfully applied in massive prophylaxis of the disease in different countries for many years. Although there are some well known and monitored adverse reactions to influenza vaccines, the evidence whether influenza vaccination might be causally associated with higher risk of Guillain-Barré syndrome is not clear. In this paper the available literature data concerning this problem were reviewed. Own experiences on influenza vaccination and plasmapheresis treatment of Guillain-Barré syndrome were presented.

PMID: 10944963 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [English Abstract](#)
- [Review](#)

MeSH Terms:

- [Guillain-Barre Syndrome/chemically induced*](#)
- [Guillain-Barre Syndrome/diagnosis](#)
- [Guillain-Barre Syndrome/therapy](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Influenza, Human/prevention & control*](#)
- [Plasmapheresis/methods](#)

Substances:

- [Influenza Vaccines](#)

71.

[Can Commun Dis Rep](#). 2000 Dec 1;26(23):205-7.

Does informing patients of the risk of acquiring Guillain-Barré syndrome following influenza vaccination have an effect on their willingness to be vaccinated?

[Article in English, French]

[De Wals P](#).

Department of Community Health Services, University of Sherbrooke, Sherbrooke, Que.

PMID: 11131690 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Canada](#)
- [Female](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Informed Consent*](#)
- [Male](#)
- [Patient Acceptance of Health Care*](#)
- [Risk Factors](#)

Substances:

- [Influenza Vaccines](#)

72.

[Eur J Paediatr Neurol](#). 2001;5(2):83-5.

Two cases of influenza with impaired ocular movement.

[Migita M](#), [Matsumoto T](#), [Fujino O](#), [Takaishi Y](#), [Yuki N](#), [Fukunaga Y](#).

Department of Pediatrics, Nippon Medical School, Tokyo, Japan. Makoto_Migita/bmb@nms.ac.jp

Complications of influenza include respiratory disorders (pneumonia, bronchitis and croup) and occasionally myocarditis, myositis, encephalitis, encephalopathy and Reye's syndrome, which may be life-threatening and cause various sequelae. We report two patients who developed unusual complications of influenza infection: one had ptosis and impaired ocular movement, and the other suffered from Guillain-Barré syndrome with paralysis of the extraocular muscles.

PMID: 11589318 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms](#)

Publication Types:

- [Case Reports](#)

MeSH Terms:

- [Blepharoptosis/diagnosis*](#)
- [Child](#)
- [Child, Preschool](#)
- [Diagnosis, Differential](#)
- [Female](#)
- [Guillain-Barre Syndrome/diagnosis*](#)
- [Humans](#)
- [Influenza A virus*](#)
- [Influenza, Human/diagnosis*](#)
- [Ophthalmoplegia/diagnosis*](#)

□ 73.

[Curr Opin Neurol](#). 2002 Jun;15(3):333-8.

Neurological adverse events associated with vaccination.

[Piyasirisilp S, Hemachudha T.](#)

Division of Neurology, Department of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand.
spiyasir@mail.med.cmu.ac.th

Public tolerance to adverse reactions is minimal. Several reporting systems have been established to monitor adverse events following immunization. The present review summarizes data on neurologic complications following vaccination, and provides evidence that indicates whether they were directly associated with the vaccines. These complications include autism (measles vaccine), multiple sclerosis (hepatitis B vaccine), meningoencephalitis (Japanese encephalitis vaccine), Guillain-Barré syndrome and giant cell arteritis (influenza vaccine), and reactions after exposure to animal rabies vaccine. Seizures and hypotonic/hyporesponsive episodes following pertussis vaccination and potential risks associated with varicella vaccination, as well as vaccine-associated paralytic poliomyelitis following oral poliovirus vaccination, are also described. In addition, claims that complications are caused by adjuvants, preservatives and contaminants [i.e. macrophagic myofasciitis (aluminium), neurotoxicity (thimerosal), and new variant Creutzfeldt-Jakob disease (bovine-derived materials)] are discussed.

PMID: 12045734 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Review](#)

MeSH Terms:

- [Adjuvants, Immunologic/adverse effects](#)
- [Adolescent](#)
- [Adult](#)
- [Animals](#)
- [Cattle](#)
- [Central Nervous System/immunology*](#)
- [Central Nervous System/physiopathology](#)

- [Central Nervous System/virology*](#)
- [Central Nervous System Diseases/epidemiology*](#)
- [Central Nervous System Diseases/immunology*](#)
- [Central Nervous System Diseases/physiopathology](#)
- [Child](#)
- [Child, Preschool](#)
- [Drug Contamination](#)
- [Encephalopathy, Bovine Spongiform/prevention & control](#)
- [Humans](#)
- [Infant](#)
- [Infant, Newborn](#)
- [Preservatives, Pharmaceutical/adverse effects](#)
- [Vaccination/adverse effects*](#)
- [Vaccines/adverse effects*](#)

Substances:

- [Adjuvants, Immunologic](#)
- [Preservatives, Pharmaceutical](#)
- [Vaccines](#)

74.

[Intern Med.](#) 2003 Feb;42(2):139.

The influenza vaccination and neurological complications.

[Shoji H, Kaji M.](#)

Comment on:

- [Intern Med. 2003 Feb;42\(2\):191-4.](#)

PMID: 12636230 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Comment](#)
- [Editorial](#)

MeSH Terms:

- [Age Factors](#)
- [Aged](#)
- [Encephalomyelitis/chemically induced](#)
- [Encephalomyelitis/physiopathology](#)
- [Guillain-Barre Syndrome/chemically induced](#)
- [Guillain-Barre Syndrome/physiopathology](#)
- [Humans](#)
- [Influenza Vaccines/administration & dosage](#)
- [Influenza Vaccines/adverse effects*](#)
- [Influenza, Human/prevention & control*](#)
- [Male](#)
- [Middle Aged](#)
- [Nervous System Diseases/chemically induced*](#)
- [Nervous System Diseases/physiopathology](#)
- [Prognosis](#)
- [Risk Assessment](#)
- [Vaccination/adverse effects](#)

Substances:

- [Influenza Vaccines](#)

75.

[Intern Med.](#) 2003 Feb;42(2):191-4.

Neurologic complications associated with influenza vaccination: two adult cases.

[Nakamura N, Nokura K, Zettsu T, Koga H, Tachi M, Terada M, Katoh H, Itoh Y, Osawa H, Ozeki T, Yamamoto H.](#)

Department of Neurology, Fujita Health University, School of Medicine, Toyoake, Aichi.

Comment in:

- [Intern Med. 2003 Feb;42\(2\):139.](#)

We describe two adult cases of neurologic complications occurring after influenza vaccination. The first case was a 62-year-old man who experienced convulsions 5 days after vaccination, and the second case was a 70-year-old man who exhibited paraplegia 7 days after vaccination. Diagnoses of acute disseminated encephalomyelitis and transverse myelitis with acute motor axonal neuropathy were made, respectively, and steroid pulse therapy and intravenous gamma globulin therapy alleviated the patients' symptoms. Although the efficacy and cost benefit of influenza vaccination have been widely accepted, such neurologic complications might occur in the elderly or even in adults.

PMID: 12636241 [PubMed - indexed for MEDLINE]

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MeSH Terms:

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- [Encephalomyelitis, Acute Disseminated/drug therapy](#)
- [Encephalomyelitis, Acute Disseminated/pathology](#)
- [Follow-Up Studies](#)
- [Guillain-Barre Syndrome/chemically induced*](#)
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- [Humans](#)
- [Immunoglobulins, Intravenous/administration & dosage](#)
- [Influenza Vaccines/administration & dosage](#)
- [Influenza Vaccines/adverse effects*](#)
- [Influenza, Human/prevention & control*](#)
- [Magnetic Resonance Imaging](#)
- [Male](#)
- [Methylprednisolone/administration & dosage](#)
- [Middle Aged](#)
- [Pulse Therapy, Drug](#)
- [Risk Assessment](#)
- [Treatment Outcome](#)
- [Vaccination/adverse effects](#)

Substances:

- [Immunoglobulins, Intravenous](#)
- [Influenza Vaccines](#)
- [Methylprednisolone](#)

76.

[BMJ.](#) 2003 Mar 22;326(7390):620.

Possible link between flu jab and Guillain-Barré syndrome under investigation.

[Marwick C.](#)

PMID: 12649232 [PubMed - indexed for MEDLINE]

PMCID: 1169311

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [News](#)

MeSH Terms:

- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)

Substances:

- [Influenza Vaccines](#)

77.

[Clin Immunol.](#) 2003 May;107(2):116-21.

Influenza vaccination and Guillain Barre syndrome small star, filled.

[Geier MR](#), [Geier DA](#), [Zahalsky AC](#).

The Genetic Centers of America, 14 Redgate Court, Silver Spring, MD 20905, USA. mgeier@erols.com
<mgeier@erols.com>

Comment in:

- [Clin Immunol. 2003 Dec;109\(3\):359; author reply 360-1.](#)

Acute and severe Guillain Barre Syndrome (GBS) cases reported following influenza vaccine to the Vaccine Adverse Events Reporting System (VAERS) database from 1991 through 1999 were examined. Endotoxin concentrations were measured using the Limulus amoebocyte lysate assay in influenza vaccines. There were a total of 382 cases of GBS reported to the VAERS database following influenza vaccination (male/female ratio, 1.2). The median onset of GBS following influenza vaccine was 12 days (interquartile range, 7 days to 21 days). There was an increased risk of acute GBS (relative risk, 4.3; 95% confidence interval, 3.0 to 6.4) and severe GBS (relative risk, 8.5; 95% confidence interval, 3.7 to 18.9) in comparison to an adult tetanus-diphtheria (Td) vaccine control group. There were maximums in the incidence of GBS following influenza vaccine that occurred approximately every third year (1993, 1996, and 1998) and statistically significant variation in the incidence of GBS among different influenza manufacturers. Influenza vaccines contained from a 125- to a 1250-fold increase in endotoxin concentrations in comparison to an adult Td vaccine control and endotoxin concentrations varied up to 10-fold among different lots and manufacturers of influenza vaccine. The biologic mechanism for GBS following influenza vaccine may involve the synergistic effects of endotoxin and vaccine-induced autoimmunity. There were minimal potential reporting biases in the data reported to the VAERS database in this study. Patients should make an informed consent decision on whether to take this optional vaccine based upon its safety and efficacy and physicians should vigilantly report GBS following influenza vaccination to the VAERS in the United States so that continued evaluation of the safety of influenza vaccine may be undertaken. PMID: 12763480 [PubMed - indexed for MEDLINE]

[Related articles](#)

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Publication Types:

- [Comparative Study](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Adverse Drug Reaction Reporting Systems](#)
- [Centers for Disease Control and Prevention \(U.S.\)](#)
- [Diphtheria-Tetanus Vaccine/adverse effects](#)
- [Endotoxins/adverse effects](#)
- [Endotoxins/analysis](#)
- [Female](#)
- [Guillain-Barre Syndrome/epidemiology](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Incidence](#)
- [Influenza Vaccines/adverse effects*](#)

- [Influenza Vaccines/analysis](#)
- [Influenza, Human/prevention & control](#)
- [Limulus Test](#)
- [Male](#)
- [Middle Aged](#)
- [Orthomyxoviridae/immunology](#)
- [Product Surveillance, Postmarketing](#)
- [Risk](#)
- [United States/epidemiology](#)

Substances:

- [Diphtheria-Tetanus Vaccine](#)
- [Endotoxins](#)
- [Influenza Vaccines](#)

78.

[Nippon Rinsho](#). 2003 Nov;61(11):1987-91.

[Evidence of indications of influenza vaccine and its efficacy--including Guillain-Barré syndrome as an adverse reaction(?)]

[Article in Japanese]

[Watanabe A.](#)

Department of Respiratory Oncology and Molecular Medicine, Institute of Development, Aging and Cancer, Tohoku University.

With respect to the indications of influenza vaccine, the US CDC guidelines are the most rational. All people aged not less than 50 years old, patients with pulmonary diseases, cardiac diseases and metabolic diseases such as diabetes mellitus, residents in old-age homes, high-risk subjects such as pregnant women, medical professionals at the position liable to infect the populations with influenza, employees of institutions, persons in charge of home care, and lodgers with high-risk patients are the subjects recommended for vaccination. There are many evidences of the efficacy of influenza vaccine in the world, and recently, it has been reported that vaccination has significantly reduced hospitalization and death due to not only influenza and pneumonia but also other diseases such as cerebrovascular diseases and cardiac diseases. Since Guillain-Barré syndrome which has been considered an adverse reaction of influenza vaccine was attributable to the swine influenza vaccine (swine type virus vaccine) used in the USA in the season from 1976 to 1977 and no incidence in the syndrome has been reported with subsequent vaccines, this syndrome does not become a reason for avoidance from vaccination in the subjects other than those with a history of the syndrome.

PMID: 14619443 [PubMed - indexed for MEDLINE]

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- [English Abstract](#)
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- [Evidence-Based Medicine*](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Influenza Vaccines*/adverse effects](#)
- [Influenza, Human/prevention & control*](#)
- [Practice Guidelines as Topic](#)
- [Risk](#)
- [Risk Factors](#)

Substances:

- [Influenza Vaccines](#)

79.

[Clin Immunol](#). 2003 Dec;109(3):359; author reply 360-1.

Influenza vaccination and Guillain Barré syndrome.

[Haber P, DeStefano F.](#)

Comment on:

- [Clin Immunol. 2003 May;107\(2\):116-21.](#)

PMID: 14697752 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Comment](#)
- [Letter](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Adverse Drug Reaction Reporting Systems](#)
- [Centers for Disease Control and Prevention \(U.S.\)](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Influenza, Human/prevention & control](#)
- [Middle Aged](#)
- [Tetanus Toxoid/administration & dosage](#)
- [United States](#)

Substances:

- [Influenza Vaccines](#)
- [Tetanus Toxoid](#)

80.

[Clin Neurol Neurosurg.](#) 2004 Mar;106(2):136-8.

Guillain-Barré syndrome coexisting with pericarditis or nephrotic syndrome after influenza vaccination.

[Kao CD](#), [Chen JT](#), [Lin KP](#), [Shan DE](#), [Wu ZA](#), [Liao KK](#).

Department of Neurology, National Yang Ming University School of Medicine, Taipei, Taiwan, ROC.

A 68-year-old woman and a 72-year-old man presented with distal weakness of the limbs and numbness following an influenza vaccination within 2 weeks. Moreover, Guillain-Barré syndrome (GBS) was diagnosed in two patients. Pericarditis was diagnosed in the first patient who also had precordial chest pain with referral to trapezius ridge, and nephrotic syndrome, was observed in the second patient who had leg edema and proteinuria. The relationship among GBS, pericarditis and nephrotic syndrome after an influenza vaccination is discussed.

PMID: 15003306 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Case Reports](#)
- [Review](#)

MeSH Terms:

- [Aged](#)
- [Anti-Inflammatory Agents/administration & dosage](#)
- [Chest Pain/etiology](#)
- [Combined Modality Therapy](#)
- [Diagnosis, Differential](#)
- [Encephalomyelitis, Acute Disseminated/diagnosis*](#)
- [Female](#)
- [Follow-Up Studies](#)
- [Guillain-Barre Syndrome/diagnosis*](#)

- [Guillain-Barre Syndrome/drug therapy](#)
- [Humans](#)
- [Influenza Vaccines/administration & dosage](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Methylprednisolone/administration & dosage](#)
- [Nephrotic Syndrome/diagnosis*](#)
- [Neurologic Examination/drug effects](#)
- [Pericarditis/diagnosis*](#)
- [Pericarditis/drug therapy](#)
- [Plasmapheresis](#)
- [Risk Factors](#)

Substances:

- [Anti-Inflammatory Agents](#)
- [Influenza Vaccines](#)
- [Methylprednisolone](#)

□ 81.

[Eur J Dermatol](#). 2004 Mar-Apr;14(2):86-90.

Autoimmune diseases and vaccinations.

[Vial T](#), [Descotes J](#).

Centre Antipoison et Centre Régional de Pharmacovigilance, 162, avenue Lacassagne, 69424 Lyon, France.
thierry.vial@chu-lyon.fr

The potential association between vaccination and autoimmune diseases has been largely questioned in the past few years, but this assumption has mostly been based on case reports. The available evidence derived from several negative epidemiological studies is reassuring and at least indicates that vaccines are not a major cause of autoimmune diseases. However, there are still uncertainties as to whether a susceptible subpopulation may be at a higher risk of developing an autoimmune disease without causing an overall increase in the disease incidence. Based on selected examples, this review highlights the difficulties in assessing this issue. We suggest that a potential link between vaccines and autoimmune diseases cannot be definitely ruled out and should be carefully explored during the development of new candidate vaccines. Copyright John Libbey Eurotext 2003.

PMID: 15196997 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Review](#)

MeSH Terms:

- [Arthritis, Rheumatoid/etiology](#)
- [Autoimmune Diseases/etiology*](#)
- [Autoimmune Diseases/physiopathology](#)
- [Diabetes Mellitus, Type 1/etiology](#)
- [Guillain-Barre Syndrome/etiology](#)
- [Hepatitis B Vaccines/adverse effects](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects](#)
- [Lupus Erythematosus, Systemic/etiology](#)
- [Multiple Sclerosis/etiology](#)
- [Vaccines/adverse effects*](#)

Substances:

- [Hepatitis B Vaccines](#)
- [Influenza Vaccines](#)
- [Vaccines](#)

□ 82.

[Isr Med Assoc J.](#) 2004 Jul;6(7):433-5.

Vaccination and autoimmune diseases: the argument against.

[Rubinstein E.](#)

Department of Infectious Diseases, Sheba Medical Center, Tel Hashomer, Israel.

ethan.rubinstein@sheba.health.gov.il

Comment on:

- [Isr Med Assoc J.](#) 2004 Jul;6(7):430-2.

PMID: 15274538 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Comment](#)

MeSH Terms:

- [Autoimmune Diseases/immunology*](#)
- [Diabetes Mellitus, Type 1/immunology](#)
- [Guillain-Barre Syndrome/immunology](#)
- [Hepatitis B Vaccines/adverse effects](#)
- [Humans](#)
- [Influenza A virus](#)
- [Influenza Vaccines/adverse effects](#)
- [Measles-Mumps-Rubella Vaccine/adverse effects](#)
- [Multiple Sclerosis/immunology](#)
- [Smallpox Vaccine/adverse effects](#)
- [Thrombocytopenia/immunology](#)
- [Vaccination/adverse effects*](#)
- [Vaccines/adverse effects*](#)

Substances:

- [Hepatitis B Vaccines](#)
- [Influenza Vaccines](#)
- [Measles-Mumps-Rubella Vaccine](#)
- [Smallpox Vaccine](#)
- [Vaccines](#)

□ 83.

[JAMA.](#) 2004 Nov 24;292(20):2478-81.

Guillain-Barré syndrome following influenza vaccination.

[Haber P](#), [DeStefano F](#), [Angulo FJ](#), [Iskander J](#), [Shadomy SV](#), [Weintraub E](#), [Chen RT.](#)

Immunization Safety Branch, Epidemiology and Surveillance Division, National Immunization Program, Centers for Disease Control and Prevention, Atlanta, Ga 30333, USA. PHaber@cdc.gov

CONTEXT: An unexplained increase in the risk of Guillain-Barre syndrome (GBS) occurred among recipients of the swine influenza vaccine in 1976-1977. Guillain-Barre syndrome remains the most frequent neurological condition reported after influenza vaccination to the Vaccine Adverse Events Reporting System (VAERS) since its inception in 1990. OBJECTIVE: To evaluate trends of reports to VAERS of GBS following influenza vaccination in adults. DESIGN, SETTING, AND PARTICIPANTS: VAERS is the US national spontaneous reporting system for adverse events following vaccination. Reports of GBS in persons 18 years or older following influenza vaccination were evaluated for each influenza season from July 1, 1990, through June 30, 2003. The number of people vaccinated was estimated from the National Health Interview Survey and US census data. Beginning in 1994, active follow-up was conducted to verify GBS diagnosis and obtain other clinical details. MAIN OUTCOME MEASURE: Reporting rates of GBS following influenza vaccination over time. RESULTS: From July 1990 through June 2003, VAERS received 501 reports of GBS following influenza vaccination in adults. The median onset interval (13 days) was longer than that of non-GBS reports of adverse events after influenza vaccine (1 day) ($P < .001$). The annual reporting rate decreased 4-fold from a high of 0.17

per 100,000 vaccinees in 1993-1994 to 0.04 in 2002-2003 ($P < .001$). A GBS diagnosis was confirmed in 82% of reports. Preceding illness within 4 weeks of vaccination was identified in 24% of reported cases.

CONCLUSIONS: From 1990 to 2003, VAERS reporting rates of GBS after influenza vaccination decreased. The long onset interval and low prevalence of other preexisting illnesses are consistent with a possible causal association between GBS and influenza vaccine. These findings require additional research, which can lead to a fuller understanding of the causes of GBS and its possible relationship with influenza vaccine.

PMID: 15562126 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adult](#)
- [Adverse Drug Reaction Reporting Systems](#)
- [Aged](#)
- [Guillain-Barre Syndrome/epidemiology](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Health Surveys](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Middle Aged](#)
- [Poisson Distribution](#)
- [United States/epidemiology](#)

Substances:

- [Influenza Vaccines](#)

84.

[J Pak Med Assoc.](#) 2005 Feb;55(2):87-8.

Guillain-Barre syndrome occurring after rabies vaccination.

[Siddiqui A](#), [Usmani RI](#), [Anwer S](#), [Afsar S](#).

Medical Unit IV, Civil Hospital, Karachi.

A variety of events are associated with the onset of Guillain-Barre syndrome, including vaccinations and vaccines. These are the swine influenza vaccine, oral poliovirus vaccine and rabies vaccine. Rabies is a uniformly fatal disease. It is preventable if World Health Organization (WHO) guidelines for post exposure treatment (PET) are followed. These include local treatment of wound, passive immunization with rabies immunoglobulins and administration of a efficacious vaccine. Cell culture vaccines are highly immunogenic with fewer side effects, but are costly. For that reason neurotissue vaccines are still widely used in Pakistan, although they are less immunogenic with higher incidence of neuroparalytic complications. We report a case of Guillain-Barre syndrome secondary to sheep brain anti-rabies vaccine in a young boy, who presented with lower limb weakness with total recovery after treatment.

PMID: 15813639 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Case Reports](#)

MeSH Terms:

- [Adolescent](#)
- [Female](#)
- [Guillain-Barre Syndrome/chemically induced*](#)
- [Humans](#)
- [Rabies Vaccines/adverse effects*](#)
- [Risk Factors](#)

Substances:

- [Rabies Vaccines](#)

85.

[Vaccine](#). 2005 Jun 10;23(30):3876-86. Epub 2005 Apr 7.

Consequence or coincidence? The occurrence, pathogenesis and significance of autoimmune manifestations after viral vaccines.

[Schattner A.](#)

Department of Medicine, University of Cambridge, School of Clinical Medicine, Level 5, Addenbrooke's Hospital, Hills Road, Cambridge CB2 2QQ, UK. as655@medschl.cam.ac.uk

BACKGROUND: Viruses and virus-induced lymphokines may have an important role in the pathogenesis of autoimmunity (Schattner A. Clin Immunol Immunopathol; 1994). The occurrence and significance of autoimmune manifestations after the administration of viral vaccines remain controversial. **METHODS:** Medline search of all relevant publications from 1966 through June 2004 with special emphasis on search of each individual autoimmune manifestation and vaccination, as well as specifically searching each viral vaccine for all potential autoimmune syndromes reported. All relevant publications were retrieved and critically analyzed. **RESULTS:** The most frequently reported autoimmune manifestations for the various vaccinations, were: hepatitis A virus (HAV)--none; hepatitis B virus (HBV)--rheumatoid arthritis, reactive arthritis, vasculitis, encephalitis, neuropathy, thrombocytopenia; measles, mumps and rubella vaccine (MMR)--acute arthritis or arthralgia, chronic arthritis, thrombocytopenia; influenza--Guillain-Barre syndrome (GBS), vasculitis; polio--GBS; varicella--mainly neurological syndromes. Even these 'frequent' associations relate to a relatively small number of patients. Whenever controlled studies of autoimmunity following viral vaccines were undertaken, no evidence of an association was found. **CONCLUSIONS:** Very few patients may develop some autoimmune diseases following viral vaccination (in particular - arthropathy, vasculitis, neurological dysfunction and thrombocytopenia). For the overwhelming majority of people, vaccines are safe and no evidence linking viral vaccines with type 1 diabetes, multiple sclerosis (MS) or inflammatory bowel disease can be found.

PMID: 15917108 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Meta-Analysis](#)
- [Review](#)

MeSH Terms:

- [Adult](#)
- [Autoimmune Diseases/epidemiology*](#)
- [Autoimmune Diseases/pathology*](#)
- [Child](#)
- [Humans](#)
- [Viral Vaccines/adverse effects*](#)

Substances:

- [Viral Vaccines](#)

86.

[Neurol Neurochir Pol](#). 2005 May-Jun;39(3):230-6.

[Guillain-Barré Syndrome and its association with infectious factors.]

[Article in Polish]

[Grygorczuk S](#), [Zajkowska J](#), [Kondrusik M](#), [Pancewicz S](#), [Hermanowska-Szpakowicz T](#).

Klinika Chorób Zakaźnych i Neuroinfekcji, Akademia Medyczna w Białymstoku. neuroin@amb.edu.pl

Guillain-Barré Syndrome (GBS) is an acute polyneuropathy often triggered by inflammatory and probably autoimmune mechanisms. Development of GBS is in 2/3 of cases preceded by acute infection, typically with gastrointestinal or respiratory symptoms. Infectious agents related to GBS include cytomegalovirus, Epstein-Barr virus, *Campylobacter jejuni*, *Mycoplasma pneumoniae* and *Haemophilus influenzae*. Molecular mimicry seems to be responsible for GBS development after infection, through the synthesis of autoantibodies against myelin gangliosides. Autoimmune reactions develop only in a small fraction of all exposed individuals, depending on still unresolved factors. Different infections lead to forms of GBS differing in spectrum of autoantibodies and in frequency with which different clinical symptoms appear. This may be of some significance for early prognosis and in future possibly for choosing therapeutic options. An increased risk of GBS may be also related to vaccination, but with presently used vaccines this increase remains below one case of GBS per one million doses.

PMID: 15981163 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [English Abstract](#)
- [Review](#)

MeSH Terms:

- [Autoantibodies/immunology*](#)
- [Bacterial Infections/complications*](#)
- [Campylobacter Infections/complications](#)
- [Cytomegalovirus Infections/complications](#)
- [Epstein-Barr Virus Infections/complications](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Guillain-Barre Syndrome/immunology](#)
- [Guillain-Barre Syndrome/microbiology](#)
- [Guillain-Barre Syndrome/virology](#)
- [Humans](#)
- [Influenza, Human/complications](#)
- [Pneumonia, Mycoplasma/complications](#)
- [Risk Factors](#)
- [Vaccines/adverse effects](#)
- [Virus Diseases/complications*](#)

Substances:

- [Autoantibodies](#)
- [Vaccines](#)

87.

[Scand J Infect Dis](#). 2005;37(8):621-623.

A case of influenza vaccination induced Guillain Barré syndrome with normal cerebrospinal fluid protein and improvement on treatment with corticosteroids.

[Eckert T](#), [Bartels C](#), [Mawrin C](#), [Feistner H](#), [Welte T](#).

Department of Pneumology, Medical School of Hannover, Carl-Neuberg-Str. 1, 30625 Hannover, Germany.

We report a case of a 62-y-old male developing an influenza vaccination induced Guillain Barré syndrome (GBS) showing all clinical and neuropathological symptoms of GBS except the characteristic elevation of protein levels in the cerebrospinal fluid. The patient improved under treatment with 100 mg prednisolone. In these cases the administration of corticosteroids might be considered as a treatment option as they might represent a subgroup of GBS with a different immunological response pattern.

PMID: 16138440 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Case Reports](#)

MeSH Terms:

- [Anti-Inflammatory Agents/therapeutic use*](#)
- [Guillain-Barre Syndrome/drug therapy](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Prednisolone/therapeutic use*](#)

Substances:

- [Anti-Inflammatory Agents](#)
- [Influenza Vaccines](#)

- [Prednisolone](#)

□ 88.

[JAMA](#). 2005 Dec 7;294(21):2720-5.

Adverse events reported following live, cold-adapted, intranasal influenza vaccine.

[Izurieta HS](#), [Haber P](#), [Wise RP](#), [Iskander J](#), [Pratt D](#), [Mink C](#), [Chang S](#), [Braun MM](#), [Ball R](#).

Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Md 20852-1448, USA.

hector.izurieta@fda.hhs.gov

Erratum in:

- [JAMA](#). 2005 Dec 28;294(24):3092.

Comment in:

- [JAMA](#). 2005 Dec 7;294(21):2763-5.

CONTEXT: In June 2003, the US Food and Drug Administration licensed a trivalent live, attenuated influenza vaccine (LAIV-T) for intranasal administration to healthy persons 5 to 49 years of age. Although prelicensure testing involved 20 228 vaccinees, clinical trials were not of sufficient size to detect rare adverse events reliably. OBJECTIVE: To identify adverse events reported following LAIV-T administration after licensure.

DESIGN, SETTING, AND PARTICIPANTS: All adverse events reported to the US Vaccine Adverse Event Reporting System (VAERS) during the 2003-2004 and the 2004-2005 influenza seasons. MAIN OUTCOME

MEASURES: Numbers and proportions of reported adverse events and reporting rates of adverse events per 100,000 vaccinees. RESULTS: Approximately 2,500,000 persons received LAIV-T during the first 2

postlicensure seasons. As of August 16, 2005, VAERS received 460 adverse event reports for vaccinations received from August 2003 through July 2005. No fatalities were reported. There were 7 reports of possible anaphylaxis, 2 reports of Guillain-Barré syndrome, 1 report of Bell palsy, and 8 reports of asthma exacerbation among individuals with a prior asthma history. Events in individuals for whom the vaccine was not indicated accounted for 73 reports (16%). CONCLUSIONS: Reports to VAERS in the first 2 seasons of LAIV-T use did not identify any unexpected serious risks with this vaccine when used according to approved indications. Like many vaccines and other medical products, LAIV-T may rarely cause anaphylaxis. Secondary transmission of the vaccine virus merits further investigation. Reports of asthma exacerbations in vaccinees with prior asthma history highlight the risks of vaccine use inconsistent with approved labeling.

PMID: 16333007 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Research Support, U.S. Gov't, P.H.S.](#)

MeSH Terms:

- [Administration, Intranasal](#)
- [Adolescent](#)
- [Adult](#)
- [Adverse Drug Reaction Reporting Systems](#)
- [Aged](#)
- [Child](#)
- [Child, Preschool](#)
- [Female](#)
- [Humans](#)
- [Influenza Vaccines/administration & dosage](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Risk](#)
- [United States/epidemiology](#)
- [Vaccines, Attenuated/adverse effects](#)

Substances:

- [Influenza Vaccines](#)
- [Vaccines, Attenuated](#)

89.

[Emerg Infect Dis](#). 2006 Jan;12(1):29-33.

Reflections on the 1976 swine flu vaccination program.

[Sencer DJ](#), [Millar JD](#).

Atlanta, Georgia 30329, USA. djud@mindspring.com

In 1976, 2 recruits at Fort Dix, New Jersey, had an influenza like illness. Isolates of virus taken from them included A/New Jersey/76 (Hsw1n1), a strain similar to the virus believed at the time to be the cause of the 1918 pandemic, commonly known as swine flu. Serologic studies at Fort Dix suggested that >200 soldiers had been infected and that person-to-person transmission had occurred. We review the process by which these events led to the public health decision to mass-vaccinate the American public against the virus and the subsequent events that led to the program's cancellation. Observations of policy and implementation success and failures are presented that could help guide decisions regarding avian influenza.

PMID: 16494713 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Historical Article](#)

MeSH Terms:

- [Animals](#)
- [Decision Making](#)
- [Guillain-Barre Syndrome/chemically induced](#)
- [History, 20th Century](#)
- [Humans](#)
- [Influenza A virus/immunology*](#)
- [Influenza Vaccines/adverse effects](#)
- [Influenza Vaccines/history*](#)
- [Influenza Vaccines/immunology](#)
- [Influenza, Human/epidemiology*](#)
- [Influenza, Human/history*](#)
- [Influenza, Human/prevention & control](#)
- [Influenza, Human/virology](#)
- [Male](#)
- [Mass Immunization/history*](#)
- [National Health Programs/history](#)
- [New Jersey/epidemiology](#)
- [United States/epidemiology](#)

Substances:

- [Influenza Vaccines](#)

90.

[Wkly Epidemiol Rec](#). 2006 Jan 13;81(2):15-9.

Global Advisory Committee on Vaccine Safety, 1-2 December 2005.

[Article in English, French]

[No authors listed]

PMID: 16671243 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Fatigue Syndrome, Chronic/etiology](#)
- [Guillain-Barre Syndrome/etiology](#)
- [Hepatitis B Vaccines/adverse effects](#)
- [Humans](#)

- [Influenza Vaccines/adverse effects](#)
- [Influenza Vaccines/standards](#)
- [Measles/prevention & control](#)
- [Measles Vaccine/adverse effects](#)
- [Meningococcal Vaccines/adverse effects](#)
- [Rotavirus Vaccines/adverse effects](#)
- [Rotavirus Vaccines/standards](#)
- [Subacute Sclerosing Panencephalitis/etiology](#)
- [Vaccines/adverse effects](#)
- [Vaccines/standards*](#)

Substances:

- [Hepatitis B Vaccines](#)
- [Influenza Vaccines](#)
- [Measles Vaccine](#)
- [Meningococcal Vaccines](#)
- [Rotavirus Vaccines](#)
- [Vaccines](#)

□ 91.

[Emerg Infect Dis](#). 2006 Jun;12(6):990-3.

Guillain-Barré syndrome, greater Paris area.

[Sivadon-Tardy V](#), [Orlikowski D](#), [Rozenberg F](#), [Caudie C](#), [Sharshar T](#), [Lebon P](#), [Annane D](#), [Raphaël JC](#), [Porcher R](#), [Gaillard JL](#).

Laboratoire de Microbiologie, Hôpital Raymond Poincaré, Garches, France. valerie.sivadon@rpc.ap-hop-paris.fr
 We studied 263 cases of Guillain-Barré syndrome from 1996 to 2001, 40% of which were associated with a known causative agent, mainly *Campylobacter jejuni* (22%) or cytomegalovirus (15%). The cases with no known agent (60%) peaked in winter, and half were preceded by respiratory infection, influenza-like syndrome, or gastrointestinal illness.

PMID: 16707059 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)

MeSH Terms:

- [Adult](#)
- [Antibodies, Bacterial/blood](#)
- [Antibodies, Viral/blood](#)
- [Campylobacter Infections/complications](#)
- [Campylobacter Infections/epidemiology*](#)
- [Campylobacter jejuni/growth & development*](#)
- [Cytomegalovirus/growth & development*](#)
- [Cytomegalovirus Infections/complications](#)
- [Cytomegalovirus Infections/epidemiology*](#)
- [Female](#)
- [Gastrointestinal Diseases/complications](#)
- [Gastrointestinal Diseases/epidemiology](#)
- [Guillain-Barre Syndrome/epidemiology*](#)
- [Guillain-Barre Syndrome/etiology](#)
- [Guillain-Barre Syndrome/microbiology](#)
- [Humans](#)
- [Male](#)
- [Middle Aged](#)
- [Paris/epidemiology](#)
- [Respiratory Tract Infections/complications](#)

- [Respiratory Tract Infections/epidemiology](#)
- [Seasons](#)

Substances:

- [Antibodies, Bacterial](#)
- [Antibodies, Viral](#)

92.

[Arch Intern Med.](#) 2006 Jun 26;166(12):1301-4.

No association between immunization and Guillain-Barré syndrome in the United Kingdom, 1992 to 2000.

[Hughes RA](#), [Charlton J](#), [Latinovic R](#), [Gulliford MC](#).

Department of Clinical Neuroscience, King's College London School of Medicine, Guy's Campus, London, England.
richard.a.hughes@kcl.ac.uk

BACKGROUND: Our goal was to determine whether immunization is associated with the incidence of Guillain-Barré syndrome (GBS). **METHODS:** We analyzed data for all patients registered with 253 general practices in the United Kingdom General Practice Research Database from 1992 to 2000, with a mean of 1.8 million registered patients. We identified new occurrences of GBS and estimated age- and sex-specific and age-standardized incidence rates. We then determined whether the date of diagnosis was made within 42 days of any immunization and estimated the relative risk of diagnosis following immunization after adjusting for age and sex. **RESULTS:** There were 228 incident cases of GBS, including 107 women and 121 men. The age-standardized incidence rate per 100 000 person-years was 1.22 (95% confidence interval [CI], 0.98-1.46) in women and 1.45 (95% CI, 1.19-1.72) in men. Age-specific incidence rates per 100 000 person-years were highest in men aged 65 to 74 years (3.86; 95% CI, 2.50-5.70) and women aged 75 to 84 years (2.54; 95% CI, 1.39-4.27). There were 7 cases (3.1%) in which the onset occurred within 42 days of any immunization; 3 of the 7 cases occurred after influenza immunization. There were 221 cases (97.0%) that were not associated with immunization. The adjusted relative risk during the 42 days after immunization was 1.03 (95% CI, 0.48-2.18; P = .94).

CONCLUSIONS: There is either minimal or no risk of GBS associated with routine immunization practice in the United Kingdom. Obtaining a precise estimate of any potential risk associated with an individual vaccine would require a study with more GBS cases.

PMID: 16801513 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms](#)

Publication Types:

- [Comparative Study](#)
- [Research Support, Non-U.S. Gov't](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Age Distribution](#)
- [Aged](#)
- [Aged, 80 and over](#)
- [Child](#)
- [Child, Preschool](#)
- [Female](#)
- [Great Britain/epidemiology](#)
- [Guillain-Barre Syndrome/epidemiology*](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Immunization/adverse effects*](#)
- [Incidence](#)
- [Infant](#)
- [Infant, Newborn](#)
- [Male](#)
- [Middle Aged](#)
- [Retrospective Studies](#)

- [Risk Factors](#)
- [Sex Distribution](#)

□ 93.

[Vaccine](#). 2007 Jan 5;25(3):570-6. Epub 2006 Aug 4.

Vaccine adverse events reported in post-marketing study of the Kitasato Institute from 1994 to 2004.

[Nakayama T](#), [Onoda K](#).

Laboratory of Viral Infection I, Kitasato Institutes for Life Sciences, Kitasato University, Shirokane 5-9-1, Minato-ku, Tokyo 108-8641, Japan. tetsuo-n@lisci.kitasato-u.ac.jp

General physicians, pediatricians and parents realize that serious adverse events occur with an extremely rare incidence, but have no information on the incidences of vaccine-associated adverse events. A proper understanding of vaccine adverse events would be helpful in promoting an immunization strategy. Causal association can rarely be determined in adverse events through laboratory examinations. We examined the cases reported in the post-marketing surveillance of the Kitasato Institute, categorizing them into two groups: allergic reactions and severe systemic illnesses. Anaphylactic patients with gelatin allergy after immunization with live measles, rubella and mumps monovalent vaccines have been reported since 1993, but the number of reported cases with anaphylaxis dramatically decreased after 1999 when gelatin was removed from all brands of DPT. The incidence of anaphylactic reaction was estimated to be 0.63 per million for Japanese encephalitis virus (JEV) vaccine, 0.95 for DPT and 0.68 for Influenza vaccine, but the causative component has not yet been specified. Among 67.2 million immunization practices, 6 cases with encephalitis or encephalopathy, 7 with acute disseminated encephalomyelitis (ADEM), 10 with Guillain-Barré syndrome and 12 with idiopathic thrombocytopenic purpura (ITP) were reported. The wild-type measles virus genome was detected in a patient with encephalitis and in two of four bone marrow aspirates obtained from ITP after measles vaccination. Enterovirus infection was identified in two patients after mumps vaccination (one each with encephalitis and ADEM), one patient with encephalitis after immunization with JEV vaccine, and one with aseptic meningitis after immunization with influenza vaccine. The total estimated incidence of serious neurological illness after vaccination was 0.1-0.2 per million immunization practices. We found that enterovirus or wild-type measles virus infection was coincidentally associated with vaccination in several cases suspected of being vaccine adverse events.

PMID: 16945455 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)

MeSH Terms:

- [Data Collection](#)
- [Diphtheria-Tetanus-Pertussis Vaccine/adverse effects](#)
- [Drug Hypersensitivity/epidemiology](#)
- [Encephalitis, Japanese/epidemiology](#)
- [Encephalomyelitis, Acute Disseminated/epidemiology](#)
- [Genome, Viral](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects](#)
- [Japan/epidemiology](#)
- [Measles Vaccine/adverse effects](#)
- [Product Surveillance, Postmarketing*](#)
- [RNA, Viral/analysis](#)
- [RNA, Viral/isolation & purification](#)
- [Vaccines/adverse effects*](#)
- [Vaccines, Attenuated/adverse effects](#)
- [Vaccines, Inactivated/adverse effects](#)
- [Virus Diseases/epidemiology](#)
- [Virus Diseases/prevention & control](#)
- [Virus Diseases/virology](#)

Substances:

- [Diphtheria-Tetanus-Pertussis Vaccine](#)
- [Influenza Vaccines](#)
- [Measles Vaccine](#)
- [RNA, Viral](#)
- [Vaccines](#)
- [Vaccines, Attenuated](#)
- [Vaccines, Inactivated](#)

94.

[Liver Transpl.](#) 2006 Oct;12(10):1537-9.

Guillain-Barré syndrome triggered by influenza vaccination in a recipient of liver transplant on FK506.
[Moon JS](#), [Souayah N](#).

Department of Neurology, UMDNJ-New Jersey Medical School, Newark, NJ 07101, USA.

Guillain-Barré syndrome (GBS) has been rarely reported after liver transplantation and generally has good outcome. We report a liver transplant patient on FK506 (tacrolimus) who developed GBS 6 months after liver transplantation. There was no evidence of liver rejection or active infection. Despite treatment with intravenous immunoglobulin, the patient expired. GBS occurred despite downregulation of T cells by FK506, suggesting that humoral dysfunction might be the predominant mechanism of GBS in this report.

PMID: 17004261 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Case Reports](#)

MeSH Terms:

- [Fatal Outcome](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Immunosuppressive Agents/therapeutic use*](#)
- [Influenza Vaccines/adverse effects*](#)
- [Liver Transplantation*](#)
- [Male](#)
- [Middle Aged](#)
- [Tacrolimus/therapeutic use*](#)
- [Vaccination*](#)

Substances:

- [Immunosuppressive Agents](#)
- [Influenza Vaccines](#)
- [Tacrolimus](#)

95.

[Arch Intern Med.](#) 2006 Nov 13;166(20):2217-21.

Guillain-Barré syndrome after influenza vaccination in adults: a population-based study.

[Juurink DN](#), [Stukel TA](#), [Kwong J](#), [Kopp A](#), [McGeer A](#), [Upshur RE](#), [Manuel DG](#), [Moineddin R](#), [Wilson K](#).

Institute of Clinical Evaluative Sciences, Sunnybrook and Women's College Health Sciences Centre, Toronto, Ontario.

BACKGROUND: Whether influenza vaccination is associated with Guillain-Barré syndrome (GBS) remains uncertain. **METHODS:** We conducted 2 studies using population-based health care data from the province of Ontario, Canada. In the first study, we used the self-matched case-series method to explore the temporal association between probable influenza vaccination (adults vaccinated during October and November) and subsequent hospitalization because of GBS. In the second study, we used time-series analysis to determine whether the institution of a universal influenza immunization program in October 2000 was associated with a subsequent increase in hospital admissions because of GBS at the population level. **RESULTS:** From April 1, 1992, to March 31, 2004, we identified 1601 incident hospital admissions because of GBS in Ontario. In 269

patients, GBS was diagnosed within 43 weeks of vaccination against influenza. The estimated relative incidence of GBS during the primary risk interval (weeks 2 through 7) compared with the control interval (weeks 20 through 43) was 1.45 (95% confidence interval, 1.05-1.99; P = .02). This association persisted in several sensitivity analyses using risk and control intervals of different durations. However, a separate time-series analysis demonstrated no evidence of seasonality and revealed no statistically significant increase in hospital admissions because of GBS after the introduction of the universal influenza immunization program.

CONCLUSION: Influenza vaccination is associated with a small but significantly increased risk for hospitalization because of GBS.

PMID: 17101939 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)

MeSH Terms:

- [Adult](#)
- [Adverse Drug Reaction Reporting Systems](#)
- [Aged](#)
- [Female](#)
- [Guillain-Barre Syndrome/epidemiology](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Hospitalization/statistics & numerical data](#)
- [Humans](#)
- [Incidence](#)
- [Influenza Vaccines/adverse effects*](#)
- [Male](#)
- [Middle Aged](#)
- [Ontario/epidemiology](#)
- [Poisson Distribution](#)
- [Population Surveillance](#)
- [Regression Analysis](#)
- [Seasons](#)

Substances:

- [Influenza Vaccines](#)

96.

[Wkly Epidemiol Rec.](#) 2007 Jan 19;82(3):18-24.

Global Advisory Committee on Vaccine Safety, 29-30 November 2006.

[Article in English, French]

[No authors listed]

PMID: 17236262 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [BCG Vaccine/adverse effects](#)
- [BCG Vaccine/standards](#)
- [Child](#)
- [Child, Preschool](#)
- [Guillain-Barre Syndrome/etiology](#)
- [HIV Infections/complications](#)
- [Humans](#)

- [India](#)
- [Infant](#)
- [Influenza Vaccines/adverse effects](#)
- [Influenza Vaccines/standards](#)
- [Japanese Encephalitis Vaccines/adverse effects](#)
- [Japanese Encephalitis Vaccines/standards](#)
- [Meningococcal Vaccines/adverse effects](#)
- [Mumps Vaccine/adverse effects](#)
- [Mumps Vaccine/standards](#)
- [Pneumococcal Vaccines/adverse effects](#)
- [Pneumococcal Vaccines/standards](#)
- [Vaccines/adverse effects](#)
- [Vaccines/standards*](#)
- [Vaccines, Conjugate/adverse effects](#)
- [World Health](#)
- [World Health Organization](#)

Substances:

- [BCG Vaccine](#)
- [Influenza Vaccines](#)
- [Japanese Encephalitis Vaccines](#)
- [Menactra](#)
- [Meningococcal Vaccines](#)
- [Mumps Vaccine](#)
- [Pneumococcal Vaccines](#)
- [Vaccines](#)
- [Vaccines, Conjugate](#)

☐ 97.

[Vaccine](#). 2007 Jul 20;25(29):5253-5. Epub 2007 May 22.

Guillain-Barre syndrome after vaccination in United States a report from the CDC/FDA Vaccine Adverse Event Reporting System.

[Souayah N](#), [Nasar A](#), [Suri MF](#), [Qureshi AI](#).

Epidemiological and Outcomes Research Division, Zeenat Qureshi Stroke Research Center, Department of Medicine, University of Medicine and Dentistry of New Jersey, 90 Bergen Street, DOC 8100, Newark, NJ 07103, United States. souayani@umdnj.edu

Comment in:

- [Vaccine. 2007 Nov 23;25\(48\):8101.](#)

Using the data from Vaccine Adverse Event Reporting System, we present 54 reports of Guillain-Barre Syndrome (GBS) after vaccination that occurred in United States in 2004. In 38 of the patients, GBS occurred within 6 weeks. The highest number (n=31) of GBS was observed in patients receiving influenza vaccine followed by hepatitis vaccine (n=9), 1 patient died and 10 patients were disabled following the event. We conclude that vaccines other than influenza vaccine can be associated with GBS.

PMID: 17560693 [PubMed - indexed for MEDLINE]

[Related articles](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [Adult](#)
- [Adverse Drug Reaction Reporting Systems](#)
- [Guillain-Barre Syndrome/epidemiology*](#)
- [Humans](#)
- [Incidence*](#)
- [Influenza Vaccines/adverse effects](#)
- [United States](#)
- [Vaccination/adverse effects*](#)

Substances:

- [Influenza Vaccines](#)

98.

[Vaccine](#). 2007 Nov 23;25(48):8101. Epub 2007 Oct 1.

Letter to the Editor. Guillain-Barré Syndrome(GBS) after vaccination reported to the United States Vaccine Adverse Event Reporting System(VAERS) in 2004.

[Haber P](#), [Slade B](#), [Iskander J](#).

Comment on:

- [Vaccine](#). 2007 Jul 20;25(29):5253-5.

PMID: 17933441 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Comment](#)
- [Letter](#)

MeSH Terms:

- [Adverse Drug Reaction Reporting Systems*](#)
- [Guillain-Barre Syndrome/epidemiology](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Humans](#)
- [Influenza Vaccines/adverse effects*](#)
- [United States/epidemiology](#)
- [Vaccination/adverse effects*](#)

Substances:

- [Influenza Vaccines](#)

99.

[Wkly Epidemiol Rec](#). 2007 Jul 20;82(28-29):252-9.

Global Advisory Committee on Vaccine Safety, 12-13 June 2007.

[Article in English, French]

[No authors listed]

PMID: 17642098 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[MeSH Terms, Substances](#)

MeSH Terms:

- [BCG Vaccine/standards](#)
- [Guillain-Barre Syndrome/etiology](#)
- [Humans](#)
- [Influenza Vaccines/standards](#)
- [Meningococcal Vaccines/adverse effects](#)
- [Mumps Vaccine/standards](#)
- [Papillomavirus Vaccines/standards](#)
- [Rotavirus Vaccines/standards](#)
- [Vaccines/adverse effects](#)
- [Vaccines/standards*](#)
- [Vaccines, Conjugate/adverse effects](#)
- [World Health Organization](#)

Substances:

- [BCG Vaccine](#)
- [Influenza Vaccines](#)
- [Menactra](#)
- [Meningococcal Vaccines](#)

- [Mumps Vaccine](#)
- [Papillomavirus Vaccines](#)
- [Rotavirus Vaccines](#)
- [Vaccines](#)
- [Vaccines, Conjugate](#)

100.

[Expert Rev Vaccines](#). 2008 Feb;7(1):75-82.

Monitoring the safety of annual and pandemic influenza vaccines: lessons from the US experience.

[Iskander J, Broder K.](#)

US Public Health Service, Immunization Safety Office, Office of Chief Science Officer, Centers for Disease Control and Prevention, 1600 Clifton Road, MS D-26, Atlanta, GA 30333, USA. jxi0@cdc.gov

Annual use of influenza vaccines represents the largest vaccine campaign conducted in the USA. Recent expansions in influenza vaccine recommendations suggest a move toward 'universal' vaccination strategies. Although a great deal of safety data has been accumulated, concerns remain regarding rare, serious adverse events following immunization. A proven association between the 1976-1977 swine influenza vaccine and Guillain-Barré syndrome halted that particular national vaccination campaign. Recently, annual influenza vaccines have been associated with novel adverse events, for example, oculorespiratory syndrome in Canada. Any vaccine used against an influenza strain of pandemic potential will have an incompletely described safety profile. Thus, the challenge of influenza vaccine safety is to detect new safety concerns that may arise during seasonal campaigns, while preparing vaccine safety systems for the timely detection of adverse events in the setting of a pandemic.

PMID: 18251695 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Review](#)

MeSH Terms:

- [Bell Palsy/etiology](#)
- [Guillain-Barre Syndrome/etiology](#)
- [Humans](#)
- [Influenza Vaccines/administration & dosage*](#)
- [Influenza Vaccines/adverse effects](#)
- [Influenza, Human/epidemiology](#)
- [United States/epidemiology](#)

Substances:

- [Influenza Vaccines](#)

101.

[Travel Med Infect Dis](#). 2008 May;6(3):114-24. Epub 2008 May 7.

Influenza-associated central nervous system dysfunction: a literature review.

[Toovey S.](#)

F. Hoffmann-La Roche Ltd., Basel, Switzerland. stephen.toovey@roche.com

CONTEXT: Influenza is a viral pathogen that imposes an under-recognized burden of central nervous system (CNS) disease. OBJECTIVE: To describe the epidemiology, clinical features and etiology of the CNS disease entities associated with influenza. DATA SOURCES: English-language publications from MEDLINE. DATA EXTRACTION: Articles were identified using "influenza, human"[Mesh] AND "nervous system diseases"[Mesh] and screened for inclusion based on relevance and scientific rigor. RESULTS: Febrile seizure is the most frequently encountered influenza-associated CNS complication, with one in five children hospitalized with influenza experiencing one or more events. In most instances, symptoms resolve without neurological sequelae, although the risk for subsequent afebrile seizure may be increased. Influenza-associated encephalitis/encephalopathy is a less common but potentially more serious complication that is widely reported in Japanese populations, although cases from other East Asian countries, North America, and Europe have been described. Clinical manifestations are diverse, and typically involve febrile seizures and abnormal behaviors in

mild cases, with rapid evolution through decreased consciousness to coma in severe forms. In cases of serious disease, the prognosis is often poor, with outcomes including death or severe neurological sequelae. Influenza is also a known trigger for a number of rarely encountered, yet often serious, CNS diseases, including the encephalopathic condition of Reye's syndrome, the peripheral neuropathy known as Guillain-Barré syndrome, and the lesser known complaints of Kleine-Levin syndrome and post-encephalitic Parkinson's disease.

CONCLUSIONS: Influenza imposes a sizeable burden of CNS disease. Increased awareness and monitoring of CNS function is indicated, especially in infants and young children.

PMID: 18486065 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)
- [Review](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Age Distribution](#)
- [Central Nervous System Viral Diseases/epidemiology*](#)
- [Central Nervous System Viral Diseases/etiology](#)
- [Central Nervous System Viral Diseases/physiopathology](#)
- [Central Nervous System Viral Diseases/prevention & control](#)
- [Child](#)
- [Child, Preschool](#)
- [Electroencephalography](#)
- [Female](#)
- [Guillain-Barre Syndrome](#)
- [Humans](#)
- [Infant](#)
- [Infant, Newborn](#)
- [Influenza, Human/epidemiology*](#)
- [Influenza, Human/etiology](#)
- [Influenza, Human/physiopathology](#)
- [Influenza, Human/prevention & control](#)
- [Kleine-Levin Syndrome](#)
- [Male](#)
- [Parkinson Disease, Postencephalitic](#)
- [Reye Syndrome](#)
- [Seizures](#)
- [Travel*](#)
- [World Health](#)

102.

[J Infect Dis.](#) 2008 Jul 15;198(2):226-33.

Anti-ganglioside antibody induction by swine (A/NJ/1976/H1N1) and other influenza vaccines: insights into vaccine-associated Guillain-Barré syndrome.

[Nachamkin I](#), [Shadomy SV](#), [Moran AP](#), [Cox N](#), [Fitzgerald C](#), [Ung H](#), [Corcoran AT](#), [Iskander JK](#), [Schonberger LB](#), [Chen RT](#).

Department of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-4283, USA. nachamki@mail.med.upenn.edu

BACKGROUND: Receipt of an A/NJ/1976/H1N1 "swine flu" vaccine in 1976, unlike receipt of influenza vaccines used in subsequent years, was strongly associated with the development of the neurologic disorder Guillain-Barré syndrome (GBS). Anti-ganglioside antibodies (e.g., anti-GM(1)) are associated with the development of GBS, and we hypothesized that the swine flu vaccine contained contaminating moieties (such as *Campylobacter jejuni* antigens that mimic human gangliosides or other vaccine components) that elicited an anti-GM(1) antibody response in susceptible recipients. METHODS: Surviving samples of monovalent and bivalent 1976 vaccine,

comprising those from 3 manufacturers and 11 lot numbers, along with several contemporary vaccines were tested for hemagglutinin (HA) activity, the presence of *Campylobacter* DNA, and the ability to induce anti-*Campylobacter* and anti-GM(1) antibodies after inoculation into C3H/HeN mice. RESULTS: We found that, although *C. jejuni* was not detected in 1976 swine flu vaccines, these vaccines induced anti-GM(1) antibodies in mice, as did vaccines from 1991-1992 and 2004-2005. Preliminary studies suggest that the influenza HA induces anti-GM(1) antibodies. CONCLUSIONS: Influenza vaccines contain structures that can induce anti-GM(1) antibodies after inoculation into mice. Further research into influenza vaccine components that elicit anti-ganglioside responses and the role played by these antibodies (if any) in vaccine-associated GBS is warranted.

PMID: 18522505 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances, Grant Support](#)

Publication Types:

- [Research Support, U.S. Gov't, P.H.S.](#)

MeSH Terms:

- [Animals](#)
- [Antibody Formation](#)
- [Campylobacter jejuni/genetics](#)
- [Campylobacter jejuni/immunology](#)
- [DNA, Bacterial/isolation & purification](#)
- [Gangliosides/immunology*](#)
- [Gangliosidosis, GM1/immunology](#)
- [Glycolipids/immunology](#)
- [Guillain-Barre Syndrome/immunology*](#)
- [Hemagglutination Inhibition Tests](#)
- [Humans](#)
- [Influenza A virus/immunology*](#)
- [Influenza Vaccines/adverse effects*](#)
- [Mice](#)
- [Mice, Inbred C3H](#)
- [Polymerase Chain Reaction](#)
- [Porcine Reproductive and Respiratory Syndrome/immunology](#)
- [Swine](#)

Substances:

- [DNA, Bacterial](#)
- [Gangliosides](#)
- [Glycolipids](#)
- [Influenza Vaccines](#)

Grant Support:

- [200-2002-00732/PHS HHS/United States](#)

103.

[CNS Spectr.](#) 2008 Sep;13(9):744-6.

Acute transverse myelitis and Guillain-Barre overlap syndrome following influenza infection.

[Tripp A.](#)

PMID: 18849892 [PubMed - indexed for MEDLINE]

[Related articles](#)[Free article](#)

[Publication Types, MeSH Terms](#)

Publication Types:

- [Case Reports](#)
- [Letter](#)

MeSH Terms:

- [Acute Disease](#)
- [Adult](#)
- [Comorbidity](#)
- [Diagnosis, Differential](#)
- [Female](#)
- [Guillain-Barre Syndrome/complications*](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Guillain-Barre Syndrome/therapy](#)
- [Humans](#)
- [Influenza, Human/complications*](#)
- [Myelitis, Transverse/complications*](#)
- [Myelitis, Transverse/etiology*](#)
- [Myelitis, Transverse/therapy](#)
- [Neurologic Examination](#)
- [Plasmapheresis](#)

□ 104.

[Clin Infect Dis](#). 2009 Jan 1;48(1):48-56.

Guillain-Barré syndrome and influenza virus infection.

[Sivadon-Tardy V](#), [Orlikowski D](#), [Porcher R](#), [Sharshar T](#), [Durand MC](#), [Enouf V](#), [Rozenberg F](#), [Caudie C](#), [Anane D](#), [van der Werf S](#), [Lebon P](#), [Raphaël JC](#), [Gaillard JL](#), [Gault E](#).

Laboratoire de Microbiologie, Hôpital Ambroise Paré, Assistance Publique-Hôpitaux de Paris (AP-HP), Boulogne-Billancourt, France.

BACKGROUND: In Western countries, the cause of 60% of all Guillain-Barré syndrome (GBS) cases remains unidentified. The number of cases of unidentified cause peaks in winter, and these cases are commonly preceded by respiratory tract infection or influenza-like illness. We investigated the triggering role of influenza virus infection. **METHODS:** Of 405 patients with GBS who were admitted to a French reference center during 1996-2004, 234 had cases caused by an unidentified agent. We used time-series methods to study the correlation between the monthly incidence of such cases and influenza-like illnesses reported by the Sentinelles surveillance network. We analyzed anti-influenza antibodies using complement fixation testing and hemagglutination-inhibition assays. We studied etiological subgroups using Wilcoxon and Fisher's exact tests. **RESULTS:** We found a positive association between the monthly incidence of GBS caused by an unidentified agent and reported influenza-like illnesses. Of 73 patients whose cases occurred during periods in which there was a possible link to influenza, 10 (13.7%) had serological evidence of recent influenza A, and 4 (5.5%) had serological evidence of influenza B. Eight of 10 influenza A-related cases occurred during "major" influenza seasons, and antibodies specific to the current epidemic strain were found in 9 cases. Most patients with influenza A-related cases were aged < 65 years, and none had antiganglioside antibodies. Influenza-related cases differed both from *Campylobacter jejuni*-related cases, with regard to the lack of need for mechanical ventilation ($P = .014$), and from the cases caused by an unidentified agent, with regard to the presence of preceding influenza-like illness or respiratory tract infection ($P = .015$) and longer time from the infectious event to GBS onset ($P = .04$). **CONCLUSIONS:** Influenza viruses are infrequent triggering agents of GBS but may play a significant role during major influenza outbreaks. Influenza-related GBS displays specific features and is not associated with antiganglioside antibody response, which suggests the presence of underlying immune mechanisms.

PMID: 19025491 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types, MeSH Terms, Substances](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)

MeSH Terms:

- [Adult](#)
- [Age Factors](#)
- [Aged](#)
- [Aged, 80 and over](#)

- [Antibodies, Viral/blood](#)
- [Complement Fixation Tests](#)
- [Female](#)
- [France](#)
- [Gangliosides/immunology](#)
- [Guillain-Barre Syndrome/epidemiology](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Hemagglutination Inhibition Tests](#)
- [Humans](#)
- [Incidence](#)
- [Influenza A virus/isolation & purification](#)
- [Influenza B virus/isolation & purification](#)
- [Influenza, Human/complications*](#)
- [Influenza, Human/epidemiology](#)
- [Male](#)
- [Middle Aged](#)
- [Seasons](#)
- [Statistics as Topic](#)

Substances:

- [Antibodies, Viral](#)
- [Gangliosides](#)

105.

[Am J Epidemiol](#). 2009 Feb 1;169(3):382-8. Epub 2008 Nov 24.

Investigation of the temporal association of Guillain-Barre syndrome with influenza vaccine and influenzalike illness using the United Kingdom General Practice Research Database.

[Stowe J](#), [Andrews N](#), [Wise L](#), [Miller E](#).

Immunisation Department, Health Protection Agency Centre for Infections, London, UK. julia.stowe@hpa.org.uk

In 1976, the national swine influenza vaccination program in the United States was suspended because of an increased risk of Guillain-Barré syndrome. Subsequent studies of seasonal influenza vaccine have given conflicting results. The authors used the self-controlled case series method to investigate the relation of Guillain-Barré syndrome with influenza vaccine and influenzalike illness using cases recorded in the General Practice Research Database from 1990 to 2005 in the United Kingdom. The relative incidence of Guillain-Barré syndrome within 90 days of vaccination was 0.76 (95% confidence interval: 0.41, 1.40). In contrast, the relative incidence of Guillain-Barré syndrome within 90 days of an influenzalike illness was 7.35 (95% confidence interval: 4.36, 12.38), with the greatest relative incidence (16.64, 95% confidence interval: 9.37, 29.54) within 30 days. The relative incidence was similar (0.89, 95% confidence interval: 0.42, 1.89) when the analysis was restricted to a subset of validated cases. The authors found no evidence of an increased risk of Guillain-Barré syndrome after seasonal influenza vaccine. The finding of a greatly increased risk after influenzalike illness is consistent with anecdotal reports of a preceding respiratory illness in Guillain-Barré syndrome and has important implications for the risk/benefit assessment that would be carried out should pandemic vaccines be deployed in the future.

PMID: 19033158 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#), [Grant Support](#)

Publication Types:

- [Research Support, Non-U.S. Gov't](#)
- [Validation Studies](#)

MeSH Terms:

- [Adolescent](#)
- [Adult](#)
- [Aged](#)
- [Aged, 80 and over](#)
- [Causality](#)

- [Child](#)
- [Comorbidity](#)
- [Family Practice/statistics & numerical data*](#)
- [Female](#)
- [Great Britain/epidemiology](#)
- [Guillain-Barre Syndrome/epidemiology*](#)
- [Humans](#)
- [Incidence](#)
- [Influenza Vaccines/administration & dosage*](#)
- [Influenza, Human/epidemiology*](#)
- [Influenza, Human/prevention & control](#)
- [Male](#)
- [Middle Aged](#)
- [Sweden/epidemiology](#)
- [Vaccination/statistics & numerical data*](#)

Substances:

- [Influenza Vaccines](#)

Grant Support:

- [121/7470/Department of Health/United Kingdom](#)

106.

[Eur J Neurol](#). 2009 Apr;16(4):e81.

Sensori-motor Guillain-Barré syndrome with anti-GD1b antibodies following influenza A infection.

[Simpson BS](#), [Rajabally YA](#).

PMID: 19222546 [PubMed - indexed for MEDLINE]

[Related articles](#)

[Publication Types](#), [MeSH Terms](#), [Substances](#)

Publication Types:

- [Case Reports](#)
- [Letter](#)

MeSH Terms:

- [Autoantibodies/blood*](#)
- [Gangliosides/immunology*](#)
- [Guillain-Barre Syndrome/etiology*](#)
- [Guillain-Barre Syndrome/immunology](#)
- [Humans](#)
- [Immunoglobulin G](#)
- [Influenza A virus*](#)
- [Influenza, Human/complications*](#)
- [Influenza, Human/immunology](#)
- [Male](#)
- [Middle Aged](#)

Substances:

- [Autoantibodies](#)
- [Gangliosides](#)
- [Immunoglobulin G](#)
- [ganglioside, GD1b](#)

107.

[J Emerg Med](#). 2009 Mar 7. [Epub ahead of print]

A child with benign acute childhood myositis after influenza.

[Heiner JD](#), [Ball VL](#).

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Background: Benign acute childhood myositis (BACM) is a rare transient muscle syndrome classically occurring in children after a viral upper respiratory infection (URI). BACM causes difficulty walking due to severe bilateral calf pain. The incidence of this well-described phenomenon is uncertain but infrequent, and it is typically appreciated during times of large influenza outbreaks and epidemics. The URI symptoms that precede BACM are consistent with an uncomplicated viral influenza infection and include fever, malaise, cough, sore throat, headache, and rhinitis. Objectives: Little is written in the Emergency Medicine literature regarding this clinical entity. In this report, a brief review of BACM from the current literature is provided, as well as tools to aid in differentiating it from more severe but similar disorders such as rhabdomyolysis and Guillain-Barré syndrome. Case Report: We present a case of BACM in a 7-year-old boy who presented to the emergency department after a resolving URI with the acute onset of calf pain causing alarming difficulty in his ability to walk. His presentation was typical for BACM and his condition improved with supportive treatment. Conclusions: Although quite alarming and potentially puzzling to the physician who is not familiar with BACM, this syndrome is self limited and spontaneously resolves with no specific intervention. Recognition of this rare but distinct clinical entity by the emergency physician can spare a patient from potentially unneeded invasive testing and hospital admission.

PMID: 19272740 [PubMed - as supplied by publisher]

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□ 108.

[Vaccine](#). 2009 Mar 26;27(15):2114-20. Epub 2009 Feb 6.

Safety of trivalent inactivated influenza vaccines in adults: background for pandemic influenza vaccine safety monitoring.

[Vellozzi C](#), [Burwen DR](#), [Dobardzic A](#), [Ball R](#), [Walton K](#), [Haber P](#).

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In preparation for pandemic vaccine safety monitoring, we assessed adverse events reported to the Vaccine Adverse Event Reporting System following receipt of trivalent inactivated influenza vaccines among adults from 1990 through 2005. We calculated reporting rates for nonserious, serious, and neurological adverse events. We reviewed reports of recurrent events and deaths, as well as reports identified through advanced signal detection. The most frequently reported events were local reactions and systemic symptoms. Guillain-Barré syndrome was the most frequently reported serious event (0.70 reports per million vaccinations). Adverse event reporting rates have been reasonably constant over time. No new safety concerns emerged after our review of 15 years of post-licensure surveillance data. These findings provide useful information if pandemic vaccine is rapidly distributed and pre-licensure data are limited.

PMID: 19356614 [PubMed - indexed for MEDLINE]

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- [Adult](#)
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- [Guillain-Barre Syndrome/epidemiology](#)
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- [Influenza, Human/prevention & control*](#)
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Substances:

- [Influenza Vaccines](#)

□ 109.

[Drug Saf.](#) 2009;32(4):309-23. doi: 10.2165/00002018-200932040-00005.

Vaccines and Guillain-Barré syndrome.

[Haber P](#), [Sejvar J](#), [Mikaeloff Y](#), [DeStefano F](#).

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Guillain-Barré syndrome (GBS) is the leading cause of acute flaccid paralysis in developed countries and is characterized by various degrees of weakness, sensory abnormalities and autonomic dysfunction. Although the underlying aetiology and pathophysiology of GBS are not completely understood, it is broadly believed that immune stimulation plays a role in its pathogenesis. Thus, since vaccines have an effect on the immune system it is biologically plausible that immunizations may be associated with subsequent GBS. The objective of this article is to review the current body of evidence that either supports or does not support a causal, rather than just temporal, association between various vaccines and GBS, and to provide an evidence-based review of this issue. The scope of the article includes published reports that, regardless of method of case ascertainment, appeared in peer-reviewed literature between 1950 and 2008. Our review indicates that, with rare exceptions, associations between vaccines and GBS have been only temporal. There is little evidence to support a causal association with most vaccines. The evidence for a causal association is strongest for the swine influenza vaccine that was used in 1976-77. Studies of influenza vaccines used in subsequent years, however, have found small or no increased risk of GBS. Older formulations of rabies vaccine cultured in mammalian brain tissues have been found to have an increased risk of GBS, but newer formulations of rabies vaccine, derived from chick embryo cells, do not appear to be associated with GBS at a greater than expected rate. In an earlier review, the Institute of Medicine concluded that the evidence favoured a causal association between oral polio vaccine and tetanus toxoid-containing vaccines and GBS. However, recent evidence from large epidemiological studies and mass immunization campaigns in different countries found no correlation between oral polio vaccine or tetanus toxoid-containing vaccines and GBS. Spontaneous reports to the US Vaccine Adverse Events Reporting System shortly after the introduction of quadrivalent conjugated meningococcal vaccine (MCV4) raised concerns of a possible association with GBS. Comparisons with expected rates of GBS, however, were inconclusive for an increased risk, and lack of controlled epidemiological studies makes it difficult to draw conclusions about a causal association. For other vaccines, available data are based on isolated case reports or very small clusters temporally related to immunizations, and no conclusion about causality can be drawn. There are certain circumstances in which immunizing individuals, particularly those with a prior history of GBS, may require caution. However, the benefit of vaccines in preventing disease and decreasing morbidity and mortality, particularly for influenza, needs to be weighed against the potential risk of GBS.

PMID: 19388722 [PubMed - indexed for MEDLINE]

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- [Vaccines/adverse effects*](#)

Substances:

- [Vaccines](#)

□ 110.

[Ugeskr Laeger.](#) 2009 May 18;171(21):1801; author reply 1801.

[Guillain-Barre syndrome after influenza vaccination]

[Article in Danish]

[Vilstrup H.](#)

PMID: 19496235 [PubMed - indexed for MEDLINE]

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- [Influenza Vaccines/adverse effects*](#)
- [Risk Factors](#)

Substances:

- [Influenza Vaccines](#)

111.

[J Infect Dis.](#) 2009 Aug 1;200(3):321-8.

"Prepandemic" immunization for novel influenza viruses, "swine flu" vaccine, Guillain-Barré syndrome, and the detection of rare severe adverse events.

[Evans D](#), [Cauchemez S](#), [Hayden FG](#).

The Wellcome Trust, London, United Kingdom.

Comment in:

- [J Infect Dis.](#) 2009 Nov 15;200(10):1627-8.

The availability of immunogenic, licensed H5N1 vaccines and the anticipated development of vaccines against "swine" influenza A(H1N1) have stimulated debate about the possible use of these vaccines for protection of those exposed to potential pandemic influenza viruses and for immunization or "priming" of populations in the so-called "prepandemic" (interpandemic) era. However, the safety of such vaccines is a critical issue in policy development for wide-scale application of vaccines in the interpandemic period. For example, wide-scale interpandemic use of H5N1 vaccines could lead to millions of persons receiving vaccines of uncertain efficacy potentially associated with rare severe adverse events and against a virus that may not cause a pandemic. Here, we first review aspects of the 1976 National Influenza Immunization Programme against "swine flu" and its well-documented association with Guillain-Barré syndrome as a case study illustration of a suspected vaccine-associated severe adverse event in a mass interpandemic immunization setting. This case study is especially timely, given the recent spread of a novel influenza A(H1N1) virus in humans in Mexico and beyond. Following this, we examine available safety data from clinical trials of H5N1 vaccines and briefly discuss how vaccine safety could be monitored in a postmarketing surveillance setting.

PMID: 19563262 [PubMed - indexed for MEDLINE]

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- [United States/epidemiology](#)

Substances:

- [Influenza Vaccines](#)

Grant Support:

- [Wellcome Trust/United Kingdom](#)

112.

[J Clin Neuromuscul Dis.](#) 2009 Sep;11(1):1-6.

Guillain-Barré syndrome after vaccination in United States: data from the Centers for Disease Control and Prevention/Food and Drug Administration Vaccine Adverse Event Reporting System (1990-2005).

[Souayah N](#), [Nasar A](#), [Suri MF](#), [Qureshi AI](#).

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BACKGROUND: There are isolated reports of Guillain-Barré syndrome (GBS) after receiving vaccination.

OBJECTIVE: To determine the rates and characteristics of GBS after administration of vaccination in United States METHODS: We used data for 1990 to 2005 from the Vaccine Adverse Event Reporting System, which is a cooperative program of the Centers for Disease Control and Prevention and the US Food and Drug

Administration. RESULTS: There were 1000 cases (mean age, 47 years) of GBS reported after vaccination in

the United States between 1990 and 2005. The onset of GBS was within 6 weeks in 774 cases, >6 weeks in 101, and unknown in 125. Death and disability after the event occurred in 32 (3.2%) and 167 (16.7%) subjects,

respectively. The highest number (n = 632) of GBS cases was observed in subjects receiving influenza vaccine followed by hepatitis B vaccine (n = 94). Other vaccines or combinations of vaccines were associated with 274

cases of GBS. The incidence of GBS after influenza vaccination was marginally higher in subjects <65 years compared with those >or=65 years (P = 0.09); for hepatitis vaccine, the incidence was significantly higher (P <

0.0001) in the <65 group. Death was more frequent in subjects >or=65 years compared with those <65 years (P < 0.0001). CONCLUSIONS: Our results suggest that vaccines other than influenza vaccine can be associated with

GBS. Vaccination-related GBS results in death or disability in one fifth of affected individuals, which is comparable to the reported rates in the general GBS population.

PMID: 19730016 [PubMed - in process]

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113.

[Hastings Cent Rep.](#) 2009 Sep-Oct;39(5):9-10.

Swine flu vaccine: what is fair?

[Gostin LO](#).

Georgetown University Law Center, USA.

PMID: 19806769 [PubMed - indexed for MEDLINE]

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- [Vulnerable Populations](#)

Substances:

- [Influenza Vaccines](#)

114.

[Lancet](#). 2009 Oct 30. [Epub ahead of print]

Importance of background rates of disease in assessment of vaccine safety during mass immunisation with pandemic H1N1 influenza vaccines.

[Black S](#), [Eskola J](#), [Siegrist CA](#), [Halsey N](#), [Macdonald N](#), [Law B](#), [Miller E](#), [Andrews N](#), [Stowe J](#), [Salmon D](#), [Vannice K](#), [Izurieta HS](#), [Akhtar A](#), [Gold M](#), [Oselka G](#), [Zuber P](#), [Pfeifer D](#), [Vellozzi C](#).

Center for Global Health and Division of Infectious Diseases, Cincinnati Children's Hospital, Cincinnati, OH, USA.

Because of the advent of a new influenza A H1N1 strain, many countries have begun mass immunisation programmes. Awareness of the background rates of possible adverse events will be a crucial part of assessment of possible vaccine safety concerns and will help to separate legitimate safety concerns from events that are temporally associated with but not caused by vaccination. We identified background rates of selected medical events for several countries. Rates of disease events varied by age, sex, method of ascertainment, and geography. Highly visible health conditions, such as Guillain-Barré syndrome, spontaneous abortion, or even death, will occur in coincident temporal association with novel influenza vaccination. On the basis of the reviewed data, if a cohort of 10 million individuals was vaccinated in the UK, 21.5 cases of Guillain-Barré syndrome and 5.75 cases of sudden death would be expected to occur within 6 weeks of vaccination as coincident background cases. In female vaccinees in the USA, 86.3 cases of optic neuritis per 10 million population would be expected within 6 weeks of vaccination. 397 per 1 million vaccinated pregnant women would be predicted to have a spontaneous abortion within 1 day of vaccination.

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