

APPROACH TO INFLUENZA VACCINATION IN PATIENTS WITH A HISTORY OF GUILLAIN–BARRÉ SYNDROME

Why are there concerns about Guillain–Barré syndrome and influenza vaccination?

Guillain–Barré syndrome (GBS) is an acute immune-mediated polyneuropathy (an autoimmune disease of the peripheral nervous system). GBS occurs in the general population at a rate of 1–2 cases per 100,000 persons per year.^{1, 2} It is commonly preceded and thought to be triggered by a gastrointestinal or respiratory infection, including with influenza virus.³ GBS became a concern in relation to influenza vaccine in 1976 when an increased number of GBS cases were reported following vaccination with a pandemic influenza vaccine. A much lower risk was associated with pandemic H1N1 influenza vaccines in 2009–10; this is thought to be an additional 1–3 case per million recipients.^{3–5} Many published studies have sought to assess the risk of GBS following seasonal inactivated influenza vaccine. However, the evidence that seasonal influenza vaccines act as a trigger for GBS is less convincing; at most they are thought to account for one additional case of GBS per million vaccine doses.^{6, 7}

What are the risks for a patient with a past history of GBS being vaccinated?

For patients with a past history of GBS, irrespective of what the trigger may have potentially been, the risk of recurrence of GBS following vaccination is likely thought to be **low**.⁸ **No recurrences** were reported in 214 patients with a history of GBS, pooled together from three studies, who received a total of 1,195 doses of influenza vaccine after their GBS diagnosis.^{9–11} Another study reported a recurrence of GBS-like symptoms following influenza vaccination in 8 out of 211 patients with a history of GBS, but formal diagnosis of a relapse was not confirmed, most symptoms were mild and no patient required treatment or hospitalisation.¹²

While vaccination appears to be not associated with recurrence in patients with GBS more generally, there are limited data in patients where the initial GBS episode occurred within 6 weeks of influenza vaccination (i.e. the initial episode was possibly triggered by vaccination).

What are the risks for a patient with a past history of GBS not being vaccinated?

The risk of a person developing GBS is several times greater following influenza *infection* than following influenza *vaccination*. A study in Canada showed that in 2,831 people with influenza who sought medical attention, their risk of developing GBS following influenza illness was much greater than their risk of developing GBS after they have received the influenza vaccination (17.2 cases per million influenza cases versus 1.02 cases per million vaccinations).¹³ Non-vaccinated individuals also have an increased risk of acquiring influenza infection and its associated severe morbidities such as pneumonia, encephalitis and myocarditis.

How should I assess and counsel a patient with a past history of GBS?

On the basis of evidence described in earlier questions and expert consensus opinion, the following questions and flowchart have been developed to help practitioners assess and advise patients with a history of GBS about the risks and benefits of influenza vaccination. Further guidance can be obtained by contacting the New South Wales Immunisation Specialist Service on 1800 NSWISS (1800 679 477) and other specialist immunisation clinics or services across Australia. For a full list of these see links [here](#).

1. In the 6 weeks before the onset of GBS, did the patient have any of the following potential triggering events?

- An influenza vaccine (pandemic or seasonal)
- An influenza infection
- Another infection documented (e.g. Campylobacter, CMV)
- Any symptoms of a likely infection (without documentation of the causative organism)

2. Is the individual at increased risk of significant complications from influenza infection?

For example:

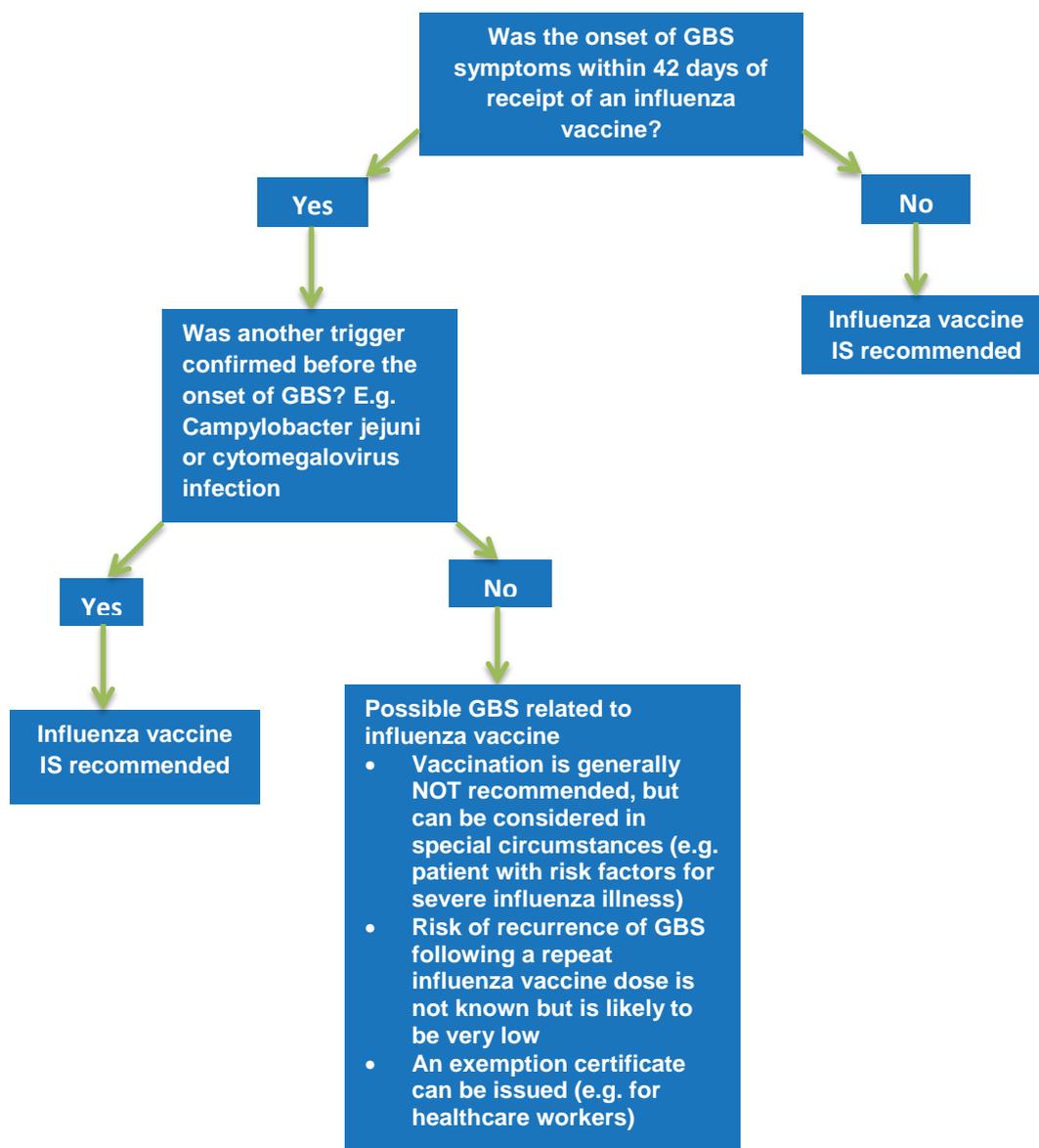
- Aged under 5 years
- Aged ≥65 years
- Aboriginal and Torres Strait Islander
- Pregnant
- Cardiac disease
- Down Syndrome
- Respiratory disease e.g. COPD, asthma
- Chronic neurological disease
- Immunocompromised
- Chronic liver disease
- Diabetes
- Chronic renal failure
- Metabolic disease

Recommendation

If a patient developed GBS within 6 weeks after having an influenza vaccination, the small risk of recurrence of GBS following revaccination may outweigh the benefit of vaccination. However, repeat vaccination could be considered in special circumstances, such as presence of risk factors for severe influenza illness or a plausible alternative trigger for GBS. If the episode did not occur within 6 weeks of influenza vaccination, and particularly if there are risk factors for severe influenza disease, vaccination is recommended.

Refer to the flow diagram which outlines these recommendations. Comparison with other country guidance is also included, for reference.

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International Guidelines

- ACIP: A history of GBS within six weeks of an influenza vaccine is a precaution to further vaccination.¹⁴
- NACI: Persons who have developed GBS within six weeks of influenza vaccination should not receive a further dose.¹⁵
- NZ: The risks and benefits of withholding vaccination should be considered on an individual basis.¹⁶

References

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