Vaccine Side Effects Reference

Natalie's Clinical Study & Findings · NEwellness101 · Natalie Elie, CFWHE

This reference compiles side effect profiles and serious adverse event rates for routinely recommended US vaccines, curated and annotated through my clinical lens as a certified functional women's health educator. Data is drawn from clinical trial publications, CDC/ACIP guidance, VAERS post-licensure surveillance, and the Vaccine Safety Datalink (VSD). Use this alongside the relevant package insert (Section 6) and individual clinical context.

How to Read Frequency Terms

Frequency Term	Rate
Very Common	> 10% of recipients
Common	1–10% of recipients
Uncommon	0.1–1% of recipients
Rare	0.01–0.1% of recipients
Very Rare	< 0.01% (often expressed as per million doses)

Important context. *Adverse event rates are population averages. Individual risk depends on age, immune status, prior reactions, pregnancy, and comorbidities. The correct clinical frame is always risk of vaccine vs. risk of disease — not vaccine vs. zero risk. Common immune-activation symptoms (sore arm, fatigue, low-grade fever) reflect a working immune response, not harm.*

Childhood Vaccines

Hepatitis B (HepB)

Prevents: Hepatitis B virus — acute and chronic liver infection, cirrhosis, liver cancer.

Common Side Effects	Serious Adverse Events
Sore injection site (~30%), fatigue (~14%), headache (~13%), low-grade fever (1–6%), irritability in infants. Typically resolve in 1–2 days.	Anaphylaxis ~1 per 1.1 million doses. No causal link to MS, autism, or SIDS in extensive study across millions of recipients.

Rotavirus (RotaTeq, Rotarix)

Prevents: Severe diarrheal illness — rotavirus hospitalized 55,000–70,000 US infants per year pre-vaccine.

Common Side Effects	Serious Adverse Events
Mild diarrhea (~24%), vomiting (~15%), irritability, low-grade fever, decreased appetite. Oral administration — no injection site reaction.	Intussusception: ~1–5 additional cases per 100,000 vaccinated infants in week 1 after dose 1. Much lower than withdrawn RotaShield. Severe allergic reaction very rare.

DTaP (Diphtheria, Tetanus, acellular Pertussis)

Prevents: Diphtheria, tetanus (lockjaw), whooping cough. Acellular formulation replaced whole-cell DTP in the 1990s — far less reactogenic.

Common Side Effects	Serious Adverse Events
Sore arm/redness/swelling (20–40%), low-grade fever (5–15%), fussiness, drowsiness, decreased appetite. Local reactions increase with successive doses.	Febrile seizure (~1 in several thousand) — no long-term harm. Hypotonic-hyporesponsive episode rare. Anaphylaxis ~1 per million. Persistent inconsolable crying >3 hours: ~1 in 1,000.

Hib (Haemophilus influenzae type b)

Prevents: Hib bacterial infections — meningitis, epiglottitis, pneumonia, sepsis. Was a leading cause of childhood meningitis pre-vaccination.

Common Side Effects	Serious Adverse Events
Sore injection site (~25%), redness (~5%), low-grade fever (~5%), irritability.	Anaphylaxis very rare. No causal link to other serious conditions in extensive surveillance.

Pneumococcal Conjugate (PCV13/15/20)

Prevents: Streptococcus pneumoniae — pneumonia, meningitis, bacteremia, ear infections.

Common Side Effects	Serious Adverse Events
Sore arm (~30–60%), fever (~25% in infants), irritability, decreased appetite, drowsiness, redness or swelling at site.	Severe allergic reaction < 1 per million. Febrile seizure rare, especially when co-administered with flu vaccine in young children. No long-term harm from brief seizures.

Inactivated Polio Vaccine (IPV)

Prevents: Poliovirus types 1, 2, 3. Polio caused paralysis and was endemic in the US until vaccination eliminated it in 1979.

Common Side Effects	Serious Adverse Events
Sore injection site (~15–30%), redness, low-grade fever (~5%). Among the better-tolerated childhood vaccines.	Severe allergic reaction extremely rare. The oral polio vaccine (OPV) carried ~1 in 2.4 million risk of vaccine-derived paralysis and has not been used in the US since 2000. IPV does not carry this risk.

MMR (Measles, Mumps, Rubella)

Prevents: Measles (pneumonia, encephalitis, death), mumps (deafness, orchitis), rubella (devastating birth defects in pregnancy).

Common Side Effects	Serious Adverse Events
Sore injection site, low-grade fever (~5–15%, often peaking 7–12 days post-dose as live attenuated virus replicates), mild measles-like rash (~5%), transient joint pain (~25% in adult women), swollen lymph nodes.	Febrile seizure ~1 per 3,000–4,000 first doses (higher with MMRV combo). Transient ITP ~1 per 30,000–40,000, usually self-resolving. Encephalitis < 1 per million — far lower than measles itself (~1 per 1,000 cases). Does not cause autism — definitively studied in millions.

Varicella (Chickenpox)

Prevents: Varicella zoster virus (chickenpox). Reduces but does not eliminate later shingles risk.

Common Side Effects	Serious Adverse Events
Sore injection site (~20%), fever (~15%), mild varicella-like rash near injection site (~3%) or generalized mild rash (~1–5%) within 5–26 days.	Disseminated vaccine-strain varicella in severely immunocompromised patients — vaccine contraindicated in this group. Transmission to close contacts very rare and only if vaccinated person develops a rash.

Hepatitis A

Prevents: Hepatitis A virus — acute liver inflammation, typically via contaminated food or water.

Common Side Effects	Serious Adverse Events
Sore arm (~50%), headache (~15%), loss of appetite (~10%), fatigue. Most reactions mild, lasting 1–2 days.	Anaphylaxis very rare. No causal link to other serious conditions.

Influenza (Annual)

Prevents: Seasonal influenza A and B. Reformulated annually based on circulating strains.

Common Side Effects	Serious Adverse Events
Sore arm (~50%), fatigue (~10–15%), headache (~10%), muscle aches (~10%), low-grade fever (1–2%). FluMist: runny nose, congestion, mild sore throat instead.	Anaphylaxis ~1 per million. Guillain-Barré syndrome: ~1–2 additional cases per million doses (background rate ~10–20 per million/year). Flu illness itself increases GBS risk much more than the vaccine. Oculorespiratory syndrome rare and self-limited.

Adolescent & Young Adult Vaccines

Tdap (Adolescent/Adult Booster)

Prevents: Tetanus, diphtheria, pertussis booster. Also recommended every pregnancy at 27–36 weeks to protect newborns.

Common Side Effects	Serious Adverse Events
Sore arm (~75%), headache (~40%), fatigue (~30%), muscle aches (~20%), low-grade fever (~5%), nausea/GI upset (~10–15%). Typically last 1–3 days.	Severe allergic reaction < 1 per million. Brachial neuritis very rare. Arthus reaction (severe local) rare — mainly in those who received tetanus boosters too frequently.

HPV (Gardasil 9)

Prevents: Nine HPV types responsible for ~90% of cervical cancers, plus most anal, oropharyngeal, vulvar, vaginal, and penile cancers, and genital warts.

Common Side Effects	Serious Adverse Events
Sore injection site (~85%), fainting in adolescents (sit or lie down 15 min post-vaccination), headache (~30%), fatigue (~25%), low-grade fever (~10%), nausea (~5%). Among the more reactogenic shots locally.	Anaphylaxis ~1.7 per million doses. No association with autoimmune disease, infertility, premature ovarian failure, or POTS confirmed in extensive post-licensure surveillance across hundreds of millions of doses globally.

Meningococcal ACWY (Menactra, Menveo, MenQuadfi)

Prevents: Neisseria meningitidis serogroups A, C, W, Y — bacterial meningitis and bloodstream infection; can be rapidly fatal.

Common Side Effects	Serious Adverse Events
Sore arm (~40%), headache (~30%), fatigue (~30%), muscle aches (~20%), irritability or low-grade fever in younger children.	Severe allergic reaction very rare. Small historical GBS signal with Menactra not seen with current products. No other established serious adverse events.

Meningococcal B (Bexsero, Trumenba)

Prevents: Neisseria meningitidis serogroup B. Recommended via shared decision-making for ages 16–23.

Common Side Effects	Serious Adverse Events
Notably reactogenic: sore arm (~85%), fatigue (~50%), muscle pain (~50%), headache (~40%), chills (~25%), fever (~5–10%), nausea (~15%). Typically 1–3 days.	Severe allergic reaction very rare. No other established serious adverse events in post-licensure data.

Adult Vaccines

Shingrix (Recombinant Zoster Vaccine, 50+)

Prevents: Shingles (herpes zoster) and postherpetic neuralgia. 97% effective ages 50–69; 91% effective 70+. Two doses 2–6 months apart.

Common Side Effects	Serious Adverse Events
Famously reactogenic: sore arm (~78%), fatigue (~45%), muscle pain (~45%), headache (~38%), shivering (~27%), fever (~21%), GI symptoms (~17%). Typically 2–3 days. Many feel meaningfully unwell for a day — this is why the vaccine works so well in older immune systems.	Anaphylaxis very rare. Small post-licensure GBS signal (~3–6 additional cases per million doses in adults 65+); absolute risk very low and outweighed by shingles/PHN prevention benefit. No association with autoimmune flares in well-controlled studies.

Pneumococcal Adult (PCV15/20/21 + PPSV23)

Prevents: Pneumococcal pneumonia, meningitis, bacteremia. Recommended at 65+ and earlier for those with certain medical conditions.

Common Side Effects	Serious Adverse Events
Sore arm (~50–70%), muscle aches (~25%), fatigue (~20%), low-grade fever (~5%), headache. PPSV23 tends to cause more local reactions than PCV formulations.	Severe allergic reaction < 1 per million. No other established serious adverse events.

RSV (Arexvy, Abrysvo, mResvia)

Prevents: RSV lower respiratory tract disease in older adults and (via maternal vaccination) in newborns.

Common Side Effects	Serious Adverse Events
Sore arm (~60%), fatigue (~30%), muscle pain (~25%), headache (~25%), joint pain (~20%). Mild and self-limited in most.	Small post-licensure GBS signal under active investigation; absolute rate appears < 10 per million doses. Benefit-risk still favors vaccination in target groups (75+, high-risk 60–74, late pregnancy). Severe allergic reaction very rare.

COVID-19 (Pfizer, Moderna, Novavax)

Prevents: Severe disease, hospitalization, and death from SARS-CoV-2.

Common Side Effects	Serious Adverse Events
Sore arm (60–80%), fatigue (~50%), headache (~40%), muscle aches (~30%), chills (~20%), fever (~15% — more common after dose 2 of mRNA vaccines), joint pain, axillary lymph node swelling.	Anaphylaxis ~2–5 per million doses. Myocarditis/pericarditis after mRNA vaccines, mainly young males ages 12–29: ~10–40 per million — typically mild and self-limited; COVID infection itself carries meaningfully higher myocarditis risk. TTS was associated with the discontinued J&J adenoviral vector vaccine only; not associated with current mRNA or Novavax vaccines.

Td (Tetanus, Diphtheria Booster — every 10 years)

Prevents: Maintains protection against tetanus and diphtheria.

Common Side Effects	Serious Adverse Events
Sore arm (~60%), redness or swelling (~25%), fatigue; low-grade fever uncommon.	Severe allergic reaction very rare. Severe local reactions (Arthus) rare — mainly in those receiving tetanus boosters too frequently.

How to Interpret These Numbers

Common Side Effects vs. Serious Adverse Events

Common side effects are immune-activation symptoms — sore arm, fatigue, low-grade fever, muscle aches. They reflect your immune system mounting a response, which is precisely the point of vaccination. They are not signs of harm and typically resolve in 1–3 days.

Serious adverse events are rare events that may require medical attention — anaphylaxis, seizures, neurological events. These are reported as rates per million doses and tracked through active surveillance via the Vaccine Safety Datalink (VSD) and passive reporting via VAERS, which is intentionally over-inclusive for signal detection.

Background Incidence Matters

If a condition occurs at 100 cases per million people per year as a baseline, and you see 100 cases per million reported after vaccination, that's coincidence — not a vaccine signal. Real safety signals emerge when the post-vaccination rate meaningfully exceeds the expected background rate. This is why VAERS reports alone don't establish causation; statistical comparison to background rates is required.

Risk Comparison: Vaccine vs. Disease

The correct clinical frame for any vaccine decision is *risk of vaccine vs. risk of disease* — not vaccine vs. zero:

Disease / Event	Risk from Vaccine	Risk from Disease
Encephalitis (MMR vs. measles)	< 1 per million doses	~1 per 1,000 measles cases
Guillain-Barré (flu vaccine vs. flu illness)	1–2 additional per million	Several-fold higher with flu illness
Myocarditis (mRNA COVID vs. COVID infection)	10–40 per million in young males	Higher with COVID infection itself
Intussusception (rotavirus vaccine vs. pre-vaccine era)	1–5 per 100,000	55,000–70,000 US infant hospitalizations/year
Cervical cancer (HPV vaccine)	No documented serious signal	~36,000 HPV-attributable US cancers/year

Claims Ruled Out by Large-Scale Evidence

- Vaccines causing autism (MMR specifically, thimerosal specifically, total vaccine load — all studied in cohorts of millions and disproved)
- HPV vaccine causing infertility, premature ovarian failure, or POTS
- Aluminum adjuvants causing Alzheimer's disease
- "Too many vaccines too soon" overwhelming infant immune systems

Well-Characterized Real Risks

- Anaphylaxis to any vaccine: ~1 per million doses
- Myocarditis after mRNA COVID vaccines in young males: ~10–40 per million; typically mild; lower than COVID infection itself
- Intussusception after rotavirus: 1–5 per 100,000
- Febrile seizures after MMR or MMRV: ~1 per several thousand; no long-term harm

- Guillain-Barré syndrome after some vaccines: 1–5 additional per million; typically reversible

Clinical Bottom Line. *Most vaccine reactions are immune-activation symptoms resolving in a few days. Serious adverse events are rare and well-documented. For any specific vaccine question, the package insert (Section 6 — Adverse Reactions) is the authoritative source, followed by the CDC Vaccine Information Statement and individualized clinical judgment.*

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