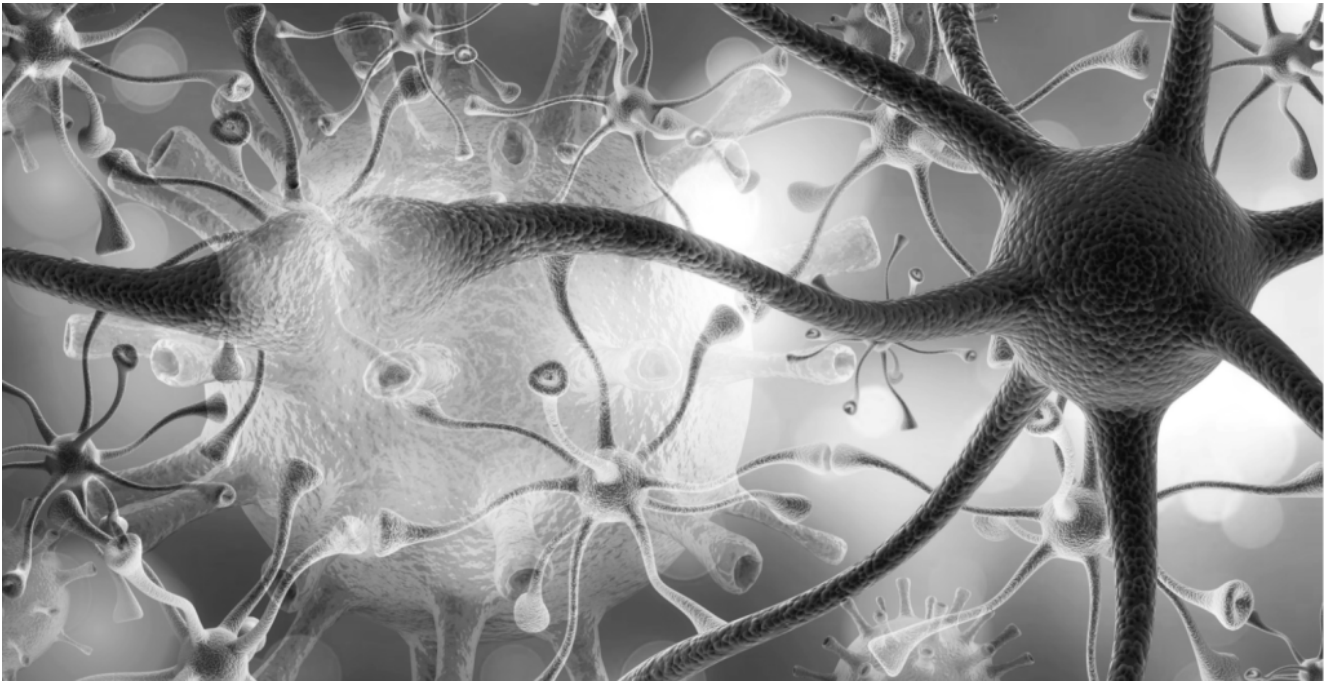


COVID-19 Vaccination Linked To Rare Neurological Disorder



A new systematic review suggests COVID-19 vaccination could trigger a rare neurological disorder that primarily affects the nerves outside the central nervous system, causing pain, muscle atrophy, and, in some cases, paralysis.

In a March 14 paper [published in Vaccines](#), researchers found Parsonage–Turner syndrome (PTS) may occur after all COVID-19 vaccine types and can recur with additional doses of similar or unrelated vaccines.

To determine whether a relationship exists between COVID-19 vaccines and the development of PTS, researchers searched LitCOVID and the World Health Organization’s COVID-19 databases through Jan. 25. They found 59 cases of PTS reported in the literature following COVID-19 vaccination. Of those 59 cases, 36 patients (61 percent) received an mRNA vaccine, and 18 patients (30 percent) received a viral vector vaccine.

Of those 36 patients who received an mRNA vaccine, 24 received Pfizer and 10 received Moderna. Of the 18 patients who

received a viral vector vaccine, 15 received AstraZeneca and two received the Johnson & Johnson shot. Five patients received an unknown vaccine type.

After performing a causality assessment, researchers found 32 cases were “possibly caused by vaccination”—22 cases after mRNA vaccination, seven cases after viral vector vaccination, and three cases where the vaccine was unknown.

What Is Parsonage–Turner Syndrome?

PTS, or neuralgic amyotrophy, is a disorder affecting the peripheral nervous system characterized by the rapid onset of severe pain followed by significant muscular atrophy. It primarily affects the skull, shoulder, upper limbs, and the chest wall on one side of the body. According to the [National Organization for Rare Disorders](#), PTS affects the brachial plexus, a network of nerves that controls movement and sensation in the shoulders and arms. In some instances, nerves in the legs can also be involved.

People who experience PTS usually have intense, constant pain that worsens with movement and can last anywhere from a few hours to several weeks. Some people may experience symptoms for a year or longer, and most recover within two years. As the pain subsides, it is usually replaced by progressive weakness or paralysis. The individual may also experience muscle atrophy, absent or reduced reflexes, or a loss of sensation.

The exact cause of PTS is unknown but the study suggests at least 50 percent of PTS attacks are brought on by a triggering event such as an infection, medical procedure, excessive physical activity, or vaccination. Although some individuals recover without treatment, others experience recurrent episodes.

Study Findings

According to the study, most PTS patients developed neurologic symptoms within 14 days of vaccination, regardless of the vaccine type, and primarily had symptoms on one side of the body—the side that received the injection. PTS occurred more often in males regardless of vaccine type and was more prevalent in patients between the ages of 41 and 50 years compared with older patients.

Among patients who received an mRNA vaccine, 15 developed PTS after the first dose and 16 developed the condition after the second dose. One patient first developed neurological symptoms after receiving an mRNA booster shot, and another presented with PTS after receiving a fourth vaccine dose—the first three of which were Pfizer vaccines and the fourth Moderna. In three cases, the type of vaccine wasn't specified.

Six patients who received a viral vector vaccine developed PTS after the first dose and three developed PTS after the second dose. In nine patients with PTS, the previous vaccination details were unknown.

Only one patient in the mRNA vaccine group who developed PTS previously had COVID-19, and none of the patients in the viral vector group had COVID-19, so the PTS symptoms could not be attributed to SARS-CoV-2 infection. More than half of the patients in both vaccine groups reported no other comorbidities.

Within two weeks of developing pain, patients experienced motor deficits, [amyotrophy](#)—or severe aching or burning in the hips and thighs—weakness and wasting of the muscles in the lower extremities, paresthesia—an abnormal “pins and needles” sensation, and sensory loss.

Those who received viral vector vaccines experienced more nerve involvement outside the brachial plexus. Further tests

revealed cerebral spinal fluid albuminocytological dissociation in 33 percent of those who received mRNA vaccines and in 100 percent of those who received viral vector vaccines. This condition is often associated with [Guillain Barré syndrome](#). Researchers also found [ipsilateral axillary lymphadenopathy](#), a condition related to the administration of mRNA vaccines in which the lymph nodes in the armpit on the side of the body that received the injection become swollen.

According to the study, two cases of PTS worsened after a second mRNA vaccine dose, and another case that had resolved recurred after influenza vaccination. Another patient tolerated a second dose of a viral vector vaccine, while another patient did not and symptoms reemerged.

Outcomes and symptom improvement varied among patients. Twelve percent of patients who received an mRNA vaccine experienced a full recovery, while 25 percent of patients who received a viral vector vaccine completely recovered.

The authors said the cases they reviewed raise the possibility that COVID-19 vaccines may cause PTS.

“The collection of reports pertaining to such events has significance as they may eventually be regarded as a signal and give rise to hypotheses about a potential link between a vaccination and the incident in question. Consequently, specific studies could be designed to examine the existence of a causal relationship,” they wrote.

Other Studies Link PTS To COVID-19 Vaccines

A 2023 [case report](#) published in the Journal of the American Academy of Orthopaedic Surgeons describes a 15-year-old boy who developed PTS four weeks after receiving a COVID-19 vaccine, suggesting a correlation between PTS and vaccination.

According to the authors, PTS has been linked to other vaccines for human papillomavirus and influenza, as well as diphtheria, tetanus, and pertussis vaccines in children. Although 63 percent of children recover fully, the authors said physical therapy must be implemented early to achieve a better outcome. Other PTS treatments include pain relievers, nonsteroid anti-inflammatory drugs, corticosteroids, and anticonvulsants.

In a 2023 [case report](#) published in the European Journal of Case Reports in Internal Medicine, a woman developed a winged scapula from PTS brought on by COVID-19 vaccination. One day after receiving her second Pfizer vaccine dose, the woman developed severe stabbing pain in her entire left upper extremity. Although the pain resolved within two weeks, she had difficulty moving her left shoulder, and scans revealed PTS. A winged scapula is a skeletal condition where the shoulder blade protrudes abnormally from the back.

“PTS should be considered in patients with post-neuralgic motor paralysis of the unilateral upper extremity, which can occur after COVID-19 vaccination,” the paper’s authors wrote.

In a 2023 case report and literature review [published in Cureus](#), researchers identified 42 cases of brachial neuritis, also known as PTS, following COVID-19 vaccination and reported a case that developed in a 44-year-old male physician after receiving his fourth vaccine dose. The physician’s pain began “insidiously” and became so unbearable that emergency services were called. He experienced crushing chest pain and pulsating shooting pain in the arm that progressively worsened and spread over the left scapula to the forearm and fingers. Any movement of the affected limb caused severe pain and paresthesia developed in his fingers.

“Brachial plexus neuritis is a rare and underdiagnosed condition which can be debilitating, with recovery lasting over two to three years. It is a recognized complication after

infections or vaccinations,” the paper’s authors wrote. The condition is increasingly being reported due to global COVID-19 vaccination, and there “appears to be no definitive correlation to the type, brand, or number of doses of vaccination” associated with the condition, they added.

A 2022 paper [published in Neurology](#) described six patients who developed PTS following COVID-19 vaccination. Each patient had received a COVID-19 vaccine within five days to eight weeks of symptom onset and developed pain in the shoulder/upper limb, followed within days by muscle weakness. Three patients did not have any improvement in arm/hand weakness, while the other half recovered some strength. The researchers decided to study these patients after noting an increase in PTS diagnosis during the first six months of 2021 and an analysis that showed the increase may be related to patients receiving COVID-19 vaccines.

“PTS may occur after the COVID-19 vaccine and should be suspected in patients with symptoms and signs suggestive of acute brachial plexopathy. Studies of a larger series may provide insight into predisposing factors,” the authors concluded.

They also found that PTS is associated with other vaccinations, including varicella zoster, hepatitis B, smallpox, swine flu, diphtheria, pertussis, and tetanus vaccine, suggesting that the viral antigen in the vaccine can trigger the development of PTS post-vaccination.