# COMPILATION: PEER REVIEWED MEDICAL PAPERS OF COVID VACCINE INJURIES

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2 Comments

Peer Reviewed Medical Papers Submitted To Various Medical Journals, Evidencing A Multitude Of Adverse Events In Covid-19 Vaccine Recipients.

## Myocarditis

Includes terms: Inflammatory Heart Reactions & Myocardial. Inflammation of the heart muscle (myocardium). The inflammation can reduce the heart's ability to pump and cause rapid or irregular heart rhythms (arrhythmias). Signs and symptoms of myocarditis include chest pain, fatigue, shortness of breath, and rapid or irregular heartbeats. In a small percentage of cases persons with myocarditis can be at risk of sudden death following strenuous activity. Some sufferers of myocarditis may require heart surgery or a heart transplant later in life.

1. Myocarditis after mRNA vaccination against SARS-CoV-2, a case series: https://www.sciencedirect.com/science/article/pii/S2666602221000409
2. Myocarditis after immunization with COVID-19 mRNA vaccines in members of the US military. This article reports that in "23 male patients, including 22 previously healthy military members, myocarditis was identified within 4 days after receipt of the vaccine": https://jamanetwork.com/journals/jamacardiology/fullarticle/2781601
3. Association of myocarditis with the BNT162b2 messenger RNA COVID-19 vaccine in a case series of children: https://pubmed.ncbi.nlm.nih.gov/34374740/
4. Acute symptomatic myocarditis in seven adolescents after Pfizer-BioNTech COVID-19 vaccination: https://pediatrics.aappublications.org/content/early/2021/06/04/peds.2021-052478
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6. Myocarditis, pericarditis and cardiomyopathy after COVID-19 vaccination: https://www.sciencedirect.com/science/article/pii/S1443950621011562
7. Myocarditis with COVID-19 mRNA vaccines: https://www.ahajournals.org/doi/pdf/10.1161/CIRCULATIONAHA.121.056135
8. Myocarditis and pericarditis after COVID-19 vaccination: https://jamanetwork.com/journals/jama/fullarticle/2782900
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10. COVID-19 Vaccination Associated with Myocarditis in Adolescents: https://pediatrics.aappublications.org/content/pediatrics/early/2021/08/12/peds.2021-053427.full.pdf
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14. Potential association between COVID-19 vaccine and myocarditis: clinical and CMR findings: https://www.sciencedirect.com/science/article/pii/S1936878X2100485X
15. Recurrence of acute myocarditis temporally associated with receipt of coronavirus mRNA disease vaccine 2019 (COVID-19) in a male adolescent: https://www.sciencedirect.com/science/article/pii/S002234762100617X
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17. Acute myocarditis after administration of BNT162b2 vaccine: https://www.sciencedirect.com/science/article/pii/S2214250921001530
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20. Acute myocarditis after Comirnaty (Pfizer) vaccination in a healthy male with previous SARS-CoV-2 infection: https://www.sciencedirect.com/science/article/pii/S1930043321005549
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## Thrombosis

Includes terms: Thrombotic & Thromboembolic & Thromboembolism. There are three categories of causes of thrombosis: damage to the blood vessel (catheter or surgery), slowed blood flow (immobility), and/or thrombophilia (if the blood itself is more likely to clot).

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## Thrombocytopenia

A condition in which there is a lower-than-normal number of platelets in the blood. It may result in easy bruising and excessive bleeding from wounds or bleeding in mucous membranes and other tissues.

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## Cerebral Venous Thrombosis

A type of stroke in which the venous channels of the brain become thrombosed, resulting in cerebral infarction in the areas corresponding to the thrombosis.

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## Vasculitis

Includes term: Microscopic polyangiitis. Inflammation of the blood vessels that causes changes in the blood vessel walls. When your blood vessel becomes weak, it might stretch and bulge (called an aneurysm). It might also burst open, causing bleeding. This can be life-threatening.

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21. Cutaneous leukocytoclastic vasculitis induced by Sinovac COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34660867/.
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## Guillain-Barré Syndrome

A neurological disorder in which the body's immune system mistakenly attacks part of its peripheral nervous system—the network of nerves located outside of the brain and spinal cord. GBS can range from a very mild case with brief weakness to nearly devastating paralysis, leaving the person unable to breathe independently. Fortunately, most people eventually recover from even the most severe cases of GBS. After recovery, some people will continue to have some degree of weakness.

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26. Guillain-Barre syndrome presenting with facial diplegia following vaccination with COVID-19 in two patients: https://pubmed.ncbi.nlm.nih.gov/34649856/
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## Lymphadenopathy

Includes terms: Unilateral, Supraclavicular And Cervical. A disease affecting the lymph nodes where the sizes of the lymph can be affected

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4. Hypermetabolic lymphadenopathy after administration of BNT162b2 mRNA vaccine Covid-19: incidence assessed by [ 18 F] FDG PET-CT and relevance for study interpretation: https://pubmed.ncbi.nlm.nih.gov/33774684/
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9. COVID-19 post-vaccination lymphadenopathy: report of fine-needle aspiration biopsy cytologic findings: https://pubmed.ncbi.nlm.nih.gov/34432391/
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19. Lymphadenopathy associated with the COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/33786231/
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## Anaphylaxis

Includes term: Anaphylactoid. A severe, potentially life-threatening allergic reaction.

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4. Allergic reactions, including anaphylaxis, after receiving first dose of Modern COVID-19 vaccine – United States, December 21, 2020-January 10, 2021: https://pubmed.ncbi.nlm.nih.gov/33507892/
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20. Anaphylaxis after Modern COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34734159/
21. Sex differences in the incidence of anaphylaxis to LNP-mRNA vaccines COVID-19: https://pubmed.ncbi.nlm.nih.gov/34020815/
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23. Allergic reactions, including anaphylaxis, after receiving the first dose of Modern COVID-19 vaccine – United States, December 21, 2020 to January 10, 2021: https://pubmed.ncbi.nlm.nih.gov/33641268/
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25. Anaphylaxis reactions to Pfizer BNT162b2 vaccine: report of 3 cases of anaphylaxis following vaccination with Pfizer BNT162b2: https://pubmed.ncbi.nlm.nih.gov/34579211/
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## Myopericarditis

A complication of acute pericarditis, is characterized by extension of pericardial inflammation to the myocardium, which manifests as an elevated troponin level. It is generally evaluated and treated as acute pericarditis.

1. Myopericarditis after Pfizer mRNA COVID-19 vaccination in adolescents: https://www.sciencedirect.com/science/article/pii/S002234762100665X
2. Myopericarditis after vaccination with COVID-19 mRNA in adolescents 12 to 18 years of age: https://www.sciencedirect.com/science/article/pii/S0022347621007368
3. Important information on myopericarditis after vaccination with Pfizer COVID-19 mRNA in adolescents: https://www.sciencedirect.com/science/article/pii/S0022347621007496
4. Insights from a murine model of COVID-19 mRNA vaccine-induced myopericarditis: could accidental intravenous injection of a vaccine induce myopericarditis https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciab741/6359059
5. Acute myocarditis after administration of BNT162b2 vaccine against COVID-19:. https://www.sciencedirect.com/science/article/abs/pii/S188558572100133X
6. Insights from a murine model of myopericarditis induced by COVID-19 mRNA vaccine: could accidental intravenous injection of a vaccine induce myopericarditis: https://pubmed.ncbi.nlm.nih.gov/34453510/
7. COVID-19 mRNA vaccination and development of CMR-confirmed myopericarditis: https://www.medrxiv.org/content/10.1101/2021.09.13.21262182v1.full?s=09.
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10. Report of a case of myopericarditis after vaccination with BNT162b2 COVID-19 mRNA in a young Korean male: https://pubmed.ncbi.nlm.nih.gov/34636504/
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## Allergic Reactions

Includes Term: Allergy. A condition in which the immune system reacts abnormally to a foreign substance.

1. An academic hospital experience assessing the risk of COVID-19 mRNA vaccine using patient's allergy history: https://www.sciencedirect.com/science/article/pii/S2213219821007972
2. Allergic reactions, including anaphylaxis, after receiving the first dose of the Pfizer-BioNTech COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/33475702/
3. Allergic reactions to the first COVID-19 vaccine: a potential role of polyethylene glycol: https://pubmed.ncbi.nlm.nih.gov/33320974/
4. Pfizer Vaccine Raises Allergy Concerns: https://pubmed.ncbi.nlm.nih.gov/33384356/
5. Allergic reactions, including anaphylaxis, after receiving the first dose of Pfizer-BioNTech COVID-19 vaccine – United States, December 14-23, 2020: https://pubmed.ncbi.nlm.nih.gov/33444297/
6. Allergic reactions, including anaphylaxis, after receiving first dose of Modern COVID-19 vaccine – United States, December 21, 2020-January 10, 2021: https://pubmed.ncbi.nlm.nih.gov/33507892/
7. Severe Allergic Reactions after COVID-19 Vaccination with the Pfizer / BioNTech Vaccine in Great Britain and the USA: Position Statement of the German Allergy Societies: German Medical Association of Allergologists (AeDA), German Society for Allergology and Clinical Immunology (DGAKI) and Society for Pediatric Allergology and Environmental Medicine (GPA): https://pubmed.ncbi.nlm.nih.gov/33643776/
8. Allergic reactions and anaphylaxis to LNP-based COVID-19 vaccines: https://pubmed.ncbi.nlm.nih.gov/33571463/
9. Allergenic components of the mRNA-1273 vaccine for COVID-19: possible involvement of polyethylene glycol and IgG-mediated complement activation: https://pubmed.ncbi.nlm.nih.gov/33657648/
10. Acute allergic reactions to COVID-19 mRNA vaccines: https://pubmed.ncbi.nlm.nih.gov/33683290/
11. Polyethylene glycole allergy of the SARS CoV2 vaccine recipient: case report of a young adult recipient and management of future exposure to SARS-CoV2: https://pubmed.ncbi.nlm.nih.gov/33919151/
12. Allergic reactions and adverse events associated with administration of mRNA-based vaccines. A health system experience: https://pubmed.ncbi.nlm.nih.gov/34474708/
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14. Allergic reactions after COVID-19 vaccination: putting the risk in perspective: https://pubmed.ncbi.nlm.nih.gov/34463751/
15. Risk of severe allergic reactions to COVID-19 vaccines among patients with allergic skin disease: practical recommendations. An ETFAD position statement with external experts: https://pubmed.ncbi.nlm.nih.gov/33752263/
16. Association of self-reported history of high-risk allergy with allergy symptoms after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34698847/
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## Bell's Palsy

Includes Terms: Facial Paralysis & Facial Palsy. An unexplained episode of facial muscle weakness or paralysis. It begins suddenly and worsens over 48 hours. This condition results from damage to the facial nerve (the 7th cranial nerve). Pain and discomfort usually occur on one side of the face or head.

1. Bell's palsy and SARS-CoV-2 vaccines: an unfolding story: https://www.sciencedirect.com/science/article/pii/S1473309921002735
2. Bell's palsy after the second dose of the Pfizer COVID-19 vaccine in a patient with a history of recurrent Bell's palsy: https://www.sciencedirect.com/science/article/pii/S266635462100020X
3. Bell's palsy after COVID-19 vaccination: case report: https://www.sciencedirect.com/science/article/pii/S217358082100122X.
4. The association between COVID-19 vaccination and Bell's palsy: https://pubmed.ncbi.nlm.nih.gov/34411533/
5. Bell's palsy after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/33611630/
6. Bell's palsy after 24 hours of mRNA-1273 SARS-CoV-2 mRNA-1273 vaccine: https://pubmed.ncbi.nlm.nih.gov/34336436/
7. Bell's palsy after Ad26.COV2.S COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34014316/
8. Bell's palsy after COVID-19 vaccination: case report: https://pubmed.ncbi.nlm.nih.gov/34330676/
9. Acute facial paralysis as a possible complication of SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/33975372/.
10. Bell's palsy after COVID-19 vaccination with high antibody response in CSF: https://pubmed.ncbi.nlm.nih.gov/34322761/.
11. Bell's palsy after a single dose of vaccine mRNA. SARS-CoV-2: case report: https://pubmed.ncbi.nlm.nih.gov/34032902/.
12. Adverse event reporting and risk of Bell's palsy after COVID-19 vaccination: https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(21)00646-0/fulltext.
13. Bilateral facial nerve palsy and COVID-19 vaccination: causality or coincidence: https://pubmed.ncbi.nlm.nih.gov/34522557/
14. Left Bell's palsy after the first dose of mRNA-1273 SARS-CoV-2 vaccine: case report:https://pubmed.ncbi.nlm.nih.gov/34763263/.
15. Bell's palsy after inactivated vaccination with COVID-19 in a patient with a history of recurrent Bell's palsy: case report: https://pubmed.ncbi.nlm.nih.gov/34621891/
16. Bell's palsy after vaccination with mRNA (BNT162b2) and inactivated (CoronaVac) SARS-CoV-2 vaccines: a case series and a nested case-control study: https://pubmed.ncbi.nlm.nih.gov/34411532/
17. A case of acute demyelinating polyradiculoneuropathy with bilateral facial palsy after ChAdOx1 nCoV-19 vaccine:. https://pubmed.ncbi.nlm.nih.gov/34272622/
18. Type I interferons as a potential mechanism linking COVID-19 mRNA vaccines with Bell's palsy: https://pubmed.ncbi.nlm.nih.gov/33858693/

## Axillary Adenopathy

Includes term: Adenopathy. Also called armpit lump, axillary lymphadenopathy occurs when your underarm (axilla) lymph nodes grow larger in size. While this condition may be concerning, it's usually attributed to a benign cause. It may also be temporary.

1. COVID-19 vaccine-induced axillary and pectoral lymphadenopathy in PET: https://www.sciencedirect.com/science/article/pii/S1930043321002612
2. Evolution of bilateral hypermetabolic axillary hypermetabolic lymphadenopathy on FDG PET/CT after 2-dose COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34735411/
3. COVID-19 vaccine-related axillary lymphadenopathy in breast cancer patients: case series with literature review: https://pubmed.ncbi.nlm.nih.gov/34836672/.
4. Subclinical axillary lymphadenopathy associated with COVID-19 vaccination on screening mammography: https://pubmed.ncbi.nlm.nih.gov/34906409/
5. Axillary adenopathy associated with COVID-19 vaccination: imaging findings and follow-up recommendations in 23 women: https://pubmed.ncbi.nlm.nih.gov/33624520/
6. Unilateral axillary adenopathy in the setting of COVID-19 vaccination: follow-up: https://pubmed.ncbi.nlm.nih.gov/34298342/
7. COVID-19 vaccine-related axillary and cervical lymphadenopathy in patients with current or previous breast cancer and other malignancies: cross-sectional imaging findings on MRI, CT and PET-CT: https://pubmed.ncbi.nlm.nih.gov/34719892/
8. Incidence of axillary adenopathy on breast imaging after vaccination with COVID-19: https://pubmed.ncbi.nlm.nih.gov/34292295/.
9. Unilateral axillary lymphadenopathy related to COVID-19 vaccine: pattern on screening breast MRI allowing benign evaluation: https://pubmed.ncbi.nlm.nih.gov/34325221/
10. Axillary lymphadenopathy in patients with recent Covid-19 vaccination: a new diagnostic dilemma: https://pubmed.ncbi.nlm.nih.gov/34825530/.
11. COVID-19 vaccine-induced unilateral axillary adenopathy: follow-up evaluation in the USA: https://pubmed.ncbi.nlm.nih.gov/34655312/.
12. Axillary adenopathy associated with COVID-19 vaccination: imaging findings and follow-up recommendations in 23 women: https://pubmed.ncbi.nlm.nih.gov/33624520/
13. Unilateral axillary adenopathy in the setting of COVID-19 vaccination: follow-up: https://pubmed.ncbi.nlm.nih.gov/34298342/
14. Incidence of axillary adenopathy on breast imaging after vaccination with COVID-19: https://pubmed.ncbi.nlm.nih.gov/34292295/.
15. Unilateral axillary lymphadenopathy related to COVID-19 vaccine: pattern on screening breast MRI allowing benign evaluation: https://pubmed.ncbi.nlm.nih.gov/34325221/
16. Axillary lymphadenopathy in patients with recent Covid-19 vaccination: a new diagnostic dilemma: https://pubmed.ncbi.nlm.nih.gov/34825530/.
17. COVID-19 vaccine-induced unilateral axillary adenopathy: follow-up evaluation in the USA: https://pubmed.ncbi.nlm.nih.gov/34655312/.
18. Adenopathy after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/33625299/.

## Pericarditis

Swelling and irritation of the thin, saclike tissue surrounding your heart (pericardium). Pericarditis often causes sharp chest pain and sometimes other symptoms. The chest pain occurs when the irritated layers of the pericardium rub against each other.

1. Myocarditis and pericarditis after vaccination with COVID-19 mRNA: practical considerations for care providers: https://www.sciencedirect.com/science/article/pii/S0828282X21006243
2. Myocarditis, pericarditis and cardiomyopathy after COVID-19 vaccination: https://www.sciencedirect.com/science/article/pii/S1443950621011562
3. Myocarditis and pericarditis after COVID-19 vaccination: https://jamanetwork.com/journals/jama/fullarticle/2782900
4. Pericarditis after administration of BNT162b2 mRNA COVID-19 mRNA vaccine: https://www.sciencedirect.com/science/article/pii/S1885585721002218
5. Epidemiology and clinical features of myocarditis/pericarditis before the introduction of COVID-19 mRNA vaccine in Korean children: a multicenter study https://search.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resourc e/en/covidwho-1360706.
6. Myocarditis, pericarditis, and cardiomyopathy after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34340927/
7. Clinical Guidance for Young People with Myocarditis and Pericarditis after Vaccination with COVID-19 mRNA: https://www.cps.ca/en/documents/position/clinical-guidance-for-youth-with-myocarditis-and-pericarditis
8. Myocarditis / pericarditis associated with COVID-19 vaccine: https://science.gc.ca/eic/site/063.nsf/eng/h_98291.html
9. Acute myocarditis after the second dose of SARS-CoV-2 vaccine: serendipity or causal relationship: https://pubmed.ncbi.nlm.nih.gov/34236331/
10. Pericarditis after administration of COVID-19 mRNA BNT162b2 vaccine: https://pubmed.ncbi.nlm.nih.gov/34364831/
11. Unusual presentation of acute pericarditis after vaccination against SARS-COV-2 mRNA-1237 Modern: https://pubmed.ncbi.nlm.nih.gov/34447639/
12. A case series of acute pericarditis after vaccination with COVID-19 in the context of recent reports from Europe and the United States: https://pubmed.ncbi.nlm.nih.gov/34635376/
13. Acute pericarditis and cardiac tamponade after vaccination with Covid-19: https://pubmed.ncbi.nlm.nih.gov/34749492/
14. Pericarditis after administration of the BNT162b2 mRNA vaccine COVID-19: https://pubmed.ncbi.nlm.nih.gov/34149145/
15. Case report: symptomatic pericarditis post COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34693198/

## Acute Myelitis

Includes Term: Transverse Myelitis. An inflammation of the spinal cord which can disrupt the normal responses from the brain to the rest of the body, and from the rest of the body to the brain. Inflammation in the spinal cord, can cause the myelin and axon to be damaged resulting in symptoms such as paralysis and sensory loss. Myelitis is classified to several categories depending on the area or the cause of the lesion; however, any inflammatory attack on the spinal cord is often referred to as transverse myelitis.

1. Acute myelitis and ChAdOx1 nCoV-19 vaccine: coincidental or causal association: https://www.sciencedirect.com/science/article/pii/S0165572821002137
2. Acute transverse myelitis (ATM): clinical review of 43 patients with COVID-19-associated ATM and 3 serious adverse events of post-vaccination ATM with ChAdOx1 nCoV-19 vaccine (AZD1222): https://pubmed.ncbi.nlm.nih.gov/33981305/
3. Transverse myelitis induced by SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34458035/
4. Acute transverse myelitis (ATM): clinical review of 43 patients with COVID-19-associated ATM and 3 serious adverse events of post-vaccination ATM with ChAdOx1 nCoV-19 (AZD1222) vaccine: https://pubmed.ncbi.nlm.nih.gov/33981305/.
5. Acute transverse myelitis after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34684047/.
6. Extensive longitudinal transverse myelitis after ChAdOx1 nCOV-19 vaccine: case report: https://pubmed.ncbi.nlm.nih.gov/34641797/.
7. Acute transverse myelitis after SARS-CoV-2 vaccination: case report and review of the literature: https://pubmed.ncbi.nlm.nih.gov/34482455/.
8. Acute transverse myelitis following inactivated COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34370410/
9. Acute transverse myelitis after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34579245/.
10. A case of longitudinally extensive transverse myelitis following Covid-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34182207/
11. Post COVID-19 transverse myelitis; a case report with review of the literature: https://pubmed.ncbi.nlm.nih.gov/34457267/.
12. Acute bilateral bilateral optic neuritis/chiasm with longitudinal extensive transverse myelitis in long-standing stable multiple sclerosis after vector-based vaccination against SARS-CoV-2: https://pubmed.ncbi.nlm.nih.gov/34131771/
13. Extensive longitudinal transverse myelitis following AstraZeneca COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34507942/.
14. Extensive longitudinal transverse myelitis following AstraZeneca COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34507942/.
15. Longitudinally extensive cervical myelitis after vaccination with inactivated virus based COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34849183/

## Perimyocarditis

An acute inflammation of the pericardium and the underlying myocardium resulting in myocellular damage. It is usually asymptomatic with complete resolution in most cases. It can however lead to fulminant cardiac failure resulting in death or requiring cardiac transplantation.

1. Perimyocarditis in adolescents after Pfizer-BioNTech COVID-19 vaccine: https://academic.oup.com/jpids/advance-article/doi/10.1093/jpids/piab060/6329543
2. Perimyocarditis in adolescents after Pfizer-BioNTech COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34319393/
3. Unusual presentation of acute perimyocarditis after modern SARS-COV-2 mRNA-1237 vaccination: https://pubmed.ncbi.nlm.nih.gov/34447639/
4. Perimyocarditis after the first dose of mRNA-1273 SARS-CoV-2 (Modern) mRNA-1273 vaccine in a young healthy male: case report: https://bmccardiovascdisord.biomedcentral.com/articles/10.1186/s12872-021-02183
5. Acute perimyocarditis after the first dose of COVID-19 mRNA vaccine: https://pubmed.ncbi.nlm.nih.gov/34515024/
6. Perimyocarditis after vaccination with COVID-19: https://pubmed.ncbi.nlm.nih.gov/34866957/
7. Tinoco, M., Leite, S., Faria, B., Cardoso, S., Von Hafe, P., Dias, G., . . . Lourenco, A. (2021). Perimyocarditis Following COVID-19 Vaccination. Clin Med Insights Cardiol, 15, 11795468211056634. doi:10.1177/11795468211056634. https://www.ncbi.nlm.nih.gov/pubmed/34866957
8. Jhaveri, R., Adler-Shohet, F. C., Blyth, C. C., Chiotos, K., Gerber, J. S., Green, M., . . . Zaoutis, T. (2021). Weighing the Risks of Perimyocarditis With the Benefits of SARS-CoV-2 mRNA Vaccination in Adolescents. J Pediatric Infect Dis Soc, 10(10), 937-939. doi:10.1093/jpids/piab061. https://www.ncbi.nlm.nih.gov/pubmed/34270752
9. Khogali, F., & Abdelrahman, R. (2021). Unusual Presentation of Acute Perimyocarditis Following SARS-COV-2 mRNA-1237 Moderna Vaccination. Cureus, 13(7), e16590. doi:10.7759/cureus.16590. https://www.ncbi.nlm.nih.gov/pubmed/34447639
10. Hasnie, A. A., Hasnie, U. A., Patel, N., Aziz, M. U., Xie, M., Lloyd, S. G., & Prabhu, S. D. (2021). Perimyocarditis following first dose of the mRNA-1273 SARS-CoV-2 (Moderna) vaccine in a healthy young male: a case report. BMC Cardiovasc Disord, 21(1), 375. doi:10.1186/s12872-021-02183-3. https://www.ncbi.nlm.nih.gov/pubmed/34348657

## Intracerebral Haemorrhage

Includes Term: Stroke. Intracerebral hemorrhage (bleeding into the brain tissue) is the second most common cause of stroke (15-30% of strokes) and the most deadly. Blood vessels carry blood to and from the brain. Arteries or veins can rupture, either from abnormal pressure or abnormal development or trauma.

1. Intracerebral haemorrhage due to thrombosis with thrombocytopenia syndrome after COVID-19 vaccination: the first fatal case in Korea: https://pubmed.ncbi.nlm.nih.gov/34402235/
2. Intracerebral haemorrhage twelve days after vaccination with ChAdOx1 nCoV-19: https://pubmed.ncbi.nlm.nih.gov/34477089/
3. Neurosurgical considerations regarding decompressive craniectomy for intracerebral hemorrhage after SARS-CoV-2 vaccination in vaccine-induced thrombotic thrombocytopenia-VITT: https://pubmed.ncbi.nlm.nih.gov/34202817/
4. First dose of ChAdOx1 and BNT162b2 COVID-19 vaccines and thrombocytopenic, thromboembolic, and hemorrhagic events in Scotland: https://pubmed.ncbi.nlm.nih.gov/34108714/
5. Large hemorrhagic stroke after vaccination against ChAdOx1 nCoV-19: a case report: https://pubmed.ncbi.nlm.nih.gov/34273119/
6. Major hemorrhagic stroke after ChAdOx1 nCoV-19 vaccination: a case report: https://pubmed.ncbi.nlm.nih.gov/34273119/
7. Aphasia seven days after the second dose of an mRNA-based SARS-CoV-2 vaccine. Brain MRI revealed an intracerebral haemorrhage (ICBH) in the left temporal lobe in a 52-year-old man. https://www.sciencedirect.com/science/article/pii/S2589238X21000292#f0005
8. Incidence of acute ischemic stroke after coronavirus vaccination in Indonesia: case series: https://pubmed.ncbi.nlm.nih.gov/34579636/

## Immune-Mediated Hepatitis

Defined as an elevation in the patient's liver function tests that requires corticosteroids and that has no alternate etiology.

1. Autoimmune hepatitis developing after coronavirus disease vaccine 2019 (COVID-19): causality or victim?: https://pubmed.ncbi.nlm.nih.gov/33862041/
2. Autoimmune hepatitis triggered by vaccination against SARS-CoV-2: https://pubmed.ncbi.nlm.nih.gov/34332438/
3. Acute autoimmune-like hepatitis with atypical antimitochondrial antibody after vaccination with COVID-19 mRNA: a new clinical entity: https://pubmed.ncbi.nlm.nih.gov/34293683/.
4. Autoimmune hepatitis after COVID vaccine: https://pubmed.ncbi.nlm.nih.gov/34225251/
5. Hepatitis C virus reactivation after COVID-19 vaccination: a case report: https://pubmed.ncbi.nlm.nih.gov/34512037/
6. Autoimmune hepatitis developing after ChAdOx1 nCoV-19 vaccine (Oxford-AstraZeneca): https://pubmed.ncbi.nlm.nih.gov/34171435/
7. Autoimmune hepatitis triggered by SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34332438/.
8. Immune-mediated hepatitis with the Moderna vaccine is no longer a coincidence but confirmed: https://www.sciencedirect.com/science/article/pii/S0168827821020936

## Facial Nerve Palsy

Patients cannot move the upper and lower part of their face on one side.

1. Facial nerve palsy following administration of COVID-19 mRNA vaccines: analysis of self-report database: https://www.sciencedirect.com/science/article/pii/S1201971221007049
2. COVID-19 vaccination association and facial nerve palsy: A case-control study: https://pubmed.ncbi.nlm.nih.gov/34165512/
3. Sequential contralateral facial nerve palsy after first and second doses of COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34281950/.
4. Peripheral facial nerve palsy after vaccination with BNT162b2 (COVID-19): https://pubmed.ncbi.nlm.nih.gov/33734623/

5. Facial nerve palsy after administration of COVID-19 mRNA vaccines: analysis of self-report database: https://pubmed.ncbi.nlm.nih.gov/34492394/
6. A case of acute demyelinating polyradiculoneuropathy with bilateral facial palsy following ChAdOx1 nCoV-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34272622/

## Neurological Symptoms

Includes Terms: Neurological Side Effects & Neurological Complications. Medically defined as disorders that affect the brain as well as the nerves found throughout the human body and the spinal cord.

1. Neurological symptoms and neuroimaging alterations related to COVID-19 vaccine: cause or coincidence: https://www.sciencedirect.com/science/article/pii/S0899707121003557.
2. Neurological symptoms and neuroimaging alterations related to COVID-19 vaccine: cause or coincidence?: https://pubmed.ncbi.nlm.nih.gov/34507266/
3. Spectrum of neurological complications after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34719776/.
4. n-hospital observational study of neurological disorders in patients recently vaccinated with COVID-19 mRNA vaccines: https://pubmed.ncbi.nlm.nih.gov/34688190/
5. Neurological side effects of SARS-CoV-2 vaccines: https://pubmed.ncbi.nlm.nih.gov/34750810/
6. Neurological complications after the first dose of COVID-19 vaccines and SARS-CoV-2 infection: https://pubmed.ncbi.nlm.nih.gov/34697502/

## Haemorrhage

Includes terms: cerebral, lobar, acral and retinal. The release of blood from a broken bloody vessel, either inside or outside the body

1. Lobar hemorrhage with ventricular rupture shortly after the first dose of an mRNA-based SARS-CoV-2 vaccine: https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC8553377/
2. Retinal hemorrhage after SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34884407/.
3. Lobar hemorrhage with ventricular rupture shortly after the first dose of a SARS-CoV-2 mRNA-based SARS-CoV-2 vaccine: https://pubmed.ncbi.nlm.nih.gov/34729467/
4. Acral hemorrhage after administration of the second dose of SARS-CoV-2 vaccine. A post-vaccination reaction: https://pubmed.ncbi.nlm.nih.gov/34092400/742.
5. Fatal cerebral hemorrhage after COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/33928772/
6. Intracerebral hemorrhage associated with vaccine-induced thrombotic thrombocytopenia after ChAdOx1 nCOVID-19 vaccination in a pregnant woman: https://pubmed.ncbi.nlm.nih.gov/34261297/

## Immune-Mediated Disease Outbreaks

Autoimmune diseases occur when the immune system produces antibodies that attack the body's own cells. There are many types, including Coeliac disease, lupus and Graves' disease. Although they can't be cured, there are various treatment options to manage the symptoms and reduce further damage to your body.

1. Immune-mediated disease outbreaks or recent-onset disease in 27 subjects after mRNA/DNA vaccination against SARS-CoV-2: https://pubmed.ncbi.nlm.nih.gov/33946748/
2. Severe autoimmune hemolytic autoimmune anemia after receiving SARS-CoV-2 mRNA vaccine:https://pubmed.ncbi.nlm.nih.gov/34549821/
3. Severe autoimmune hemolytic anemia after receipt of SARS-CoV-2 mRNA vaccine: https://onlinelibrary.wiley.com/doi/10.1111/trf.16672
4. Immunogenicity and safety of the BNT162b2 mRNA COVID-19 vaccine in adult patients with autoimmune inflammatory rheumatic diseases and in the general population: a multicentre study: https://www.ncbi.nlm.nih.gov/pubmed/34127481
5. Autoimmune encephalitis after ChAdOx1-S SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34846583/
6. Immune-mediated disease outbreaks or new-onset disease in 27 subjects after mRNA/DNA vaccination against SARS-CoV-2: https://pubmed.ncbi.nlm.nih.gov/33946748/

## Takotsubo cardiomyopathy

A temporary heart condition that develops in response to an intense emotional or physical experience. It's also known as stress cardiomyopathy or broken heart syndrome. In this condition, the heart's main pumping chamber changes shape, affecting the heart's ability to pump blood effectively. Death is rare, but heart failure occurs in about 20% of patients. Rarely reported complications include arrhythmias (abnormal heart rhythms), obstruction of blood flow from the left ventricle, and rupture of the ventricle wall.

1. Myocarditis, pericarditis and cardiomyopathy after COVID-19 vaccination: https://www.sciencedirect.com/science/article/pii/S1443950621011562
2. Takotsubo cardiomyopathy after vaccination with mRNA COVID-19: https://www.sciencedirect.com/science/article/pii/S1443950621011331
3. Takotsubo (stress) cardiomyopathy after vaccination with ChAdOx1 nCoV-19: https://pubmed.ncbi.nlm.nih.gov/34625447/
4. Takotsubo cardiomyopathy after coronavirus 2019 vaccination in patient on maintenance hemodialysis: https://pubmed.ncbi.nlm.nih.gov/34731486/.
5. Takotsubo syndrome after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34539938/

## Cardiac

Cardiac complications include myocardial injury, heart failure (HF), cardiogenic shock, multisystem inflammatory syndrome in adults, and cardiac arrhythmias including sudden cardiac arrest.

1. Transient cardiac injury in adolescents receiving the BNT162b2 mRNA COVID-19 vaccine: https://journals.lww.com/pidj/Abstract/9000/Transient_Cardiac_Injury_in_Adolesce nts_Receiving.95800.aspx
2. Snapiri, O., Rosenberg Danziger, C., Shirman, N., Weissbach, A., Lowenthal, A., Ayalon, I., . . . Bilavsky, E. (2021). Transient Cardiac Injury in Adolescents Receiving the BNT162b2 mRNA COVID-19 Vaccine. Pediatr Infect Dis J, 40(10), e360-e363. doi:10.1097/INF.0000000000003235. https://www.ncbi.nlm.nih.gov/pubmed/34077949
3. Fazlollahi, A., Zahmatyar, M., Noori, M., Nejadghaderi, S. A., Sullman, M. J. M., Shekarriz-Foumani, R., . . . Safiri, S. (2021). Cardiac complications following mRNA COVID-19 vaccines: A systematic review of case reports and case series. Rev Med Virol, e2318. doi:10.1002/rmv.2318. https://www.ncbi.nlm.nih.gov/pubmed/34921468
4. Ho, J. S., Sia, C. H., Ngiam, J. N., Loh, P. H., Chew, N. W., Kong, W. K., & Poh, K. K. (2021). A review of COVID-19 vaccination and the reported cardiac manifestations. Singapore Med J. doi:10.11622/smedj.2021210. https://www.ncbi.nlm.nih.gov/pubmed/34808708
5. Temporal relationship between the second dose of BNT162b2 mRNA Covid-19 vaccine and cardiac involvement in a patient with previous SARS-COV-2 infection: https://www.sciencedirect.com/science/article/pii/S2352906721000622
6. Sessa, F., Salerno, M., Esposito, M., Di Nunno, N., Zamboni, P., & Pomara, C. (2021). Autopsy Findings and Causality Relationship between Death and COVID-19 Vaccination: A Systematic Review. J Clin Med, 10(24). doi:10.3390/jcm10245876. https://www.ncbi.nlm.nih.gov/pubmed/34945172
7. Post-mortem investigation of deaths after vaccination with COVID-19 vaccines: https://pubmed.ncbi.nlm.nih.gov/34591186/
8. A look at the role of postmortem immunohistochemistry in understanding the inflammatory pathophysiology of COVID-19 disease and vaccine-related thrombotic adverse events: a narrative review: https://pubmed.ncbi.nlm.nih.gov/34769454/
9. COVID-19 vaccine and death: causality algorithm according to the WHO eligibility diagnosis: https://pubmed.ncbi.nlm.nih.gov/34073536/
10. Post-mortem investigation of deaths after vaccination with COVID-19 vaccines: https://pubmed.ncbi.nlm.nih.gov/34591186/

## Rhabdomyolysis

A serious syndrome due to a direct or indirect muscle injury. It results from the death of muscle fibers and release of their contents into the bloodstream. This can lead to serious complications such as renal (kidney) failure. This means the kidneys cannot remove waste and concentrated urine. In rare cases, rhabdomyolysis can even cause death.

1. Rhabdomyolysis and fasciitis induced by the COVID-19 mRNA vaccine: https://pubmed.ncbi.nlm.nih.gov/34435250/
2. COVID-19 vaccine-induced rhabdomyolysis: case report with literature review: https://pubmed.ncbi.nlm.nih.gov/34186348/
3. COVID-19 vaccine-induced rhabdomyolysis: case report with review of the literature: https://www.sciencedirect.com/science/article/pii/S1871402121001880
4. Rhabdomyolysis and fasciitis induced by COVID-19 mRNA vaccine: https://pubmed.ncbi.nlm.nih.gov/34435250/.
5. Case report: ANCA-associated vasculitis presenting with rhabdomyolysis and crescentic Pauci-Inmune glomerulonephritis after vaccination with Pfizer-BioNTech COVID-19 mRNA: https://pubmed.ncbi.nlm.nih.gov/34659268/

## Thrombotic Thrombocytopenic Purpura

A disorder that causes blood clots (thrombi) to form in small blood vessels throughout the body. These clots can cause serious medical problems if they block vessels and restrict blood flow to organs such as the brain, kidneys, and heart.

1. Thrombotic thrombocytopenic purpura after vaccination with Ad26.COV2-S: https://pubmed.ncbi.nlm.nih.gov/33980419/
2. Thrombotic thrombocytopenic purpura: a new threat after COVID bnt162b2 vaccine: https://pubmed.ncbi.nlm.nih.gov/34264514/.
3. Severe immune thrombocytopenic purpura after SARS-CoV-2 vaccine: https://pubmed.ncbi.nlm.nih.gov/34754937/
4. Immune thrombocytopenic purpura associated with COVID-19 mRNA vaccine Pfizer-BioNTech BNT16B2b2: https://pubmed.ncbi.nlm.nih.gov/34077572/

## Cardiovascular events

Refer to any incidents that may cause damage to the heart muscle.

1. Myocarditis and other cardiovascular complications of COVID-19 mRNA-based COVID-19 vaccines https://www.cureus.com/articles/61030-myocarditis-and-other-cardiovascular-complications-of-the-mrna-based-covid-19-vaccines
2. Cardiovascular magnetic resonance imaging findings in young adult patients with acute myocarditis after COVID-19 mRNA vaccination: a case series: https://jcmr-online.biomedcentral.com/articles/10.1186/s12968-021-00795-4
3. Be alert to the risk of adverse cardiovascular events after COVID-19 vaccination: https://www.xiahepublishing.com/m/2472-0712/ERHM-2021-00033
4. Myocarditis and other cardiovascular complications of mRNA-based COVID-19 vaccines: https://pubmed.ncbi.nlm.nih.gov/34277198/

## Acute Hyperactive Encephalopathy

Includes Terms: Acute Encephalopathy & Encephalitis. A general brain dysfunction due to significantly high blood pressure. Symptoms may include headache, vomiting, trouble with balance, and confusion. Onset is generally sudden. Complications can include seizures, posterior reversible encephalopathy syndrome, and bleeding in the back of the eye.

1. Acute hyperactive encephalopathy following COVID-19 vaccination with dramatic response to methylprednisolone: a case report: https://www.sciencedirect.com/science/article/pii/S2049080121007536
2. Post-vaccinal encephalitis after ChAdOx1 nCov-19: https://pubmed.ncbi.nlm.nih.gov/34324214/
3. Acute disseminated encephalomyelitis following vaccination against SARS-CoV-2: https://pubmed.ncbi.nlm.nih.gov/34325334/
4. Acute hyperactive encephalopathy following COVID-19 vaccination with dramatic response to methylprednisolone: case report: https://pubmed.ncbi.nlm.nih.gov/34512961/

## Acute Kidney Injury

A sudden episode of kidney failure or kidney damage that occurs within a few hours or a few days.

1. Minimal change disease with severe acute kidney injury after Oxford-AstraZeneca COVID-19 vaccine: case report: https://pubmed.ncbi.nlm.nih.gov/34242687/.
2. Acute kidney injury with macroscopic hematuria and IgA nephropathy after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34352309/
3. AstraZeneca): https://pubmed.ncbi.nlm.nih.gov/34362727/
4. Minimal change disease and acute kidney injury after Pfizer-BioNTech COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34000278/

## Multiple Sclerosis

A potentially disabling disease of the brain and spinal cord (central nervous system).

1. Severe relapse of multiple sclerosis after COVID-19 vaccination: a case report: https://pubmed.ncbi.nlm.nih.gov/34447349/
2. Acute relapse and impaired immunization after COVID-19 vaccination in a patient with multiple sclerosis treated with rituximab: https://pubmed.ncbi.nlm.nih.gov/34015240
3. Humoral response induced by Prime-Boost vaccination with ChAdOx1 nCoV-19 and BNT162b2 mRNA vaccines in a patient with multiple sclerosis treated with teriflunomide: https://pubmed.ncbi.nlm.nih.gov/34696248/
4. Initial clinical manifestation of multiple sclerosis after immunization with the Pfizer-BioNTech COVID-19 vaccine: https://www.jni-journal.com/article/S0165-5728(21)00282-4/fulltext

## Henoch-Schonlein Purpura

Affects the small blood vessels of the skin, joints, intestines and kidneys. It's most common before the age of seven but can affect anyone. A disorder causing inflammation and bleeding in the small blood vessels.

1. A rare case of Henoch-Schönlein purpura after a case report of COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34518812/
2. Henoch-Schönlein purpura occurring after vaccination with COVID-19: https://pubmed.ncbi.nlm.nih.gov/34247902/.
3. Henoch-Schönlein purpura following the first dose of COVID-19 viral vector vaccine: case report:https://pubmed.ncbi.nlm.nih.gov/34696186/.

## Bleeding Episodes

Major episodes include most joint bleeds, bleeding into large muscles, muscle bleeds with signs of compartment syndrome, life-threatening bleeds, and surgery. These usually require a 70% – 100% correction and more than one infusion. The exact dose will depend on the individual and on HTC policy.

1. Blood clots and bleeding episodes after BNT162b2 and ChAdOx1 nCoV-19 vaccination: analysis of European data: https://www.sciencedirect.com/science/article/pii/S0896841121000937
2. Association between ChAdOx1 nCoV-19 vaccination and bleeding episodes: large population-based cohort study: https://pubmed.ncbi.nlm.nih.gov/34479760/.
3. Association between ChAdOx1 nCoV-19 vaccination and bleeding episodes: large population-based cohort study: https://pubmed.ncbi.nlm.nih.gov/34479760/.

## Cutaneous Adverse Effects

Also known as toxidermia, are skin manifestations resulting from systemic drug administration. These reactions range from mild erythematous skin lesions to much more severe reactions such as Lyell's syndrome.

1. Cutaneous adverse effects of available COVID-19 vaccines: https://pubmed.ncbi.nlm.nih.gov/34518015/
2. Rare cutaneous adverse effects of COVID-19 vaccines: a case series and review of the literature: https://pubmed.ncbi.nlm.nih.gov/34363637/
3. Cutaneous adverse reactions of 35,229 doses of COVID-19 Sinovac and AstraZeneca vaccine COVID-19: a prospective cohort study in health care workers: https://pubmed.ncbi.nlm.nih.gov/34661934/

## Skin Reactions

An allergic reaction can cause rash, itching, burning, redness, bumps, hives, and swelling.

1. A case series of skin reactions to COVID-19 vaccine in the Department of Dermatology at Loma Linda University: https://pubmed.ncbi.nlm.nih.gov/34423106/
2. Skin reactions reported after Moderna and Pfizer's COVID-19 vaccination: a study based on a registry of 414 cases: https://pubmed.ncbi.nlm.nih.gov/33838206/
3. Skin reactions after vaccination against SARS-COV-2: a nationwide Spanish cross-sectional study of 405 cases: https://pubmed.ncbi.nlm.nih.gov/34254291/
4. Coagulopathies after SARS-CoV-2 vaccination may derive from a combined effect of SARS-CoV-2 spike protein and adenovirus vector-activated signaling pathways: https://pubmed.ncbi.nlm.nih.gov/34639132/
5. Diffuse prothrombotic syndrome after administration of ChAdOx1 nCoV-19 vaccine: case report: https://pubmed.ncbi.nlm.nih.gov/34615534/
6. Calcaterra, G., Bassareo, P. P., Barilla, F., Romeo, F., & Mehta, J. L. (2022). Concerning the unexpected prothrombotic state following some coronavirus disease 2019 vaccines. J Cardiovasc Med (Hagerstown), 23(2), 71-74. doi:10.2459/JCM.0000000000001232. https://www.ncbi.nlm.nih.gov/pubmed/34366403
7. Post-vaccination multisystem inflammatory syndrome in adults without evidence of prior SARS-CoV-2 infection: https://pubmed.ncbi.nlm.nih.gov/34852213/
8. Buchhorn, R., Meyer, C., Schulze-Forster, K., Junker, J., & Heidecke, H. (2021). Autoantibody Release in Children after Corona Virus mRNA Vaccination: A Risk Factor of Multisystem Inflammatory Syndrome? Vaccines (Basel), 9(11). doi:10.3390/vaccines9111353. https://www.ncbi.nlm.nih.gov/pubmed/34835284
9. Chai, Q., Nygaard, U., Schmidt, R. C., Zaremba, T., Moller, A. M., & Thorvig, C. M. (2022). Multisystem inflammatory syndrome in a male adolescent after his second Pfizer-BioNTech COVID-19 vaccine. Acta Paediatr, 111(1), 125-127. doi:10.1111/apa.16141.

## Vogt-Koyanagi-Harada syndrome

A rare disorder of unknown origin that affects many body systems, including as the eyes, ears, skin, and the covering of the brain and spinal cord (the meninges). The most noticeable symptom is a rapid loss of vision.

1. Vogt-Koyanagi-Harada syndrome after COVID-19 and ChAdOx1 nCoV-19 (AZD1222) vaccination:https://pubmed.ncbi.nlm.nih.gov/34462013/.
2. Reactivation of Vogt-Koyanagi-Harada disease under control for more than 6 years, after anti-SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34224024/

## Capillary Leak Syndrome

Includes Term: Systemic Capillary Extravasation Syndrome. A rare disorder by acute and severe recurrent attacks associated with a rapid fall in blood pressure as a result of fluid leaks from smaller vessels called capillaries. Attacks often last several days and require emergency care. They are sometimes life threatening. SCLS occurs most often in adults and the disease is very rare in children.

1. Fatal systemic capillary leak syndrome after SARS-COV-2 vaccination in a patient with multiple myeloma: https://pubmed.ncbi.nlm.nih.gov/34459725/
2. Systemic capillary extravasation syndrome following vaccination with ChAdOx1 nCOV-19 (Oxford-AstraZeneca): https://pubmed.ncbi.nlm.nih.gov/34362727/

## Systemic Lupus Erythematosus

An autoimmune disease in which the immune system attacks its own tissues, causing widespread inflammation and tissue damage in the affected organs. It can affect the joints, skin, brain, lungs, kidneys, and blood vessels. Treatment can help, but this condition can't be cured.

1. Induction and exacerbation of subacute cutaneous lupus erythematosus after mRNA- or adenoviral vector-based SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34291477/
2. Ntouros, P. A., Vlachogiannis, N. I., Pappa, M., Nezos, A., Mavragani, C. P., Tektonidou, M. G., . . . Sfikakis, P. P. (2021). Effective DNA damage response after acute but not chronic immune challenge: SARS-CoV-2 vaccine versus Systemic Lupus Erythematosus. Clin Immunol, 229, 108765. doi:10.1016/j.clim.2021.108765. https://www.ncbi.nlm.nih.gov/pubmed/34089859

## Petechiae

Includes: Petechial rash. Tiny purple, red, or brown spots on the skin. They usually appear on your arms, legs, stomach, and buttocks. You might also find them inside your mouth or on your eyelids. These pinpoint spots can be a sign of many different conditions — some minor, others serious. They can also appear as a reaction to certain medications. Though petechiae look like a rash, they're actually caused by bleeding under the skin.

1. Petechiae and peeling of fingers after immunization with BTN162b2 messenger RNA (mRNA)-based COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34513435/
2. Petechial rash associated with CoronaVac vaccination: first report of cutaneous side effects before phase 3 results: https://ejhp.bmj.com/content/early/2021/05/23/ejhpharm-2021-002794

## Purpura Annularis Telangiectodes

An uncommon pigmented purpuric eruption, which is characterized by symmetrical, purpuric, telangiectatic, and atrophic patches with a predilection for the lower extremities and buttocks.

1. Purpuric rash and thrombocytopenia after mRNA-1273 (Modern) COVID-19 vaccine: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7996471/
2. Generalized purpura annularis telangiectodes after SARS-CoV-2 mRNA vaccination: https://pubmed.ncbi.nlm.nih.gov/34236717/

## Pulmonary Embolism

Pulmonary embolism is a blockage in one of the pulmonary arteries in your lungs. In most cases, pulmonary embolism is caused by blood clots that travel to the lungs from deep veins in the legs or, rarely, from veins in other parts of the body (deep vein thrombosis). Because the clots block blood flow to the lungs, pulmonary embolism can be life-threatening.

1. Pulmonary embolism, transient ischemic attack, and thrombocytopenia after Johnson & Johnson COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34261635/
2. A case of acute pulmonary embolism after immunization with SARS-CoV-2 mRNA: https://pubmed.ncbi.nlm.nih.gov/34452028/

## Psoriasis

A chronic autoimmune condition that causes the rapid buildup of skin cells. This buildup of cells causes scaling on the skin's surface. Inflammation and redness around the scales is fairly common. Typical psoriatic scales are whitish-silver and develop in thick, red patches. Sometimes, these patches will crack and bleed.

1. Onset / outbreak of psoriasis after Corona virus ChAdOx1 nCoV-19 vaccine (Oxford-AstraZeneca / Covishield): report of two cases: https://pubmed.ncbi.nlm.nih.gov/34350668/
2. Exacerbation of plaque psoriasis after COVID-19 inactivated mRNA and BNT162b2 vaccines: report of two cases: https://pubmed.ncbi.nlm.nih.gov/34427024/
3. Miller Fisher syndrome after Pfizer COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34817727/.
4. Miller Fisher syndrome after 2019 BNT162b2 mRNA coronavirus vaccination: https://pubmed.ncbi.nlm.nih.gov/34789193/.

## Nephrotic Syndrome

Kidney disorder that causes your body to pass too much protein in your urine. Nephrotic syndrome is usually caused by damage to the clusters of small blood vessels in your kidneys that filter waste and excess water from your blood

1. Nephrotic syndrome after ChAdOx1 nCoV-19 vaccine against SARScoV-2: https://pubmed.ncbi.nlm.nih.gov/34250318/.
2. New-onset nephrotic syndrome after Janssen COVID-19 vaccination: case report and literature review: https://pubmed.ncbi.nlm.nih.gov/34342187/
3. Hematuria, a generalized petechial rash and headaches after Oxford AstraZeneca ChAdOx1 nCoV-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34620638/
4. A case of outbreak of macroscopic hematuria and IgA nephropathy after SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/33932458/

## Bullous Drug Eruption

Refers to adverse drug reactions that result in fluid-filled blisters or bullae. Blistering may be localised and mild, or widespread and severe, even life-threatening.

1. Bullous drug eruption after the second dose of COVID-19 mRNA-1273 (Moderna) vaccine: Case report: https://www.sciencedirect.com/science/article/pii/S1876034121001878.
2. Widespread fixed bullous drug eruption after vaccination with ChAdOx1 nCoV-19: https://pubmed.ncbi.nlm.nih.gov/34482558/

## Hemophagocytic Lymphohistiocytosis

An aggressive and life-threatening syndrome of excessive immune activation. It most frequently affects infants from birth to 18 months of age, but the disease is also observed in children and adults of all ages.

1. Hemophagocytic lymphohistiocytosis after vaccination with ChAdOx1 nCov-19: https://pubmed.ncbi.nlm.nih.gov/34406660/.
2. Hemophagocytic lymphohistiocytosis following COVID-19 vaccination (ChAdOx1 nCoV-19): https://pubmed.ncbi.nlm.nih.gov/34862234/

## Pulmonary Embolism

Pulmonary embolism is a blockage in one of the pulmonary arteries in your lungs. In most cases, pulmonary embolism is caused by blood clots that travel to the lungs from deep veins in the legs or, rarely, from veins in other parts of the body (deep vein thrombosis). Because the clots block blood flow to the lungs, pulmonary embolism can be life-threatening.

1. Isolated pulmonary embolism after COVID vaccination: 2 case reports and a review of acute pulmonary embolism complications and follow-up: https://pubmed.ncbi.nlm.nih.gov/34804412/
2. Myocardial infarction, stroke, and pulmonary embolism after BNT162b2 mRNA COVID-19 vaccine in persons aged 75 years or older: https://pubmed.ncbi.nlm.nih.gov/34807248/
3. Beware of neuromyelitis optica spectrum disorder after vaccination with inactivated virus for COVID-19: https://pubmed.ncbi.nlm.nih.gov/34189662/
4. Neuromyelitis optica in a healthy woman after vaccination against severe acute respiratory syndrome coronavirus 2 mRNA-1273: https://pubmed.ncbi.nlm.nih.gov/34660149/
5. Shingles-like skin lesion after vaccination with AstraZeneca for COVID-19: a case report: https://pubmed.ncbi.nlm.nih.gov/34631069/
6. Recurrent herpes zoster after COVID-19 vaccination in patients with chronic urticaria on cyclosporine treatment – A report of 3 cases: https://pubmed.ncbi.nlm.nih.gov/34510694/

## Blood Clots

A gelatinous mass of fibrin and blood cells formed by the coagulation of blood.

1. Blood clots and bleeding after BNT162b2 and ChAdOx1 nCoV-19 vaccination: an analysis of European data: https://pubmed.ncbi.nlm.nih.gov/34174723/

## Thrombophilia

A blood disorder that makes the blood in your veins and arteries more likely to clot. This is also known as a "hypercoagulable" condition because your blood coagulates or clots more easily.

1. Antiphospholipid antibodies and risk of thrombophilia after COVID-19 vaccination: the straw that breaks the camel's back?: https://docs.google.com/document/d/1XzajasO8VMMnC3CdxSBKks1o7kiOLXFQ

## iTTP episode

A rare, life-threatening thrombotic microangiopathy caused by severe ADAMTS13 (a disintegrin and metalloproteinase with thrombospondin motifs 13) deficiency, recurring in 30–50% of patients.

1. First report of a de novo iTTP episode associated with a COVID-19 mRNA-based anti-COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34105244/

## Refractory Status Epilepticus

Can be defined as status epilepticus (seizures) that continues despite treatment with benzodiazepines and one antiepileptic drug. RSE should be treated promptly to prevent morbidity and mortality; however, scarce evidence is available to support the choice of specific treatments.

1. New-onset refractory status epilepticus after chadox1 ncov-19 vaccination: https://www.sciencedirect.com/science/article/pii/S0165572821001569

## Central Serous Retinopathy

A medical condition where fluid builds up behind the retina in the eye. It can cause sudden or gradual vision loss as the central retina detaches. This central area is called the macula.

1. Acute-onset central serous retinopathy after immunization with COVID-19 mRNA vaccine:. https://www.sciencedirect.com/science/article/pii/S2451993621001456.

## Cutaneous Reactions

A group of potentially lethal adverse drug reactions that involve the skin and mucous membranes of various body openings such as the eyes, ears, and inside the nose, mouth, and lips.

1. Late cutaneous reactions after administration of COVID-19 mRNA vaccines: https://www.sciencedirect.com/science/article/pii/S2213219821007996

## Prion Disease

Prion diseases comprise several conditions. A prion is a type of protein that can trigger normal proteins in the brain to fold abnormally. Prion diseases or transmissible spongiform encephalopathies (TSEs) are a family of rare progressive neurodegenerative disorders that affect both humans and animals. They are distinguished by long incubation periods, characteristic spongiform changes associated with neuronal loss, and a failure to induce inflammatory

1. COVID-19 RNA-based vaccines and the risk of prion disease: https://scivisionpub.com/pdfs/covid19rna-based-vaccines-and-the-risk-of-prion-dis ease-1503.pdf

## Pregnant Woman

See below studies.

1. This study notes that 115 pregnant women lost their babies, out of 827 who participated in a study on the safety of covid-19 vaccines: https://www.nejm.org/doi/full/10.1056/NEJMoa2104983.

## Process-Related Impurities

See below studies.

1. Process-related impurities in the ChAdOx1 nCov-19 vaccine: https://www.researchsquare.com/article/rs-477964/v1

## CNS Inflammation

A disease that causes inflammation of the small arteries and veins in the brain and/or spinal cord. The brain and spinal cord make up the CNS. Intense interest in inflammation in the CNS has arisen from its potential role in diseases including acute brain injury, stroke, epilepsy, multiple sclerosis, motor neurone disease, movement disorders and Alzheimer's disease, and more recently some psychiatric disorders.

1. COVID-19 mRNA vaccine causing CNS inflammation: a case series: https://link.springer.com/article/10.1007/s00415-021-10780-7

## **CNS Demyelination**

A demyelinating disease is any condition that results in damage to the protective covering (myelin sheath) that surrounds nerve fibers in your brain, optic nerves and spinal cord. When the myelin sheath is damaged, nerve impulses slow or even stop, causing neurological problems.

1. A systematic review of cases of CNS demyelination following COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34839149/

## Orofacial

An orofacial myofunctional disorder (OMD) is when there is an abnormal lip, jaw, or tongue position during rest, swallowing or speech.

1. Reported orofacial adverse effects from COVID-19 vaccines: the known and the unknown: https://pubmed.ncbi.nlm.nih.gov/33527524/

## Brain Haemorrhage

Includes Term: Lobar Hemorrhage. An emergency condition in which a ruptured blood vessel causes bleeding inside the brain.

1. Fatal brain haemorrhage after COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/33928772/

## Varicella Zoster Virus

The varicella-zoster virus (VZV) is so named because it causes two distinct illnesses: varicella (chickenpox), following primary infection, and herpes zoster (shingles), following reactivation of latent virus. Varicella is a highly contagious infection with an incubation period of 10–21 days, most commonly 14–16 days, after which a characteristic rash appears. Acute varicella may be complicated by secondary bacterial skin infections, haemorrhagic complications, cerebellitis, encephalitis, and viral and bacterial pneumonia.

1. Acute retinal necrosis due to varicella zoster virus reactivation after vaccination with BNT162b2 COVID-19 mRNA: https://pubmed.ncbi.nlm.nih.gov/34851795/.

## Nerve And Muscle Adverse Events

Many different possible neurologic adverse events including encephalitis, myelopathy, aseptic meningitis, meningoradiculitis, Guillain-Barré-like syndrome, peripheral neuropathy (including mononeuropathy, mononeuritis multiplex, and polyneuropathy) as well as myasthenic syndrome.

1. Nerve and muscle adverse events after vaccination with COVID-19: a systematic review and meta-analysis of clinical trials: https://pubmed.ncbi.nlm.nih.gov/34452064/.

## Oculomotor Paralysis

Defines the decreased strength of a muscle, which produces a reduced rotational movement of the eyeball in the direction corresponding to the paralysed muscle. Partial deficit is called paresis, while full deficit is called paralysis.

1. Transient oculomotor paralysis after administration of RNA-1273 messenger vaccine for SARS-CoV-2 diplopia after COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34369471/

## Parsonage-Turner Syndrome

An neurological disorder characterized by rapid onset of severe pain in the shoulder and arm. This acute phase may last for a few hours to a few weeks and is followed by wasting and weakness of the muscles (amyotrophy) in the affected areas.

1. Parsonage-Turner syndrome associated with SARS-CoV-2 or SARS-CoV-2 vaccination. Comment on: "Neuralgic amyotrophy and COVID-19 infection: 2 cases of accessory spinal nerve palsy" by Coll et al. Articular Spine 2021; 88: 10519: https://pubmed.ncbi.nlm.nih.gov/34139321/.

## Acute Macular Neuroretinopathy

A rare, acquired retinal disorder characterised by transient or permanent visual impairment accompanied by the presence of reddish-brown, wedge-shaped lesions in the macula, the apices of which tend to point towards the fovea.

1. Bilateral acute macular neuroretinopathy after SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34287612/

## Lipschütz ulcers (Vaginal ulcers)

Acute genital ulceration, also known as "Lipschütz ulcer" or "ulcus vulvae acutum," is an uncommon, self-limited, nonsexually transmitted condition characterized by the rapid onset of painful, necrotic ulcerations of the vulva or lower vagina.

1. Lipschütz ulcers after AstraZeneca COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34366434/.

## Amyotrophic Neuralgia

A disorder characterized by episodes of severe pain and muscle wasting (amyotrophy) in one or both shoulders and arms. Neuralgic pain is felt along the path of one or more nerves and often has no obvious physical cause.

1. Amyotrophic Neuralgia secondary to Vaxzevri vaccine (AstraZeneca) COVID-19: https://pubmed.ncbi.nlm.nih.gov/34330677/

## Polyarthralgia

Pain in multiple joints. Symptoms may include pain, tenderness, or tingling in the joints and reduced range of motion. Polyarthralgia is similar to polyarthritis, but it doesn't cause inflammation. Lifestyle changes, home remedies, and medication can help manage the symptoms.

1. Polyarthralgia and myalgia syndrome after vaccination with ChAdOx1 nCOV-19: https://pubmed.ncbi.nlm.nih.gov/34463066/

## Thyroiditis

The swelling, or inflammation, of the thyroid gland and can lead to over- or under-production of thyroid hormone. A thyroid storm — or thyroid crisis — can be a life-threatening condition. It often includes a rapid heartbeat, fever, and even fainting. Symptoms may include pain in the throat, feeling generally unwell, swelling of the thyroid gland and, sometimes, symptoms of an overactive thyroid gland or symptoms of an underactive thyroid gland.

1. Three cases of subacute thyroiditis after SARS-CoV-2 vaccination: post-vaccination ASIA syndrome: https://pubmed.ncbi.nlm.nih.gov/34043800/.

## **Keratolysis (Corneal Melting)**

A common prelude to the development of corneal perforation. This process occurs from conditions such as infections, sterile inflammation, or surgical/chemical injury to the cornea. Collectively, these conditions are a significant cause for blindness world-wide.

1. Bilateral immune-mediated keratolysis after immunization with SARS-CoV-2 recombinant viral vector vaccine: https://pubmed.ncbi.nlm.nih.gov/34483273/.

## Arthritis

The swelling and tenderness of one or more joints. The main symptoms of arthritis are joint pain and stiffness, which typically worsen with age. The most common types of arthritis are osteoarthritis and rheumatoid arthritis.

1. Reactive arthritis after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34033732/.

## Thymic hyperplasia

A condition in which the thymus gland is inflamed. It isoften accompanied by autoimmune diseases such as systemic lupus erythematosus, myasthenia gravis and rheumatoid arthritis.

1. Thymic hyperplasia after Covid-19 mRNA-based vaccination with Covid-19: https://pubmed.ncbi.nlm.nih.gov/34462647/

## Tolosa-Hunt Syndrome

A rare disorder characterized by severe periorbital headaches, along with decreased and painful eye movements (ophthalmoplegia). Symptoms usually affect only one eye (unilateral). In most cases, affected individuals experience intense sharp pain and decreased eye movements.

1. Tolosa-Hunt syndrome occurring after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34513398/

## Hailey-Hailey Disease

Also known as benign chronic pemphigus, is a rare skin condition that usually appears in early adulthood. The disorder is characterized by red, raw, and blistered areas of skin that occur most often in skin folds, such as the groin, armpits, neck, and under the breasts.

1. Hailey-Hailey disease exacerbation after SARS-CoV-2 vaccination: https://pubmed.ncbi.nlm.nih.gov/34436620/

## Acute Lympholysis

The destruction of lymph cells.

1. Rituximab-induced acute lympholysis and pancytopenia following vaccination with COVID-19: https://pubmed.ncbi.nlm.nih.gov/34429981/

## Interstitial Lung Disease

Describes a large group of disorders, most of which cause progressive scarring of lung tissue. The scarring associated with interstitial lung disease eventually affects your ability to breathe and get enough oxygen into your bloodstream.

1. Vaccine-induced interstitial lung disease: a rare reaction to COVID-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34510014/.

## Vesiculobullous Cutaneous Reactions

A vesiculobullous lesion of the skin encompasses a group of dermatological disorders with protean clinicopathological features. They usually occur as a part of the spectrum of various infectious, inflammatory, drug-induced, genetic, and autoimmune disorders.

1. Vesiculobullous cutaneous reactions induced by COVID-19 mRNA vaccine: report of four cases and review of the literature: https://pubmed.ncbi.nlm.nih.gov/34236711/

## Hematologic Conditions

Disorders of the blood and blood-forming organs.

1. Collection of complement-mediated and autoimmune-mediated hematologic conditions after SARS-CoV-2 vaccination: https://ashpublications.org/bloodadvances/article/5/13/2794/476324/Autoimmune-and-complement-mediated-hematologic

## Hemolysis

The destruction of red blood cells.

1. COVID-19 vaccines induce severe hemolysis in paroxysmal nocturnal hemoglobinuria: https://ashpublications.org/blood/article/137/26/3670/475905/COVID-19-vaccines-induce-severe-hemolysis-in

## Headache

See below papers.

1. Headache attributed to COVID-19 (SARS-CoV-2 coronavirus) vaccination with the ChAdOx1 nCoV-19 (AZD1222) vaccine: a multicenter observational cohort study: https://pubmed.ncbi.nlm.nih.gov/34313952/

## Acute Coronary Syndrome

Any condition brought on by a sudden reduction or blockage of blood flow to the heart.

1. Mrna COVID vaccines dramatically increase endothelial inflammatory markers and risk of Acute Coronary Syndrome as measured by PULS cardiac testing: a caution: https://www.ahajournals.org/doi/10.1161/circ.144.suppl_1.10712

## ANCA Glomerulonephritis

The term we use when ANCA vasculitis has affected or involved the kidneys, and when this happens there is inflammation and swelling in the kidney filters, meaning that the body's own immune system injures its cells and tissues.

1. ANCA glomerulonephritis following Modern COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34081948/

## Neurologic Phantosmia

An olfactory hallucination perceived when no odorants are present. Both the olfactory distortions are typically described as unpleasant.

1. Unique imaging findings of neurologic phantosmia after Pfizer-BioNtech COVID-19 vaccination: a case report: https://pubmed.ncbi.nlm.nih.gov/34096896/

## Uveitis

Includes terms: bilateral. A form of eye inflammation. It affects the middle layer of tissue in the eye wall (uvea). Uveitis warning signs often come on suddenly and get worse quickly. They include eye redness, pain and blurred vision.

1. Bilateral uveitis after inoculation with COVID-19 vaccine: a case report: https://www.sciencedirect.com/science/article/pii/S1201971221007797

## Pathophysiologic Alterations

Deranged function in an individual or an organ due to a disease. For example, a pathophysiologic alteration is a change in function as distinguished from a structural defect.

1. Extensive investigations revealed consistent pathophysiologic alterations after vaccination with COVID-19 vaccines: https://www.nature.com/articles/s41421-021-00329-3
2. Gross hematuria after severe acute respiratory syndrome coronavirus 2 vaccination in 2 patients with IgA nephropathy: https://pubmed.ncbi.nlm.nih.gov/33771584/

## Inflammatory Myositis

Inflammatory myopathies aare a group of diseases that involve chronic (long-standing) muscle inflammation, muscle weakness, and, in some cases, muscle pain. Myopathy is a general medical term used to describe a number of conditions affecting the muscles. All myopathies cause muscle weakness.

1. Inflammatory myositis after vaccination with ChAdOx1: https://pubmed.ncbi.nlm.nih.gov/34585145/

## Still's Disease

A rare type of inflammatory arthritis that features fevers, rash and joint pain. Some people have just one episode of adult Still's disease. In other people, the condition persists or recurs. This inflammation can destroy affected joints, particularly the wrists.

1. An outbreak of Still's disease after COVID-19 vaccination in a 34-year-old patient: https://pubmed.ncbi.nlm.nih.gov/34797392/

## Pityriasis Rosea

A skin rash that sometimes begins as a large spot on the chest, abdomen or back, followed by a pattern of smaller lesions.

1. Case report: Pityriasis rosea-like rash after vaccination with COVID-19: https://pubmed.ncbi.nlm.nih.gov/34557507/

## Acute Eosinophilic Pneumonia

is the acute-onset form of eosinophilic pneumonia, a lung disease caused by the buildup of eosinophils, a type of white blood cell, in the lungs. It is characterized by a rapid onset of shortness of breath, cough, fatigue, night sweats, and weight loss.

1. Acute eosinophilic pneumonia associated with anti-COVID-19 vaccine AZD1222: https://pubmed.ncbi.nlm.nih.gov/34812326/.

## Sweet's Syndrome

An uncommon skin condition marked by a distinctive eruption of tiny bumps that enlarge and are often tender to the touch. They can appear on the back, neck, arms or face. Sweet's syndrome, also called acute febrile neutrophilic dermatosis, is an uncommon skin condition.

1. Sweet's syndrome after Oxford-AstraZeneca COVID-19 vaccine (AZD1222) in an elderly woman: https://pubmed.ncbi.nlm.nih.gov/34590397/

## Sensorineural Hearing Loss

Hearing loss caused by damage to the inner ear or the nerve from the ear to the brain. Sensorineural hearing loss is permanent.

1. Sudden sensorineural hearing loss after COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34670143/..

## Serious Adverse Events Among Health Care Professionals

See below paper.

1. Prevalence of serious adverse events among health care professionals after receiving the first dose of ChAdOx1 nCoV-19 coronavirus vaccine (Covishield) in Togo, March 2021: https://pubmed.ncbi.nlm.nih.gov/34819146/.

## Toxic Epidermal Necrolysis

A life-threatening skin disorder characterized by a blistering and peeling of the skin. This disorder can be caused by a drug reaction—often antibiotics or anticonvulsives.

1. A case of toxic epidermal necrolysis after vaccination with ChAdOx1 nCoV-19 (AZD1222): https://pubmed.ncbi.nlm.nih.gov/34751429/.

## Ocular Adverse Events

The majority of ocular immune-related adverse events (irAEs) are mild, low-grade, non-sight threatening, such as blurred vision, conjunctivitis, and ocular surface disease.

1. Ocular adverse events following COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34559576/

## Depression

A common and serious medical illness that negatively affects how you feel, the way you think and how you act. Depression causes feelings of sadness and/or a loss of interest in activities you once enjoyed.

1. Depression after ChAdOx1-S / nCoV-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34608345/.

## Pancreas Allograft Rejection

When the body's blood cells identify the pancreas as foreign and begin mounting an army of cells to attack the transplanted organ. Although acute rejection can happen at any time, about 15 to 25% of pancreas acute rejection occurs within the first three months after transplant.

1. Pancreas allograft rejection after ChAdOx1 nCoV-19 vaccine: https://pubmed.ncbi.nlm.nih.gov/34781027/

## Acute Hemichorea-Hemibalismus

Hemiballismus is characterized by high amplitude, violent, flinging and flailing movements confined to one side of body and hemichorea is characterized by involuntary random-appearing irregular movements that are rapid and non-patterned confined to one side of body.

1. Acute hemichorea-hemibalismus after COVID-19 (AZD1222) vaccination: https://pubmed.ncbi.nlm.nih.gov/34581453/

## Alopecia Areata

Sudden hair loss that starts with one or more circular bald patches that may overlap. Alopecia areata occurs when the immune system attacks hair follicles and may be brought on by severe stress.

1. Recurrence of alopecia areata after covid-19 vaccination: a report of three cases in Italy: https://pubmed.ncbi.nlm.nih.gov/34741583/

## Graves' Disease

An autoimmune disorder that causes hyperthyroidism, or overactive thyroid. With this disease, your immune system attacks the thyroid and causes it to make more thyroid hormone than your body needs. The thyroid is a small, butterfly-shaped gland in the front of your neck. Thyroid hormones control how your body uses energy, so they affect nearly every organ in your body—even the way your heart beats. If left untreated, hyperthyroidism can cause serious problems with the heart, bones, muscles, menstrual cycle, and fertility. During pregnancy, untreated hyperthyroidism can lead to health problems for the mother and baby. Graves' disease also can affect your eyes and skin.

1. Two cases of Graves' disease after SARS-CoV-2 vaccination: an autoimmune / inflammatory syndrome induced by adjuvants: https://pubmed.ncbi.nlm.nih.gov/33858208/

## Cardiovascular Events

Incidents that may cause damage to the heart muscle.

1. Cardiovascular, neurological, and pulmonary events after vaccination with BNT162b2, ChAdOx1 nCoV-19, and Ad26.COV2.S vaccines: an analysis of European data: https://pubmed.ncbi.nlm.nih.gov/34710833/

## Metabolic Syndrome

A cluster of conditions that increase the risk of heart disease, stroke and diabetes.

1. Change in blood viscosity after COVID-19 vaccination: estimation for persons with underlying metabolic syndrome: https://pubmed.ncbi.nlm.nih.gov/34866465/

## Eosinophilic Dermatosis

Eosinophilic skin diseases, commonly termed as eosinophilic dermatoses, refer to a broad spectrum of skin diseases characterized by eosinophil infiltration and/or degranulation in skin lesions, with or without blood eosinophilia. The majority of eosinophilic dermatoses lie in the allergy-related group, including allergic drug eruption, urticaria, allergic contact dermatitis, atopic dermatitis, and eczema.

1. Eosinophilic dermatosis after AstraZeneca COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34753210/.

## Hypercoagulability

the tendency to have thrombosis as a result of certain inherited and/or acquired molecular defects. Clinical manifestations of hypercoagulability can be devastating and even lethal

1. COVID-19 vaccine in patients with hypercoagulability disorders: a clinical perspective: https://pubmed.ncbi.nlm.nih.gov/34786893/

## Neuroimaging Findings in Post COVID-19 Vaccination

See paper below.

1. Spectrum of neuroimaging findings in post-COVID-19 vaccination: a case series and review of the literature: https://pubmed.ncbi.nlm.nih.gov/34842783/

## Urticaria

A rash of round, red welts on the skin that itch intensely, sometimes with dangerous swelling, caused by an allergic reaction.

1. Increased risk of urticaria/angioedema after BNT162b2 mRNA COVID-19 vaccination in health care workers taking ACE inhibitors: https://pubmed.ncbi.nlm.nih.gov/34579246/

## Central Vein Occlusion

A blockage of this vein that causes the vein to leak blood and excess fluid into the retina. This fluid often collects in the area of the retina responsible for central vision called the macula. When the macula is affected, central vision may become blurry. The second eye will develop vein occlusion in 6-17% of cases. There's no cure for retinal vein occlusion. Your doctor can't unblock the retinal veins. What they can do is treat any complications and protect your vision.

1. Central retinal vein occlusion after mRNA SARS-CoV-2 mRNA: case report: https://pubmed.ncbi.nlm.nih.gov/34574163/.

## Thrombophlebitis

A condition in which a blood clot in a vein causes inflammation and pain.

1. Idiopathic external jugular vein thrombophlebitis after coronavirus disease vaccination (COVID-19): https://pubmed.ncbi.nlm.nih.gov/33624509/.

## Squamous Cell Carcinoma

A slow-growing type of lung cancer.

1. Squamous cell carcinoma of the lung with hemoptysis following vaccination with tozinameran (BNT162b2, Pfizer-BioNTech): https://pubmed.ncbi.nlm.nih.gov/34612003/

## Chest Pain

See paper below.

1. Chest pain with abnormal electrocardiogram redevelopment after injection of COVID-19 vaccine manufactured by Moderna: https://pubmed.ncbi.nlm.nih.gov/34866106/

## Acute Inflammatory Neuropathies

Encompass groups of heterogeneous disorders characterized by pathogenic immune-mediated hematogenous leukocyte infiltration of peripheral nerves, nerve roots or both, with resultant demyelination or axonal degeneration or both, and the pathogenesis of these disorders remains elusive.

1. Reporting of acute inflammatory neuropathies with COVID-19 vaccines: subgroup disproportionality analysis in VigiBase: https://pubmed.ncbi.nlm.nih.gov/34579259/

## Brain Death

Irreversible cessation of all functions of the entire brain, including the brain stem. A person who is brain dead is dead.

1. Brain death in a vaccinated patient with COVID-19 infection: https://pubmed.ncbi.nlm.nih.gov/34656887/

## Kounis Syndrome

The concurrence of acute coronary syndromes with conditions associated with mast cell activation, such as allergies or hypersensitivity and anaphylactic or anaphylactoid insults that can involve other interrelated and interacting inflammatory cells behaving as a ball of thread'.

1. Kounis syndrome type 1 induced by inactivated SARS-COV-2 vaccine: https://pubmed.ncbi.nlm.nih.gov/34148772/

## Angioimmunoblastic T-cell Lymphoma

A type of peripheral T-cell lymphoma. It is a high grade (aggressive) lymphoma that affects blood cells called T cells. High grade lymphomas tend to grow more quickly than low grade lymphomas. Also, it usually affects older people, typically around the age of 70, is typically aggressive with a median survival of fewer than 3 years, even with intensive treatment.

1. Rapid progression of angioimmunoblastic T-cell lymphoma after BNT162b2 mRNA booster vaccination: case report: https://www.frontiersin.org/articles/10.3389/fmed.2021.798095/

## Gastroparesis

A condition that affects the stomach muscles and prevents proper stomach emptying.

1. Gastroparesis after Pfizer-BioNTech COVID-19 vaccination: https://pubmed.ncbi.nlm.nih.gov/34187985/

## Asthma

A condition in which a person's airways become inflamed, narrow and swell and produce extra mucus, which makes it difficult to breathe. Asthma can be minor or it can interfere with daily activities. In some cases, it may lead to a life-threatening attack.

1. Colaneri, M., De Filippo, M., Licari, A., Marseglia, A., Maiocchi, L., Ricciardi, A., . . . Bruno, R. (2021). COVID vaccination and asthma exacerbation: might there be a link? Int J Infect Dis, 112, 243-246. doi:10.1016/j.ijid.2021.09.026. https://www.ncbi.nlm.nih.gov/pubmed/34547487
2. Dimopoulou, D., Spyridis, N., Vartzelis, G., Tsolia, M. N., & Maritsi, D. N. (2021). Safety and tolerability of the COVID-19 mRNA vaccine in adolescents with juvenile idiopathic arthritis on treatment with TNF-inhibitors. Arthritis Rheumatol. doi:10.1002/art.41977. https://www.ncbi.nlm.nih.gov/pubmed/34492161
3. Hause, A. M., Gee, J., Baggs, J., Abara, W. E., Marquez, P., Thompson, D., . . . Shay, D. K. (2021). COVID-19 Vaccine Safety in Adolescents Aged 12-17 Years – United States, December 14, 2020-July 16, 2021. MMWR Morb Mortal Wkly Rep, 70(31), 1053-1058. doi:10.15585/mmwr.mm7031e1. https://www.ncbi.nlm.nih.gov/pubmed/34351881

## Safety Monitoring of the Janssen Vaccine

See below paper.

1. Shay, D. K., Gee, J., Su, J. R., Myers, T. R., Marquez, P., Liu, R., . . . Shimabukuro, T. T. (2021). Safety Monitoring of the Janssen (Johnson & Johnson) COVID-19 Vaccine – United States, March-April 2021. MMWR Morb Mortal Wkly Rep, 70(18), 680-684. doi:10.15585/mmwr.mm7018a2. https://www.ncbi.nlm.nih.gov/pubmed/33956784

## Myocardial Injury

Refers to the cell death of cardiomyocytes and is defined by an elevation of cardiac troponin values. It is not only considered a prerequisite for the diagnosis of myocardial infarction but also an entity in itself and can arise from non-ischaemic or non-cardiac conditions.

1. Acute myocardial injury after COVID-19 vaccination: a case report and review of current evidence from the Vaccine Adverse Event Reporting System database: https://pubmed.ncbi.nlm.nih.gov/34219532/
2. Deb, A., Abdelmalek, J., Iwuji, K., & Nugent, K. (2021). Acute Myocardial Injury Following COVID-19 Vaccination: A Case Report and Review of Current Evidence from Vaccine Adverse Events Reporting System Database. J Prim Care Community Health, 12, 21501327211029230. doi:10.1177/21501327211029230. https://www.ncbi.nlm.nih.gov/pubmed/34219532

## Autoimmune Inflammatory Rheumatic Diseases

Rheumatic diseases are autoimmune and inflammatory diseases that cause your immune system to attack your joints, muscles, bones and organs. Rheumatic diseases are often grouped under the term "arthritis" — which is used to describe over 100 diseases and conditions.

1. Furer, V., Evstatiev, T., Zisman, D., Peleg, H., Paran, D., Levartovsky, D., . . . Elkayam, O. (2021). Immunogenicity and safety of the BNT162b2 mRNA COVID-19 vaccine in adult patients with autoimmune inflammatory rheumatic diseases and in the general population: a multicentre study. Ann Rheum Dis, 80(10), 1330-1338. doi:10.1136/annrheumdis-2021-220647. https://www.ncbi.nlm.nih.gov/pubmed/34127481

## Neurological Autoimmune Diseases

If you have a neurological autoimmune disease, your immune system may be overly active and mistakenly attack healthy cells. These include central nervous system demyelinating disorders such as multiple sclerosis and neuromyelitis optica, paraneoplastic, and other autoimmune encephalomyelitis and autoimmune inflammatory myositis and demyelinating neuropathies.

1. Neurological autoimmune diseases after SARS-CoV-2 vaccination: a case series: https://pubmed.ncbi.nlm.nih.gov/34668274/.

## V-REPP

Vaccine-related eruption of papules and plaques.

1. Clinical and pathologic correlates of skin reactions to COVID-19 vaccine, including V-REPP: a registry-based study: https://www.sciencedirect.com/science/article/pii/S0190962221024427

## Herpes Simplex Virus

A virus causing contagious sores, most often around the mouth or on the genitals.

1. Varicella zoster virus and herpes simplex virus reactivation after vaccination with COVID-19: review of 40 cases in an international dermatologic registry: https://pubmed.ncbi.nlm.nih.gov/34487581/

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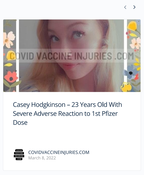


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