



Drug Coverage Policy

Effective Date02/12/2026

Coverage Policy Number.....IP0790

Policy Title.....Itvisma

Spinal Muscular Atrophy – Gene Therapy – Itvisma

- Itvisma® (onasemnogene abeparvovec-brve intrathecal injection – Novartis)

INSTRUCTIONS FOR USE

The following Coverage Policy applies to health benefit plans administered by Cigna Companies. Certain Cigna Companies and/or lines of business only provide utilization review services to clients and do not make coverage determinations. References to standard benefit plan language and coverage determinations do not apply to those clients. Coverage Policies are intended to provide guidance in interpreting certain standard benefit plans administered by Cigna Companies. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement, Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document always supersedes the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Each coverage request should be reviewed on its own merits. Medical directors are expected to exercise clinical judgment where appropriate and have discretion in making individual coverage determinations. Where coverage for care or services does not depend on specific circumstances, reimbursement will only be provided if a requested service(s) is submitted in accordance with the relevant criteria outlined in the applicable Coverage Policy, including covered diagnosis and/or procedure code(s). Reimbursement is not allowed for services when billed for conditions or diagnoses that are not covered under this Coverage Policy (see "Coding Information" below). When billing, providers must use the most appropriate codes as of the effective date of the submission. Claims submitted for services that are not accompanied by covered code(s) under the applicable Coverage Policy will be denied as not covered. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations.

Overview

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Itvisma, an adeno-associated virus vector-based gene therapy, is indicated for the treatment of **spinal muscular atrophy** with confirmed mutation in the survival motor neuron 1 (SMN1) gene in adult and pediatric patients ≥ 2 years of age.¹

Disease Overview

Spinal muscular atrophy is a genetic, autosomal recessive, progressive, neuromuscular disorder caused by biallelic deletions or pathogenic variants in the SMN1 gene which can be identified by genetic testing.²⁻⁵ The subsequent reduced levels of survival motor neuron (SMN) protein impacts brainstem and spinal cord motor neurons. The estimated incidence in the US is one in 11,000 patients.³ The phenotypic expression of the disease is generally impacted by the survival motor neuron 2 (SMN2) gene copy number.³⁻⁵ Patients with a higher number of SMN2 gene copies often have less severe disease with milder progression. Table 1 describes disease types. Of note, various motor ability assessments and different functional motor scales are used in clinical practice to characterize impairment in patients with spinal muscular atrophy. When motor neuron function is lost, it cannot be regained, which greatly impacts patients who have experienced progression (e.g., patients with complete paralysis of limbs or permanent ventilator dependence). A different manner of patient categorization classifies the three most common types as "non-sitters", "sitters", and "walkers".

Table 1. Types of Spinal Muscular Atrophy.^{4,5}

	Age at Onset	Features/Clinical Presentation*	Lifespan*	SMN2 Gene Copy Number
Type 0 ($< 1\%$ of patients)	Birth	Severe hypotonia and weakness with respiratory failure at birth. There is no achievement of motor milestones.	A few weeks to days (< 6 months)	1
Type 1 (50% of patients)	< 6 months	Poor muscle tone and lack of movement. Respiratory assistance may be needed. Patients are never able to sit without support.	< 2 years	1 to 2 for 80% of patients
Type 2 (30% of patients)	6 to 18 months	Patients are able to sit. However, patients are unable to walk or stand without assistance.	Close to normal	2 to 3 for over 90% of patients
Type 3 (10% to 20% of patients)	≥ 18 months	Walks independently but may lose this ability as the disease progresses. There is loss of motor skills.	Normal	3 to 5 for most patients
Type 4 ($< 1\%$ of patients)	> 18 years	Independent walking. Fatigue and proximal muscle weakness.	Normal	4 for 75% of patients; 5 or 6 for 25% of patients

* With supportive care only; SMN2 – Survival motor neuron 2.

Clinical Efficacy

The STEER trial was a double-blind, sham-controlled, Phase III study that evaluated the efficacy of Itvisma in 126 treatment-naïve patients ≥ 2 to < 18 years of age with spinal muscular atrophy.^{1,6}

Patients involved in the trial were able to sit, but never able to walk independently.¹ Randomization was in a 3:2 ratio in which patients received Itvisma by single lumbar intrathecal injection or sham procedure. The mean patient age was 6 years (range 2 years to 17 years). Main races were Asian (59%), White (11%) and Black or African American (7%). Most patients (97%) had confirmed bi-allelic deletion (0 copies) of the SMN1 gene. The highest motor function ever achieved were as follows: 52% of patients sitting without support; 26% standing with assistance; 19% walking with assistance; and 2% standing independently.¹ Most patients had three survival motor neuron 2 (SMN2) gene copies (94.4%); 4.0% of patients had two SMN2 gene copies and 1.6% of patients had ≥ 4 SMN2 gene copies.⁶ The presence of an elevated baseline serum anti-adenovirus serotype 9 antibody titer (i.e., $> 1:50$) at screening prevented participation, as well as a platelet count at less than the lower limit of normal. Patients with an infectious process or febrile illness within 30 days prior to the treatment day were excluded. Those positive for human immunodeficiency virus, hepatitis B, or hepatitis C could not participate.⁶ At baseline, the mean Hammersmith Functional Motor Scale Expanded (HFMSE) total score, which evaluates motor function in patients with spinal muscular atrophy who are ambulatory, was around 18 (range 1 to 42.5).¹ Of note, the maximum HFMSE score is 66 with higher scores indicative of better function. The primary endpoint was the change from baseline in the HFMSE total score at the end of follow-up, defined as the average of the Week 48 and Week 52 assessment for Itvisma compared with sham. The mean change from baseline in the HFMSE total score at the end of follow-up was 2.39 for Itvisma ($n = 75$) and 0.51 for sham ($n = 51$) [treatment difference 1.88].

Guidelines

The Spinal Muscular Atrophy Newborn Screening Multidisciplinary Working Group developed a treatment algorithm in 2018 for infants who have positive results from a newborn screening test for spinal muscular atrophy.⁷ Spinal muscular atrophy Types 1 and 2 comprise a large majority of cases and account for many patients who screen positively for spinal muscular atrophy with three or fewer SMN2 gene copies. Immediate treatment is recommended in patients with two or three SMN2 gene copies. Treatment recommendations for patients who screen positive for spinal muscular atrophy and have only one SMN2 gene copy are more complicated. It is likely that patients with only one SMN2 gene copy will likely be symptomatic at birth and the physician should determine if treatment is warranted.⁷ In 2020, the Working Group updated recommendations that infants diagnosed with spinal muscular atrophy via newborn screening with four SMN2 gene copies should receive immediate treatment.⁸ Also, patients with five (or more) SMN2 gene copies should be observed and screened for symptoms.

Dosing

The recommended dose of Itvisma is 1.2×10^{14} vector genomes by intrathecal bolus injection over approximately 1 to 2 minutes.¹ Itvisma is for single-dose injection; do not re-administer Itvisma.

Safety

Itvisma has a Boxed Warning regarding acute serious liver injury.¹ Acute serious liver injury and elevated aminotransferases can occur with Itvisma. Patients with preexisting liver impairment may be at higher risk. Prior to intrathecal injection, evaluate liver function in all patients by clinical examination and laboratory testing (e.g., aspartate aminotransferase, alanine aminotransferase, prothrombin time, total bilirubin). Before administration of Itvisma, it is recommended to examine a creatinine level, as well as obtain a complete blood count (including hemoglobin and platelet count).

Coverage Policy

POLICY STATEMENT

Prior Authorization is required for benefit coverage of Itvisma. Approval is recommended for those who meet the **Criteria** and **Dosing** for the listed indication. Because of the specialized skills required for evaluation and diagnosis of patients treated with Itvisma as well as the specialized training required for administration of Itvisma, approval requires Itvisma to be prescribed by a physician who has consulted with or who specializes in the condition. All approvals are provided for one-time (per lifetime) as a single dose. The approval duration is 90 days to allow for an adequate timeframe to prepare and administer one dose of therapy. If claims history is available, verification is required for certain criteria as noted by **[verification in claims history required]**. All reviews (approvals and denials) will be forwarded to the Medical Director for evaluation.

Documentation: Documentation is required for the use of Itvisma as noted in the criteria as **[documentation required]**. Documentation may include, but is not limited to chart notes, laboratory results, medical test results, claims records, prescription receipts, and/or other information. All documentation must include patient-specific identifying information.

Itvisma is considered medically necessary when the following criteria are met:

FDA-Approved Indication

- 1. Spinal Muscular Atrophy – Treatment.** Approve for a one-time (per lifetime) single dose if the patient meets ALL of the following (A, B, C, D, E, F, G, H, I, J, K, L, M, N, and O):
 - A)** Patient is ≥ 2 years to < 18 years of age; AND
 - B)** Patient has not received Itvisma or Zolgensma (onasemnogene abeparvovec-xioi intravenous infusion) in the past **[verification in claims history required]**; AND
Note: If no claim for Itvisma or Zolgensma is present (or if claims history is not available), the prescribing physician confirms that the patient has not previously received Itvisma or Zolgensma.
 - C)** Patient has had a genetic test confirming the diagnosis of spinal muscular atrophy with pathogenic variants in the survival motor neuron 1 (SMN1) gene **[documentation required]**; AND
Note: Pathogenic variants may include homozygous deletion, compound heterozygous mutation, or a variety of other rare mutations.
 - D)** Patient meets ONE of the following (i or ii):
 - i.** Patient has two or three survival motor neuron 2 (SMN2) gene copies **[documentation required]**; OR
 - ii.** Patient meets BOTH of the following (a and b):
 - a)** Patient has four SMN2 gene copies **[documentation required]**; AND
 - b)** The number of SMN2 gene copies has been determined by a quantitative assay capable of distinguishing between four SMN2 gene copies and five or greater SMN2 gene copies; AND
 - E)** Baseline anti-adenovirus serotype 9 (AAV9) antibody titers are $\leq 1:50$ **[documentation required]**; AND
 - F)** Patient has undergone liver function testing within the past 30 days AND meets ALL of the following (i, ii, iii, and iv):
 - i.** Alanine aminotransferase levels are ≤ 2 times the upper limit of normal **[documentation required]**; AND

- ii. Aspartate aminotransferase levels are ≤ 2 times the upper limit of normal **[documentation required]**; AND
 - iii. Total bilirubin levels are ≤ 2 times the upper limit of normal **[documentation required]**; AND
 - iv. Prothrombin time results are ≤ 2 times the upper limit of normal **[documentation required]**; AND
- G)** Patient has undergone a renal function assessment within the past 30 days AND has a creatinine level < 1.0 mg/dL **[documentation required]**; AND
- H)** A complete blood count has been obtained within the past 30 days AND the patient meets BOTH of the following (i and ii):
- i. White blood cell count is $\leq 20,000$ cells per mm^3 **[documentation required]**; AND
 - ii. Hemoglobin level is within the normal reference range **[documentation required]**; AND
- Note: Reference ranges for hemoglobin levels vary among laboratories and are dependent upon age and gender.
- I)** Patient does not have hepatitis B; AND
- J)** Patient does not have hepatitis C; AND
- K)** Patient is not human immunodeficiency virus positive; AND
- L)** For a patient currently receiving or who has received prior treatment with Spinraza (nusinersen intrathecal injection), the prescribing physician confirms that further therapy with Spinraza will be discontinued; AND
- M)** For a patient currently receiving or who has received prior treatment with Evrysdi (risdiplam oral solution and tablets), the prescribing physician confirms that further therapy with Evrysdi will be discontinued; AND
- N)** The medication is prescribed by a physician who has consulted with or who specializes in the management of patients with spinal muscular atrophy and/or neuromuscular disorders; AND
- O)** If criteria A through N are met, approve one dose of Itvisma to provide for a one-time (per lifetime) single dose of 1.2×10^{14} vector genomes by intrathecal injection.

Dosing. The recommended dose of Itvisma is one-time (per lifetime) as a single-dose intrathecal injection of 1.2×10^{14} vector genomes.

Conditions Not Covered

Itvisma for any other use is considered not medically necessary, including the following (this list may not be all inclusive; criteria will be updated as new published data are available):

- 1. Patient has Complete Paralysis of All Limbs.** Data are needed to determine if this patient population would derive benefits from Itvisma.
- 2. Patient has Permanent Ventilator Dependence.** Data are needed to determine if this patient population would derive benefits from Itvisma.
- 3. Prior Receipt of Gene Therapy.** Itvisma has not been studied in patients who previously received gene therapy.

Coding Information

- 1) This list of codes may not be all-inclusive.
- 2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

HCPCS Codes	Description
J3399	Miscellaneous uncategorized agents (per treatment, up to 5x10 ¹⁵ vg)

References

1. Itvisma® intrathecal injection [prescribing information]. Bannockburn, IL: Novartis; November 2025.
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3. Yeo CJJ, Tizzano EF, Darras BT. Challenges and opportunities in spinal muscular atrophy therapeutics. *Lancet Neurol*. 2024;23:205-218.
4. Ramdas S, Oskoui M, Servais L. Treatment options in spinal muscular atrophy: a pragmatic approach for clinicians. *Drugs*. 2024;84:747-762.
5. Prior TW, Leach ME, Finanger E. Spinal Muscular Atrophy. 2000 Feb 24 [Updated 2024 September 19]. In: Adam MP, Feldman J, Mirzaa GM, et al, editors. GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2024. Available at: https://www.ncbi.nlm.nih.gov/books/NBK1352/pdf/Bookshelf_NBK1352.pdf. Accessed on January 14, 2026.
6. Proud CM, Vu DC, Wilmshurst JM, et al, for the STEER study group. Intrathecal onasemnogene abeparvovec in treatment-naïve patients with spinal muscular atrophy: a phase 3, randomized, controlled trial. *Nat Med*. 2025 Dec 8. [Online ahead of print].
7. Glascock J, Sampson J, Haidet-Phillips A, et al. Treatment algorithm for infants diagnosed with spinal muscular atrophy through newborn screening. *J Neuromuscul Dis*. 2018;5:145-158.
8. Glascock J, Sampson J, Connolly AM, et al. Revised recommendations for the treatment of infants diagnosed with spinal muscular atrophy via newborn screening who have 4 copies of SMN2. *J Neuromuscul Dis*. 2020;7(2):97-100.

Revision Details

Type of Revision	Summary of Changes	Date
New	New policy	02/12/2026

The policy effective date is in force until updated or retired.

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