

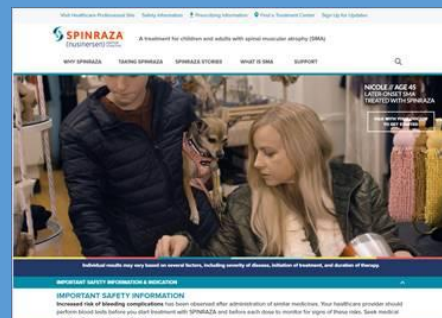
Dear SMA Community,

We are excited to share several highlights from the last few months. We announced the presentation of new data from the SPINRAZA® (nusinersen) clinical development program and our plans to initiate a new clinical research study called ASCEND. More information is provided below.

Congratulations to the community on coming together to elevate the discussion about SMA throughout SMA Awareness Month! We were proud to join in to help further education about SMA. We carry the passion and perseverance from the community into everything we do.

– The Biogen Team

CHECK OUT UPDATES TO [SPINRAZA.COM](https://www.spinraza.com)



- Clinical data
- New patient stories
- New STEP events topics

PUBLICATIONS AND DATA UPDATES

- We **announced** plans to initiate **ASCEND**, a global Phase 3b study, to evaluate the clinical outcomes and assess the safety of a higher investigational dose of nusinersen in adults, teens and children with later-onset SMA previously treated with Evrysdi® (risdiplam). For more information, visit clinicaltrials.gov.
- We **presented** new data at the virtual **2021 Cure SMA Research & Clinical Care Meeting**. Highlights include:
 - Data from the **NURTURE** study regarding changes in the ability to swallow among those who received SPINRAZA treatment as pre-symptomatic infants.¹
 - Post-hoc data from the **CS2-CS12** and **SHINE** studies about changes in walking distance and fatigue among children and teens with later-onset SMA.²
- **Scientific American** published an **article** discussing our efforts to identify potential biomarkers for SMA.³

SMA CLINICAL TRIAL PROGRAM STATUS*

8 Global Clinical Trials Ongoing

7 U.S. Enrollment Sites Open for **DEVOTE**

13 U.S. Enrollment Sites Open for **RESPOND**

*As of October 1, 2021

INDICATION

SPINRAZA® (nusinersen) is a prescription medicine used to treat spinal muscular atrophy (SMA) in pediatric and adult patients.

IMPORTANT SAFETY INFORMATION

Increased risk of bleeding complications has been observed after administration of similar medicines.

Your healthcare provider should perform blood tests before you start treatment with SPINRAZA and before each dose to monitor for signs of these risks. Seek medical attention if unexpected bleeding occurs.

Please see Important Safety Information continued on page 2 and click here to access full [Prescribing Information](#).

SPZ-US-4728 10/21

IMPORTANT SAFETY INFORMATION (cont'd)

Increased risk of kidney damage, including potentially fatal acute inflammation of the kidney, has been observed after administration of similar medicines. Your healthcare provider should perform urine testing before you start treatment with SPINRAZA and before each dose to monitor for signs of this risk.

The most common side effects of SPINRAZA include lower respiratory infection, fever, constipation, headache, vomiting, back pain, and post-lumbar puncture syndrome.

These are not all of the possible side effects of SPINRAZA. Call your healthcare provider for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

Before taking SPINRAZA, tell your healthcare provider if you are pregnant or plan to become pregnant.

Click here to access full [Prescribing Information](#).

This information is not intended to replace discussions with your healthcare provider.

REFERENCES

1. Swoboda KJ, et al. Preserved Swallowing Function in Infants Who Initiated Nusinersen Treatment in the Presymptomatic Stage of SMA: Results From the NURTURE Study. Cure SMA Virtual Research and Clinical Care Meeting June 9–11, 2021 podium presentation.
2. Montes J, et al. Nusinersen in Later-onset Spinal Muscular Atrophy: Walking Distance and Fatigue in CS2/12 and SHINE Participants. Cure SMA Virtual Research and Clinical Care Meeting June 9–11, 2021 podium presentation.
3. Valente M. "How a Biomarker Could Improve Care for Neurological Diseases in the Future." *Scientific American*. June 2021. Available at: <https://www.scientificamerican.com/custom-media/how-a-biomarker-could-improve-care-for-neurological-diseases-in-the-future/>.