

# Intrathecal Spinraza: Anesthetic Implications for Expensive but Life-Altering Injections



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## Spinal Muscular Atrophy (SMA)

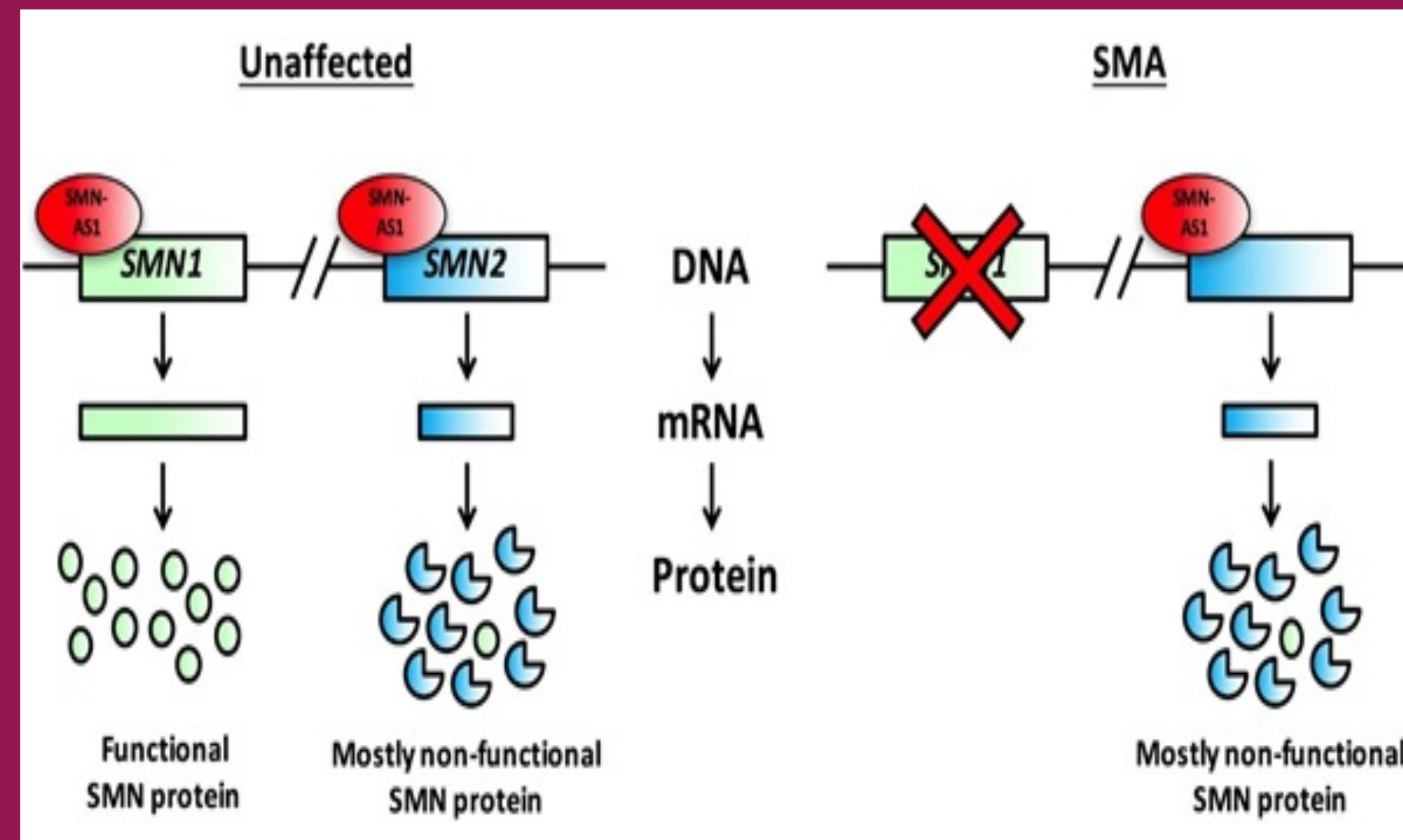
- Progressive motor neuron disorder
- Most common genetic cause of infant mortality
- Survival Motor Neuron 1 gene resulting in the loss of the SMN protein
- Three categories of disease intensity
  - Mild, Intermediate, and Severe with likelihood of death increasing respectively
- Spinraza is a short string of synthetic genetic material aimed to produce more SMN protein.
- Anesthetically challenging to ensure optimum safety for complex patients undergoing minimally invasive procedure
- Procedure, although relatively short, is extremely expensive

## Life-Long Costs

- Spinraza injection 1, 2, & 3 are given 14 days apart and injection 4 is given 30 days after 3
- Subsequent injections every 4 months for the rest of their lives.
- Each individual Spinraza vial costs \$125,000, amounting to **\$750,000 for the first year** and \$375,000 per year after.

## Anesthetic Implications

- Frequency of injections + Pulmonary Incompetence = Negative Outcomes
  - Respiratory infection, post-lumbar puncture headache, back pain, constipation, etc.
- Appropriate airway support and intravenous access
- Patients remaining still increases the likelihood of a timely and proficient intrathecal injection
- These patients will likely present with a wide spectrum of SMA comorbidities and it is the anesthesiologist's responsibility to be familiar with these and address them appropriately.



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## References

1. Chung, B., Wong, V., Ip, P. Spinal Muscular Atrophy: Survival Pattern and Functional Status. *Pediatrics*. 2004; 114(5): 548 – 553.
2. Prakash, V. Spinraza – a rare disease success story. *Gene Therapy*. 2017; 24: 497.
3. Weintraub, A. (2017, March 13). Biogen's Spinraza sparks pricing concerns. <http://www.fiercepharma.com>