

# Neurodiagnostics

## What Is Neurodiagnostics?

Neurodiagnostic testing uses various techniques and instruments to record, analyze and monitor nervous system function. A neurodiagnostic test might look at electrical activity from the brain, spinal cord and/or peripheral nerves to diagnose and treat neurological conditions.

## Conditions Neurodiagnostics Treats

Conditions that most often require neurodiagnostic testing include:

- **Epilepsy and seizures.**
- **Brain injury** and related neurotrauma.
- Muscular dystrophy, **spinal muscular atrophy** and other **neuromuscular conditions.**
- Acetabular dysplasia.
- **Birth brachial plexus injury.**
- Burst fractures.
- **Chiari malformation.**
- Hearing difficulties.
- **Scoliosis.**
- **Sleep disorders.**
- Spasticity.
- **Tethered spinal cord.**

## Tests and Treatments

Neurodiagnostic testing can help make or confirm a diagnosis, plan treatments, and monitor your child's condition.

Tests we offer include:

- Auditory brainstem response (ABR), which is an **audiology test.**
- **Electroencephalogram (EEG) and video EEG (VEEG),** which record brain waves.
- **Electromyogram (EMG)** and nerve conduction study, which looks at electrical activity of muscles and nerves.
- Intraoperative monitoring of the peripheral and central nervous system during surgery.

- Sleep study or sleep science (polysomnography).

## Integrated Care

If your child has a disability or complex condition, Gillette specialists can offer a variety of neurodiagnostic tests. Our neurodiagnostic services support care for kids who have a wide variety of complex neurological conditions and injuries. Our staff will work with you and your family to plan full medical, surgical and rehabilitation training as needed.

The technology and testing spaces your child will encounter here are supported by one of the region's largest teams of pediatric neurologists and neurosurgeons. Your child might work with experts (such as an EEG technologist) in the following areas:

- Neurology.
- Neurosciences inpatient care.
- Neurosurgery.
- Rehabilitation medicine.
- Sleep medicine.

## Locations



[St. Paul Campus](#)



[Burnsville Clinic](#)



[Duluth Clinic](#)



[Maple Grove Clinic](#)



## [Minnetonka Clinic](#)

### **The Brain, Electricity, and Neurodiagnostics**

Did you know that the human brain produces electricity? Electrical signals that travel from the brain make our muscles move. When those electrical signals don't function as they should, it can cause a host of problems including epilepsy, behavioral issues, or nerve and muscle disorders.

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### [The Brain, Electricity, and Neurodiagnostics](#)

[Did you know that the human brain produces electricity? Learn how neurodiagnostic services help](#)



[diagnose and treat problems that arise when the brain's electrical signals don't function as they should.](#)



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### [The Brain, Electricity, and Neurodiagnostics](#)

[Did you know that the human brain produces electricity? Learn how neurodiagnostic services help diagnose and treat problems that arise when the brain's electrical signals don't function as they should.](#)

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If you are a Gillette patient with urgent questions or concerns, please contact Telehealth Nursing at [651-229-3890](#).