



## ENDOCRINE STIMULATION TESTING

The Pediatric Endocrinology Nursing Society (PENS) is a non-profit specialty nursing organization founded in 1987 whose members include nurses with expertise and leadership in the field of pediatric endocrinology. The organization is a resource for information, education, and collaboration for nurses who perform endocrine stimulation testing. PENS established and continues to promote the following guidelines to ensure patient safety while producing valid results.

Because natural hormonal secretion is frequently pulsatile rather than continuous, obtaining an accurate level from a random blood sample is not always possible. Endocrine stimulation testing is, therefore, the preferred method of assessing hormonal pathways for many endocrine disorders. The testing process involves administering stimulation agents intended to provoke a release of hormone(s) that can then be measured through blood samples that are collected at timed intervals to identify a normal or abnormal response.

### PROMOTE EDUCATION

1. All healthcare providers involved in stimulation testing procedures should be trained and or certified to administer stimulation agents and collect timed specimens.
2. Healthcare providers who are inexperienced in performing stimulation testing should be supervised directly by senior staff until considered independent and they themselves feel comfortable performing stimulation testing without direct supervision.
3. Education of healthcare providers performing stimulation testing should include principles of growth and development in children and education on age-appropriate interventions to maximize comfort and minimize apprehension during stimulation testing procedures.
4. Healthcare providers performing stimulation testing should be knowledgeable regarding potential adverse events that can occur during and after stimulation testing and expected progression of recovery.
5. Healthcare providers performing stimulation testing should give both verbal and written instructions to patients and their families regarding pre-testing preparation, expectations during the stimulation testing procedure, and post-testing recovery.

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## ENSURE SAFETY

1. Stimulation testing should be performed by healthcare providers with knowledge of the protocol and/or procedure, appropriate dosing of agents, and potential adverse reactions that may occur.
2. These individuals must be licensed by their state as registered nurses or licensed professional nurses. Medical assistants may support professional staff but should not perform testing independently. State law may restrict certified medical assistants to performing stimulation testing only under the supervision of a physician.
3. Stimulation testing on children should only be performed by healthcare providers experienced in providing acute pediatric medical management, preferably in a pediatric medical center.
4. A pediatric endocrinologist should be readily available on site during stimulation testing and be able to respond immediately to emergent situations before, during, and after the stimulation testing procedure.
5. The testing facility should have immediate access to age-appropriate resuscitation equipment (e.g., oxygen and emergency medications), and staff should be knowledgeable in activation of local emergency medical system.
6. Patent intravenous access should be established by healthcare providers certified in intravenous access and maintained throughout the testing procedure.
7. Dose calculations of stimulation agents should be verified by two healthcare providers such as registered nurses, physicians, or pharmacists.
8. Bedside glucose testing must be available for patients at risk for hypoglycemia either because of their medical history or because of possible adverse reaction to a stimulation agent.
9. Vital signs (blood pressure and pulse) should be monitored throughout the testing procedure where applicable.
10. A patient's medical history including allergies, recent acute illness, and prior physical exams should be reviewed prior to testing. It is critical that patients not be exposed to potential risk of a contraindicated stimulation agent during the stimulation testing procedure.
11. Easily accessible, pre-written testing protocols should be in place and updated as needed.
12. Staffing ratios must be appropriate for patient acuity. For example, the staffing ratio for insulin tolerance tests must be 1:1.

Developed by the PENS Stimulation Testing Position Statement Task Force members: Mary Burr, MS, RN, CPNP; Margaret Keil, MS, RN, CRNP; Belinda Pinyerd Zipf, PhD, RN; Cynthia Gordner, BS, RN; Helen Grosskreuz, BSN, RN; Judy Bonnett, BSN, RN; Kelly Behm, BSN, RN; Mary Zwisler, BSN, RN; Tamara Nenadovich, ADN, RN; and Isabel Couto, MSN, RN, CPN.

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