

## **Application of SCENAR therapy for enuresis (nocturnal urinary incontinence, bedwetting) and other neurogenic bladder dysfunctions in children.**

*Prof. Yuri Perfiliev, MD, Ph.D. Associate Professor of Pediatrics  
Dr. Iosif Semikatov, MD, SCENAR practitioner, trainer  
Boris Kulizshkiy, Deputy Director for Biomedical Affairs, OKB RITM ZAO*

Neurogenic bladder in children is a functional disorder of filling and emptying the bladder, associated with a violation of the mechanisms of nervous regulation of urination at the central or peripheral level.

By the age of 4 - 5, most children can control the process of urination during the day and at night. For children under 3 the uncontrolled urination is considered a normal physiological phenomenon.

Urinary incontinence is a common disease in children (about 10%), occurring at the age of 3-7. This disease, in most cases, is not dangerous, but it brings a lot of unpleasant, uncomfortable moments to the parents and a child. Enuresis can have a negative impact on the development of the child's character, behavior, psycho-emotional state and form psychological complexes.

In children, there are 2 types of the neurogenic bladder dysfunction:

- **Primary dysfunction** occurs mainly in children older than 4 and is expressed in automatic urination (as in newborns), i.e. an unconditioned reflex.
- **Secondary dysfunction** appears in children, as a rule, at the age of 3 – 7 and older who previously knew how to control the process of urination and go to the toilet on their own. Secondary bladder dysfunction often occurs in excitable, overly emotional and restless children. Also, secondary childhood enuresis can be associated with stress, genitourinary infections, diabetes and other diseases.

There are daytime and nocturnal forms of childhood urinary incontinence.

1. **Daytime urinary incontinence** is uncontrolled urination that occurs when the child is awake. Usually manifested in children 3 - 5 years old. In most cases, daytime urinary incontinence manifests while a child is laughing, running, playing games or watching favorite cartoons.
2. **Nocturnal urinary incontinence** (bedwetting, enuresis) is a common problem that affects children older than 4. If your 4-5 year old child regularly wakes up wet, then you can talk about enuresis, which requires the advice of a pediatric specialist.

The main causes of occurrence:

- stress;
- fears, fright;
- lack of attention and love;
- drastic changes in a child's life;
- "too busy" - when a child is completely absorbed by the game, the movie, etc. and forgets to urinate;
- infections of the genitourinary system;
- endocrine disorders in a child;
- disorders of the nervous system;
- manifestation of enuresis at the presence of other disease (e.g., upper respiratory infection).

Children suffering from long-lasting urinary incontinence become more aggressive, withdrawn, their character deteriorates, behavior and habits change. Timely treatment and consultation with

a competent pediatric specialist will help to avoid unpleasant situations associated with this disease, and a child or a teenager will regain self-confidence and good mood.

The following types of disorders are distinguished: hyperreflex, hyporeflex, and normo-reflex and areflectory bladder. The disease can occur in mild, moderate, and severe forms of neurogenic bladder dysfunction. For the treatment of enuresis and other variants of neurogenic bladder dysfunctions, the following treatment options are used:

- Physiotherapy;
- Psychotherapy (auto-training, motivation, hypnosis);
- Phytotherapy (treatment with natural remedies);
- Medication (hormones, antidepressants, psychostimulants).

Any of the above methods is recommended to be used after consultation with a doctor and conducting an appropriate amount of examinations in each case.

The search for the most effective methods of treatment that would not be accompanied by side effects and contraindications continues. According to various international recommendations, the treatment of enuresis and other manifestations of neurogenic bladder dysfunction should include various methods of physiotherapy.

Our studies have proved the high efficiency and expediency of using SCENAR therapy (dynamic electrical nerve stimulation) in the treatment of any type of neurogenic bladder dysfunction in children.

The use of SCENAR therapy favorably influenced the parameters of the autonomic nervous system.

As a result:

- The normalizing effect of the dynamic electrical neurostimulation on the mechanisms of innervation of the act of urination was established, which was characterized by a decrease or disappearance of urinary incontinence, imperative urges and the restoration of urine excretion from the body (urodynamics). Various symptoms of bladder dysfunction were subjected to regression, including the disappearance of enuresis.
- An analgesic effect of SCENAR therapy was revealed, as evidenced by the relief of cystalgia in children with neurogenic bladder dysfunction.
- Significantly decreased the number of children with autonomic dysregulation, hypersympathicotonic and asympathicotonic types of autonomic reactivity.
- The system of physical thermoregulation improved.
- Activation of the body's self-regulation processes was noted, which led to stabilization of the patient's emotional sphere, increased resistance to various psycho-traumatic situations.

After the examination and consultation with the specialists it was agreed that SCENAR therapy can be used both in the complex therapy of enuresis and other types of neurogenic bladder dysfunction, and as an independent method of treatment.

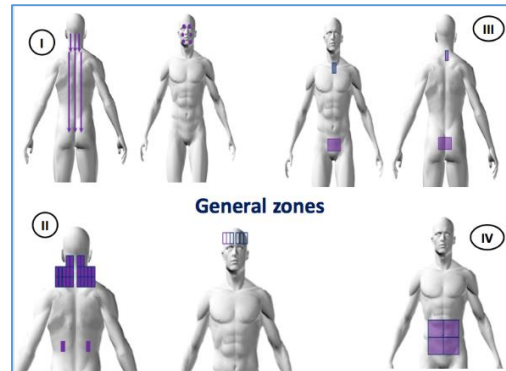
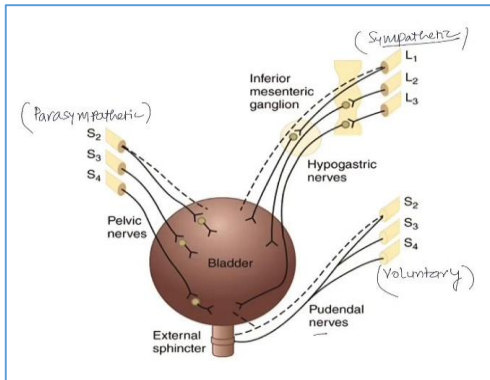
SCENAR therapy is performed by SCENAR specialists using methods of treatment of the zones of general regulation (General zones), projection and additional zones to restore self-regulation mechanisms of filling and emptying the bladder and the normal functioning of the urinary system as a whole. When treating these zones, it is recommended to use both modes: D-0 (SDM - subjectively dosed mode) and D-1 (IDM - individually dosed or digital mode).

Recommended zones for SCENAR treatment:

1. *General zones* (to activate the general regulation of the body):

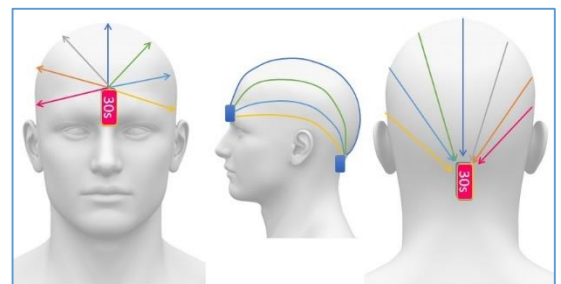
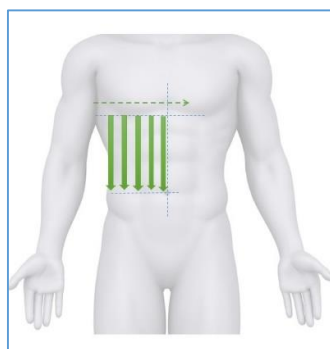
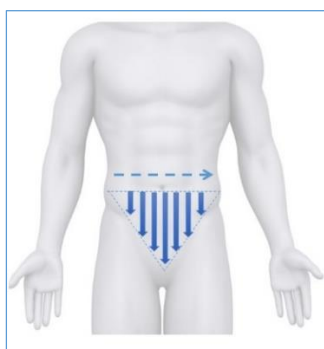
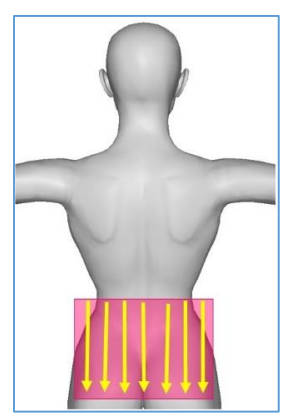
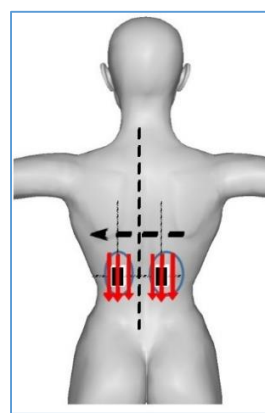
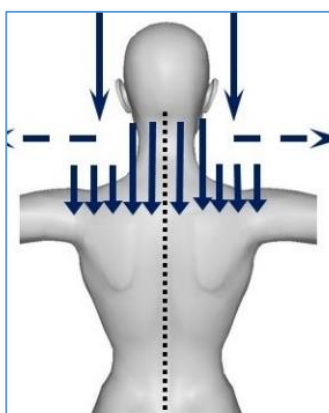
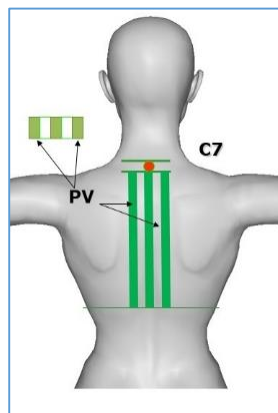
- "3 Pathways 6 Points",
- "Collar Zone",
- "Palm",
- "Abdomen".

*Note:* At one procedure, treat no more than one general zone.



2. *Projection treatment zones:*

- Posterior projection of the kidneys, anterior projection of the ureters and bladder.
- Projection of the sacrum.



3. *Additional treatment zones* (to activate the adaptive mechanisms, to normalize the immune system, to activate the detoxification processes, especially in case of an infection, and to enhance the regulatory influence of the central nervous and the autonomic (autonomous) nervous systems):

- Projection of the thoracic spine and paravertebrally at this level.
- Anterior projection of the liver.
- "Pirogov's ring" ("Immune Ring around the Neck").
- Collar Zone ("CZ") area.
- Treatment of the scalp (Craniotherapy).
- Forehead zone.
- Projection of an additionally appeared active complaint.

When treating any zone in IDM D-1, it is preferable to work in the "default" mode - F (Frequency) = 90Hz, Intensity and Modulations are disabled.

When treating projection and additional zones in SDM D-0, you can use Intensity mode (Int = 3-7), especially if there is pain. In the devices with the special presets you can use "LocalPain" preset.

In projection zones, it is recommended to use treatment parameters depending on the type of neurogenic dysfunction of the bladder.

- *For a hyperreflex bladder*, it is recommended to use F (Frequency) - 120Hz and above + Int (Intensity) = 5-7. In the devices with presets use "HiFM" preset.
- *For a normo-reflex bladder*, it is recommended to use F (Frequency) - 60-90 Hz + Int (Intensity) = 2-5. Periodically, it is recommended to add FM, AM, FM + AM settings during the procedures. In the devices with presets use "Myo" and "FM-Var" presets.
- *For a hyporeflex and areflectory bladder*, it is recommended to use F (Frequency) - 15-60 Hz. Int (Intensity)  $\leq$  3. Periodically it is recommended to add FM, AM, FM+AM settings during the procedures. In the devices with presets use "LoFM" preset.

Treatment Energy in children - minimal to comfortable.

The number of treatment zones in one procedure is no more than 2-3.

The total duration of treatment in one procedure - an average of 15-30 minutes.

The number of procedures - 1-2 times a day. In the presence or accession of an acute infectious process, the number of procedures is recommended to be increased to 3-5 per day.

The duration of the course of treatment is 2-3 weeks.

A break between courses is at least 1 month.

It is possible to combine the treatment of a child by a SCENAR specialist and by parents with a personal use device at home according to the recommendations of a SCENAR specialist. This combination will help enhance and speed up the therapeutic effect.

### **Conclusion:**

The problem of childhood enuresis, and other types of neurogenic bladder dysfunction, as well as any situation related to the health and well-being of a child, requires attention and a professional approach to the treatment. The task of parents is not just to take the issue of "bedwetting" seriously, but to support the child, provide him/ her with the comfortable conditions in which he/ she will not experience stress and pressure. This is often the best "cure" for childhood incontinence.

**Be healthy and love your children the way they are.**

## REFERENCE LIST:

1. The Treatment of Neurogenic Bladder Dysfunction with Enuresis in Children Using SCENAR Device. (<http://www.ncbi.nlm.nih.gov/pubmed/8779182>).
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