

# THE ROLE OF KINESITHERAPY AT THE REHABILITATION OF PARALYSIS OF N. FACIALIS

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## Sažetak

U slučaju paralize n. facialis, najveći naglasak je stavljen na rano otkrivanje, pravilna dijagnoza oštećenja i što raniji početak rehabilitacije.

Klinički, oštećenje n. facialis se manifestuje sa rigidnosti na jednoj strani lica. Pacijent nije u stanju da podigne čelo pokušavajući da zatvori oči, očna jabučica se podiže i vidi se beli deo oka, oko se ne zatvara, usmeni ugao je spušten, a usta je izvučena u stranu. Nazalni žlijeb je izbrisan, oko stalno suzi i refleks rožnice je izgubljen.

Uspjeh rehabilitacije ovisi od uzrocima, od obima funkcionalnih oštećenja nerava i vrijeme početka tretmana na licu.

Osim medikamentozne terapije, u rehabilitaciji paralize facijalisa, važno mjesto zauzima fizikalna terapija, ali kineziterapija je najvažniji dio svih procedura za vraćanje izgubljene funkcije facijalisa.

Shema za liječenje je pripremljen u skladu sa rezultatima MMT-a.

Glavne komplikacije neuritisa n. facialis su kontrakture i sinkinezije.

**Ključne riječi:** neuritis, n. facialis, mišići, vježbe, kineziterapija i rehabilitacija.

## Abstract

In the case of paralysis of n. facialis, most emphasis is placed on early detection, proper diagnosis of the damage and as soon as possible starting rehabilitation.

Clinically, damages of n. facialis is manifested by rigidity on one side of the face. The patient is unable to raise his forehead while trying to close the eye, eye apple is stepping up to, and reflected the white of the eye, the eye does not close, the oral angle is lowered, and the mouth is drawn aside. Nasal groove is deleted, the eye constantly tears and corneal reflex is lost.

The success of rehabilitation depends on the causes, extent of functional damage to the facial nerve and time of starting with a treatment.

Besides drug therapy in the rehabilitation of paralysis of the facial nerve, an important place has physical therapy, but kinesitherapy is the most important part of all procedures to restore the lost function of the facial nerve.

The scheme for the treatment is prepared according to the results of MMT.

Main complications of neuritis n. facialis are contractures and synkinesis.

**Key Words:** neuritis, n. facialis, muscles, exercise, kinesitherapy and rehabilitation.

## Aim of the study:

To show the number of patients with the diagnosis of neuritis n. facialis, who were hospitalized in the Clinic of Neurosurgery in Skopje in the period from 2014 to 2015.

## Methods of research activities

The research is conducted at the Clinic for Neurosurgery in Skopje. At first is determined the total number of patients with facial paralysis who were hospitalized and treated at the Clinic of

Neurosurgery between 2014 and 2015. It is made classification of the patients according to the cause of which is due to the appearance of neurites of n. facialis. Among respondents who are involved in the research, most of neuritis n. facialis, is due to lesion in the central nervous system (the consequence after surgical intervention, intracerebral haemorrhage and a brain tumor). The obtained statistical indicators for patients with this diagnosis are classified according to demographic characteristics: gender, age, place of residence, and are presented in tables and graphs.

## Results and Discussion

The study included 150 patients hospitalized at the Clinic for Neurosurgery in Skopje in the period from 2014 to 2015.

*Table 1. Number of patients hospitalized at the Clinic for Neurosurgery in Skopje in the period from 2014 to 2015.*

<b>Total number of hospitalized patients</b>	<b>150</b>
<b>Patients with intracerebral hemorrhage</b>	<b>90</b>
<b>Patients with brain tumors</b>	<b>60</b>

From Table 1, it can be noted that the total number of 150 patients hospitalized at the Clinic for Neurosurgery in Skopje in the period from 2014 to 2015, 90 patients have been diagnosed with intracerebral hemorrhage, while the remaining 60 patients were diagnosed with a brain tumor.

*Table 2. Number of patients with neuritis n. facialis, as a result of surgical intervention of patients with intracerebral hemorrhage and brain tumor.*

<b>Number of patients with Neuritis of n. facialis</b>	<b>70</b>
<b>Number of patients with Neuritis of n. facialis set due to intracerebral hemorrhage</b>	<b>25</b>
<b>Number of patients with Neuritis of n. facialis occur as a consequence of brain tumor</b>	<b>45</b>

From Table 2 can be seen that after the surgical intervention, the 70 participants developed secondary neuritis n. facialis, of which 25 patients is a consequence of intracerebral hemorrhage, while the remaining 45 patients as a consequence of surgical intervention on a brain tumor.

*Table 3. Total number of patients with neuritis n. facialis who live in the region of Skopje.*

<b>Patients with neuritiso n.facialis who live in the region of Skopje</b>	<b>40</b>
<b>Male</b>	<b>15</b>
<b>Female</b>	<b>25</b>

The Table 3, show that the total number of respondents with neuritis n. facialis who live in the region of Skopje, 25 patients were female and the remaining 15 patients are male.

*Table 4. Classification according to the gender of patients with neuritis n. facialis, who live in other cities in the Republic Macedonia.*

<b>Patients who live in other cities in the Republic Macedonia</b>	<b>30</b>
<b>Male</b>	<b>13</b>
<b>Female</b>	<b>17</b>

*From Table 4, it is evident that the from totat nuber of 30 patients who live in other cities of the Republic Macedonia, 17 patients were female and the remaining 13 patients are male.*

### **Kinesitherapy at the rehabilitation of paralysis of n. facialis**

**Purpose of the rehabilitation program is:** To determine the role and effects of kinesitherapy means and methods in the rehabilitation of paralysis of the facial nerve.

**Tasks of the Kinesitherapy are:**

- strengthening of blood and lymph flow in the face;
- restore the conductivity of nerve and stimulate muscles innervated by it;
- protection of greater stretching of the affected muscles;
- protection against pathological synkinesis and contractures;

Kinesitherapy is the most important part of all procedures that seek to restore the lost function of the facial nerve.

The method of applying kinesitherapy passes through three periods depending on the clinical picture.

#### First period

In the first period, when there is no active movement, the main task is to improve the trophic and tones the paralyzed muscles. The exercises are with passive movements, careful to the extent that corresponds to the normal function of muscles. The patient sits in front of a mirror. The therapist stands behind him with his hand exercises performed, while it is important that the patient performed the same exercise alone, but with a healthy side of his face.

The exercise tones the paralyzed muscles. During this period may be applied splint that supports the oral angle, and also to comply the paralyzed muscles by excessive stretching. The splint is removed only for eating, sleeping and exercise.

#### Second period

This period begins with the appearance of the smallest visible muscle contractions. They are used to start the exercise by the patient that ends therapist to the full extent of the muscles movement. These exercises go on so long as to restore normal movement. In performing of these exercises are turning out the movements of a healthy muscle, which is controlled laughter, speech and all the moments that reflect mimicry muscles.

#### Third period

It occurs when already appeared contraction of mimic muscles. With proper kinesiotherapy strive to the maximum to restore muscle strength, mobility and coordination of the affected muscles. The exercise is performed by resisting with hand of the therapist. The resistance shall correspond to the ability of the muscle but should still allow movement. Resistance should be given after beginning of active movement. In the event of contractures, exercises are repeated three to four times front of mirror, 2-3 times a day. Also, are given massages and paraffin mask for better muscle relaxation and prevent contractures, electrical stimulation and electrophoresis with vasodilator agent (Novocain, Benirol).

### **The means and methods of the kinesiotherapy at neuritis of the facial nerve:**

1. Treatment with position - is extremely important in the treatment of neuritis of the facial nerve. It has the task to stretch shortened muscles of healthy side and simultaneously shorten the the painful muscles. Treatment by position is achieved when the patient lies on his back with the head on the lower pillow, which relax muscles on both sides of the face, reduces muscle tone and the face looks symmetrically.

2. Passive movements - shall be applied in the absence of active movements of the affected muscles. In fulfillment of these movements is necessary to keep an eye on the following key points: exercises to be enclosed slowly, carefully, because otherwise can be caused reflex elevation of muscle tone by healthy side.

3. Breathing exercises and exercises for unaffected muscles (m.masseter, shoulder girdle muscles, neck muscles), which improves circulation in the muscles and mimic the fallopian canal.

4. The collar massage - is of great importance. The starting position is lying on back, and the massage starts from the distal to the muscles near the ear.

5. Active exercises - if the patient can perform independent movements of injured muscles, then we include active exercises (movements). They need to be performed to the degree of muscle strength. It should be taken in mind that the muscles get tired quickly, and therefore should not be made quick movements. The correct dosage of the exercises is essential because, otherwise it can come to the appearance of synkinesis. Active exercises are enclosed by the degree of MMT (with help, independently, by giving resistance). Active exercises improves the function of the affected nerve, improve trophic protect against contractures. Also, of great importance is the slight fixing of the unaffected side of the face, for aiding and easier fulfillment of the movements of the affected muscles.

6. Additional techniques - includes movement of muscles, stretching and manual teasing with subsequent contraction.

### **Conclusion**

Kinesiotherapy as part of physical therapy is one of the most important aspects of medical rehabilitation. It stands for the maximum utilization of all potentials of the treated patients with a particular emphasis on the possible optimal recovery of damaged functions.

We apply the following kinesiotherapy methods: therapy with position (elongation of shortened muscles of the healthy side and the shortening of the muscles of the patient side); active movements (for affected muscles and others); breathing exercises and general exercises; exercises for the muscles of the shoulder girdle; neck muscles and for the muscles which are not affected. The treatment lasts for months, and bimonthly repeat course of treatment lasting 15 days.

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