

# REHABILITATION OF PEOPLE WITH NEUROMUSCULAR DISORDERS IN CROATIA

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**EAMDA Conference about neuromuscular disorders**

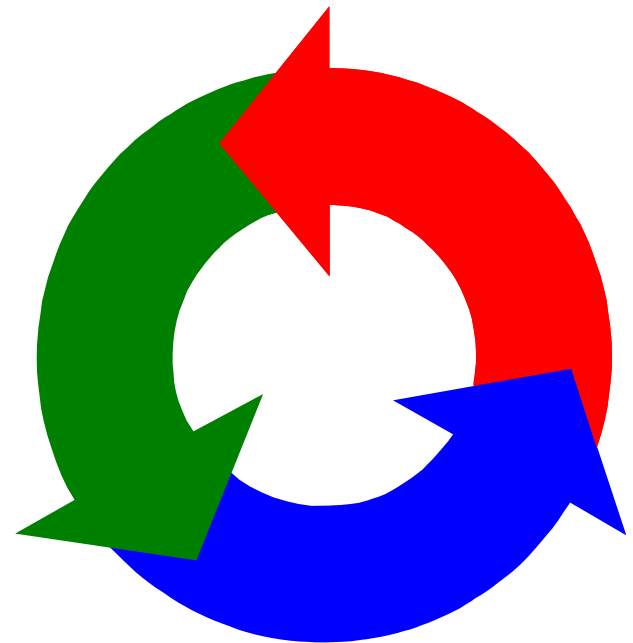
**43rd ANNUAL GENERAL MEETING**

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# Rehabilitation of patients with NM disorders

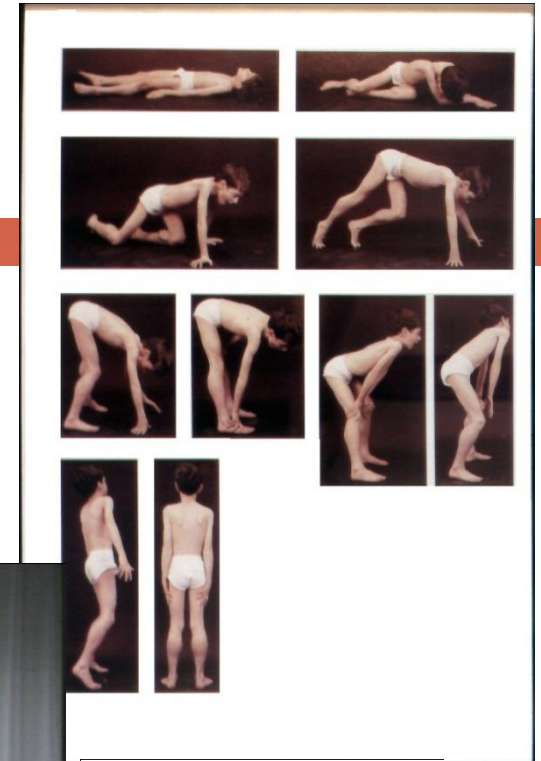
## Rehabilitation of patients with NM disease:

- is very complex one
- and includes three components:
- **medical,**
- **psychological**
- **and social**
- according to **Bio-Psycho-Social Model.**



# Clinical presentation of NMD

- ***the loss of muscular strenght***
- 
- **Secondary changes** in musculoskeletal system ;
- ***contractures of joints***
- ***deformities of spine*** ( scoliosis)
- 
- ***The mobility*** of patients gradually becomes more ***difficult***
- and can led to ***loss of independent walking ability.***
- 
- ***breathing difficulties***



# Rehabilitation of patients with NM disorders



Scientific efforts aimed towards finding the cure or treatment of genetic defects have produced no result yet,

- so, **as there is no casual therapy** for most of the neuromuscular diseases,
- **the important role is played by physical therapy and rehabilitation !**

# Rehabilitation of patients with NM disorders



**All manifestations are different for each type of NMD,**

- so the rehabilitation has to be planned with the most precise diagnosis one can make
- and it should be based on knowledge of ethiopathogenesis, clinical course and progression

**Medical rehabilitation** - primarily aimed towards functional deficit, impairment or loss of certain physical abilities and patient's independence !

# Rehabilitation of patients with NM disorders

- Rehabilitation does not change the clinical course of the disease, but definitely helps one's functional abilities.
- It is aimed towards soothing the consequences of the diseases on the neuromuscular and musculoskeletal system.
- **Medical rehabilitation methods** are not specific to any the diagnosis , although there is similarity in certain groups of the diseases (myopathy/neuropathy)

# Rehabilitation of patients with NM disease

**The aim in rehabilitation of patients with NMD are:**

- alleviation or prevention of patients functional capacity deterioration,
- preserving independence in daily routine and mobility for as long as possible,
- and advising and instructing the patients and their families,
- giving them psychological support about gaining independence within reasonable limits.

# Rehabilitation of patients with NM disorders

- ***Successful rehabilitation*** of these patients presumes **interdisciplinary approach , team work** and **cooperation of different specialities** ( neurologist, physiatrists, pediatricians, orthopaedics) then physical therapists, occupational therapists, nurse, etc.
- 
- **Cooperation with psychologists, social workers** and professional advisers is desirable and necessary
- **Cooperation with orthopedic technicians** who provide and make orthopaedic devices



# In medical rehabilitation of NMD,

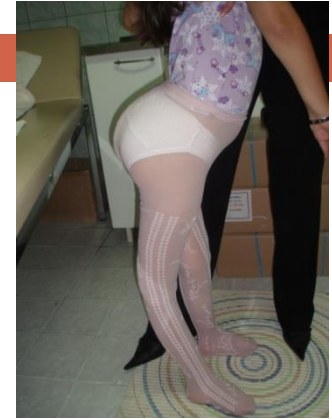
number of methods are used

- ***physical therapy,***
- ***occupational therapy,***
- ***application of orthopaedic devices (shoes, orthoses..,***



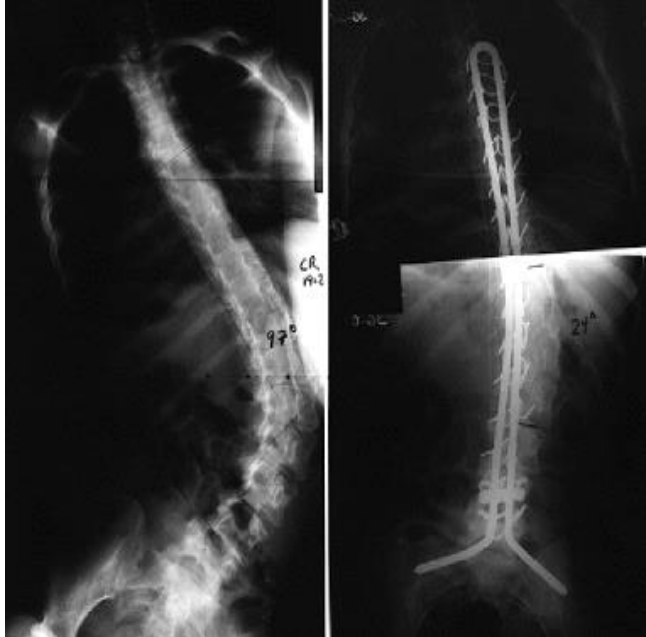
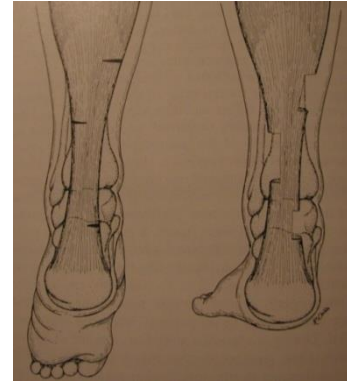
# In medical rehabilitation of NMD,

- **walking devices** (cains, walkers, wheelchair),
- **application of tehcnical utilities in everyday life**
- in order to ease the degree of the patients' disabilities and handicaps.



# In medical rehabilitation of NMD,

- In some cases, the ***surgical stabilization of spine or extremities***
- is used.



# Kinesiotherapy or medical gymnastics, 1



- is the most useful method of physical therapy
- which uses motions in order to improve or preserve muscle function (strength, endurance),



# Kinesiotherapy or medical gymnastics 2



- and aerobic capacity, coordination and balance
- and to prevent or reduce secondary problems such as contractures, pain, or fatigue.

# Medical rehabilitation



- Medical rehabilitation *must be planned individually*, based on early diagnosis, familiarity with the pathophysiological cascade in every phase of the disease, progression and prognosis of the disease
- It must start with *objective assesment of patient's clinical state, physical state, motivation* etc.

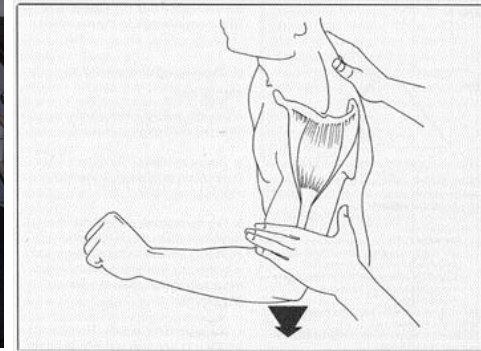
# Clinical examination of the physiatrist



- *exact evaluation of distribution and level of muscular atrophy or pseudohypertrophy,*
- *evaluation of muscular strenght and endurance*
- *active and passive mobility of extremities*
- *spine deformities (scoliosis)*
- *shoulder bones and feet*
- *the mobility and patho-biomechanicss of walking*

# Functional measurements - physical therapist

- the assessment of muscle strength (by manual muscle test and dynamometric),
- measurement of joint mobility,
- measuring the speed of walking,





# Functional measurements - physical therapist

- measuring the speed of walking,
- the mobility and patho-biomechanics of walking
- Vignos and Archibald's functional classification
- balance analysis on the stabilometric platform



# Specific goals of neuromuscular medical rehabilitation:

- 1. to improve, keep or slow down the loss of muscular strenght
- 2. to prevent or reduce the contractures
- 3. to improve or prolong mobility
- 4. to improve physical abilities and patient's independence
- 5. to instruct the patientss and their families
- 6. to improve the patient's qulity of life

# Medical rehabilitation

- **The rehabilitation plan** is done **by a physiatrist**.
- *Physical therapy, occupational therapy, the application of orthopaedic devices, walking devices, orthopaedic shoes, limb orthoses, devices for self-care activities and various technical devices are used.*
- In some cases there is **the necessity of surgical stabilization of the spine** because of scoliosis or tendon lengthening /arthrodesis because of **joint contractures**.

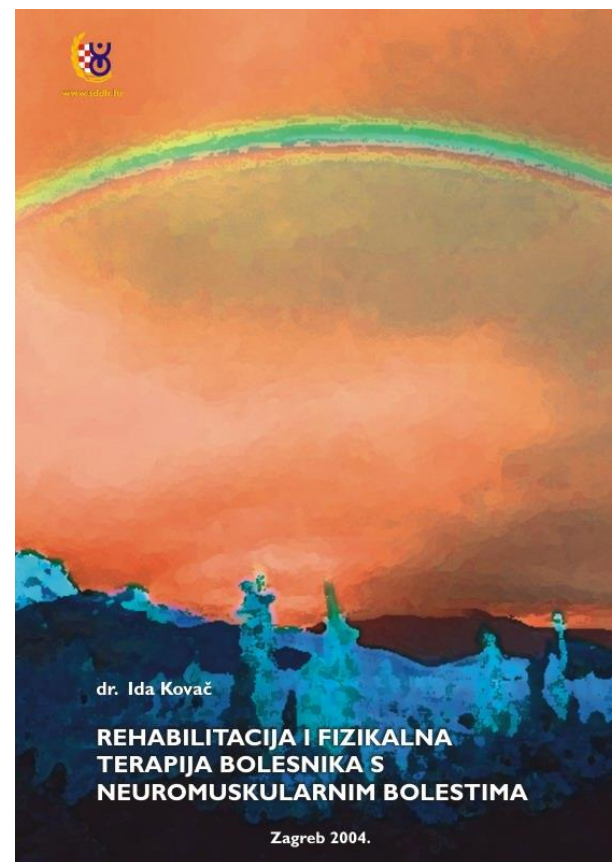
# Medical rehabilitation

- **The patient should be informed about the rehabilitation** plan in order to cooperate adequately and to be motivated for the rehabilitation process and educated for active role in the training
- It is particularly important to **ensure the continuity of physical training** through daily exercise, so the exercises carried out by physiotherapists should be supplemented with exercises carried out by well-educated parents.

# Medical rehabilitation



- **For a better education about the NM disease and physiotherapy,**
- on the initiative and at the expense of the Croatian Alliance of Muscular Dystrophy,
- reha team from the Institute has published a **multimedia guide for NM patients** and their parents (with a CD).



# Activities on NM disorders rehabilitation in Croatia

- ❖ Physical medicine and rehabilitation in the Croatian health system is implemented at several levels:

Level I: ambulatory/outpatient

Level II: hospital or inpatient

Level III rehabilitation in the patient's home.

- ❖ *The method of implementation of rehabilitation and physical therapy can be performed in several ways,* depending on the clinical status of patients, especially the mobility of patients and the availability of health care institutions.

# Rehabilitation of the NM patients

- ❖ 1) Patients who are **moving independently** **attend therapy at the Departement for PMR -outpatients**
- ❖ 2) For **patients with walking difficulties** or those who are non-ambulatory, physiatrist plans **physiotherapy (exercises) in the patient's home carried out by a physiotherapist**
- ❖ 3) **The possibility of rehabilitation in the rehabilitation hospital**, usually for a period of three weeks, once a year

# Croatian Alliance of Muscular Dystrophy



- **The Alliance of Muscular Dystrophy of Croatia and its representatives has significantly contributed** to raising awareness about the importance of medical rehabilitation.
- They have also gotten engage with the implementation of rehabilitation of NM patients in everyday life,
- changing law regulations regarding the rights of patients in the field of rehabilitation and orthopedic supplies,
- ensuring a personal assistant for patients which greatly facilitates the task of medical professionals



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