

PHYSICAL THERAPY ASSESSMENT REPORT

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Patient Name: Hadi Fadi Harkous

Patient Number: 01700047

Date of Birth: January 20, 2013

Date of Assessment: June 6, 2018

GENERAL INFORMATION

Hadi is a 5 year-old boy with Duchenne Muscular Dystrophy (DMD).

Hadi was born at Jabal Amel hospital, at 36 weeks of gestation, with a birth weight of 3.1 kg. His parents are not consanguineous. Hadi lives in Tyre with his parents and his older sister who is healthy. No other family members were similarly affected.

Hadi presented to our clinic with a waddling gait, a Gowers maneuver (compensatory mechanism of climbing on the legs when getting up from the floor), and pseudo hypertrophy of calf muscle. Hadi's parents mentioned a history of frequent falls, fatigue and inability to climb stairs.

Exams:

- Cytogenetics, done on May 16, 2018, showed Duchenne Muscular Dystrophy or Becker Muscular Dystrophy.
- Blood test showed high level of CPK.

Further tests and genetic counseling were recommended.

On June 2018, Hadi started taking Cortisone, on a daily basis. Currently, he is on Prednisone and Nexium.

REASON FOR ASSESSMENT

Hadi was referred by Dr. Boustany for a Physical Therapy evaluation and parental guidance, in order to preserve and improve Hadi's functional capacities and performances.

ASSESSMENT METHODS

- 1- Parent interview;
- 2- Observations in the clinic setting; and
- 3- Assessments by Physical Therapist. The evaluation mainly covered the gross motor skills.

PHYSICAL THERAPY EVALUATION

- 1- North Star Ambulatory Assessment (NSAA).
- 2- Joint deformity and Passive Range of motion.
- 3- Manual Muscle Testing.
- 4- Functional Performance and Capacities.
- 5- Respiratory Function.
- 6- Pain.

1- North Star Ambulatory Assessment (NSAA):

North Star Ambulatory Assessment	Score (2,1,0)
Stand	2
Walk 10m	2
Sit to stand from chair	1
Stand on one leg R	1
Stand on one leg L	1
Climb step R	2
Climb step L	2
Descend step R	1
Descend step L	1
Gets to sitting	2
Rise from floor	1
Lifts head	1
Stands on heels	0
Jump	0
Hop R	0
Hop L	0
Run	1
Total out of 34	18

2- Joint deformity and Passive Range of motion.

Hadi does not have any joint deformities or progressive scoliosis. Mild lumbar hyperlordosis is noticed, obvious mainly while walking.

Passively, Hadi has painful limitation in knees extension (-15°) and in ankle dorsiflexion of 20 ° with full knees extension, and of 15 ° with knees flexion.

He has tightness in his hip Abductors, Hamstrings and Gastrocnemius muscles. He cannot touch his toes with his knees straight.

3- Manual Muscle testing:

Hadi has generalized weakness, but functional strength is still present. Hadi has bulky calves although they are not strong.

Weakness in trunk, abdominal, pelvis and lower extremities' motor strength was noticed:

	Left	Right
Ankle dorsiflexors	3/5	3/5
Ankle plantarflexors	5/5	5/5
Ankle everters	4/5	4/5
Quadriceps	3/5	3/5
Hamstrings	4/5	4/5
Hip abductors (gluteus medius)	4/5	4/5
Hip extensors (gluteus maximus)	4/5	4/5
Hip adductors	4/5	4/5
Pelvis tilts	NT	NT
Abdominal muscles	3/5	
Upper trunk and Back extensors	4/5	

The motor power in his/her upper extremities is functional 4/5, except for:

	Left	Right
Neck flexors (SCM)	2/5	2/5
Neck extensors	5/5	5/5
Shoulder abductors (Deltoid)	3/5	3/5
Triceps	3/5	3/5
Elbow flexors	4/5	4/5
Forearm supinators	3/5	3/5
Forearm Pronators	4/5	4/5
Wrist and fingers extensors	4/5	4/5

Hadi has the same rating for the left and the right side.

4- Functional performances and capacities:

Hadi has good functional skills.

He can do all transfers alone, starting from supine to standing position without any assistance.

He can sit from a supine position, but needs hand support. He can hold all sitting positions (on the floor, on a box, on a chair) with a good balance, and functional parachute reactions. Rising from a low chair is possible if arms are supported.

Gower's sign is positive. To get up from the floor, Hadi gets into crawling, position then kneeling, then half kneeling, then standing; these transfers are possible if arms are supported.

Picking an object from the floor is possible.

Hadi can stand up and walk alone, acquired at the age of 1 year 5 month. While walking, lack of heel strike and lower back hyperlordosis are obvious.

Hadi has a poor balance while walking and standing.

He can hold standing position, with feet together or in front of each other, but not for a long period of time.

Hadi can climb the stairs holding on to the rails with one hands.

Hadi cannot stand up on one leg. Walking backwards and sideways is difficult for him. He is able to walk on a line (both feet) for about 5 steps.

Hadi cannot jump up, down, forward, and sideways. He has difficulty hopping forward and cannot run fast easily. He reports that he gets tired quickly. He cannot jump or hop on one foot.

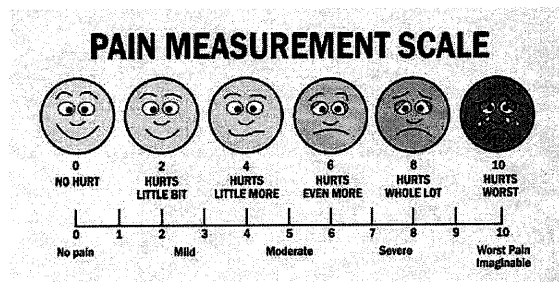
5- Respiratory function.

Hadi does not have any restricted pattern of breathing yet. He has normal respiratory rate and a good thoracic expansion.

Hadi has good respiratory muscle strength. Mild weakness in abdominal muscles is noticed. His cough ability is normal, but he complains of getting tired easily.

6- Pain.

The stretching of Gastrocnemius, Hamstrings and Hip Adductors muscles is painful. Wong-Baker FACES Pain Rating Scale is 7/10.



RECOMMENDATIONS/PARENTAL GUIDANCE

Based on the results of this assessment, it is recommended that:

- Hadi receives at least **1 session per week** of Physical Therapy by a trained and qualified Physical Therapist.
- Hadi receives Aqua-gym and Hydrotherapy twice per week by a trained and qualified Physical Therapist. Gentle aqua gym and swimming are highly recommended in order to strengthen muscles and joints, improve endurance, proprioception and coordination skills.
- Hadi follows an individual daily home program that addresses his needs. In order to maximize his quality of life and to control the symptoms. Hadi was taught appropriate care and precautions in order to preserve and decrease his risk for loss of function.

The main aims of physical therapy program are:

- Maintain strength and endurance in respiratory muscles.
- Establish good pulmonary hygiene.
- Maintain chest wall mobility.
- Maintain and maximize muscle strength, mainly for hip abductors/extensors, quadriceps, ankle dorsiflexors, abdominal muscles and back extensors.
- Maintain the range of motion for affected muscles, prevent or delay contractures by frequent stretching exercises.
- Prevent deformities mainly scoliosis and hyperlordosis.
- Good positioning and encourage symmetrical postures and exercises.
- Improve strength and endurance in gross motor activities (e.g. walking frequently starting 5 minutes the first week and increasing the time progressively).
- Improve and maximize Hadi's functional capabilities.
- Develop balance and weight shifting skills, to enable success in functional activities and facilitate more effective equilibrium reaction (e.g. standing on one leg with and without eye control, walking on unsteady surfaces, such as garden, sand, etc.).
- Educate the family and establish appropriate home program.

Tips to remember:

- Daily stretching is highly recommended for his lower extremities mainly for Gastrocnemius, Hamstrings and hip Adductors muscles. Move and stretch gently and slowly. Don't force a movement.
- Activity is encouraged. Inactivity such as bed rest or sitting down for too long on car rides can worsen the muscle disease.
- To keep from falling, remove loose carpeting from the floor.
- Using chairs with side arms and hard cushions will make it easier to get up or out of a chair.
- Put grab bars on the walls beside toilets and inside showers and bathtubs. These will help you get up after using the toilet or after bathing. Grab bars will also help to keep you from falling in the shower. You may want to put a shower chair inside the shower.
- Avoid excessive generalized heat, because it can cause fatigue and compromise strength.
- Swimming is highly recommended for breathing control and endurance.

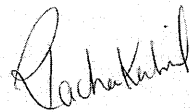
PROGRAM EVALUATION

Hadi's skills will be re-evaluated bi-annually to reassess his skills, his posture and his progress. Upon re-evaluations and at any time during treatment, the aforementioned program and recommendations are subject to change or modification based on the client's needs, in the professional judgment of specialists in AUBMC Special Kids Clinic or if data indicates this need.

It has been a pleasure working with Hadi and his family. Should you have any questions concerning the information in this report, please don't hesitate to contact us on the numbers provided below.



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Director, AUBMC Special Kids Clinic



Racha Kahil
Physical Therapist