

FUNCTIONAL EXERCISE IN OLD PEOPLE

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Disclosures



I have no conflict of interest or disclosure in relation to this presentation .



OBIECTIVES :

- INTRODUCTION
- FUNCTIONAL TRAINING
- PHYSICAL ACTIVITY COMPONENT
- Common chronic lower limbs MSK condition VS. Functional exercise.
- Functional Training Program at MUA Wellness.
- Successful stories At MUA WELNESS .

INTRODUCTION :

Physical activity has multiple health benefits for people of all ages .

In older adults, the key benefits of increasing physical activity include improved **strength**, **flexibility**, **mobility**, and **fitness**, all of which can improve daily **function**, help to maintain independence, and reduce the risk of falls and fall-related injuries .

* Brach JS, FitzGerald S, Newman AB, et al. Physical activity and functional status in community-dwelling older women: a 14-year prospective study. Arch Intern Med 2003; 163:2565.

- **Functional training** is a classification of exercise which involves training the body for the activities performed in daily life.

- **RISKS OF EXERCISE**

There is no evidence that the risks of physical activity outweigh the benefits for healthy older adults. However, there may be risks associated with medical conditions which are more prevalent in older adults, such as cardiovascular, renal, or metabolic disease.

IN THE FIRST VISIT TO THE CLINIC

Patient assessment (history , examination + review file) according to the patient condition refer the patient for further assessment (secondary care) and ask for clear clearance to allow the patient to start the functional physical exercise .

- Musculoskeletal symptoms including pain and impaired in daily activities are the most common presenting complaint at PHCC Health Centers and constitutes up to 18% of GP's workload.
- Muaither Health Center encountered 1630 Qatari patients (623 male, 1007 female) with lower back and lower limbs chronic musculoskeletal disorders from September 2018 to February 2019 mainly due to pain symptoms and impaired in daily function.
- 30% of the patient are above 60s .

- Most of the patients receive painkiller medication, which has temporary effects, and vast side effects, other group of patients receive combination of treatment painkiller medication and physiotherapy sessions.
- As per the recently trend functional exercise program is one of the effective intervention in improving the daily life activities quality and therefore improving the pain score.

- **PHYSICAL ACTIVITY COMPONENTS:**

- Aerobic exercise
- Muscle strengthening
- Flexibility
- Balance

- **Aerobic Exercise :**

Aerobic exercise involves the sustained use of large muscle groups that stimulate and strengthen the heart and lungs, thereby improving the body's ability to utilize oxygen.

e.g stationary bike , elliptical training , light walk

Guidelines from the AHA and ACSM for older adults suggest a minimum of **150 minutes** per week of moderate-intensity aerobic activity (**30 minutes on five days each week**)

- **Muscle strengthening :**

Activities to maintain and increase muscle strength include resistance training , Development of muscle strength and muscle endurance is progressive and requires gradual increases in resistance over time.

- **Flexibility :**

Flexibility is considered paramount to overall good physical health and is necessary to perform daily life activities.

- **Balance training :**

Balance exercise improves stability and may prevent falls and reduce injuries related to falls.

Common chronic lower limbs MSK condition VS. Functional exercise

- Chronic lower back pain :

Exercise therapy improves pain and function in patients with chronic LBP, although a single mechanism by which exercise improves symptoms is not clear. There are likely several mechanisms contributing to the derived benefit, including neurologic, musculoskeletal, and psychological.

A temporary exacerbation of symptoms may occur during or after therapeutic exercise. Counseling the patient that there may be an initial exacerbation of symptoms before there is an improvement can be reassuring .

* Hayden JA, van Tulder MW, Malmivaara A, Koes BW. Exercise therapy for treatment of non-specific low back pain. Cochrane Database Syst Rev 2005; :CD000335.



- In a meta-analysis including nine observational studies, post-treatment exercises were more effective than no intervention for reducing the rate of LBP recurrence at one year (rate ratio 0.50, 95% CI 0.34 to 0.73) . The most promising approaches involved back flexibility and strengthening exercises.

- Arthritis :

For patients with osteoarthritis, aerobic activities should be selected, if possible, that minimize joint stress (eg, swimming, water aerobics, stationary cycling). Any water-based, low or non- weight bearing activities (OKC) eg, lap swimming, water walking, or water aerobics, are beneficial.

- 39 %.Osteoarthritis of the knee typically affects women more than men . prevalence between 35-45% at age 65 and above .
- This degenerative joint disease aetiology is multifactorial, with inflammatory, metabolic, and mechanical causes but commonly through wear and tear of joints.
- It is classified into two types **primary** and **secondary**.

Primary type cause is idiopathic, occurs in **old age**.

Secondary type cause is any underlying primary disease of joint which leads to degeneration.

- The OA patient may also present with such symptoms as limitation of joint motion .
- Muscle atrophy due to quadriceps arthrogenic muscle inhibition .
- Decrease in proprioceptive acuity may contribute to reduced dynamic knee stability, progressive functional limitation , decreased agility and perturbation associated disability.

Goals of managing osteoarthritis include controlling pain, maintaining and improving range of movement and stability of affected joints .

- Recent trends show that exercise therapy includes balance exercises which consist of Agility and Perturbation training and Functional task exercises.
- Are designed to challenge neuromuscular system helps to maintain balance and improve activities of daily living function.
- Improve function rapidly.

- Functional task exercises involve interplay of cognitive perceptual and motor functions and closely linked to individual dynamic environment.
- Functional task exercises helps to **enhance** muscle strength, flexibility, or balance and to improve functional ability, mobility into the patient's (activities of daily living) .

- This approach in the exercise treatment is specific with expected functional outcomes.

Functional Training Program at MUA Wellness

The Scope :

In addition, shifting the patients with chronic lower MSK conditions from depending on pain killer medication to the functional exercise program will help in:

- Improve in lower limbs flexibility and power.
- Improve in the posture and biomechanical changes.
- Improve in pain score.
- Avoid using medication and to avoid the sequence side effects.





- AIM:

This training program aim to restore 50-60 % of the daily functional activities with less pain and more flexibility after 1 year of the program.

- **ASSESSMENT TOOLS :**

A- Clinical assessment by history mainly VAS SCORE ASSESSMENT ,
Joints Range of MOTION AND targeted Muscle Power Score .

First Assessment in the first visit at the clinic and then re evaluate the patients every three months .



B-Assigned gym instructor feedback. Progression flexibility ,
coordination , strength , proprioception at **first visit and then re
evaluate every 6 weeks.**

Inclusion :

- Qatari Patients registered at Muither H.C
- to be referred from HLSC , MSK CLINIC at MUA
- FEMALE and Male
- Age: 20 year and above (no limit age)
- Has biomechanical changes
- Chronic osteoarthritis
- Chronic MSK Problems and over weight .
- 6 months post joint replacement .
- Disc herniation with no active neurological sign or symptoms .

Not Eligible :

- Age under 20 year
- Has acute active joint problems
- Rheumatoid arthritis
- Less than 6 mon post-surgery
- Pregnant
- Cardiovascular disease (without cardiologist clearance)

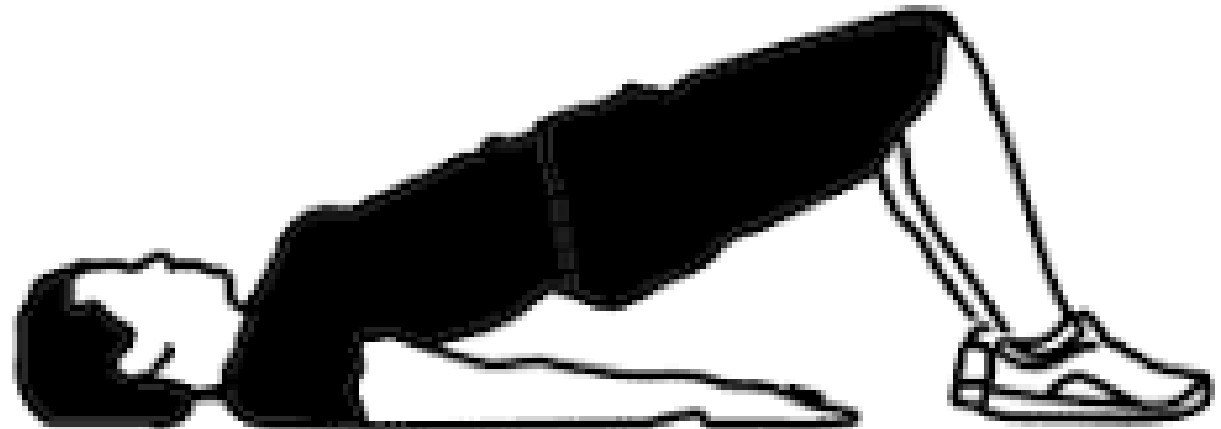


Types of Functional exercises: Applied at **MUA Wellness**

A- Core functional exercise:

Aim : Maintaining
functional posture, overall
body strength and
Flexibility/mobility .

1-Bridging:

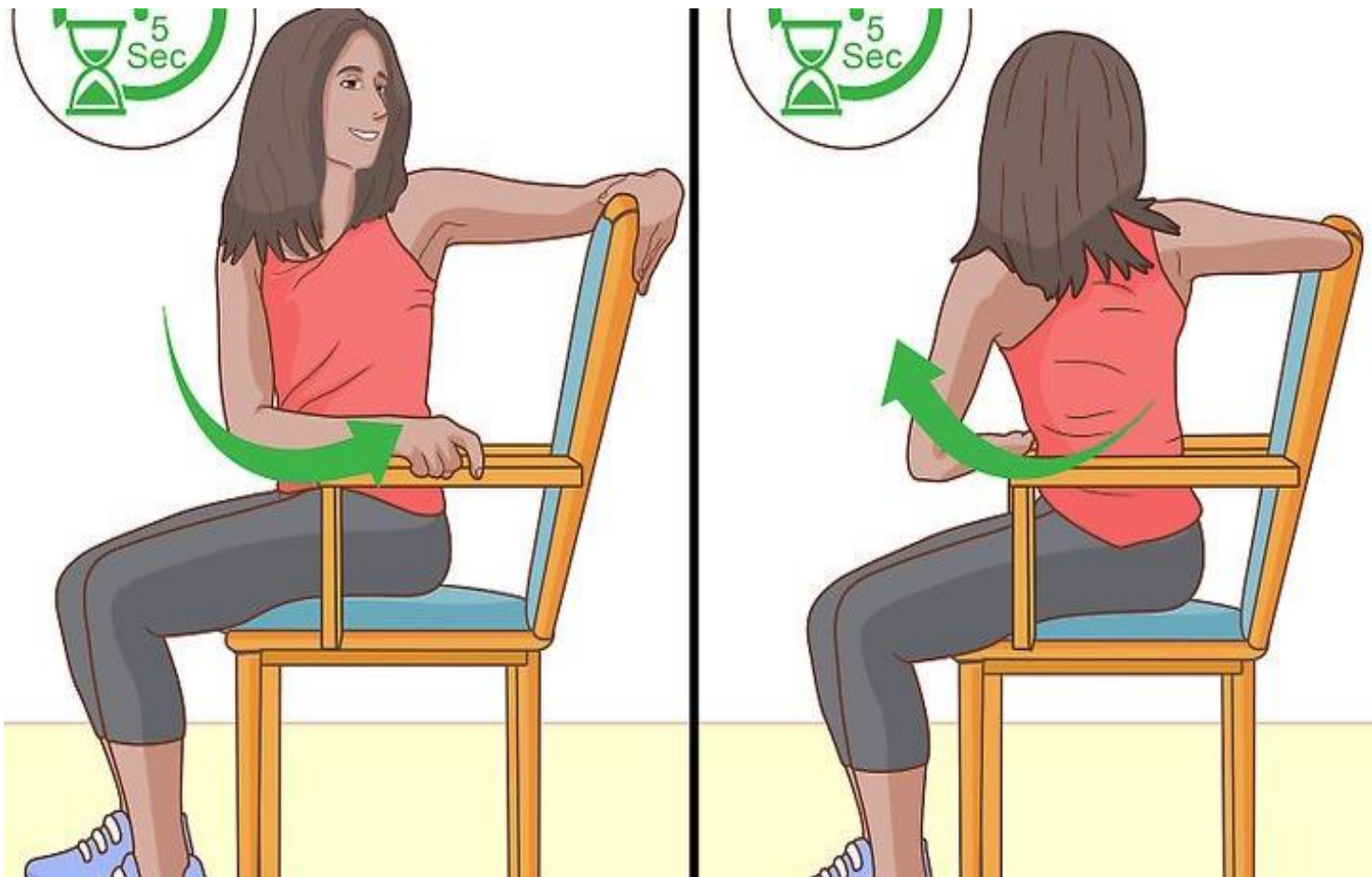


2-Superman:





3-Abdominal Chair Crunch:



**4-Simple waist
rotation:**

B- Exercises to Strengthen Knees:

Aim : strength the quadriceps , proximal hip muscles , calf muscle and hamstring starching .

1- Straight Leg Raises:



2-Knee Marches:



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4-Clams:



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4-Heel Raises:



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Successful stories At MUA WELNESS

- A 69 YEAR OLD FEMALE K/C B/L KNEE OA S/P LT KNEE REPLACEMENT

Done at HMC 2 years ago

Complain of knee pain , knee gave way , lower back pain

Facing difficulty in praying , ascending and descending steps

1 st assessment : VAS 6/10

Limitation in hip flexion and INT.ROT

Limitation in knee flexion // no acute swelling

Rt . Knee crepitus

Slump test : negative

SLRT : TIGHT hamstring (30 degree)

Ant . And lat. pelvic tilt



- Patient presents after 3 months for 1st re assessment

Pain and function improving

Vas score 2-3/10

Improve in flexibility and ROM SLRT TO 60 DEGREE

KNEE FLEXION AND HIP INT ROT. IMPROVE BY 60 %

PATIENT CAN PRAY EASLY

No pain at night

No h/o full



IN SUMMARY

- Physical activity has multiple health benefits for people of all ages.
- In older adults, the key benefits of increasing physical activity include improved **strength**, **flexibility**, **mobility**, and **fitness** .



Improve daily **function**

Improve in pain score.

Avoid using medication to avoid side effects

References :

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PRACTICE SESSION



QUESTIONS



THANK YOU