

Rehabilitation of Rheumatic diseases

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Definitions:

- **Rehabilitation:**

Is a branch of medicine which aims to enhance and restore functional ability and quality of life to those with physical impairments or disabilities.

- **Disability:**

Any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.

- **Impairment:**

Limitation to normal function (dysfunction of an organ or a body part).

- **Rheumatic disease:**

May involve joint structures (synovium, cartilage and bone) and their surrounding soft tissues (skin, muscles, tendons and ligaments).

Team Work



PRINCIPLES OF EVALUATION IN RHEUMATIC DISEASE:

A successful rehabilitation program for a patient with a rheumatic disease starts with an appropriate evaluation.

Key components of the rehabilitation evaluation of patients with rheumatic diseases

1. Disease and co morbidities

2. Functional assessment

1. Disease and co-morbidities

- Current diagnosis
- Current disease activity

- Associated co morbidities (such as cardiovascular, GIT, CNS.....)
- Depression
- **Problems associated with rheumatic disease**
- **Synovitis is most prominent in**

a) RA b) juvenile idiopathic arthritis (JIA)

- **Bony alkalosis and motion loss of the spine and large peripheral joints are prominent in a) spondo-arthropathies**

b) May be seen in RA and JIA.

- **Soft tissue contracture is most prominent in a)Progressive systemic sclerosis (PSS)**

b)RA

c) Mixed connective tissue disease.

- **Deformities**

PROBLEMS

- **Muscle weakness**

1. **Inactivity**

2. **Myositis**

3. **myopathy secondary to steroids**

4. **inhibition of muscle contraction due to joint effusion**

5. **direct effects of the disease itself on muscle.**

- **Neuropathic muscle weakness is most common with vasculitis, as seen in RA and SLE.**
western ontario-mcmaster questionnaire(WOMAC)

1. **Getting in and out of bath**

2. **Going down stairs**

3. **Heavy chores**

4. **Going upstairs**

5. **Lying down**

6. **Bending**

7. **Putting on socks**

8. **Shopping**

9. **Walking on flat ground**

10. **Getting on and off the toilet**

11. **Sitting**

12. **Standing**

13. **Taking off socks**

14. **Arising from bed**

15. **Arising from sitting**

16. **Light chores**

17. **Getting in and out of a car**

The Arthritis Impact Measurement Scales (AIMS)

The AIMS has the following questionnaire items

1. **Mobility**

2. **Physical activity (walking, bending, lifting)**

3. **Dexterity**

4. **Household activity**

5. **Social activity**

6. **Activities of daily living**

7. Pain

8. Depression

9. Anxiety

- **Score range:** Range is 0-10 for each section. Total health score 0-90.

- **Interpretation of scores:** Zero represents good health status, 10 and 90 represent poor health status.

Management of Rheumatic Diseases

- **Pharmacologic Management**
- **Alternative and Complementary Medicine**
- **Rehabilitation Interventions**
- **Surgery: Soft-Tissue and Reconstructive Procedures**

Compliance

factors may influence compliance of patients with treatment :

- 1. Nature of the disease**
- 2. Therapeutic regimens**
- 3. Patient-doctor relationship**
- 4. Socio-behavioral features of the patient**

Alternative and Complementary Medicine

Complementary therapies: are therapies that are used with conventional medicine.

Alternative therapies: are therapies that are used in place of conventional medicine

I. Prayer and Spirituality

II. Chinese medicine

III. Acupuncture

acupuncture significantly decreases knee pain in OA, neck and low back pain.

IV. Chiropractic

V. Bee venom

VI. Fasting

IV. Diet

➤ **diet can influence gout**

Serum urate levels increase with meat ,seafood OR alcohol intake and decrease with dairy intake and plant oils(olive,sunflower...).

➤ **There is some suggestive evidence that a decrease of omega fatty acids and substituting omega-3 oils may decrease pain and inflammation.**

➤ **Ginger can increase NSAID effects., and should not be used in diabetes**

➤ **Zinc interferes with glucocorticoid and immunosuppressive drugs**

VIII. Herbs and Supplements

Ginseng may increase the effects of glucocorticoids and estrogens

VIII. Yoga

A yoga program based on upper-body posture flexibility; correct hand, wrist, arm, and shoulder alignment; and stretching provided significant reduction in pain and increased grip strength in CTS (a common problem in RA)

Rehabilitation Interventions

1. EDUCATION

2. REST

3. EXERCISE

4. TREATMENT WITH PHYSICAL MODALITIES
5. ORTHOTICS
6. ASSISTIVE DEVICES AND ADAPTIVE AIDS
7. SELF-CARE
8. Environmental Design
9. Psychosocial Interventions

EDUCATION

Patient education should include:

1. discussion about the natural history of the disease and the likely impact that it will have on life-style, job, and leisure activities.
2. Instructions which should be followed to avoid more damage to the joint.
3. A full discussion of the medication and its related problems.
4. educational groups consisting of arthritis patients who gather to hear experts in the field and talk about aspects of medical and rehabilitative management are very informational and supportive.

REST

- Three forms of rest have been used by persons with arthritis :

1. complete bed rest
2. local rest of a joint
3. short rest periods
4. Systemic Rest:

Several days of bed rest may be indicated for severe new-onset RA, SLE, and PM and for severe acute flares during the course of these diseases

❖ Local Rest:

Local rest of acutely or subacutely inflamed joints with resting splints > reduces inflammation and pain, and may help to prevent contracture.

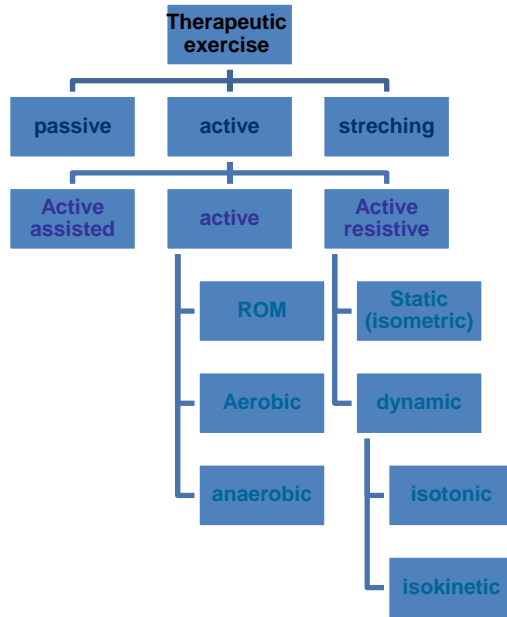
❖ Short Rest Periods:

short rest periods during the day of 20 to 30 minutes with appropriate local splinting is considered the appropriate way to manage patients with inflammatory arthritis to help control joint inflammation and fatigue.

EXERCISE

- Benefits of exercise
1. Increase and maintain ROM .
 2. Reeducate and strengthen muscles .
 3. Enable joints to function better biomechanically
 4. Increase locomotor ability
 5. Increase bone density
 6. Decrease pain
 7. Increase the patient's overall function and well-being.
 8. Increase lung capacity .
 9. Reduce body weight
 10. Limit rheumatoid cachexia

Therapeutic exercise



- Isometric exercise is usually the initial approach, with the addition of an isotonic exercise program for muscle endurance and for strengthening if joints permit.
- Isotonic low-resistive and low-weight progressive resistive exercise, can be used without joint damage.

Passive Exercise

- Passive exercise is beneficial for patients with severe muscle weakness
- Patients with acute joint flares should passively or actively move the acute joint through the range once or twice a day, to prevent motion loss.
- Passive exercise may also increase intra-articular pressure in the presence of joint effusion and has been associated with rupture of the joint capsule with large effusions

Active Exercise

Types of Active exercise:

1. Isometric or static contraction:

- it is highly suited for arthritis patients with mechanically damaged joints and during acute inflammation.
- advantage of isometrics is that muscle tension can be generated with minimal joint stress. Pain has been reported with maximal contraction.
- some studies report that isometric quadriceps exercise of inflamed knee joints in RA increased oxidative damage to hyaluronate and glucose, determined by analyzing synovial fluid 1 hour following exercise . Therefore isometric exercise in an inflamed joint is not recommended

HEAT or COLD?

- As heat increases intra-articular temp, it's contraindicated in acutely inflamed joint
- Cooling used in acute inflammation or in 1st 24 hs after acute trauma .
- In subacute & chronic inflammation heat therapy is preferred .

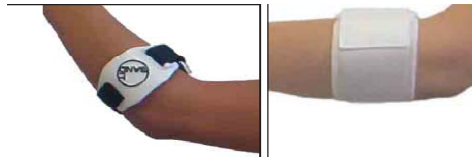
Aquatic Therapy

The benefits of performing exercise in a pool include:

1. **elimination of gravity and the positive effect of water buoyancy so a greater level of aerobic exercise may be tolerated in the water than on land.**
2. **decreased pain .**
3. **increased muscle relaxation.**
4. **So therapeutic pool therapy may be most useful for those with moderate to severe arthritis, with recent joint replacement, with AS, and with any cardiopulmonary compromise.**



Epicondylar straps



cock-up splint

- **Used in radial nerve palsy, tennis elbow**



Rheumatoid Arthritis Splint

- **Used in rheumatoid arthritis patient, acute inflamed or injured wrist joint and post surgically.**



Deviation splint Ulnar



Thumb spica



finger splints Bunnell

- Used in reducing boutonnière deformity



Night splint



cervical collar



Lumbo-sacral built



Elbow crutch, Canes, axillary crutch



wheelchair



SELF-CARE

- Dressing, undressing, and other daily self-care activities can be time and energy consuming tasks for those with RA, SLE, and PM.
- Clothing made with elastic and Velcro is easier to don than that with buttons
- Large long handled items are helpful to conserve energy. Such as long-handled sponges, brushes and toothbrushes and elastic shoelaces .
- Wrinkle-resistant fabrics that do not require ironing and lightweight fabrics and wools (e.g., mohair) are useful.
- Useful kitchen devices include: food processors, built-up handles on utensils, electric knives and vegetable peelers, and lightweight aluminum pans. Lining pans with aluminum foil saves scrubbing. Bringing together items involved in a work area is helpful.



Environmental Design

- Slopes, stairs with deep steps may be difficult to be used for someone with disease of the hips and knees.
- Appropriate placement of steps, suitably graded inclines, and ramps are helpful.
- Indoors, thick carpets increase friction and are difficult to walk on or negotiate in a wheelchair.
- In the bathroom, guard rails are best for safety. The bathtub should have nonskid strips or an entire nonskid surface.



Psychosocial Interventions

- **Depression is common in RD. It has been reported that 37% of patients with RA have depression**
- **Psychosocial interventions help improve pain, affect, and function .They may also increase self-efficacy and health status**