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# Physotherapy management of rheumatoid arthritis in elderly patient; A case study

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**Abstract**
**Objective:** The purpose of this case study was to understand how a planned physiotherapy program can help an elderly patient with Rheumatoid Arthritis by reducing pain and stiffness and improving movement, strength, and daily functional ability.
**Methodology:** A 58-year-old elderly patient diagnosed with Rheumatoid Arthritis participated in this study. Initial assessment focused on pain level, joint movement, muscle strength, balance, and ability to perform daily activities. A 4-week physiotherapy program was designed according to the patient's needs and included pain-relief techniques, gentle joint mobility exercises, muscle strengthening, balance training, joint protection strategies, and patient education. The patient was re assessed at the end of the treatment period.
**Results:** After completing the physiotherapy program, the patient reported noticeable pain relief and reduced joint stiffness. Improvements were seen in joint mobility, muscle strength, and balance. The patient was able to perform daily activities more comfortably and independently, leading to better confidence and overall well-being.
**Conclusion:** This case study highlights that regular and individualized physiotherapy plays an important role in managing Rheumatoid Arthritis in elderly patients. It not only helps in reducing symptoms but also supports independence and improves quality of life.

**Keywords:** Rheumatoid arthritis, physiotherapy management, elderly patient

## Introduction

Rheumatoid Arthritis (RA) is a long-lasting disease in which the body's immune system wrongly attacks its own joints. This causes pain, swelling, stiffness, and difficulty in movement. RA mainly affects small joints such as those of the hands, wrists, and feet and usually affects both sides of the body in the same way (Smolen *et al*., 2020). Because the disease is chronic, symptoms may continue for many years and can, gradually worsen if not treated properly (Smolen *et al*., 2023).

The exact cause of Rheumatoid Arthritis is still not completely known. However, studies suggest that RA develops due to a combination of genetic and environmental factors. Certain genes, especially HLA-DRB1, increase the risk of developing RA. Environmental factors such as smoking, obesity, infections, and hormonal changes also play an important role in triggering the disease (Romao *et al*., 2021; Shakeel *et al*., 2025). RA is more common in women than men and usually appears in middle or older age (McInnes *et al*., 2021).

The most common signs and symptoms of RA include joint pain, swelling, warmth, and stiffness, especially in the morning or after rest. Morning stiffness lasting more than 30 minutes is a typical feature of RA. Many patients also feel tired, weak, and find it difficult to perform daily activities like walking, dressing, cooking, or holding objects (Smolen *et al*., 2020; Aletaha & Smolen *et al*., 2023). As the disease progresses, joint deformities and loss of function may develop, leading to reduced independence and quality of life (Scott *et al*., 2020).

Rheumatoid Arthritis does not affect only the joints. It can also involve other body systems such as the heart, lungs, eyes, and blood vessels, increasing the risk of other health problems (McInnes *et al*., 2021). Because of these wide-ranging effects, early diagnosis and proper management are very important. Medical treatment using disease-modifying drugs helps control inflammation, while physiotherapy and exercise therapy help reduce pain, maintain joint movement, improve muscle strength, and support daily function (Hurkmans *et al*., 2021; Zhang *et al*., 2025) [5].

Regular physiotherapy, combined with patient education and lifestyle modification, plays a key role in helping individuals with RA stay active, independent, and confident in their daily lives, especially in elderly patients (Allameen *et al*., 2024; Fedorchenko *et al*., 2025).

Based on the assessment findings, a personalized physiotherapy program was planned according to the patient's tolerance and needs. The treatment was provided over a period of six weeks, with sessions conducted five times a week. The program included pain-relief techniques, gentle joint movement exercises, gradual muscle strengthening, balance and functional training, and education on joint protection, posture correction, and energy conservation. The patient was also guided on a simple home exercise program.

At the end of the treatment period, all assessments were repeated to observe changes and improvements following physiotherapy intervention.

## Case Study

58-year-old woman came to the Orthopaedic Outpatient Department of Sharda Hospital on 28-11-2025 with complaints of ongoing pain, swelling, and stiffness involving several joints, mostly the wrists, fingers, knees, and ankles. She reported prolonged morning stiffness exceeding one hour and increasing difficulty in carrying out everyday activities such as walking, grasping objects, and personal care, which had a noticeable impact on her quality

of life. The patient had been diagnosed with Rheumatoid Arthritis two years earlier at a private healthcare facility outside Sharda Hospital, where her treatment and follow-up were inconsistent. Approximately one year prior to the present visit, she discontinued treatment altogether, following which her symptoms gradually increased, resulting in increased discomfort, joint stiffness, and functional problems. Physical examination revealed multiple joints with associated swelling, tenderness, limited range of motion, and reduced functional ability. Relevant laboratory investigations, including Rheumatoid Factor, Anti-CCP antibodies indicated active inflammatory disease. Based on the clinical and investigative findings, a diagnosis of chronic active Rheumatoid Arthritis was established, and the patient was referred from the Orthopaedic OPD to the Physiotherapy Department of Sharda Hospital for comprehensive rehabilitation aimed at pain reduction, stiffness management, improvement of joint mobility and muscle strength, and enhancement of functional independence.

**Investigation Findings**

| Test Name | Result | Unit | Bio. Ref. Interval | Sample Type |
|---|---|---|---|---|
| Anti CCP(CYCLIC CITRULLINATED PEPTIDE) Method: Turbidometric Method | 36.00 | IU/mL | 0.00 - 18.00 NEGATIVE: Below 18 Weak Positive: 18-24 U/ml Positive:25-75 U/ml Strong Positive:75.00 U/ml | |

CCP INTERPRETATION

Dr. Preeti Yadav
ASSISTANT PROFESSOR

**Fig 1:** displays a anti CCP blood report

| | | | | |
|---|---|---|---|---|
| Rheumatoid Factor (Quantitative), Serum Method: Immunoturbidimetric Assay | 24.8 | IU/mL | <12.0 IU/ml | Serum |

Comments:

1. Rheumatoid Factor is an auto antibody against human IgG commonly seen in serum of patients with rheumatoid arthritis. The sensitivity of the reagent is 12 IU / ml, below this it is negative.

2. Negative result does not exclude disease because of the delayed appearance of the Rheumatoid Factor, it is more frequently present in chronic active phase of the disease than in early or in subclinical chronic phases of the rheumatoid arthritis.

3. Weekly positive latex agglutination test has been observed in sera of patient having hepatitis, sarcoidosis, cirrhosis of liver, syphilis, some acute bacterial or viral infections. it is negative in rheumatic fever.

4. A positive result does not provide final diagnosis of Rheumatoid Arthritis and therefore, it should be used only in conjunction with proper clinical evaluation.

5. Kindly correlate clinically to arrive at the final diagnosis.

**End Of Report**

Dr. Preeti Yadav
ASSISTANT PROFESSOR

- Low **H - High **CL-Critical Low **CH-Critical High

**Fig 2:** Displays Rheumathoid Factor Blood Report

**Physiotherapy Intervention**

The goal of the patient was to reduce pain and make daily life activities easy and simple. over the period of 4 weeks, she went to different types of exercises. And treatment. That are mentioned below.

**Fig 3:** radial deviation of wrist.

**Fig 4:** passive straight leg raises

**WEEK 1-acute/ pain and inflammation control phase**

**Short term goals**

- Reduce pain, inflammation and morning stiffness
- Prevent joint deformity
- Maintain available ROM

**Long term goal**

- Achieve daily life activities
- Complete joint mobility

| Exercise | Frequency | Intencity | Time | Type |
|---|---|---|---|---|
| Hot pack | daily | Mild | 10-12 minutes | Thermal therapy |
| Passive and active AAROM Shoulder-flexion, extension, abduction elbow-forearm pronation, supination wrist-flexion, ulnar deviation extension knee-heel slides, , stair step ups ankle-runner calf stretch, tibialis anterior stretch, plantar fascia stretch | 5 days per week | Mild | 10-12 repetition 3 SETS | mobility |
| Isometric exercises {quadriceps-quadriceps chair, wall low squats Hamstrings, elevated heel bridge, long lever bridge glutes figure of 4} | 5 days per week | Mild | 10-12 Repetition 3 sets | Stretching [ standing quads stretch SLR-70-90 degree Figure of 4] |
| Breathing and relaxation exercises Pursed lip breathing, deep breathing, | daily | Moderate | 10-15 minutes | relaxation |

**WEEK 2-increase mobility and increase range of motion**

**Short term goals**

- Improve joint ROM
- Reduce morning stiffness duration
- Initiate muscle movement

**Long term goals**

- Improve joint stability

| Exercise | Frequency | Intensiity | Time | Type |
|---|---|---|---|---|
| Isometric exercises With TheraBand-lateral raise, biceps curls, overhead adduction | 5 days per week | Moderate | 10-15 repetition3 sets | TheraBand for mobility |
| Ball squeezing | daily | Mild | 30 repetitions 3 sets | Strength |
| Postural correction Chin tuck, bird dog, standing forward bend, shoulder roll, seated, elbow grasp | 5 days per week | Mild | 10-12 minutes | posture |
| Hot pack | 5 days per week | Moderate | 10 minutes | Thermal therapy |
| ROM exercises of affected joints | 5 days per week | Moderate | 10-12 repetition 3 sets | mobility |

**WEEK 3-Strenghtening and functional training phase**

**Short term goals**

- Improve muscles strength and endurance
- Enhance functional joint use

**Long term goals**

- Improve independence in daily life activities

| Exercise | Frequency | Intencity | Time | Type |
|---|---|---|---|---|
| Resistance exercise [TheraBand-front squats standing 2kg dumbbells- curls] | 4 days per week | Moderate | 15 repetitions 3 sets | Strengthening exercise |
| Closed chain exercise Squats, wall push ups | 3 days per week | Moderate | 10 repetitions 3 sets | Strengthening |
| Balance exercises [balance board sit ups] | 3 days per week | Moderate | 5 minutes | Balance and coo ordination |
| Hot pack | daily | Moderate | 10 minutes | Thermal therapy |

**WEEK 4-Increse endurance and home exercises**

**Short term goals**

- Maintain joint mobility

**Long term goals**

- Prevent flare ups
- Teach long self-management at home

| Exercise | Frequency | Intencity | Time | Type |
|---|---|---|---|---|
| Aerobic exercise [walking, Breathing exercises] | 4-5 days per day | moderate | 20-30 minutes | endurance |
| Stretching [full body] | daily | Mild to moderate | 10 repetitions 3 sets | flexibility |
| Closed chain exercises [squats Wall push ups | 5 days per week | moderate | 10 repetitions | strengthening |

**Patients Outcome** **Before Treatment and After Treatment**

| Joint | Movement | Normal rom | Before rom | After rom |
|---|---|---|---|---|
| Shoulder | Flexion<br>Abduction<br>External rotation | 180 degrees<br>45-60 degree<br>90 degrees | 75 degrees<br>90 degrees<br>45 degrees | 135degrees<br>125degrees<br>68 degrees |
| Elbow | Flexion<br>Extension | 150 degrees<br>0 degree | 90 degrees<br>-6 degree | 120degree<br>0 degrees |

| | | | | |
|---|---|---|---|---|
| Wrist | Flexion<br>Extension | 80 degrees<br>70 degrees | 30 degrees<br>25 degrees | 56degree<br>50degree |
| Hip | Flexion<br>Abduction | 120 degrees<br>45 degrees | 75degrees<br>28 degrees | 100degree<br>40degree |
| Ankle | Dorsiflexion<br>Plantarflexion | 20degrees<br>50 degrees | 8 degrees<br>25 degrees | 18degree<br>40degree |
| Knees | Flexion<br>Extension | 135 degrees<br>0 degrees | 90 degrees<br>0 degrees | 116degree<br>0 degree |

## Discussion

Rheumatoid arthritis (RA) is a chronic systemic inflammatory disorder that primarily affects synovial joints, leading to pain, stiffness, reduced muscle strength, and limitations in functional activities, particularly among elderly individuals. Alongside pharmacological management, physiotherapy has an essential role in addressing physical impairments and improving overall functional performance. Recent evidence suggests that structured exercise-based physiotherapy interventions contribute significantly to pain reduction and enhancement of physical function in individuals with RA when exercises are appropriately tailored to disease severity and patient tolerance (Zhang *et al*., 2025) [5]. Studies comparing different exercise approaches indicate that combined aerobic and resistance training, as well as mind–body exercises such as Pilates, are effective in reducing morning stiffness and improving joint function (Li *et al*., 2024) [3]. Additionally, regular therapeutic exercise has been shown to positively influence fatigue levels and physical endurance, which are common concerns in RA patients (Gupta & Singh, 2025) [2]. Physiotherapist-guided behavioural strategies further support adherence to physical activity, helping patients overcome fear of movement and inactivity associated with chronic pain conditions (Anderson *et al*., 2024) [1]. Moreover, techniques focusing on joint mobility, protection, and energy conservation can reduce mechanical stress on inflamed joints and support functional independence (Patel *et al*., 2024) [4]. Collectively, these findings support the use of individualized physiotherapy programmes as a key component of comprehensive rheumatoid arthritis management.

## Conclusion

This case study highlights the importance of physiotherapy in the effective management of rheumatoid arthritis in an elderly patient. The structured and individualized physiotherapy programme focused on pain relief, improvement of joint mobility, enhancement of muscle strength, and restoration of functional independence. Gradual progression of exercises helped reduce stiffness and improve movement without increasing joint stress or inflammation. Functional training and patient education played a significant role in improving confidence and the ability to perform activities of daily living independently. Emphasis on joint protection techniques and energy conservation supported long-term symptom management and prevention of further joint damage. The improvements observed in pain levels, mobility, and overall function indicate that physiotherapy is a vital component of comprehensive rheumatoid arthritis care. Early intervention and consistent physiotherapy can help elderly patients maintain independence, improve quality of life, and reduce disability associated with the disease.

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