

## Prevention of Rheumatic Diseases: Physical Treatment, Prevention, Basic Knowledge and Classification

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### Abstract

**Introduction:** Rheumatic diseases have been known since ancient times and are presumed to be as old as mankind, are very widespread and often chronic. Rheumatic diseases are classified into:

- Inflammatory rheumatism - rheumatoid arthritis (AR), rheumatic fever etc.
- Degenerative rheumatism - arthrosis of peripheral nodes and spinal cord.
- Extraarticular-periarticular rheumatism (about nodule) - bursitis, tendinitis, fasciitis.

**Definition:** AR is a chronic illness of unknown cause, which involves many organic human systems. The characteristic of RA is the persistent synovitis, which most often involves nodes peripheral (symmetrically). Inflammation causes stump destruction and erosion bone, which is also the main feature of the disease. The course of the disease is very variable: the sick may have light forms of oligoarthritis or severe progressive polyarthritis with major injuries. Epidemiology of AR suffers 1-3% of the population, while women are more affected than men.

**Keywords:** Rheumatoid arthritis, Oligoarthritis, Bursitis, Tendinitis, Fasciitis

### Introduction

Rheumatic diseases are autoimmune and inflammatory diseases which cause ones immune system to attack joints (leading to lead to painful, swollen joints), muscles, bones, cartilage, ligaments and organs, which lead to painful and swollen joints.

Rheumatic diseases include most forms of arthritis and spondyloarthropathies (inflammatory spinal conditions). According to National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), there are more than 100 rheumatic diseases.

These diseases are usually painful, chronic, and progressive (get worse over time). Sometimes they're also called musculoskeletal diseases.

**Causes of Rheumatic diseases:** The actual cause remains unknown, however researchers believe sometimes it is genetic, or it may be a result of the surrounding atmosphere or lifestyle choices (cigarette smoke, pollution), some kind of infection, trauma and metabolic problems.

**Diagnosis of Rheumatic diseases:** There is no particular test which can diagnose the disease. Doctor may examine via visible signs of swelling, stiffness, or redness in your joints and body parts. The doctors may suggest lab tests such as blood test, urine or synovial fluid (lubricating fluid in the joint), imaging tests like X-rays, CT scans, MRI, or ultrasound.

**Duration of Rheumatic Diseases:** Some diseases are chronic and can stay for life long while other lasts for much shorter period of time, if treated properly & promptly.

**Prevention of Rheumatic Diseases:** There are no ways to prevent certain rheumatic diseases; however some diseases can be prevented by avoiding or reducing certain triggers such as stress, infections, alcohol consumption, soda drinks, and certain food, depending upon the type of rheumatic disease.

**Complications of Rheumatic Diseases:** Several complications may arise or develop for the one having rheumatic disease e.g., diabetes,

depression, heart disease, High BP, increased cholesterol level, kidney disease, memory issues, Osteopenia, Osteoporosis, etc.

### Rheumatic Diseases are Mainly Classified into 3 Categories

1. Inflammatory rheumatism
2. Degenerative rheumatism
3. Extraarticular-periarticular rheumatism (about nodule)

### Inflammatory Rheumatism

This includes various types of arthritis which may lead to painful, swollen joints. Sometimes may also affect the bones, cartilage, muscles and other organs of body.

Such condition arises when immune system functions in disturbed or wrong way and begins to attack one's own tissues.

Common Inflammatory Rheumatic diseases are rheumatoid arthritis, rheumatic fever, Lupus, Ankylosing Spondylitis, Sjogren's syndrome, Psoriatic Arthritis, Gout, Scleroderma, Infectious Arthritis, Juvenile Idiopathic Arthritis, Polymyalgia Rheumatica, and Reactive Arthritis. One of the inflammatory Rheumatic diseases is described below:

### Description of Rheumatoid Arthritis (RA)

It is an chronic, autoimmune & inflammatory disease that mainly affects the joints (of wrists, hands, feet, spine, knees, and jaw) occurs when one's immune system itself mistakenly attacks own body's tissues

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leading to causing swelling, pain, stiffness and loss of functions in joints.

It can occur at any age, mostly in women. Those have family background in this disease are more prone to have it, long time smokers.

**Symptoms of RA:** Pain and swelling in multiple joints (generally same joints on both sides of body, e.g. both wrists, both ankles), sporadic fever, loss of appetite, problems in other parts of body such as the eyes and lungs, unusual tiredness.

**Diagnosis of RA:** Doctor may take X-ray of joints, blood sample or joint fluid sample to look for the different signs of inflammation including antinuclear antibody (ANA), Anti-cyclic citrullinated peptides (anti-CCP), Complete blood count, C-reactive protein (CRP), Erythrocyte sedimentation rate (ESR), Rheumatoid factor (RF).

**Treatment of RA:** Its treatment can relieve symptoms, improving quality of life. Treatments include: Medication is given which helps in pain relief and delaying or stopping the damage of joints or other organs. Sometimes surgery is required such as Joint replacement surgery.

## Degenerative Rheumatism

It is defined as an arthrosis of peripheral nodes and spinal cord. An example of degenerative rheumatism is Vasculitis, which is described below:

### Description of Vasculitis

It occurs when the immune system mistakenly attacks blood vessels in the body. However in most cases cause of attack remains unknown, while in few cases an ongoing or recent infection, allergic reaction of medication, certain blood cancers (leukemia, etc.) can trigger reaction of immune system leading to the cause of disease.

**How does Vasculitis affect the nervous system?:** Vasculitis can cause problems in the central and peripheral nervous systems, by affecting the blood vessels that nourishes the brain, spinal cord, and peripheral nerves.

**Symptoms of Vasculitis:** This includes fever, a sick feeling, loss of weight, unusual rashes or skin discoloration, and damage to virtually any organ system.

Nervous system complications from vasculitis:

- Headaches (that doesn't go away)
- Cerebral aneurysms can burst causing hemorrhagic stroke
- Blood in the inflamed blood vessel can clot causing ischemic stroke
- Dementia
- Paralysis
- Pain
- Swelling of brain
- Vision problems
- Seizures and convulsion
- Trouble speaking or understanding

**Diagnosis of Vasculitis:** It is quite difficult to diagnose vasculitis as some other diseases also have similar symptoms to it. The diagnosis of a CNS or PNS vasculitis will depend upon the no. of blood vessels

involved, size and locations of blood vessels, as well as the types of other organs involved. Doctor may take blood and urine samples to look for signs of inflammation (such as antibodies, blood cells and abnormal levels of certain proteins). By analyzing fluid sample that surround spinal cord and brain, biopsy of brain or nerve tissue. By CT and MRI scan which can develop 2D and 3D images of brain, nerves, and other organs and tissues. By Angiogram (x-ray imaging using a special dye that is released into the bloodstream) to detect the size (degree of narrowing) of the blood vessel in the brain, head, or neck. By ultrasound which helps to produce high-resolution images of the blood vessel walls and to measure blood flow velocity.

**Treatment of Vasculitis:** It depends on the organ affected medications can be used to suppress abnormal activity of immune system and reducing inflammation. This medication primarily involves steroids such as prednisone, which helps in reducing inflammation and it may be prescribed along with immunosuppressive drugs. Other medication include Immunosuppressant or cytotoxic drugs such as methotrexate, azathioprine, and cyclophosphamide, which helps to either stop or reduce the functioning of immune system cells.

Rituximab also called monoclonal antibody works by adhering to certain abnormally functioning immune cells and killing them.

Aneurysms along with vasculitis may need to be treated surgically, involving procedures that's can block blood flow to an aneurysm.

## Extraarticular-Periaricular Rheumatism (About Nodule)

Common example of extraarticular-periaricular rheumatism is bursitis, tendinitis, fasciitis. One of the extraarticular-periaricular rheumatic diseases is described below:

### Description of Bursitis

It is an inflammation of bursae (fluid-filled sacs found about your joints) it is mainly of 5 types prepatellar bursitis, Olecranon bursitis, Trochanteric bursitis, Retrocalcaneal bursitis, Infectious (septic) bursitis.

**Symptoms of Bursitis:** It involves pain, swelling, redness, thickening of one's bursae. Various types of bursitis have their own specific symptoms:

In prepatellar and olecranon bursitis, it can be hard to bend one's leg or arm, respectively. In Trochanteric and retrocalcaneal bursitis can cause difficulty walking, also can make it painful to lie on hip.

**Causes of Bursitis:** The major cause of bursitis is injuries or damage to bursae. This damage may trigger pain, swelling, and redness in the affected area.

**Diagnosis of Bursitis:** Doctors can use an X-ray or ultrasound, to get a clear picture of the affected area. Blood sample and samples from the affected bursae can also be used for diagnosis. Needle aspiration is usually recommended in cases where bursitis appears to be limited to the joint.

**Treating Bursitis:** Resting, pain medication and icing of the joint may relieve bursitis, however, other treatments are also mandatory:

- Antibiotics are mandatory in cases in which the bursa is infected.
- Corticosteroids are used for pain relief, inflammation, and swelling until there remains no evidence of any infection in or around the bursa.
- At-home exercises may help in relieving pain and other symptoms. In some cases, physical therapy is also required.

**Preventing Bursitis:** It is not always preventable however, changing a basic lifestyle to a little can reduce risk of developing bursitis and may prevent severe flare-ups:

- By maintaining a healthy weight for avoid putting extra stress on joints.
- Exercise for strengthening muscles which support joints.
- Frequent breaks should be taken, while performing repetitive tasks.
- One should warm up before starting strenuous activities.
- Try maintaining good posture while sitting and standing.
- Stop an activity if pain is experienced.