

# RHEUMATOID ARTHRITIS -by Pauline Goodwin RGN, FPSPract

***Rheumatoid Arthritis (RA) is a disease that affects connective tissues. It is an autoimmune disease in which the immune system attacks its own tissues causing inflammation of joints (synovitis), synovial effusion, granulation of the articular cartilage, muscle weakness around the joint, damage to tendons and ligaments, joint instability, joint deformity, joint malfunction and eventually muscular atrophy and contracture deformity. The effects can be quite debilitating and can happen to anyone at any time, but RA is not hereditary.***

Rheumatoid Arthritis typically starts at between 40 and 60 years of age; statistics show it is about three times more common in women than men and affects more than 400,000 in the UK at any one time. There is no cure but there is a lot that can be done to aid mobility, reduce inflammation and pain. The earlier the disease is diagnosed and treated, the less damage is likely to occur to the joints, muscles, cartilage, ligaments and tendons.

## **Symptoms**

In most cases the symptoms develop gradually over a few weeks, or so, typically causing stiffness in the hands, the wrist, joints and feet. This may be accompanied by pain varying in degree. The stiffness may gradually ease as the day goes on only to re-appear the following day.

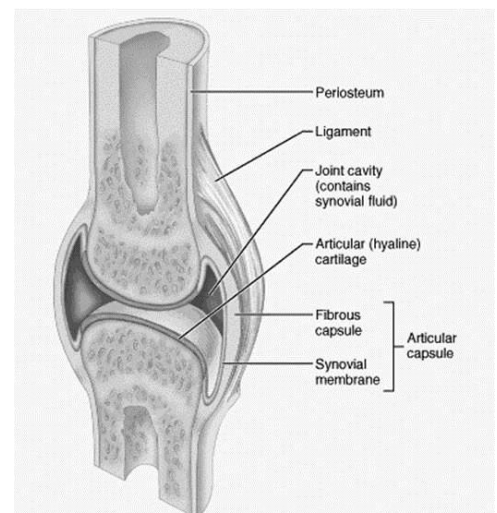
The symptoms may come and go at first but will, with time, become more persistent and painful. For about one in 5 people the disease develops rapidly causing pain and stiffness in a lot of the joints which makes it difficult to achieve everyday tasks, i.e. work.

Joint inflammation can make people feel very unwell, which can lead to tiredness, (feeling tired is very common with rheumatism).

When Rheumatism is described as chronic, it is persistent. The disease often flares up for a while. Each time the disease flares up it causes more pain and inflammation which in turn leads to an increase in the progression of the disease and joint damage. This can be followed by mild to severe disability. Subcutaneous nodules may appear over bony prominences, bursae and tendons sheaths, lymph nodes may enlarge particularly nodes draining inflamed joints. This in turn may cause fever.

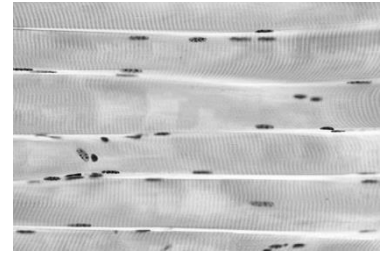
## **Joints**

A joint is where two or more bones meet; each joint is classified according to the structure and movability. Movement of the bones is caused by striated muscles which pull on tendons which are attached to our bones. Cartilage covers the ends of bones. Between the cartilages of the two bones that form the joint, there is a thick fluid called the synovial fluid; this lubricates the joint which allows the joints to move freely. Most of the joints in the body are freely movable and allow gliding, circumduction, rotation and angular movements; this is known as articulation.



## **Muscle**

The muscles attached to the bones are striated. They are comprised of striped myofibrils that contract. Richly vascular, irritable, conductive and elastic, they respond quickly to stimulation. Muscle contraction occurs when an electrochemical impulse crosses the myoneural junction - this causes the filaments to contract and shorten.

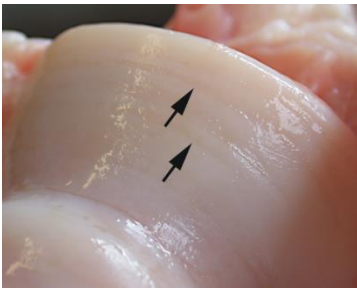


## **Tendons**

White glistening fibrous bands that attach muscle to bone, tendons are made of fibroblastic connective tissue. Large tendons contain an internal septum, a blood supply and nerves. They are extremely strong, flexible, and inelastic and come in various lengths and thicknesses.



## **Cartilage**



Cartilage is composed of various cells and fibres - a non-vascular supporting connective tissue that is found in the thorax, larynx, trachea, nose, ear, and extends and modifies the bones. We also have temporary cartilage as infants. In infancy, most of our skeleton is cartilage, and much of it is eventually replaced by bone. Permanent cartilage remains unossified, except in certain diseases and advanced age.

## **Synovial Fluid**

The synovium is the tissue that surrounds a joint and exudes synovial fluid. Synovial fluid is a transparent viscous fluid that resembles the white of an egg. It acts as a lubricant for many joints, bursae and tendons. It contains mucin, albumin, fat and mineral salts.



In people with rheumatoid arthritis antibodies are formed against all the tissue that surrounds each joint, and this causes the inflammation which damages the joint cartilage, tendon, and eventually part of the bone.

## **Diagnosis**

At first it is difficult to diagnose rheumatoid arthritis; there are many other reasons for joint pains which include lupus, osteoporosis, gout, injury, i.e. fractures.

X-rays are usually taken of the hands and feet. These may show early signs of inflammation and damage to the joints.

Blood tests: Blood is taken to check for a protein called the rheumatoid factor, C-Reactive Protein (CRP). A normal CRP would be negative. C-Reactive Protein is a test which measures the concentration in blood serum of a special type of protein produced in the liver which is present during episodes of acute

inflammation or infection. An elevated CRP result is an indication of acute inflammation. In cases of inflammatory rheumatic disease such as rheumatoid arthritis and lupus, doctors can utilize the CRP test to assess the effectiveness of a specific arthritis treatment and monitor periods of disease flare-up. Its value is as a general indicator though, it is not specific. By 'not specific', we mean that the CRP test does not reveal what is causing the inflammation in the body -- it simply indicates that there is inflammation.

When a positive result is found patients will be referred to a rheumatoid specialist.

When being told they have rheumatism they are being told they have a long term incurable condition which will have a long term effect on the rest of their lives, which can be hard to accept.

**The National Institute for Health and Care Excellence, (N.I.C.E)** have a quality standard for rheumatoid arthritis sufferers.

**Statement 1** People with suspected persistent synovitis affecting the small joints of the hands or feet, or more than one joint, are referred to a rheumatology service within 3 working days of presentation.

**Statement 2** People suffering with suspected synovitis is assessed in a rheumatology service within 3 weeks of referral.

**Statement 3** People with newly diagnosed rheumatoid arthritis are offered short term glucosteroids and a combination of disease-modifying anti-rheumatic drugs by a rheumatology service within 6 weeks of referral.

**Statement 4** People with rheumatoid arthritis are offered educational and self-management activities within 1 month of diagnosis.

**Statement 5** People who have active rheumatoid arthritis are offered monthly treatment escalation until the disease is controlled to an agreed low disease activity target.

**Statement 6** People with rheumatoid arthritis and disease flares or possible drug related side effects receive advice within 1 working day of contacting the rheumatology service.

**Statement 7** People with rheumatoid arthritis have a comprehensive annual review that is coordinated by the rheumatology service.

Once referred to the rheumatoid clinic condition is discussed and explained to the patient. Medication may need to be prescribed and referrals made.

Physiotherapy: exercises are given - these are shown to improve fitness and muscle strength.

Occupational therapy: when rheumatoid arthritis causes problems with managing everyday task, training and advice can help. Splints on the hands restrict movements thus reducing friction on the bone. Devices can be supplied to help turn on taps, open jars etc.

Alternative Therapies: Some patients benefit from having massage, acupuncture relaxation techniques or swimming.

### **Foot health**



The foot contains 26 bones - these bones all work together with more than a hundred muscles, 30 small joints, tendons, ligaments, nerves and blood vessels. So it's not surprising that people with rheumatoid arthritis have problems with walking.

The x-ray demonstrates metatarsophalangeal instability. Anteroposterior view of a 40 year old woman with rheumatoid arthritis shows signs of metatarsophalangeal instability, osteophytes of both medial cuneiometatarsal joints (white arrows).

Most pain caused by rheumatoid arthritis is found under the ball of the foot.

Bursae can be visible. The amount of fluid in the bursae varies and can change as the disease flares. Treating this can be difficult. Reducing the pressure on the area (off-loading) helps with the discomfort.



In people with rheumatoid arthritis, nodules, (small pea-shaped lumps) appear. These can occur on a bunion, toes or the back of the heels and can cause severe pain when walking; again proper padding helps by cushioning the lumps. Callus may form and needs to be pared regularly to maintain comfort.

*Rheumatoid foot from the plantar surface showing exposure of the metatarsal heads under the skin.*

Foot hygiene is important too:

1. Feet should be washed daily ensuring to dry well
2. A good foot cream can be used to soften hard skin
3. Socks should be changed daily, damp wet shoes and sweaty socks are a breeding ground for bacteria / fungal infections
4. Good comfortable shoes are a must, feet where ever possible should be measured, (feet change shape with rheumatoid arthritis)

Remember the feet swell during the day so it is best to buy shoes in the afternoon. Never buy shoes when someone says "they're ok", or "they're a bit tight but you can break them in". They will cause problems in the future and can cause unnecessary pain.

Shoes should be able to bend from the base of the big toes to the base of the little toe.

5. Velcro fastenings on shoes are easier to manage
6. High heels should be avoided

Some people may need to be referred for specially made shoes; your G.P or specialist clinic can arrange an orthotics referral.

### **Expected outcome**

The patient should benefit by:

1. Relief of stiffness and joint pain

2. Increase in mobility and muscle strength
3. Achieving independence in activities of daily living
4. Maintaining weight-keeping within ideal parameters
5. Developing a positive self-concept, able to express feelings about their disease
6. Be able to socialise with family and friends
7. Having a clear understanding of their disease, treatment, and appreciating the importance of adherence to proposed plans.

## **References**

<https://www.nice.org.uk/guidance/qs33/chapter/list-of-quality-statements>

<http://arthritis.about.com/cs/diagnostic> 07.03.2015

ARC Arthritis research campaign. Chesterfield Derbyshire 2008.

Lippincott Manual of nursing and surgery. Rheumatoid Arthritis. Lillian S Brunner & Doris S Suddarth 1994

NHS choices <http://.nhs.uk> rheumatoid arthritis. January 2015

Clinical skills in treating the foot. Rheumatoid Arthritis; David R Tollafeld, Linda M Merriman, 2000

Mosbys Medical Dictionary, 2010

Tortora Anatomy & Physiology 1996

[Patient.co.uk/January2015-03-07](http://Patient.co.uk/January2015-03-07)

NRAS National Rheumatoid Arthritis Society 2013 – [www.nras.org.uk](http://www.nras.org.uk)

# RHEUMATOID ARTHRITIS

*Answers should be submitted on A4 paper and should be of sufficient length to demonstrate full understanding of the topic. Single word answers are not permissible. Try to answer in one or two short paragraphs, generally not more than 1/3<sup>rd</sup> page per answer.*

1. At what age does Rheumatoid Arthritis typically start?
2. What tissues does Rheumatoid Arthritis affect?
3. Why is it important for the disease to be diagnosed early?
4. Describe the symptoms and effects of the disease.
5. What does the Synovial Fluid do?
6. Where else in the body will you find striated muscle? Describe its function.
7. What role does Synovial Fluid have in relation to our joints?
8. Is CRP an indication of Rheumatoid Arthritis when a positive result is found?
9. What role does NICE have in helping people with Rheumatoid Arthritis?
10. How does RA affect the feet and what role can we play in maintain their mobility and comfort?

*Return this page with the administration fee (see website CPD Download page) and your answers to:  
Alliance CPD Dept, Plas Erias Business Parc, Abergele Road, Colwyn Bay, Conwy, N Wales LL29 8BF*

*A CPD certificate will be issued for 10 CPD points on successful completion.*

---

Name: .....

Address: .....

.....

.....

Post Code: .....

Date:.....