Life and Health

# Medletter 07
# Rheumatic diseases


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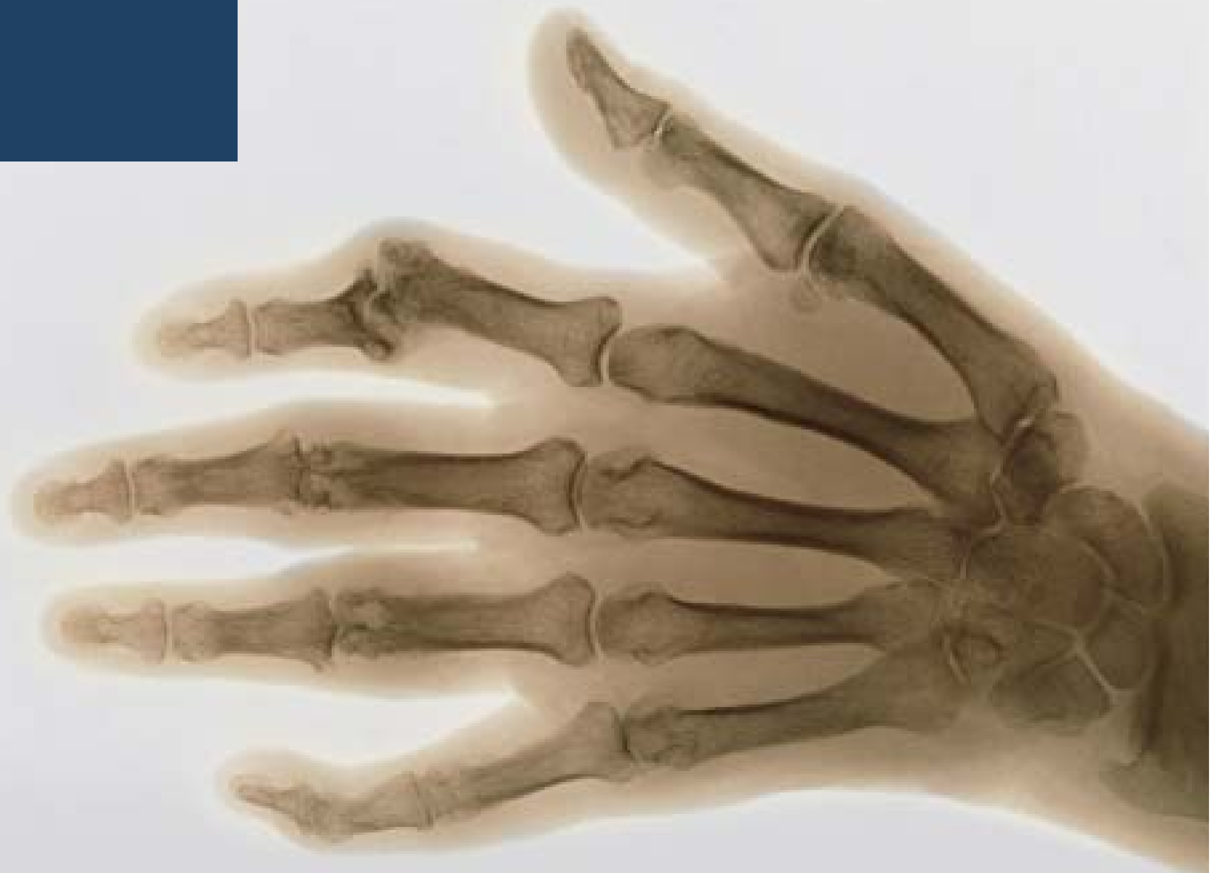
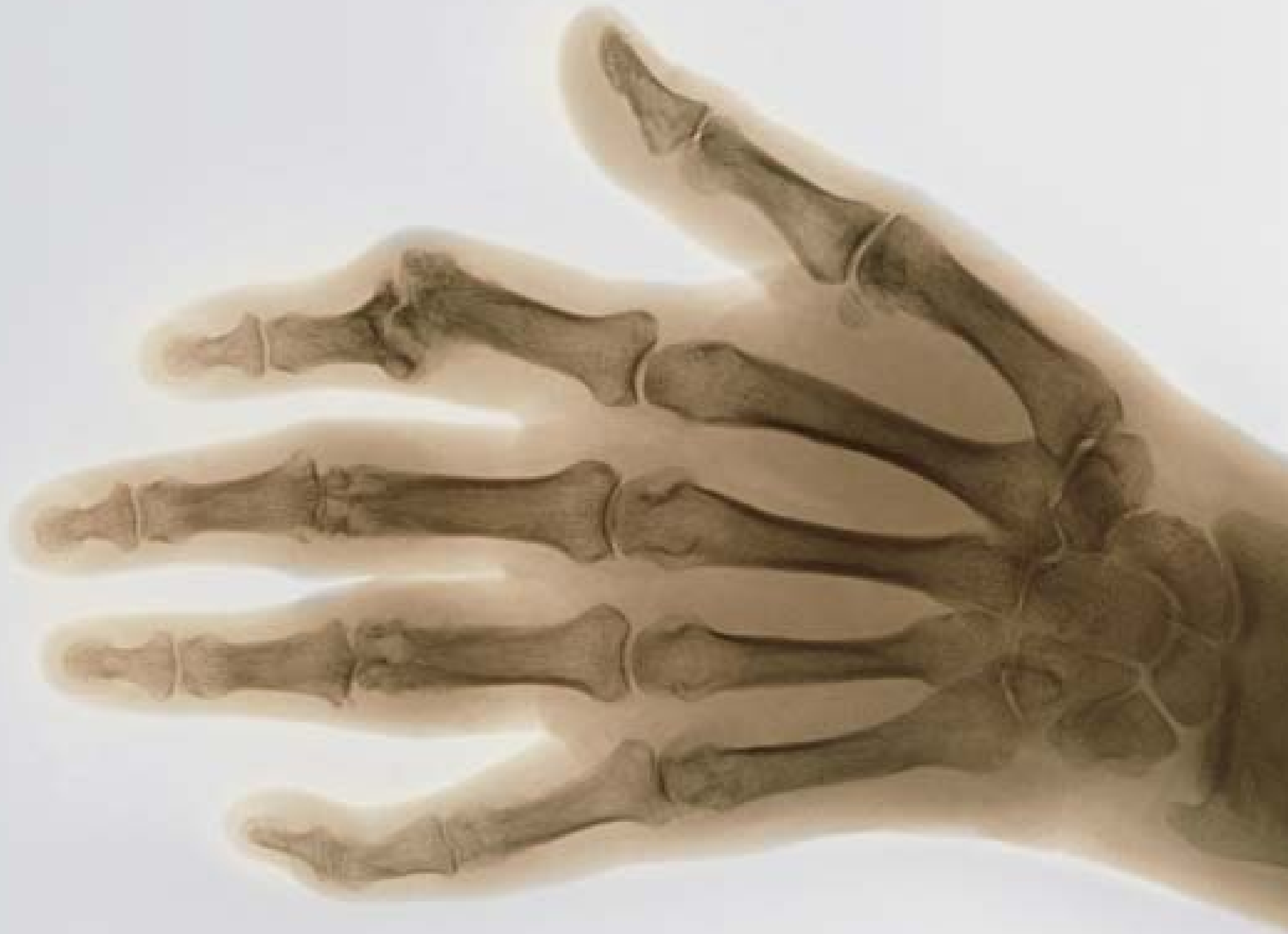


**In patients suffering from rheumatoid arthritis, an X-ray of the hand provides diagnostic and therapeutic information.**



When we hear the word "rheumatism", we usually think of pain in the joints. In fact, it covers a multitude of conditions and no single disease entity exists that can be diagnosed as "rheumatism". As many as several hundred different diseases are covered by this term. Some of them can be very serious indeed and therefore entail a high risk of disability as well as increased mortality.

# Non-specific joint pain – Is it "rheumatism"?

Almost every single person suffers from joint pain at some time in their life without a definite trigger or disease being identified as the primary cause. Joint pains may, however, be the harbinger of serious rheumatic disease that carries pronounced extramortality and extramorbidity if the full-blown condition develops.

The medical term for joint pain is arthralgia. Arthralgia may be the result of injury, overuse, or the expression of an inflammatory process in the joint structures. Not every joint pain is a rheumatic condition. And many forms of rheumatic disease are not limited to pains in the joints: some inflammatory diseases affect the entire body (i.e. are systemic) while other conditions, such as osteoarthritis, are not inflammatory in origin but are due to many years wear from overloading or incorrect loading of an individual joint – something that is almost normal with advancing age.

Unfortunately there are no tests today that can reliably predict the course of rheumatic disease. As inflammatory and non-inflammatory diseases have very different prognoses, however, it is important for risk assessment in insurance medicine to examine all the available information as to whether an inflammatory or non-inflammatory condition is present.

**How to tell the difference: Inflammatory or non-inflammatory pain**

When there is joint pain, swelling and warmth of the affected joint are the most important indications of inflammatory disease. Swelling is caused by effusion into the joint; the rise in temperature is due to increased blood flow. If there is great deal of inflammatory activity, the joint may also appear red.

Inflammatory and non-inflammatory joint diseases can also be distinguished by the nature of the pain and the time it appears: inflammatory joint pain almost always occurs at rest and especially at night. The pain cannot be relieved by changing position. In addition, morning stiffness is typical, with a marked restriction of movement after getting up in the morning, lasting for at least an hour. In contrast, arthralgia not caused by an inflammatory condition usually occurs when the joint is stressed and improves considerably when it is at rest.

## General symptoms

Many of the conditions classed as rheumatic disease do not just affect the joints but also cause symptoms of inflammation in other parts of the body (extra-articular manifestations) and non-specific complaints that may precede the onset of the joint problems by a long interval, sometimes even years. Depending on the severity of the illness, the patient may suffer from general ill-health, lassitude, reduced performance and fever. In the case of rheumatoid arthritis, the most common form of rheumatic disease, structures in the immediate vicinity of the joint are often affected by the inflammatory process. Inflammation of the tendon sheaths (tendinitis) and lining of the bursae (bursitis) must always be considered as the first signs of disease. Inflammatory changes in the eyes, e.g. inflammation of the sclera and choroid (scleritis und episcleritis), may be the forerunner or concomitant signs of rheumatoid arthritis or another form of rheumatic disease.

### Predictors and extra-articular manifestations of various forms of rheumatic desease

| Symptoms | Rheumatic disease |
|---|---|
| Fever, malaise, loss of weight, lassitude | Systemic lupus erythematosus, vasculitis, rheumatoid arthritis |
| Tendovaginitis, enthesitis, rheumatoid nodules | Rheumatoid arthritis |
| Painless oral aphtous ulcers, facial erythema | Systemic lupus erythematosus |
| Ulcers of the nasal mucosa | Wegener's granulomatosis |
| Scleritis, episcleritis, conjunctivitis, iridocyclitis/uveitis | Rheumatoid arthritis, reactive arthritis, spondylarthritis, Behçet's syndrome, sarcoidosis |
| Pleuritis, pericarditis, (abacterial) endocarditis | Systemic lupus erythematosus |

**Patients with non-specific joint pains will be asked by the physician to provide a detailed description of their symptoms.**

## Laboratory tests

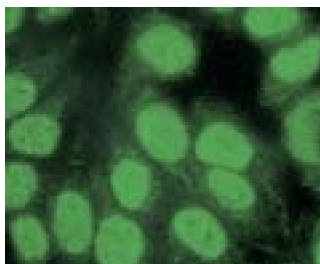
Certain blood tests indicate inflammatory disease and thus aid in making the decisions for risk assessment.

### Erythrocyte sedimentation rate (ESR)

Measurement of the erythrocyte sedimentation rate (ESR) is a routine laboratory test, although its sensitivity and specificity are not very high. But it is certainly an appropriate test for recognising rheumatic diseases, since a raised ESR together with inflammatory joint pains indicates an inflammatory process. In cases of systemic lupus erythematosus (SLE) in particular, an elevated ESR may be the first sign of disease or indicate an imminent flare-up of the condition.

### C-reactive protein (CRP)

C-reactive protein in the blood is a fairly clear sign of active inflammation occurring somewhere in the body. In rheumatology, this parameter is appropriate for diagnostic purposes as well as for the regular monitoring of treatment to ensure that the dose of immunosuppressant drugs is sufficient to suppress the inflammatory activity. Inflammatory joint pains associated with a raised CRP always make the doctor think of rheumatoid arthritis.



**Fluorescent cells under the microscope indicate the presence of antinuclear antibodies (ANA).**

### Rheumatoid factor (RF)

Rheumatoid factor (RF) is a protein found in the blood; although it belongs to the antibody class, RF itself is directed against other antibodies.

A positive rheumatoid factor by no means signifies that the person has a rheumatic disease – this factor is present in many other conditions and even in healthy people. In conjunction with joint pains of an inflammatory nature, however, rheumatoid arthritis has to be considered; the likelihood of this diagnosis increases as the RF titre rises. The risk of healthy RF-positive people having rheumatoid arthritis is only about 5%.

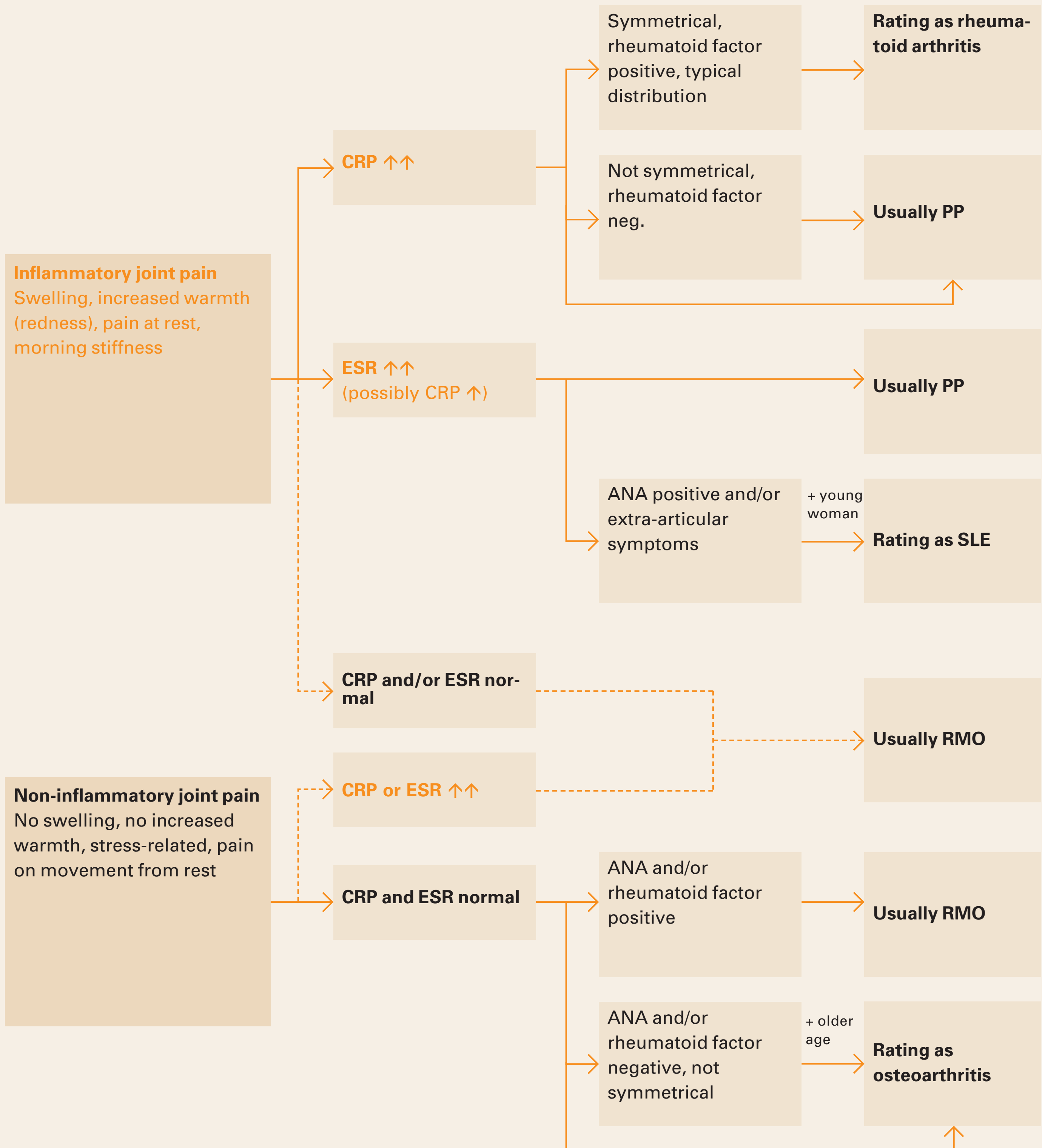
### Antinuclear antibodies (ANA)

Antinuclear antibodies (ANA) are a type of autoantibody targeted against the nuclear components of the body’s own cells (for example against the genetic material) and they can probably also damage certain organs directly. The presence of these antibodies is determined with an ANA immunofluorescence test, and this forms part of the diagnostic investigation of systemic lupus erythematosus. The high sensitivity of these autoantibodies means that the condition can practically be ruled out if the test is negative. Antinuclear antibodies may be found in the blood long before the rheumatic disease becomes overt. If ANA have been demonstrated in a case with undiagnosed joint pains, risk assessment should be carried out cautiously.

### Important laboratory tests in rheumatic diseases

| Laboratory test | Description | Interpretation |
|---|---|---|
| ESR | Measurement of the sedimentation rate of blood cells, especially the red blood cells (erythrocytes) | ESR is an appropriate screening test in autoimmune diseases, especially SLE. |
| CRP | The classical inflammatory protein, indicator of an inflammatory process | CRP is elevated in more than 90% of all patients with active rheumatoid arthritis (RA). |
| Rheuma factor (RF) | Antibodies that react with structures on other antibodies | 70–90% of patients with RA have a positive RF. The level may sometimes be elevated even years before the actual onset of disease. |
| Antinuclear antibodies (ANA) | Antibodies against structures in the cell nucleus (= antinuclear) | Positive ANA is a very reliable test for active SLE (sensitivity > 99%). A negative finding rules out SLE with a high degree of probability. |

## Undiagnosed joint pain




**If the symptom "undiagnosed joint pains" appears in the risk assessment, any evidence of inflammatory rheumatic disease must be looked for: especially swelling, warmth and possibly redness, which could indicate that the joint pain is due to inflammation. The nature and timing of the pain and how it is related to movement also provide valuable information on which to base the risk assessment. Particular caution should be exercised in underwriting if there are also laboratory test results that indicate a systemic inflammatory reaction. On the other hand, if the pain is of a non-inflammatory nature and associated with normal blood tests, then the mortality risk is much smaller, as is the morbidity risk.**

| | |
|---|---|
| ANA: | Antinuclear antibody |
| CRP: | C-reactive protein |
| ESR: | Erythrocyte sedimentation rate |
| PP: | Postpone |
| RMO: | Refer to Medical Officer |
| SLE: | Systemic lupus erythematosus |

# The erythrocyte sedimentation rate (ESR) – What does it tell us?

Too much importance should not be placed on an elevated sedimentation rate in the absence of other signs of disease, as many factors can influence this value. However, if inflammatory joint pains or other symptoms that give rise to the suspicion of rheumatic disease are present, caution should be exercised in underwriting.

For many screening tests or if an inflammatory process in the body is suspected, the doctor has to ask the patient for a blood sample, which is sent to the laboratory for analysis. One parameter, however, can easily be determined directly in the practice – the sedimentation rate. A small quantity of blood is added to a glass tube containing sodium citrate, shaken well and left to stand in an upright position. After one hour, the level can be read off a scale showing how many millimetres the red blood cells (erythrocytes) have sunk.

The normal ESR in a healthy young man is up to 10 mm/h (Westergren method); the rate is about 5 mm/h greater in a woman of similar age, as women have smaller red blood cells than men. With advancing age, the ESR increases by about 0.2 mm a year so that older people generally have a higher sedimentation rate than younger ones.

A raised ESR shows that the red blood cells have a tendency to clump together – referred to as aggregation. This may indicate, for example, inflammation or kidney disease. But obesity, hyperlipoproteinaemia and anaemia also influence the results. Recent studies have led to the suspicion that there is also an association between raised ESR and higher cardiovascular mortality. Particularly in men, an elevated ESR seems to be a risk factor for death due to coronary heart disease.

**The ESR is a fairly non-specific parameter**

If a raised ESR is found in a healthy person, this is no cause for serious concern, as there are several harmless reasons for this value being out of the normal range, including menstruation and taking hormones (e.g. the pill) or vitamins. Other factors, such as the room temperature, can also affect the ESR. The value may also rise if the tubes are not stood absolutely vertically.

**Seven patients with different erythrocyte sedimentation rates. The further down the numbers go on the scale, the higher the ESR.**

Because of these many influencing factors and frequent chance findings, the test has only low sensitivity and specificity and thus a low positive and negative predictive value. Even though it was often used for cancer screening in the past, the test is also not suitable for this purpose, as several studies have confirmed in the meantime.

**Is the ESR still of value in rheumatology?**

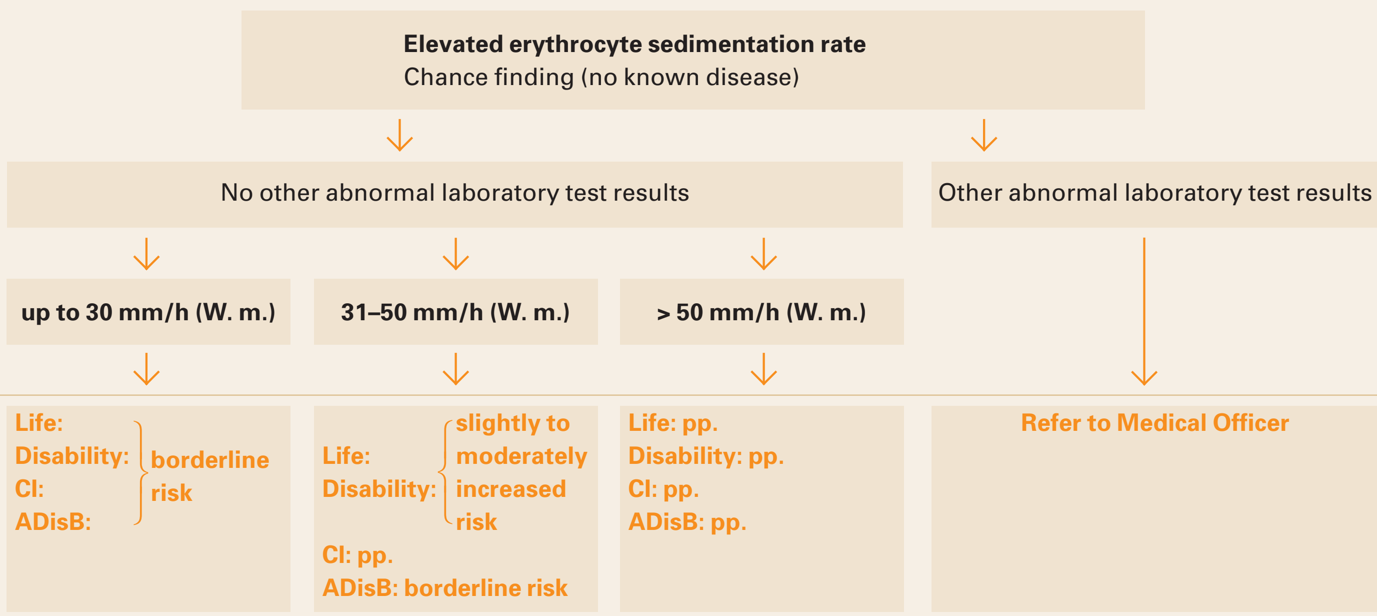
Despite its generally low specificity, the ESR is a valuable laboratory test in rheumatology. It is used for both diagnostic purposes and to monitor the disease – whether there is a response to drug therapy and whether the dose is sufficient. The ESR is the parameter that best indicates the systemic inflammatory activity in cases of systemic lupus erythematosus, and is used as the basis for dosage adjustment in the treatment of polymyalgia rheumatica, a rheumatic vasculitis.

**The higher the value, the more likely a disease**

In general, ESR becomes more sensitive as the value increases. In other words, the probability of finding a disease process is much greater with very high erythrocyte sedimentation rates. If the ESR is very high (i.e. 60–100 mm in the first hour), the patient usually already has clear symptoms, so that the sedimentation rate hardly provides the doctor with any additional information regarding the diagnosis.

## Flow chart with an elevated ESR

An elevated ESR is a not uncommon chance finding in risk assessment. Whenever it is found, very careful attention should be paid to any symptoms and signs that may indicate a rheumatic disease. The case should be referred to the medical officer if there are changes in the full blood count besides the elevated ESR, any other abnormal laboratory test results, or any unexplained symptoms and signs. If the ESR is elevated without any other abnormalities, the risk assessment can be carried out as shown.




CI: Critical illness ADisB: Accidental disability benefit pp.: postpone W. m.: Westergren method

# Rheumatoid arthritis – When inflammation destroys the joints

Rheumatoid arthritis is the most common inflammatory rheumatic disease. As the wrists are nearly always involved, it often leads to early disability. Rheumatoid arthritis can also affect internal organs and frequently leads to arteriosclerosis. For this reason, there is an increased mortality.

Rheumatoid arthritis (RA) has also been called “chronic polyarthritis”, which means the lasting inflammation of more than one joint. Although this describes the main symptoms of the condition, RA is actually a systemic disease of the connective tissue that also involves internal organs in severe cases. The worldwide prevalence is about 1% and the condition affects women about three times more often than men.

How and why rheumatoid arthritis is triggered has still not been explained. What is quite clear, however, is that it is an autoimmune disease: the immune system misguidedly gives rise to inflammatory reactions against the body’s own tissues and damages them. Through a mechanism – possibly a viral infection – that has not yet been fully elucidated, there is an excessive and with time self-reinforcing immune response to the body’s own structures. There is also a genetic predisposition.

The pathological immune reaction in rheumatoid arthritis is directed against the lining of the joint – the synovial membrane. Immunologically-active white blood cells migrate into this tissue and cause a progressive inflammatory process which finally also involves the cartilaginous components of the joint. In the advanced stage, this causes deformities and malposition of the joints, thus restricting their functional ability.

## Symptom and signs

### Onset: Morning stiffness and pain in the small joints

Rheumatoid arthritis often begins in the small joints of the fingers and toes. The extremities are particularly painful first thing after getting up in the morning, are swollen and only capable of limited movement (morning stiffness).

### Generalised symptoms

Non-specific symptoms such as fever, lassitude and impaired performance may be present even before the disease becomes apparent, but occur especially during flares in the disease activity.

### Later: Involvement of larger joints and deformity

If RA is not effectively treated in the early stage, it inevitably affects further joints including larger ones such as the shoulders and knees. The arthritic symptoms are typically symmetrical. Following the initial attack on the synovial membrane, the inflammation extends into the surrounding tissue of the joint and into the bone, which results in thickening, deformation and increasing loss of function.

### Extra-articular manifestations

The joint symptoms may be accompanied by inflammatory changes in the tendon sheaths, bursae, blood vessels and eyes. Internal organs tend not to be involved in RA, but in the rare cases that they are, it is usually the heart (pericarditis and heart valve changes) or lungs (pleuritis and pulmonary fibrosis) that are affected.

### Rheumatoid nodules

Rheumatoid nodules are a particular diagnostic criterion for rheumatoid arthritis. These rubbery nodules are to be found mainly on the extensor surfaces of the upper limbs, especially at sites where the bone is very close to the overlying skin.

**Treatment**

There are now various possibilities for the treatment of rheumatoid arthritis.

### Exercises, corticosteroids and disease-modifying drugs

Exercises and physiotherapy enhance the circulation of the joint and keep them flexible. Medication reduces or suppresses the inflammatory processes and relieves the pain. Apart from non-steroidal anti-inflammatory drugs (NSAIDs) that include aspirin-like substances, corticosteroids and disease-modifying anti-rheumatic drugs (DMARDs) are used. These last-mentioned are immunosuppressant agents, which diminish the destructive autoimmune processes. Methotrexate is often prescribed as first-line DMARD therapy; other DMARDs are sulfasalazine, hydroxychloroquine, leflunomide und ciclosporin A.

**Biologics**

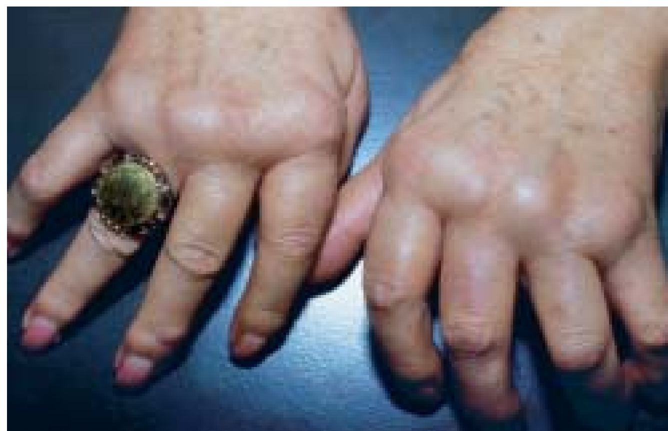
Thanks to intensive research, further disease-modifying medication that can arrest the progressive destruction of the joints has become available in the past few years. Biologics intervene in the inflammatory process and have already been shown to be very effective even in cases refractive to other treatment.

### Surgery

Operations such as removal of the synovial membrane (synovectomy) or joint replacement may help to improve the patient's mobility.

**Prognosis**

There is a high risk of disability because of the limited functioning of the joints. As with many other autoimmune diseases, rheumatoid arthritis is associated with significant extramortality. This is principally due to the very pronounced comorbidity with arteriosclerosis and its sequelae of heart attack and stroke. In addition, patients with RA have a higher risk of dying of infection than the general population because long-term immunosuppressant treatment increases their susceptibility to infection.



**Swollen knuckles and finger joints in a patient suffering from rheumatoid arthritis.**

## Risk assessment of rheumatoid arthritis

**Documentation for risk assessment**
Progress report from the treating physician, hospital reports with the latest test results

| | |
|---|---|
| **Life** | Slightly to moderately increased risk |
| **Disability** | In general decline. Acceptance is possible in individual cases, depending upon the course of the disease. |
| **Accidental death/disability benefit** | Slightly to moderately increased risk |
| **Health insurance** | In general: decline |

# Did you know ...?

Auguste Renoir (1841–1919), the French painter and one of the founders of Impressionism, probably produced more works than any other artist. His oeuvre of approximately 6,000 paintings is full of light and joie de vivre – even though the artist sometimes worked under the most difficult conditions. Renoir suffered from very severe rheumatoid arthritis. The first major flare-ups occurred in 1889, although this did not prevent him from carrying on painting. His joints became progressively more deformed and caused him considerable pain. Although he underwent all kinds of treatment, by 1910 he was unable to walk even with crutches and spent the rest of his days in a wheelchair. At night he had a metal frame over his body to keep the bedclothes off his painful limbs.

When his stiff curved fingers could no longer hold a paintbrush he had it plastered to his hand. Even so, the courageous Renoir sometimes lost the will to continue and talked about giving up painting – but when he saw one of his pretty young models in his house in Cagnes on the Côte d'Azur the following morning, he let himself be wheeled into his garden atelier and painted on the specially constructed canvas that allowed him to work on a large scale even from his wheelchair. The brushstrokes of his later paintings are less delicate than in his earlier works, but for this very reason the colourful paintings seem more spontaneous.

**Self-portrait of Auguste Renoir.**

# Ankylosing spondylitis – Chronic inflammation of the spine

For patients with ankylosing spondylitis, night time and the mornings are agony, as the characteristic pain in the back and gluteal region is particularly bad at rest. The disease comes in flares and can lead to the stiffness of the entire spinal column.

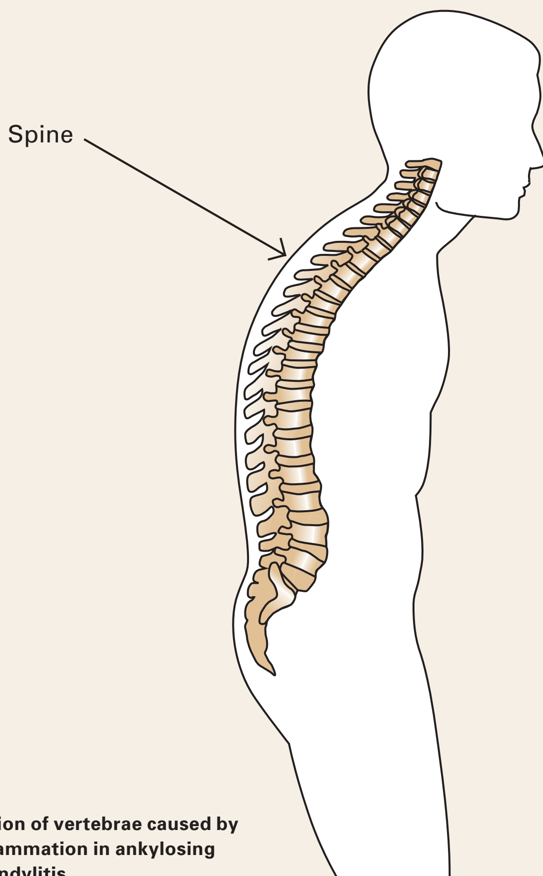
Ankylosing spondylitis (which has several other names such as Bechterew's syndrome, Marie-Strümpell disease and spondylitis ankylosans) is a chronic systemic inflammation that primarily affects the spine. It is thought to be triggered by a misguided immune reaction to environmental influences in association with a genetic predisposition (HLA-B27). The onset of ankylosing spondylitis usually occurs between the ages of 20 and 40 years.

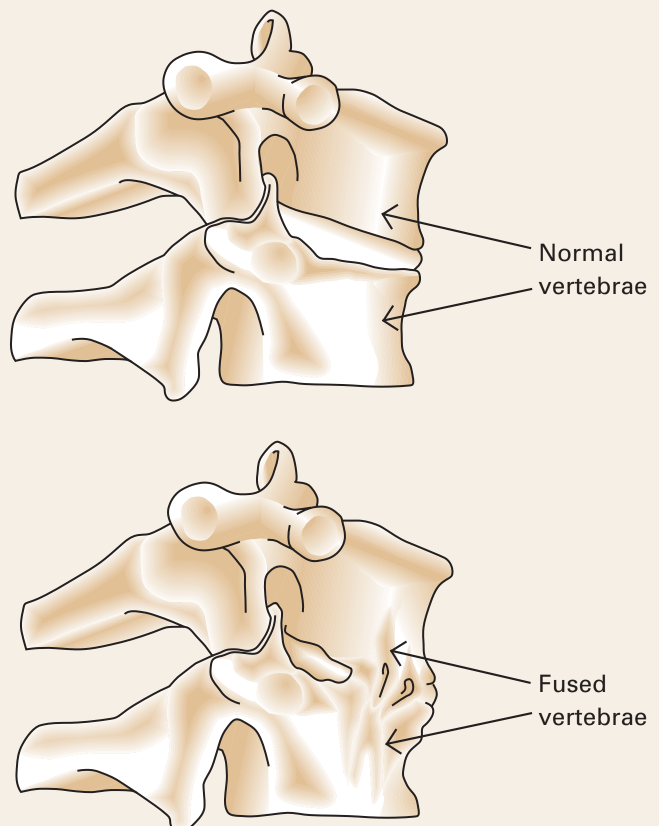
## Symptoms and signs

### Onset: Inflammatory back pain

The characteristic symptoms of ankylosing spondylitis are deeply situated back pain that sometimes radiates to the legs, and stiffness of the lower back and buttocks. Symptoms occur mainly at night and in the early hours of the morning, and usually improve with movement. The cause of the pain is inflammation of the sacroiliac joint, the joint between the wing of the ilium and the sacrum.

**Ankylosing spondylitis**




**Fusion of vertebrae caused by inflammation in ankylosing spondylitis.**

### Later: Stiffening of the spine and extra-articular symptoms

As the disease progresses, the spine becomes stiffer and stiffer and deformed; movement is increasingly restricted. Back pain is particularly severe during the flare-ups of the disease, and may be accompanied by extra-articular manifestations. These include painful inflammation of tendon insertions (especially the Achilles tendon) and ligaments (enthesiopathy) as well as inflammation (arthritis) of other joints. The eyes are also affected in about a quarter of the cases. Inflammation of the iris (iritis, iridocyclitis), frequently associated with ankylosing spondylitis, results in the inability to narrow the pupils properly (difficulties in accommodation), which makes bright lights unpleasant for the person concerned. More rarely, the inflammation involves internal organs or the main artery (the aorta). Since the aortitis is usually close to the heart, it may result in incompetence of the aortic valve.

### Typically: Rheumatoid factor negative, HLA-B27 positive

In contrast to many other rheumatic diseases, rheumatoid factor is typically absent in patients with ankylosing spondylitis; however, HLA-B27 antigen can be detected in 95% of cases.

### Treatment

The maintenance of mobility is of prime importance in treatment; for this reason, physiotherapy exercises are absolutely essential. During inflammatory flares, especially in cases with severe progression, disease-modifying drugs such as methotrexate are prescribed and more recently also TNF-alpha antagonists.

### Prognosis

The morbidity risk of ankylosing spondylitis is particularly significant for insurance medicine. Mortality is increased slightly but only when the disease runs a severe course, requiring frequent inpatient treatment. The causes of this increase are organic complications (e.g. renal failure or aortic insufficiency) or infections due to high-dose immunosuppressant therapy.

On the other hand, the disability risk is considerably elevated. The increasing restriction of movement often leads to premature occupational disability. Since intensive physiotherapy of ankylosing spondylitis is the only factor that improves the prognosis, the course of the disease is largely dependent on the cooperation of the patient.

Certain jobs, for example those in which the person is exposed to strong climatic stresses have a negative effect on the development of ankylosing spondylitis. Unfavourable prognostic factors include a poor response of the pain to medication with non-steroidal anti-inflammatory drugs (NSAIDs), involvement of the hip joint, very high ESR, early restriction of movement and onset of disease before the age of 16 years.

## Risk assessment for ankylosing spondylitis

**Documentation for risk assessment**
Progress report from the treating physician, hospital reports with the latest test results

| | |
|---|---|
| **Life** | Only slightly increased risk if no involvement of internal organs |
| **Disability** | The risk is considerabely increased. Acceptance is possible in individual cases, depending upon the course of disease. |
| **Accidental death/disability benefit** | Normal to slightly increased risk |
| **Health insurance** | In general: decline |

# Systemic lupus erythematosus – The wolf in many clothings

If systemic lupus erythematosus is suspected, it is necessary to look specifically for this multi-faceted and particularly aggressive rheumatic disease. The initial symptoms may closely resemble a skin condition but systemic lupus erythematosus not infrequently ends up with the patient needing dialysis.

"Lupus", from the Latin meaning "wolf", was used to describe the disease because, in earlier times, the typical skin lesions were associated with wolf bites. Even though systemic lupus erythematosus (SLE) often begins with skin symptoms or other non-specific complaints, all organs may be damaged in the course of the disease – giving rise to the adjective "systemic" in its name. In particular, involvement of the kidneys is decisive for the prognosis. In contrast to systemic lupus erythematosus, the form known as cutaneous lupus erythematosus is a mostly harmless condition because it is restricted to the skin; however, the cutaneous form may progress to systemic lupus in rare cases.

The trigger for SLE has still not been explained. Besides genetic factors, environmental factors probably play their part. A misguided immune response gives rise to the formation of antibodies against components of the body's own cells, including DNA, which contains the genetic information. These antinuclear antibodies (ANA) are present in the blood of almost all patients with SLE, and can be demonstrated with an ANA immunofluorescence assay. The prevalence of this disease is 10–40 per 100,000 in Europe. It is considerably higher in many parts of Asia. SLE particularly affects young women of child-bearing age.

## Symptoms and signs

### Skin changes and general symptoms

At the onset and often quite a long time before SLE becomes overt, there are changes in general well-being and signs in the skin. Those affected feel exhausted and complain of reduced performance; there is often fever and weight loss. Two-thirds of patients complain about joint pain with swelling. The characteristic skin change is the "butterfly rash" – marked erythema (reddening) of the cheeks and across the bridge of the nose. Extreme sensitivity to ultraviolet radiation is also typical – just a short exposure to sunlight may cause a very pronounced skin reaction and even trigger an acute generalised flare-up of the disease.

### Manifestations in the organs

SLE causes inflammatory activity that is seen particularly in three main organ systems: the kidneys, the nervous system and the combined cardiopulmonary system. If the last-mentioned is affected, inflammation of the pericardium or pleura may lead to the collection of fluid within the pericardial sac or the chest cavity (pericardial effusion, pleural effusion).

SLE most commonly affects the kidneys. It causes glomerulonephritis, which is inflammation of the smallest functional units of the kidneys, known as glomeruli. This may be an acute condition, causing the sudden onset of renal failure, or may follow a chronic course, i.e. becoming progressively worse and worse. Dialysis treatment is necessary if the functional capacity of the kidneys is too badly impaired. Positive urine dipstick tests for blood and proteins indicate renal involvement.

**Urine dipstick screening in underwriting**

A positive urine dipstick test for blood and/or proteins must always put the risk assessor on the alert. The kidneys may still be damaged even if the applicant has experienced no symptoms of renal disease. If the applicant is a young woman with generalised symptoms or skin changes as described above, a diagnosis of SLE has to be considered in view of the positive findings on urinalysis.

### Neurological changes

SLE may also affect the nervous system and give rise to various neurological symptoms. The most common are inflammatory reactions causing headaches and depression. Individual areas of the brain may sometimes be damaged, however, and cause symptoms that closely resemble those of a stroke or multiple sclerosis.

**Treatment**

SLE is treated with immunosuppressant agents. Apart from cortisone, cyclophosphamide is often used, especially when there is renal involvement. Cyclophosphamide is a drug otherwise used in cancer therapy.

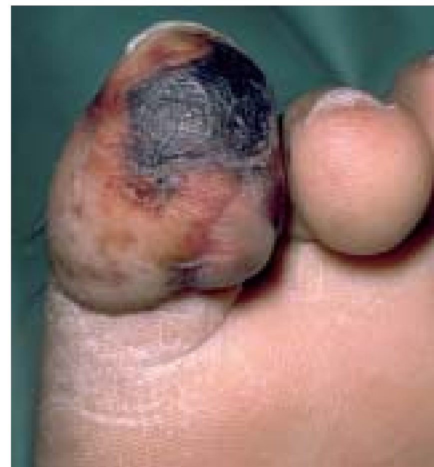
**Prognosis**

Although drug therapy for SLE has made great advances in recent years, the disease still means considerable extramortality and extramorbidity.

Despite the improved five-year survival rate, from 50% to 90–95% today, the mortality is still four to five times higher. The causes of death are either SLE-induced loss of organ function such as acute renal failure, or adverse effects of the immunosuppressant therapy – infections with a fatal outcome are not rare. Complications in the cardiovascular system often cause premature death in patients with SLE; arteriosclerotic changes are seen in the same way as in rheumatoid arthritis, due to the steadily increasing inflammatory activity and because of the adverse effects of medication (cortisone), and may give rise to a heart attack or stroke.

Besides the primary symptoms of the disease, the reason for the clearly raised morbidity is the development of osteoporosis and aseptic necrosis of the femoral head – adverse effects of long-term corticosteroid therapy. Involvement of the central nervous system, experienced as headaches, impaired concentration and reduced performance, also often means that the patient with SLE has a reduced ability to work.

In contrast to systemic lupus, the simple form of cutaneous lupus has a good prognosis, as no internal organs are involved and there is no need to prescribe potent medicines with their associated adverse effects.



**Tissue damage in SLE caused by inflammation of small vessels.**

# Risk assessment of systemic lupus erythematosus

**Documentation for risk assessment:**
Progress report from the treating physician, hospital reports with the latest test results; if there is renal involvement, the most recent results of renal function tests and protein excretion

| | |
|---|---|
| **Life** | Depending on the extent of the renal involvement: moderately to highly increased risk |
| **Disability** | In general: decline |
| **Accidental death/disability benefit** | Depending on the extent of the renal involvement: slightly to moderately increased risk |
| **Health insurance** | In general: decline |

# HLA-B27 – Have carriers got rheumatic disease in their blood?

The laboratory parameter HLA-B27 indicates a structure on white blood cells that can be detected in most patients with ankylosing spondylitis. Completely healthy people may also have HLA-B27. In association with inflammatory back pain, however, rheumatic disease is likely and the risk of disability greatly increased.

The HLA-B27 marker appears over and again in application documents. HLA stands for "human leucocyte antigen" and is a type of blood group system for white blood cells. Determination of leucocyte antigens is of particular relevance in transplantation medicine, as there needs to be the greatest possible tissue compatibility between donor and recipient to prevent rejection reactions. Leucocyte antigens also play an important role in rheumatology. At the end of the 1960s, it was discovered that some HLA characteristics appeared more frequently with certain diseases; HLA-B27 is found in some 95% of patients with ankylosing spondylitis.

Despite the high probability that people with ankylosing spondylitis are positive for HLA-B27, a negative finding does not exclude this disease, as 5% of patients do not carry the antigen. And conversely, a positive HLA-B27 result does not confirm disease. More than 90% of carriers – about 6–8% in the general populations of Europe and most parts of Asia – will never be affected by ankylosing spondylitis. If there is simultaneous evidence of back pain of an inflammatory nature, however, the likelihood of ankylosing spondylitis is considerably increased. With respect to the risk assessment, a positive finding of HLA-B27 means that a thorough check must be made for associated symptoms. The very fact that an HLA-B27 test has been performed should give pause for thought, as leucocyte antigen is not tested routinely but only if inflammatory back pain or other symptoms give rise to the suspicion of ankylosing spondylitis or another HLA-B27-associated disease. In cases of doubt, the underwriter should always ascertain the reason why this parameter was tested.

**Risk assessors need to watch out for HLA-B27.**

# A case in practice – Rheumatoid arthritis

## Case report

**39-year-old IT specialist**
**Cover applied for: Life, disability, accidental disability benefit**

The patient was diagnosed with rheumatoid arthritis four years earlier. This diagnosis was based on pain and swelling of the wrists, elbows and shoulder joints together with high levels of inflammatory markers in the blood. Treatment was started with a high dose of cortisone and methotrexate. Even though the dose of cortisone could be reduced with time, it could never be discontinued as otherwise pain and swelling in the joints and raised levels of the inflammatory markers reappeared. Methotrexate was given in maximum doses from the onset of treatment. There was no involvement of internal organs.

## Our rating

Life: 75% extramortality
TPD: Decline
ADisB: 50% extra premium

## Comments

Rheumatoid arthritis can today be effectively treated with medication although a cure is still not possible. Even though medication results in many patients going into remission, i.e. a symptom-free interval, the disease may flare up again at any time.

In the case presented here, there was apparently moderately severe disease activity on presentation that needed high-dose immunosuppressant therapy. Even though the patient responded well to treatment, whenever the cortisone was reduced below a certain dose, the symptoms became worse. The repeatedly raised CRP values show that the inflammatory activity has flared up again and again. As the inflammation has affected other joint structures, functioning of the affected joints will very probably become worse. Acceptance for disability insurance is therefore not possible. The mortality risk is increased because of the possible adverse effects of the immunosuppressant therapy and the cardiovascular disease that is often associated with rheumatoid arthritis.

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