This booklet provides information and answers to your questions about this condition.
What is Sjögren’s syndrome?

Sjögren’s syndrome is a condition that mainly causes a dry mouth and eyes, though it can also cause a range of other symptoms including joint pain and fatigue. In this booklet, we’ll look at the symptoms, the possible causes and the treatments available for Sjögren’s syndrome.

At the back of this booklet you’ll find a brief glossary of medical words - we’ve underlined these when they’re first used in the booklet.

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What is Sjögren’s syndrome?
Sjögren’s syndrome is a condition which mainly affects the glands that produce saliva and tears, causing a dry mouth and/or eyes. It’s estimated that half a million people in the UK have Sjögren’s syndrome, and it most commonly affects women aged 40–60.

What are the symptoms of Sjögren’s syndrome?
The most common symptoms of Sjögren’s syndrome are:

- dry, sore, irritable or gritty eyes
- a dry mouth and/or throat, which may cause difficulty chewing or swallowing food
- fatigue (tiredness)
- joint pain or general achiness.

There may also be dryness of the skin, digestive tract, vagina or air passages. Other possible symptoms include:

- headaches
- fever
- swollen lymph glands in the neck, armpits or groin
- aggravated menopausal symptoms
- fingers or toes turning blue in the cold (Raynaud’s phenomenon).

How is it diagnosed?
Your doctor will ask about your symptoms and carry out tests to assess how dry your eyes and mouth are. You may also need to see an eye specialist (ophthalmologist), a dentist or oral surgeon, or a rheumatologist before you’re diagnosed.
What tests are there?
The main tests that can help with diagnosis are:
• tear production
• eye examinations
• saliva production
• x-rays of the salivary glands and ducts
• other scans
• blood tests
• a lip biopsy.

How can I help myself?
Some of the following tips may help:
• Increase the humidity in rooms by introducing humidifiers, plants or bowls of water.
• Always have some water to hand.
• Follow a good dental routine and have regular check-ups.
• Increase the amount of fibre in your diet if you have bowel symptoms.
• Don’t have too many sugary foods and drinks.
• Don’t have too many caffeinated drinks.
• Use lubricating gels if sex is painful.

What treatments are there?
Although there’s no cure yet, there are many treatments available that can help with the various symptoms. These include eye drops and ointments, mouth gels and sprays, painkillers and anti-inflammatory drugs. Other drugs may be prescribed depending on the type and severity of your symptoms.

Occasionally, a minor surgical procedure may be used to reduce the drainage of fluid from the eyes.
What is Sjögren’s syndrome?
Sjögren’s (pronounced Shurgren’s) syndrome is an autoimmune disease. Your body’s immune system usually fights infections, but with Sjögren’s syndrome it attacks its own tissues instead – particularly the tear glands and the salivary glands – causing dryness of the eyes and mouth. Other parts of the body can also be affected, leading to dryness of the skin, nose, throat, breathing tubes, gut or vagina.

Sjögren’s syndrome can occur on its own (when it’s described as primary) but can also occur in association with another rheumatic disease such as rheumatoid arthritis, lupus or scleroderma (when it’s described as secondary).

It’s estimated that half a million people in the UK may be affected by Sjögren’s syndrome but the exact figures aren’t known because many people never see a doctor about their symptoms.

**What are the symptoms of Sjögren’s syndrome?**
The most common symptoms of Sjögren’s are dry eyes and/or mouth, and feeling tired and achy. Many people don’t have any other symptoms. However, the range and severity of symptoms can vary a great deal from person to person.

**Eye problems**
Your eyes may be dry and feel sore, irritable or gritty. Some people find strong lights can be uncomfortable, while others find their eyes become sticky with mucus.

**Mouth and throat problems**
Your mouth may become dry and you may have mouth ulcers, which can sometimes cause a sticky feeling in the mouth or throat. Swallowing may be difficult and some people find their sense of taste is altered. Your voice may be hoarse or weak, and some people have a dry cough.

Occasionally a very dry mouth can lead to other problems such as fungal infections (e.g. thrush), an unpleasant taste in the mouth and increased dental decay. The salivary glands may also become painful and/or swollen.

**Extreme fatigue**
Fatigue (extreme tiredness) is one of the most common symptoms and it’s not the sort of tiredness that’s cured by a good night’s sleep. Some people may also feel down or depressed.
Aches and pains
The joints may be painful and swollen due to inflammation, while some people have a general achy feeling or tenderness at various points around the body. However, joint problems are usually less severe than in conditions such as rheumatoid arthritis.

Other symptoms
Other parts of the body may also be drier than normal, for example:
- the digestive passage, making it difficult to swallow food
- the bowel, causing symptoms similar to irritable bowel syndrome (e.g. abdominal pain)
- the vagina, making sex uncomfortable
- the skin, which may also be itchy or unusually sensitive to strong sunlight
- the air passages, making you more sensitive to irritants such as smoke or dust.

Other problems and complications that can sometimes be associated with Sjögren’s syndrome include:
- fever
- cold, blue fingers (Raynaud’s phenomenon)
- migraine-like headaches
- swollen lymph glands in your neck, armpits or groin
- aggravated menopausal symptoms
- problems with your nervous system, such as weakness or numbness
- inflamed blood vessels (known as vasculitis)
- chest pain (caused by pleurisy) or breathlessness
- liver or kidney problems.

See Arthritis Research UK booklet Raynaud’s phenomenon.

Who gets Sjögren’s syndrome
Women aged between 40 and 60 are most likely to be diagnosed with Sjögren’s syndrome. Only about 1 in 10 Sjögren’s syndrome patients are men, and the condition only rarely occurs in childhood.

It’s possible that some people are more likely to get Sjögren’s syndrome because something in their genes makes it difficult for them to get rid of certain infections. However, it’s unusual for children to inherit the condition from their mother or father.
What causes Sjögren’s syndrome?
Sjögren’s syndrome is an autoimmune disease in which the immune system attacks the body’s own tissues – mainly the tear-producing glands, such as the lacrimal glands behind the eyelids (see Figure 1), and the salivary glands in the mouth (see Figure 2). The body produces antibodies that react with and damage the tissues and nerve signals to the glands, reducing the amount of saliva and tears produced.

We don’t yet know what causes the immune system to behave this way in Sjögren’s syndrome. It’s been suggested that the Epstein-Barr virus, the retroviruses and the HTLV group of viruses could trigger it, although there’s no strong evidence for this.
What is the outlook?
You’re unlikely to be disabled by Sjögren’s syndrome, although the symptoms can be uncomfortable and long lasting. In a few people, the joints may become inflamed or the liver or kidneys may be affected. But the condition usually only damages the tear- and saliva-producing glands.

Some people with Sjögren’s syndrome might have an increased risk of developing cancers of the lymphatic tissues, known as lymphoma. Lymphoma only affects a small number of people with Sjögren’s syndrome – most people won’t be affected – but you and your doctor should look out for any early signs such as enlarged lymph glands (in your neck, armpits or groin) or salivary glands that are persistently swollen. The good news is that the treatment for lymphoma is generally very effective.
How is Sjögren’s syndrome diagnosed?

Dryness of the eyes and mouth can have other causes, which include:

- sicca syndrome, which means the glands are less able to make tears and saliva – it can occur as people get older
- diseases other than Sjögren’s syndrome, such as sarcoidosis, which can also damage the tear or saliva-producing glands
- certain medications such as antihistamines and antidepressants
- inflammation of the oil-producing glands in the eyelids (blepharitis), which causes excessive evaporation of the tear film.

It’s important to see your doctor to get an accurate diagnosis. Your doctor will ask about your symptoms and carry out tests to assess how dry your eyes and mouth are.

Because there are a number of possible symptoms and complications with Sjögren’s syndrome, you may also need to see an eye specialist (ophthalmologist), a dentist or oral surgeon, or a rheumatologist before you’re diagnosed.

What tests are there?

The main tests that can help with diagnosis are:

**Tear production** – a small piece of sterilised, pre-packaged blotting paper is used to measure your tear production. This is called Schirmer’s test (see Figure 3).
There’s no cure as yet for Sjögren’s syndrome, but there are many treatments that can help with the different symptoms. These can include eye drops for dry eyes and artificial saliva for a dry mouth.

Regular exercise can help with joint pain and is also good for your general heath.
The paper is placed in the corner of your eye and folded over your lower eyelid. This is a little uncomfortable and causes your eyes to water, making the paper wet. The amount of water that soaks into the blotting paper within five minutes is measured, and this tells the doctor how good your tear production is.

**Eye examination** – an eye specialist will put a dye (fluorescein and sometimes lissamine green dye) into your eyes and use an instrument called a slit lamp to examine them. The lamp shines a beam of light through a narrow slot (the slit-beam) and magnification allows the surface of the eye to be examined more effectively. This makes it possible to see the film of liquid over the surface of each eye. If you don’t have enough of this liquid, it could be a sign that you have Sjögren’s syndrome.

**Saliva production** – you may be asked to spit or dribble into a container over a period of 5 minutes or so. The amount of saliva that you can produce in that time is measured.

**X-rays of the salivary glands and ducts (sialography)** – a contrast dye is injected so that the glands and ducts show up clearly in the images. This will allow the doctor to assess how well the salivary glands are functioning.

**Other scans** – ultrasound scans or occasionally magnetic resonance imaging (MRI) scans are increasingly being used to scan the glands.

**Blood tests** – people with Sjögren’s syndrome often have high levels of antibodies in their blood. These can be measured with a blood test. The high antibody levels can make the blood thicker than usual, and this is measured by an erythrocyte sedimentation rate (ESR) test. The ESR measures how fast the cells in a tube of blood settle. The thicker the blood, the faster the cells settle and the higher the ESR. Patients with Sjögren’s syndrome often have very high ESR levels regardless of whether they feel well or ill, unlike people who have other conditions such as lupus or rheumatoid arthritis. In people with Sjögren’s syndrome, measuring the ESR isn’t a good way to tell how active the condition is, so other measurements such as C-reactive protein (CRP) are better because they only rise when the Sjögren’s syndrome becomes more active.

Two particularly important antibodies are called anti-Ro and anti-La antibodies. They’re found in 75% (anti-Ro) and 60% (anti-La) of people with primary Sjögren’s syndrome and can also be seen in patients with lupus. The presence of anti-Ro and or anti-La antibodies in a person with dry eyes and/or dry mouth strongly suggests they have Sjögren’s syndrome.

**Lip biopsy** – several tiny salivary glands may be removed from your lower lip under a local anaesthetic and examined under a microscope. This is usually only done if the diagnosis is still uncertain after the other tests.

Further specialised tests may be needed if you develop swelling in the lymph glands (in the neck, armpits or groin) or if you have complications involving the chest, kidney, liver or nervous system.
What treatments are there for Sjögren’s syndrome?

There’s no cure yet for Sjögren’s syndrome, but the most common symptoms can usually be treated with a combination of specific medications and self-help measures.

Eye symptoms

For dry, sore or irritable eyes:

- Lubricant eye drops such as hypromellose, Sno Tears or Viscotears can be used several times a day.
- If you need eye drops more than six times a day, you should use a preservative-free formulation because frequent use of drops containing preservative can increase dryness and sensitivity. Formulations such as artelac, hypromellose preservative-free, Viscotears single-dose units, Celluvisc and Optive can be used up to hourly if you need to.
- For very dry eyes you may need to use ointments (e.g. ciclosporin) or pseudoplastic drops such as Celluvisc or hyaluronate preparations.

If mucous and debris are causing stickiness:

- Mucolytic agents such as acetylcysteine eye drops may be helpful.
- Paraffin-based ointments such as Lacrilube can be used at night if your eyes are dry and crusty on waking.

If you have corneal ulcers or infections, you should NOT use any of these treatments and should seek advice from an eye specialist.

In some cases, an eye specialist may suggest punctal occlusion. This is where tiny plugs are inserted into the ducts (puncta) at the inner corners of the eyelids to reduce the drainage of tears (or eye drops) from the surface of the eye (see Figure 4). This only works well if the lacrimal glands are producing some tears to start with because it means that those tears stay in the eye and don’t drain away quickly. If your Sjögren’s syndrome is so bad that you have minimal tear production, punctal occlusion won’t help you. For this reason, temporary plugs are usually tried first and if these are helpful permanent plugs can be inserted. If the eyes remain very dry, the puncta may be sealed by cauterisation.

Figure 4
Puncta
For a dry mouth:

- Artificial saliva such as Biotene OralBalance or BioXtra gels can be helpful.
- Mouth sprays such as Luboran or AS Saliva Orthana are recommended if you have your own teeth because they contain fluoride. It’s best to avoid Glandosane mouth spray because it’s more acidic and may increase the risk of dental decay.
- If you’re able to produce some saliva, pilocarpine can be taken as a tablet (Salagen). This works by stimulating glandular tissue. Some people may notice side-effects such as sweating, flushing, a change of bowel habit or a more frequent need to urinate. These effects usually ease after a time, and it may help to start on a low dose and gradually increase it as the side-effects decrease.
- If your mouth is severely dry and is causing other problems such as fungal infections or dry coughs, your doctor may recommend an antifungal treatment such as nystatin.
- Chlorhexidine mouth rinses such as Corsodyl may help with dental hygiene, and fluoride mouthwashes or high concentration fluoride toothpastes (Duraphat) can be used to help reduce dental decay. Non-sugar chewing gum or other dental care products or lozenges such as anhydrous crystalline maltose can also help.
For mouth ulcers:
- Adcortyl in Orabase ointment can be applied to mouth ulcers. If this doesn't help, your doctor may prescribe corticosteroid pellets for you to keep in your mouth a few times a day.
- Difflam oral rinse or spray can help relieve discomfort from mouth ulcers.
- If the ulcers are causing stickiness in your mouth or throat, a diluted chlorhexidine mouthwash such as Corsodyl will help. Alternatively you could try rinsing and gargling with a mouthwash made from a mixture of a teaspoon of salt, a teaspoon of baking powder and a litre of water.

If your salivary glands are painful, ask your doctor for further assessment and advice – they’ll check whether you have an infection. If your salivary glands aren’t infected, they may prescribe a short course of a corticosteroid called prednisolone.

Other symptoms

Joint pain, aching or tender spots:
- Painkillers such as paracetamol and/or non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen may help.
- If joints are inflamed, an intramuscular steroid injection (Depomedrone) or short course of steroid tablets may be suggested for short-term relief.
- Hydroxychloroquine can be used for longer-term treatment (from 6 months to many years).

Extreme tiredness, lethargy, difficulty in concentrating:
- Your doctor may suggest blood tests to check the thyroid gland and screening for coeliac disease.
- Hydroxychloroquine may help with fatigue and joint pain.
- Lifestyle changes such as taking sensible exercise and pacing yourself in your daily activities can also be helpful.

Fever:
- Your doctor will want to rule out more serious problems such as infection, thyroid problem or lymphoma.

Raynaud’s phenomenon:
- Self-help measures will often improve the symptoms but drugs such as nifedipine, which open up the blood vessels, may be prescribed if necessary.

Migraine-like headaches:
- Painkillers or specific anti-migraine medications are usually effective.

Abdominal pain, irritable bowel syndrome:
- Antispasmodic drugs, such as mebeverine (Colofac) can be helpful for disrupted bowel habits.

Aggravated menopausal symptoms:
- Hormone replacement therapy (HRT) can be used if necessary, but it’s important to discuss the risk of side-effects with your doctor.

If you have Raynaud’s phenomenon, try wearing an extra pair of socks to keep your feet warm.
Other medications may sometimes be needed if you have a more severe form of the disease or if the peripheral nervous system is affected.

Patients with severe progressive disease may need high-dose corticosteroids and immunosuppressive drugs such as cyclophosphamide. Painkillers including gabapentin or pregabalin can be used for nerve pain.

Rituximab, which targets the B-cells of the immune system, and mycophenolate, which is an immunosuppressant, have been helpful in some people with Sjögren’s syndrome. However, the majority of people don’t need these drugs because their symptoms are confined primarily to the eyes and mouth.

Mild liver abnormalities aren’t common and probably won’t require treatment, but you should have regular checks. Specialist treatment may be needed if a condition called primary biliary cirrhosis develops.

The lungs can occasionally be affected by fibrosis, which can cause breathlessness, a dry cough and chest pain. Fibrosis requires specialist advice but steroids can be prescribed.

### Self-help and daily living

Some symptoms of Sjögren’s syndrome can be eased by simple self-help measures:

- Wear wraparound sunglasses or glasses with side shields to help retain moisture in the eyes.
- Keep your eyelids and the surrounding areas clean to maximise oil secretion from glands in the eyelids.
- Avoid contact lenses because they’ll be uncomfortable if your eyes are dry.
- Consider wearing tinted glasses if you find strong lights uncomfortable.
- Increase the humidity in your home. This can help eye symptoms and a dry cough. Humidifiers, large-leaved houseplants or bowls of water all help to increase humidity in a room.
- Avoid strong soaps if you have dry, itchy skin. Water-based creams and emollients may be helpful.
- Wear sunscreen (factor 15 or higher) if your skin is sensitive to the sun or comes out in a rash.
- Wear warm gloves if you experience Raynaud’s phenomenon. Exercise will help by improving your circulation, and smoking should be avoided because it’s bad for the circulation.
- Good dental hygiene is recommended for any oral symptoms.
- Only take medications such as antibiotics if it’s really necessary as Sjögren’s syndrome can slightly increase the risk of side-effects.

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See Arthritis Research UK drug leaflets Ciclosporin; Cyclophosphamide; Hydroxychloroquine; Mycophenolate; Non-steroidal anti-inflammatory drugs; Rituximab; Steroid tablets.
It’s important to have a good dental care routine and regular check-ups if you have oral symptoms of Sjögren’s syndrome.

**Exercise**
Exercise is recommended to maintain mobility, particularly if you have symptoms in your joints. You’ll need to find the right balance between rest and exercise, especially if you also suffer from extreme tiredness. A physiotherapist will be able to advise on suitable exercises and on how to increase your activity level gradually.

*See Arthritis Research UK booklets*
*Keep moving; Looking after your joints when you have arthritis; Physiotherapy and arthritis.*

**Diet and nutrition**
No special diet is recommended for Sjögren’s syndrome. However, if you have abdominal pain or bowel problems, increasing the amount of fibre in your diet should help. Cutting down on sweet food and drinks will help to minimise dental problems.

Remember that alcohol, tea, coffee and other caffeinated drinks can be dehydrating. Sipping water or sucking ice cubes regularly can help to relieve the discomfort of a dry mouth.

*See Arthritis Research UK booklet*
*Diet and arthritis.*

**Complementary medicine**
There isn’t scientific evidence that suggests any specific complementary medicine can ease the symptoms of Sjögren’s syndrome. Generally speaking, though, complementary and alternative therapies are relatively well tolerated, but you should always discuss their use with your doctor before starting treatment.

There are some risks associated with specific therapies. In many cases the risks associated with complementary and alternative medicine are more to do with the therapist than the therapy. This is why it’s important to go to a legally registered therapist, or one who has a set ethical code and is fully insured.

If you decide to try therapies or supplements you should be critical of what they’re doing for you, and base your decision to continue on whether you notice any improvement.

Taking vitamins can help to control the symptoms in some people with Raynaud’s. The use of high dose vitamins E and C, evening primrose oil, fish oils and ginger or Ginkgo Biloba can also help. If the vitamin regime doesn’t help within 3 months you should stop taking them, but always consult your doctor before you try anything.

**Sex and pregnancy**
One less common symptom of Sjögren’s syndrome may be that you have a dry vagina, which can make sex painful. Lubricants such as KY Jelly or Astroglide should help and so can oestrogen creams.
Treatments for infections such as thrush are readily available from chemists. There aren’t usually any increased problems during or after pregnancy with Sjögren’s syndrome. In about 2% of women who have anti-Ro and/or anti-La antibodies, these antibodies are passed on to the baby during pregnancy and cause symptoms in the baby after birth. These symptoms can include rashes and abnormal blood tests, but both settle within a few weeks to a few months as the mother’s antibodies are gradually lost from the baby’s blood. In some cases the antibodies affect the baby’s heart, causing it to beat slowly. Remember that 98% of mothers with anti-Ro and anti-La have no problems with pregnancy, but if you know you have these antibodies you should mention this to your obstetrician as additional monitoring of the baby’s heartbeat in the womb is required.

See Arthritis Research UK booklets
*Pregnancy and arthritis;*  
*Sex and arthritis.*
Glossary

**Antibodies** – blood proteins that form in response to germs, viruses or any other substances that the body sees as foreign or dangerous. The role of antibodies is to attack these foreign substances and make them harmless.

**Autoimmune disease** – a disorder of the body’s defence mechanism (immune system), in which antibodies and other components of the immune system attack the body’s own tissue rather than germs, viruses and other foreign substances.

**Biopsy** – the removal of a small amount of living tissue from the body. The sample can help diagnose illness when examined under a microscope.

**Cauterisation** – the controlled destruction of body tissues by the application of heat. In Sjögren’s syndrome it’s sometimes used to permanently seal the ducts that drain fluid away from the eye.

**C-reactive protein (CRP)** – a protein found in the blood. The level of C-reactive protein in the blood rises in response to inflammation and a blood test for the protein can therefore be used as a measure of inflammation or disease activity.

**Epstein-Barr virus (EB virus)** – part of the herpes family of viruses. The virus causes glandular fever, which can cause a sore throat, swollen lymph nodes (glands), fever and fatigue. It’s one of the most common viruses that affect humans.

**Erythrocyte sedimentation rate (ESR)** – a test that shows the level of inflammation in the body. Blood is separated in a machine with a rapidly rotating container (a centrifuge), then left to stand in a test tube. The ESR test measures the speed at which the red blood cells (erythrocytes) settle.

**Fibrosis** – the formation of scar tissue, sometimes caused by an exaggerated healing process. When it occurs in one of the body’s vital organs, fibrosis may impair the function of the affected organ.

**HTLV (human T-cell lymphotrophic virus)** – a virus that infects a type of white cell called the T-cell or T-lymphocyte and is associated with adult T-cell leukaemia and lymphoma.

**Immunosuppressive drugs** – drugs that suppress the actions of the immune system. They’re often used in conditions such as rheumatoid arthritis where the immune system attacks the body’s own tissues.

**Inflammation** – a normal reaction to injury or infection of living tissues. The flow of blood increases, resulting in heat and redness in the affected tissues, and fluid and cells leak into the tissue, causing swelling.

**Lupus (systemic lupus erythematosus or SLE)** – an autoimmune disease in which the immune system attacks the body’s own tissues. It can affect the skin, the hair and joints and may also affect internal organs. It’s often linked to a condition called antiphospholipid syndrome (APS).
Magnetic resonance imaging (MRI) – a type of scan that uses high-frequency radio waves in a strong magnetic field to build up pictures of the inside of the body. It works by detecting water molecules in the body’s tissue that give out a characteristic signal in the magnetic field. An MRI scan can show up soft-tissue structures as well as bones.

Non-steroidal anti-inflammatory drugs (NSAIDs) – a large family of drugs prescribed for different kinds of arthritis that reduce inflammation and control pain, swelling and stiffness. Common examples include ibuprofen, naproxen and diclofenac.

Oestrogen – one of a group of hormones in the body that control female sexual development and the reproductive cycle.

Physiotherapist – a therapist who helps to keep your joints and muscles moving, helps ease pain and keeps you mobile.

Pleurisy – inflammation of the pleura (the lining of the lungs and of the inside surface of the chest wall), causing pain on deep breathing.

Primary biliary cirrhosis – an autoimmune disorder that gradually destroys the biliary system, which drains bile from the liver into the intestines. The bile ducts in the liver become inflamed and damaged, resulting in an accumulation of bile in the liver. Symptoms include yellowing of the skin (jaundice), itching and an enlarged liver.

Raynaud’s phenomenon – a circulatory problem that causes the blood supply to certain parts of the body to be greatly reduced. It can make the fingers and toes go temporarily cold and numb and they turn white, then blue, then red. Raynaud’s phenomenon can also occur with the condition scleroderma.

Retrovirus – a type of virus whose genetic material is ribonucleic acid (RNA) instead of deoxyribonucleic acid (DNA). The virus is able to change its genetic material into DNA so the virus becomes part of the genetic information of the host cell as the host cell replicates. Retroviruses include HIV and some forms of cancer.

Rheumatoid arthritis – an inflammatory disease affecting the joints, particularly the lining of the joint. It most commonly starts in the smaller joints in a symmetrical pattern – that is, for example, in both hands or wrists at once.

Sarcoidosis – a disorder that causes small fleshy nodules (granulomata) to form in tissues in the body. This can be in the lungs, liver, spleen, skin, salivary glands and other tissues, and the lymph glands are often swollen. The cause isn’t known.

Scleroderma – a medical condition characterised by hardening and tightening of the skin. It often affects other parts of the body as well, including the connective tissues that surround the joints, blood vessels and internal organs.
Ultrasound scan – a type of scan that uses high-frequency sound waves to examine and build up pictures of the inside of the body.

Vasculitis – inflammation of the walls of blood vessels. This can cause the blood flow to be reduced. Vasculitis can occur on its own (primary vasculitis) or in people who already have an established disease (secondary vasculitis). Secondary vasculitis can happen with a number of different rheumatic diseases, including Sjögren’s syndrome, rheumatoid arthritis and lupus.
Where can I find out more?
If you’ve found this information useful you might be interested in these other titles from our range:

**Conditions**
- Lupus (SLE)
- Rheumatoid arthritis
- Raynaud’s phenomenon
- Scleroderma

**Therapies**
- Physiotherapy and arthritis

**Self-help and daily living**
- Complementary medicine and arthritis
- Diet and arthritis
- Fatigue and arthritis
- Pregnancy and arthritis
- Sex and arthritis

**Drug leaflets**
- Ciclosporin
- Cyclophosphamide
- Hydroxychloroquine
- Mycophenolate
- Non-steroidal anti-inflammatory drugs
- Rituximab
- Steroid tablets

You can download all of our booklets and leaflets from our website or order them by contacting:

**Arthritis Research UK**
PO Box 177
Chesterfield,
Derbyshire S41 7TQ
Phone: 0300 790 0400
www.arthritisresearchuk.org

**Related organisations**
The following organisations may be able to provide additional advice and information:

**Arthritis Care**
18 Stephenson Way
London NW1 2HD
Phone: 020 7380 6500
Helpline: 0808 800 4050
www.arthritiscare.org.uk

**British Sjögren’s Syndrome Association (BSSA)**
PO Box 15040
Birmingham B31 3DP
Phone: 0121 478 0222
Helpline: 0121 478 1133
www.bssa.uk.net

**National Rheumatoid Arthritis Society (NRAS)**
Unit B4, Westacott Business Centre
Westacott Way
Littlewick Green
Maidenhead SL6 3RT
Phone: 0845 458 3969 or 01628 823524
Helpline: 0800 298 7650
www.nras.org.uk
Notes
Μικροβιολογικό—Διαγνωστικό Ιατρείο

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Παράλληλα Αποτελέσματα
Αποτελέσματα επιστημονικών εργασιών στην Ιατρική, Οδοντιατρική, Φαρμακευτική, Τμήμα Μικροβιολογίας, Χημείο, ΠΕΣ Βιοχημείας και έχει 146 ανακοινώσεις σε συνέδρια (Ελληνικά: 53 Διεθνή: 93). Τέλος, έχει γράψει 10 εταιρεία σε διεθνές και 2 ελληνικά βιβλία και είναι μέλος σε 6 επιστημονικές εταιρείες και συλλόγους.
Το εργαστήριο μας αποτελεί ένα διαγνωστικό εργαστήριο αναφοράς, για την πραγματοποίηση μικροβιολογικών, βιοχημικών, αμπυρικολογικών, αναστολικών και οφμολογικών εξετάσεων. Στο εργαστήριο μας επιστήμηνται και πιο εξειδικευμένες εξετάσεις όπως μοριακός έλεγχος με PCR (πχ για την μέτρηση ικονομολογίων, έλεγχο θρομβοπλασίας κλπ), αναστολικολογικός έλεγχος δυσανεξίας σε διατομικές παράγνοντες και μετρητή Τ-λεμφόκυτταρικής αναστολικής απαντήσης. Επομένως, εκτελούνται ερευνητικά πρωτοκόλλα που περιλαμβάνουν ανάλυση βιολογικών δειγμάτων, θετική επέλεξη αεροπορειακών και απαντήσεις "in house" διαγνωστικών μεθόδων, όπως ELISA με "custom peptides" κλπ.

Επιστημονικός υπεύθυνος του εργαστηρίου είναι ο Αρης Ιωάννης Ρούτσιας. Είναι Χημικός και Ιατρός Βιοπαθολογος - Μικροβιολογος με διδακτορικό δίπλωμα στην Αναστολική. Το εργαστήριο του έργου είναι σημαντικό (συνολικό Ιmpact Factor διεθνών δημοσιεύσεων = 242) και διεθνώς αναγνωρισμένο (H-Index = 18), είναι με δεκατέρων ελληνικών και διεθνών βιομηχανιών και διακρίσεις Ανοσολογίας υπό την τύχη και μετρά δεκατέρων ιστοσελίδων στη συνέδρια της Ιατρικής Σχολής του Πανεπιστημίου Ιωαννίνων (1992-1997) και υπηρετεί σε διάφορες περιοδικά που κατανέμονται από τα επιστημονικά συνεδρία (Ε.Μ.Υ.). Εκλήθη χρηματοπιστωτικά δικαιώματα έξω από την επιστημονική μηχανή και επιτίθεται στην Ιατρική Σχολή του Πανεπιστημίου Ιωαννίνων. Διαλέθη σε εναντιον αναστολικών και διεθνών συνεδρίων (Ε.Μ.Υ.) και υπήρξε διεθνώς αναγνωρισμένος με διακρίσεις στα επιστημονικά περιοδικά σε διεθνών συνεδρίων.

ΙΩΑΝΝΗΣ Γ. ΡΟΥΤΣΙΑΣ
ΜΙΚΡΟΒΙΟΛΟΓΙΚΟ
DIΑΓΝΩΣΤΙΚΟ
& ΕΡΕΥΝΗΤΙΚΟ
ΕΡΓΑΣΤΗΡΙΟ

ΜΙΚΡΟΒΙΟΛΟΓΙΚΟ—ΔΙΑΓΝΩΣΤΙΚΟ
ΙΑΤΡΕΙΟ

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ΠΑΡΑΛΑΒΗ ΑΠΟΤΕΛΕΣΜΑΤΩΝ
Αποτελέσματα εξετάσεων: Οι επιστήμες έχουν τη δυνατότητα να διαδείξουν τα αποτελέσματα των δικών τους αισθηνόντως, αλλά παρα στιγμή, από την ιστοσελίδα του ιατρείου.

ΜΙΚΡΟΒΙΟΛΟΓΙΚΟ
ΔΙΑΓΝΩΣΤΙΚΟ
ΙΑΤΡΕΙΟ

ΚΑΤΑΛΟΓΟΣ
ΠΑΡΕΧΟΜΕΝΩΝ
ΥΠΗΡΕΣΙΩΝ

Λέκτορας Ιατρικής Σχολής Εθνικού με διδακτορικό δίπλωμα στην Αναστολική. Είναι συναντητικός σε 12 διεθνές περιοδικά, έχει δημοσιευτεί 50 αρθρά σε διεθνή περιοδικά (μέσο IF/αρθρό=4,8) με > 900 βιβλιογραφικές αναφορές (citations). Είχε επιβλέψει 12 διατριβές, έχει διδάξει 10 διαφορετικά αντικείμενα (μάθημα) σε 6 τμήματα (Ιατρική, Οδοντιατρική, Φαρμακευτική, Τμήμα Διατροφικής Άνθρωπου, Χημικό, ΠΣΕ Βιοχημείας) και έχει 146 ανακοινώσεις σε συνέδρια (Ελληνικά: 53, Διεθνή: 93). Είναι γραφείο κεφαλαία σε 9 διεθνή και 7 ελληνικά βιβλία και είναι μέλος σε 6 επιστημονικές ομάδες και συλλογές.
Το εργαστήριο μας αποτελεί ένα διαγνωστικό εργαστήριο ανάφορα για την πραγματοποίηση μικροβιολογικών, βιοχημικών, αμινολογικών, αναποδοτικών και αφιλολογικών εξετάσεων. Στο εργαστήριο μας επίδεση εκτελούνται και πιο εξειδικευμένες εξετάσεις όπως μοριακός έλεγχος με PCR (πχ για την μέτρηση ικων φυτικών, ελέγχο θρομβοβιολογίας κλπ.), αναποδοτικός έλεγχος δυσανέλειας σε διατροφικούς παράγοντες και μέτρηση μόνομονταρικής αναποδοτικής απαντήσεως. Τέλος, εκτελούνται ερευνητικά πρωτοκόλλα που περιλαμβάνουν αναλυτικές μεθόδους, όπως ELISA με "custom peptides" κλπ.

Επιστημονικούς υπεύθυνους του εργαστηρίου είναι ο Δρ. Ιωάννης Ρούτσιας. Είναι Χημικός και Λέκτορας Βιοπαθολογικού - Μικροβιολογικό με διδακτορικό δίπλωμα στην Αναποδοτική Ιατρείο. Το εργαστήριο του έργου είναι σημαντικό (λιμπο ικ ικ = 4.8) και διεθνώς αναγνωρισμένο (H-index = 18), έχει δεκατριής έλεγχοι και διεθνώς μοριακές περιοδικές διαγνωστικών μεθόδων, όπως ELISA με "custom peptides" κλπ.

ΠΑΡΑΛΑΒΗ ΑΠΟΤΕΛΕΣΜΑΤΩΝ
Αποτελέσματα εξετάσεων: Οι ιατροί έχουν την δυνατότητα να βλέπουν τα αποτελέσματα των δικών τους ασθενών, ανά πασα στιγμή, από την ιστοσελίδα του ιατρού.