



# Axial Spondyloarthritis (axial SpA) Ankylosing Spondylitis (AS)

A guide to biologic therapy

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# Who is this guide for?

It's for anyone with axial spondyloarthritis (axial SpA) including ankylosing spondylitis (AS) who wants to find out more about biologic therapy. To keep things simple we have tried to just refer to AS throughout unless we need to highlight a difference between **AS** and **non-radiographic axial spondyloarthritis**.

# What is biologic therapy?

Unlike medications like paracetamol or ibuprofen, biologic medicines are not manufactured by simply combining specific chemical elements in an ordered process.

Biologic medicines are manufactured within a living system and target specific molecules believed to be involved in AS. They are made up of genetically-engineered proteins and are very large, complex molecules.

Most biologics are designed to block aspects of the immune system. Because these therapies are proteins, they do not work as tablets and have to be given as injections into the skin.

Biologic Medicines		Other Prescription Medicines
<i>(eg, anti TNF therapy)</i>		<i>(eg, aspirin)</i>
Generally very large and complex medicines	<b>SIZE</b>	Generally smaller and with a less complex structure
A biological process (inside a living cell)	<b>HOW THEY ARE MADE</b>	A chemical process
Because biologics are so large and so complex, copies can never be identical. <b>These are known as biosimilars</b>	<b>MAKING COPIES</b>	Exact copies can be made by using the same chemical components and processes. <b>These exact copies are known as generics</b>

# What biologic therapies are available to treat AS?

The current biologics licensed for AS and approved by NICE target one of two specific inflammatory molecules, namely TNF and IL-17. Both work by reducing the inflammation produced by the body. We know there are more currently in development and going through clinical trials which target these and other pathways.

## Anti TNF therapies

Anti TNF therapies are used to treat a range of conditions including non radiographic axSp A (no changes on x-ray) and AS (definite changes on x-ray), as well as other conditions such as inflammatory bowel disease and psoriasis.

These treatments interfere with the action of a protein called tumour necrosis factor (TNF) which is over-active in people with inflammatory arthritis, including AS.

Tumour necrosis factor causes inflammation and damage to bones, cartilage and tissue.

Anti TNF therapy blocks the action of TNF and can reduce the amount of inflammation present in your body and joints.

There are several anti TNF therapies available for AS, which are listed later on in this guide.

## Anti IL-17A

Anti IL-17A is used to treat ankylosing spondylitis. It is likely it will also become available in the future for people with non radiographic axial spondyloarthritis although these studies are still ongoing.

It works by neutralising the activity of a protein in the body called IL-17A.

IL-17A is a key protein in causing the skin inflammation in psoriasis. More recently research has shown that people with AS have very high levels of IL-17A in their body and that IL-17A plays a very important role in causing the inflammation associated with AS. By decreasing the IL-17A, this biologic reduces inflammation in your body and joints.

# Who can be offered biologic therapy?

Many people with AS do not need biologic therapy because they can manage their condition well with a combination of physiotherapy and non steroidal anti inflammatories (NSAIDs) such as ibuprofen or naproxen. However, some people still have active or progressive symptoms despite these treatments and may require biologic therapies.

Your rheumatology consultant or nurse might talk to you about biologic therapy if:

- You have tried at least two different NSAIDs but you feel they aren't helping.
- You are not able to take NSAIDs because they cause problems with your stomach or other medical conditions.
- You still have high pain levels and stiffness which are thought to be due to inflammation from your AS.
- Your AS is having a big impact on your life. It might be affecting your ability to work, enjoy your family life or have a good quality of life.

Biologic therapy can only be prescribed by a consultant rheumatologist. Your GP cannot offer it to you. So if you are not under the care of a rheumatologist do ask your GP to refer you.

The National Institute for Health and Care Excellence (NICE) has produced written national guidelines about prescribing anti TNF therapy and anti IL-17A that must be followed. Your rheumatologist will advise you if you meet the criteria for biologic therapy and they are safe for you.

You **may** not be suitable for biologic therapy if:

- You have had tuberculosis (TB) in the past (in which case you may need treatment for this)
- You have had recent, repeated or serious infections, or are at very high risk of infections
- You have multiple sclerosis (MS)
- You have had cancer within the past 5 years
- You have heart failure
- Your pain is due to causes other than inflammation

# How can biologic therapy help?

Biologic therapy works to reduce inflammation in your body and that means you should get less pain, less stiffness and more movement. Hopefully this will mean you can get moving more quickly in the morning, find it easier to carry out your daily activities, be able to exercise more and sleep better. In short, biologic therapy should give you a better quality of life.

*It is still important to continue with your regular exercises, whatever treatment you take.*

It is still too early to tell if biologic therapies will prevent new bone formation in the long-term, but it is hoped this will be the case. Biologic therapy also cannot reverse any damage or fusion of the spine and sacroiliac joints that has already occurred, but research has shown that many people with long-standing disease can still have significant improvement with biologic therapies.

Unfortunately, not everyone with AS will respond to biologic therapies. The reasons for this are not known and cannot be predicted in advance. It is thought that approximately 8 people

out of every 10 will have a meaningful response, justifying ongoing use. It appears that people generally tolerate these treatments well, but occasionally have to stop them due to side effects. Your rheumatologist should explain these possible side effects.

People who do not respond sufficiently (it may take 3-6 months to be certain), or who get serious side effects, will usually be recommended to stop their biologic therapy. If it is safe and appropriate to do so, your rheumatologist may suggest trying an alternative biologic therapy.

# What are the side effects?

Most people have relatively few day-to-day side effects with biologics. The most common side effects are:

## Injection site reactions

You may find you get a reaction at the site of the injection, such as redness, swelling or pain. These aren't usually serious and regularly changing the injection site will help reduce the chances of this irritation. However, you should inform your rheumatology team if these are serious, increasing or you think you may be having an allergic reaction, in which case they may suggest changing to a different biologic therapy.

## Infections

Because biologic therapy affects the immune system, it can make you more likely to pick up infections. It can also make them harder to spot as the normal signs of infection may be suppressed by the biologic therapy. If you do pick up an infection you need to see your GP immediately and may need antibiotics. You should stop your biologic therapy while you have an active infection or are taking antibiotics. You should also tell any doctor who sees you that you are taking biologic therapy.

## Viruses

You might find a viral infection affects you more severely. You should see your doctor immediately if you develop chickenpox or shingles or come into contact with someone who has chickenpox or shingles. You may need antiviral treatment, and your biologic therapy may be stopped until you're better.

# What are the long-term risks?

All medications come with risk. It's important to understand the risks and to balance these against the possible benefits of taking the medication.

These risks should always be fully discussed with your consultant and rheumatology team.

**Anti TNF therapy** has now been used in patients with AS and other types of arthritis for well over 10 years and no pattern of serious long-term side effects is currently emerging. Safety data is being collected by large registries around the world, principally the UK (British Society for Rheumatology Biologics Register), mainland Europe and Scandinavia.

Reassuringly, the registry data has found no increase in the incidence of cancer above what was expected for the general population – with the exception of certain types of skin cancer which can be readily treated when diagnosed early.

People on anti TNF therapy are asked to keep a close eye out for any suspicious skin moles, lumps or bumps that develop once treatment has started and see their GP for a review if necessary.

**Anti IL-17A** is a newer therapy. It has, however, been used for many years in patients with psoriasis, and no new side effect signals have emerged. There is still some uncertainty regarding some superficial fungal (candida) infections and its use in people with inflammatory bowel disease (Crohn's disease), so your consultant may ask you about these.



# How do I decide if biologic therapy is for me?

- Think about how your AS has affected you over the past 6 months. Consider what it's stopping you doing or how it's caused you problems.
- Talk to your rheumatologist, specialist nurse and physiotherapist.
- Read through all the information in this guide and any other leaflets given to you.
- Get your family and friends to look through the information and discuss this with them.
- Have a chat with someone else taking biologic therapy. More than a third of NASS members are now taking biologic therapy.
- Call for a chat on the NASS Helpline (020 8741 1515).

*Use the following pages to write down your hopes and concerns about biologic therapy. Take it to your next appointment and talk them through with your rheumatology team.*

# ( HOPES )

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# Getting started on biologic therapy

In addition to asking you questions, your rheumatology team will also do a number of tests before you start biologic therapy. Essentially these include:

**Blood tests** to check levels of inflammation and to check there are no other problems that may affect the safety of the therapy. They may also do blood tests to see if you do not have certain infections, such as viral hepatitis.

**Chest x-ray and special tuberculosis (TB) blood test** to make sure you have no latent or active TB infection.

**The Bath Ankylosing Spondylitis Disease Activity Index (BASDAI)** asks a number of questions about your AS symptoms including fatigue, back pain and morning stiffness. You rate your symptoms using a 1 to 10 scale. A higher score means your symptoms are worse and may require biologic therapy if other treatments, such as NSAIDs, have not worked.

**Spinal pain** asks you to assess your back pain. You score higher the worse your back pain is.

Occasionally your consultant may request an **MRI** to see if there is evidence inflammation in your spine or sacroiliac joints before starting biologic therapy, but this is not required for most people

# Choices, choices, choices...

A number of biologics have been licensed and approved by NICE for the treatment of AS. There is currently no evidence that any particular biologic therapy is better or worse than another.

Your consultant may have a particular biologic in mind for you given your past medical history or current condition. There may be reasons, such as having another condition like Crohn's disease, which would suggest one specific therapy might be better for you than another. Your rheumatologist should discuss this with you.

Often your rheumatology nurse or physiotherapist may take you through your choices. They will highlight the main differences between the different options to help you make your choice.

Some things you should consider when making your choice include:

- Would I prefer to have an infusion (drip) administered by a nurse or have inject myself using a pen device?
- Can I safely store injection pen devices in a fridge?
- How often will I have to inject?
- Is there an injection device I prefer or find easier?

We have outlined the main therapy choices on the next page. These include both the originator therapies and biosimilar medicines.

**Biosimilar medicines** are developed to be highly similar (but not identical) to a biological medicine which has already been approved and made available for patients.

They can be developed by manufacturers once the original patent for the product has expired. They are called "biosimilar" because the molecular structures are so complex that it is not possible to produce an absolutely identical drug to the original - referred to as the "originator". Biosimilar medicines are developed in order to provide alternative products, usually at a lower cost than the original biological medicine.

Biosimilars still have to go through a regulatory process which requires comparability studies that demonstrate equivalence to the originator product in terms of quality, efficacy and safety.

**Once approved, a biosimilar medicine is recognised to be a highly similar version of a biological medicine.**

## Anti TNF therapy choices

### **ADALIMUMAB (Amgevita (biosimilar), Hulio (biosimilar), Humira (originator), Hyrimoz (biosimilar), Imraldi (biosimilar))**

- Self-administered by an injection pen device
- Once fortnightly dosing

### **CERTOLIZUMAB PEGOL (Cimzia)**

- Self-administered by an injection pen device
- When you start certolizumab pegol you need to do two injections every 2 weeks for the first 6 weeks and then you move to one injection every 2 weeks, or 2 injections every 4 weeks

### **ETANERCEPT (Benepali (biosimilar), Enbrel (originator), Erelzi (biosimilar))**

- Self-administered by an injection pen device or a pre-filled syringe
- Once or twice a week dosing

### **GOLIMUMAB (Simponi)**

- Self-administered by an injection pen device
- Once monthly dosing

### **INFLIXIMAB (Inflectra (biosimilar), Remicade (originator) and Remsima (biosimilar))**

- Administered by an infusion (drip), often in a day unit clinic
- Dosing varies but is often every 6 to 8 weeks

## Anti IL-17A

### **SECUKINUMAB (Cosentyx)**

- Self-administered by an injection pen device
- Treatment starts with four 'loading doses'. After your first dose (week 0) you inject your medication weekly at weeks 1, 2 and 3. On week 4 you will receive the first of your monthly injections. After that you will continue to inject monthly



# What next?

Once you have been fully assessed for biologic therapy and you and your rheumatology team have decided which biologic you will use, then you will be shown how to do the injections and given all the extra information you need.

## Delivery

If you are using a self administered biologic, these will be delivered to your home on a regular basis by a specialist home care delivery company. You will not pay for your prescription. You will be able to organise the deliveries to arrive at a convenient time for you.

# How long does treatment last?

Once you start on biologic therapy you will be assessed after approximately 12 to 16 weeks to see if it is working for you. If it is helping with your AS symptoms and you are happy with it then you may stay on it for the long term. You should have regular checks with your rheumatology team while on the drug.

Biologic therapies are not a cure for AS, so most patients' disease will return (relapse) when they stop their biologic. On average people relapse within 14 weeks of stopping therapy. There are also concerns that if you

do not take your biologic as advised by your rheumatology team, it may not work as well, so you should not stop taking this unless agreed with your rheumatology team or if there is a medical reason.



# The main reasons for having to stop

## Surgery

If you have surgery planned you should talk to your rheumatologist or rheumatology nurse about how far in advance to stop your biologic therapy and how long you will need to wait before re-starting. Most rheumatologists suggest stopping your biologic for two weeks before surgery and waiting until two weeks after surgery before restarting, but then only if the wound is healing well and there are no signs of infection.

These recommendations may differ for different biologic drugs, types of surgery and between rheumatology departments, so you should always discuss with your local rheumatology team in advance of your surgery.

## Serious infections

If you develop an infection and need to take antibiotics, you should stop your biologic therapy and not take your next dose until you have finished your course of antibiotics and are sure you are clear of infection. If you are not sure when to restart, check with your rheumatology nurse.

## Deciding to start a family

It is very important that you discuss your options with your rheumatology team before becoming pregnant. You may decide that you do not want or need to take biologic therapy during pregnancy or you may feel that you won't be able to manage without it. Your team will be able to guide you to make decision that is best for you and your family.

*If you need or plan to stop treatment temporarily for any reason, it is important to discuss this with your rheumatology team well in advance.*

# Attending regular check ups

Your rheumatology team will tell you how often you need to attend for check-ups while on biologic therapy. This may vary depending on local arrangements and which biologic you are taking.

At these check ups, your rheumatologists will ask you about any changes to your health, side effects and how your AS is doing. You will also be asked to complete simple questionnaires, such as the BASDAI, to check you are still getting a good response, and you may be asked to have some blood tests.

Monitoring your response to treatment and your health whilst on biologic therapy is extremely important. If you fail to attend your check-ups for some time it is possible that your prescription will be stopped.

*It's really important you attend all your check-ups while you are on biologic therapy.*

# Day-to-day living with biologic therapy

## EATING AND COOKING

Visit the NHS website for information on reducing your risk of infection from foods.

## VACCINATIONS

The Pneumovax (pneumonia) vaccine is recommended for people starting on biologic therapy along with annual flu vaccines.

If you're in your 70s your doctor may advise you to have the shingles vaccination (Zostavax) before starting biologic therapy. This vaccination is not recommended for people who are already taking biologic therapy.

If you're taking biologic therapy it's recommended that you avoid live vaccines. If you do need a live vaccine do discuss all the possible risks and benefits of the vaccination with your doctor.

## OTHER MEDICINES

Biologic therapy may be prescribed along with other medicines. Do discuss any new medications with your doctor before starting them, and always tell any doctor treating you that you are on biologic therapy.

If you develop any kind of infection and are prescribed antibiotics you should not take your biologic therapy again until your course of antibiotics is complete and the infection has cleared.

Biologic therapy is not a painkiller. If you are already taking a non-steroidal anti-inflammatory drug (NSAID) or painkillers you can carry on taking these as well as your biologic therapy, unless your doctor advises otherwise.

Do not take over-the-counter preparations or herbal remedies without discussing this first with your doctor, rheumatology nurse or pharmacist.

**ALCOHOL**

There is no known interaction between biologic therapy and alcohol.

**SURGERY**

If you are going to have an operation please inform your doctor, as you are likely to be advised to temporarily stop biologic therapy before and after surgery.

**PLANNING A FAMILY**

If you are planning a family we would strongly advise you discuss this with your rheumatologist well in advance.

**TRAVELLING**

If you are travelling abroad and taking your biologic therapy with you, it's important to make plans to keep it at the correct temperature during the journey and at your destination. You can buy special cool bags and even travel fridges.

One option is to use a Frio wallet or carry case. These are designed to keep insulin cool but work well for biologic therapy. You can buy these through Amazon.

In addition to your biologic medication you may require a travel size sharps box.

Do discuss this with your Clinical Nurse Specialist or your delivery team.

Ask for a letter confirming you have been prescribed biologic therapy from your rheumatologist and keep a copy in your hand luggage. Some people find it helpful to scan a copy of the letter and email it to themselves so they have an electronic copy.

If you are travelling somewhere warm and sunny do remember that you should use a high factor sunscreen when on biologic therapy.

# NASS resources

## **NASS GUIDEBOOK**

A practical introduction to treatment and management with useful advice on living and working with AS.

## **GUIDE TO MANAGING YOUR AS AT WORK**

Includes how AS can affect your work, communicating about your condition, staying well at work and your rights.

## **GUIDE TO MANAGING YOUR AS FLARES**

Practical information to help you manage your AS flares.

## **EXERCISE FOR AS**

Exercise is not just a useful addition to the management of AS, it is one of the cornerstones of treatment. Exercise helps in the maintenance of flexibility and good posture and also assists with pain management and wellbeing.

## **Back to Action**

A guide to exercising safely in the gym (pdf version). You can also buy a printed, spiral bound version in the NASS shop.

## **Back to Action Part 2**

Includes exercises with gym balls and free weights.

## **Back to Action App**

Our Back to Action guide is also available as a free app for iPhones and android phones.

## **LEAFLETS**

### **Driving and AS**

Safe driving, the DVLA, the Motability scheme and the Blue Badge scheme.

### **Fatigue and AS**

What causes fatigue in AS and tips for managing.

### **Uveitis and AS**

Symptoms of uveitis and treatments.

## **Fight Back**

Our exercise DVD aimed at people with more advanced AS who want to exercise at home. It includes 6 exercise programmes with 35 individual exercises and contains hip safe exercises.

## **NASS BRANCH NETWORK FOR HYDROTHERAPY AND PHYSIOTHERAPY**

There are 95+ NASS branches providing regular physiotherapy and hydrotherapy sessions throughout the UK. Call NASS or check on our website under 'In your area' for your nearest branch.

# NASS

The National Ankylosing Spondylitis Society (NASS) is the only charity in the UK dedicated to providing life-changing support to anyone affected by AS.

- We empower people with the knowledge to manage their AS
- We provide specialist physiotherapy and hydrotherapy at over 90 locations in the UK
- We fund research into better treatments, and campaign for improved care
- We respond to over 5,000 queries each year on our Helpline and send over 30,000 publications

## Join NASS and make a difference

Membership of NASS can go a long way towards improving your health and your life. With over 4,000 members, you'll connect with others and share experiences to better manage your AS, help to fund research into new treatments, and raise vital awareness of AS.

Join NASS today for your exclusive benefits:

- Membership pack including a range of NASS guidebooks
- Free entry for you and a guest to our action-packed Members' Day
- Our twice-yearly magazine, AS News
- Exclusive access to the NASS Members' Forum to share your experiences online
- Receive exclusive guides on claiming benefits such as Personal Independence Payment

## To join NASS

If you'd like to join online please go to our website at [www.nass.co.uk](http://www.nass.co.uk) and look in the 'Get involved' section for the 'Become a member' page.

If you'd like to pay by credit card and over the telephone please call **020 8741 1515**

*"Until NASS came along my understanding of AS was 'like operating in the dark'. NASS threw so much light on the issues, for which I will always be exceedingly grateful."*

Ron, NASS Member

*Whether you are newly diagnosed, supporting a loved one, or have been living with AS for many years, NASS is backing you with your AS.*





NATIONAL ANKYLOSING SPONDYLITIS SOCIETY

Telephone **020 8741 1515**

[www.nass.co.uk](http://www.nass.co.uk)