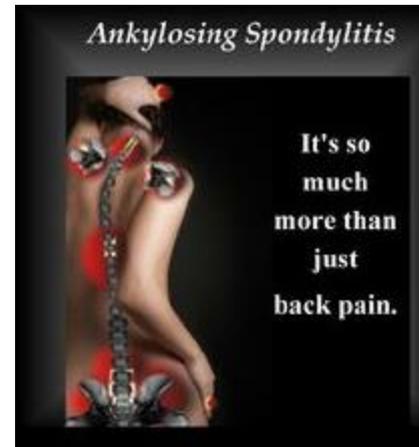


# Ankylosing Spondylitis

## Shared Decision Making

**Biologic Therapy**  
**Anti-TNF**



[El Miedany et al. Ann Rheum Dis 74\(Suppl2\): 1002](#)

[DOI: 10.1136/annrheumdis-2015-eular.1410](https://doi.org/10.1136/annrheumdis-2015-eular.1410)

[www.rheumatology4u.com](http://www.rheumatology4u.com)

Copyrights reserved

[www.rheumatology4u.com](http://www.rheumatology4u.com)

# Supporting your Decision Making

- This booklet is **not meant to replace other information leaflets** or talking with your treating health care professional.
- Rather, its goal is to inform you about your treatment options and support your decision making.

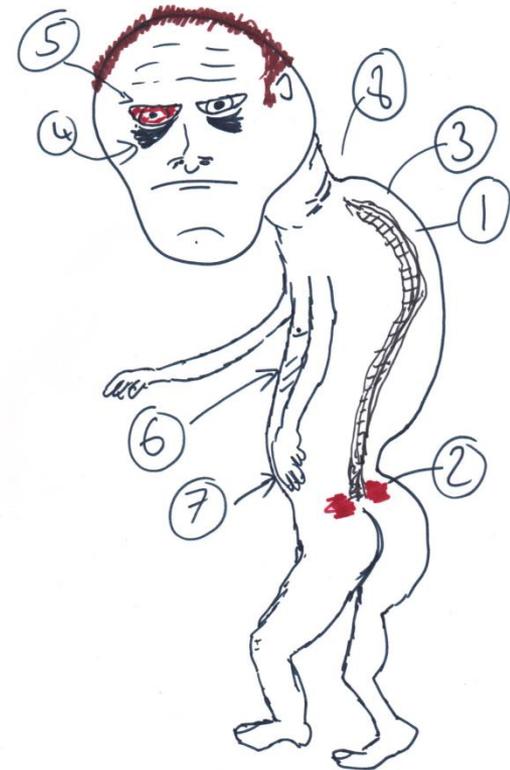
# What is Shared Decision Making Tool?

- Shared Decision Making is a new approach aiming at achieving the partnership between you as a patient and the treating doctor. It has been used by medical providers to enhance the discussion about your disease management. It was developed to give you a simple idea, in a plain language, about effectiveness and outcome probabilities of the treatment options for your disease.
- This tool is dedicated to the advanced treatment for the **persistently active Ankylosing Spondylitis**, namely, the “Biologic Therapy” . It was developed following the international Patient Decision Aid Standards Consortium criteria\* and has been developed and used with other people suffering from similar condition. Our pilot testing revealed that this tool has helped people like you to know more about risks and benefits of the Biologic therapy and to make a decision about future treatment.

# Information about Ankylosing Spondylitis

- Spondylitis means inflammation of the spine, whereas Arthritis means inflammation of joints. Enthesitis means inflammation at the site where a ligament is attached to the bone.

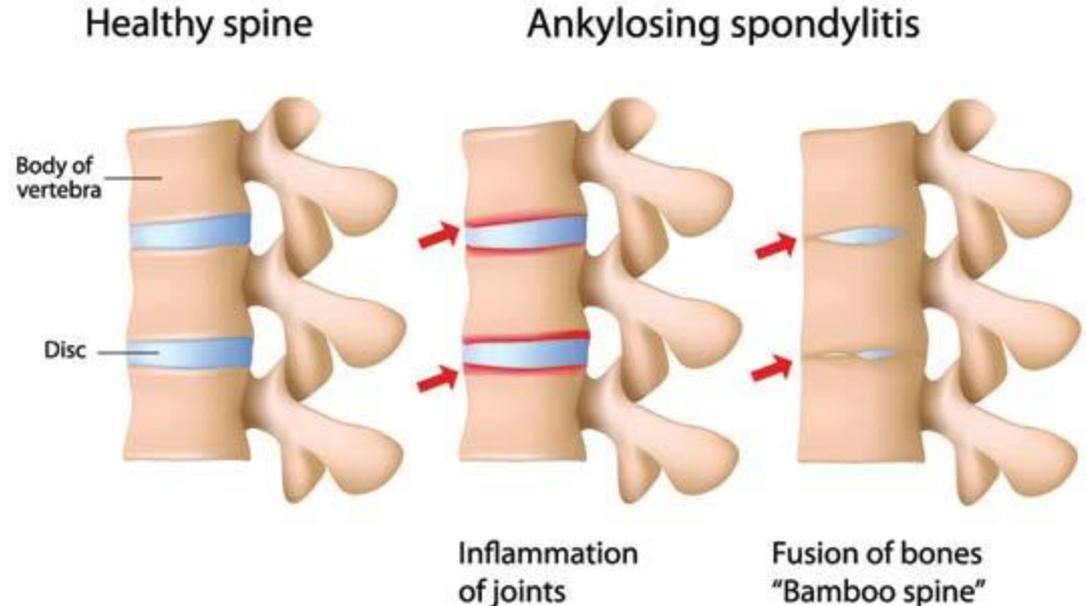
Ankylosing spondylitis (AS) is an inflammatory condition which affects mainly the spine. Other parts of the body can be also affected such as joints and sites where ligaments are attached to the bones (medical condition named enthesitis). One important point to remember – contact your doctor urgently if you have AS and developed a painful or red eye. An eye complication called uveitis can be serious but can be treated successfully if treatment is given promptly.



# How AS Damage Progresses Without Treatment

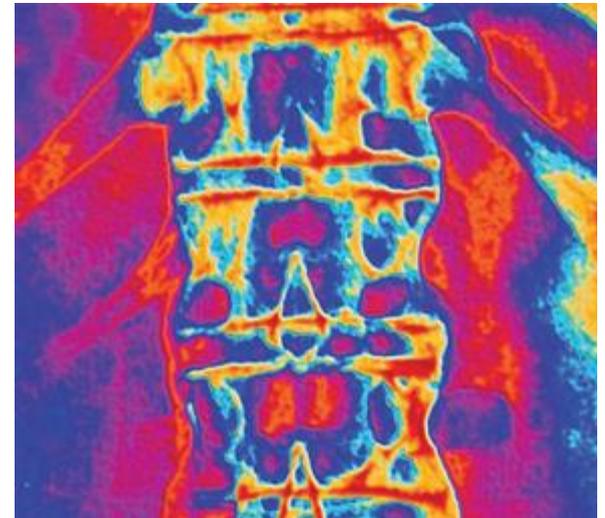
In AS the ligaments of the spine become inflamed at the points where they attach to the spinal vertebrae. In time, this can stimulate the bone-making cells and cause some bone to grow and form within the ligaments. As the inflammation process continues, these bony growths may become larger and form bony bridges between vertebrae that are next to each other.

This may, over time, cause some of the vertebrae in the spine to fuse together with this new abnormal bone material connecting them. The small facet joints of the spine are also commonly inflamed.



## How AS Damage Progresses Without Treatment

- The sacroiliac joints in the lower back and their nearby ligaments also commonly become inflamed. This too may ultimately end in fusion between the sacrum and pelvis.



# How AS Damage Progresses Without Treatment



# Other areas of the body may be affected

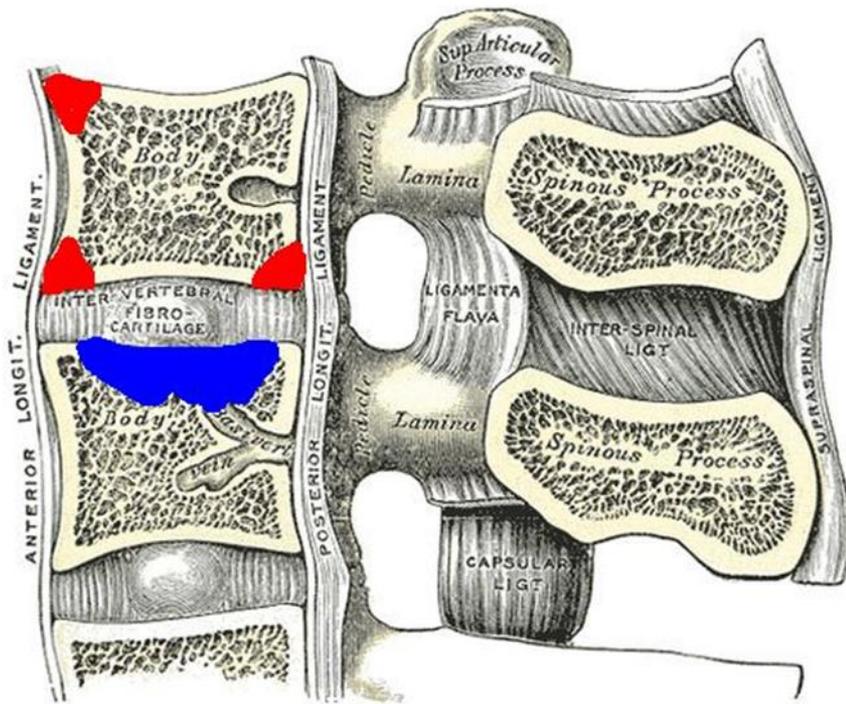
The disease is not always confined to the spine and sacroiliac joints. In some cases, inflammation occurs in the joints and in other parts of the body outside of the spine may occur. Like the spine, inflammatory changes occur at other sites where ligaments are attached to bones. Common sites include tip of the shoulder, outer side of the elbow, lateral side of the hip, back of the ankle as well as heels. Such inflammation in the soft tissue may cause sleep disturbance as it may wake up the patient because of pain. The person may also feel stiff in particular in the morning.



# Enthesitis

Inflammation at the ligaments attachment sites

Spine



Foot

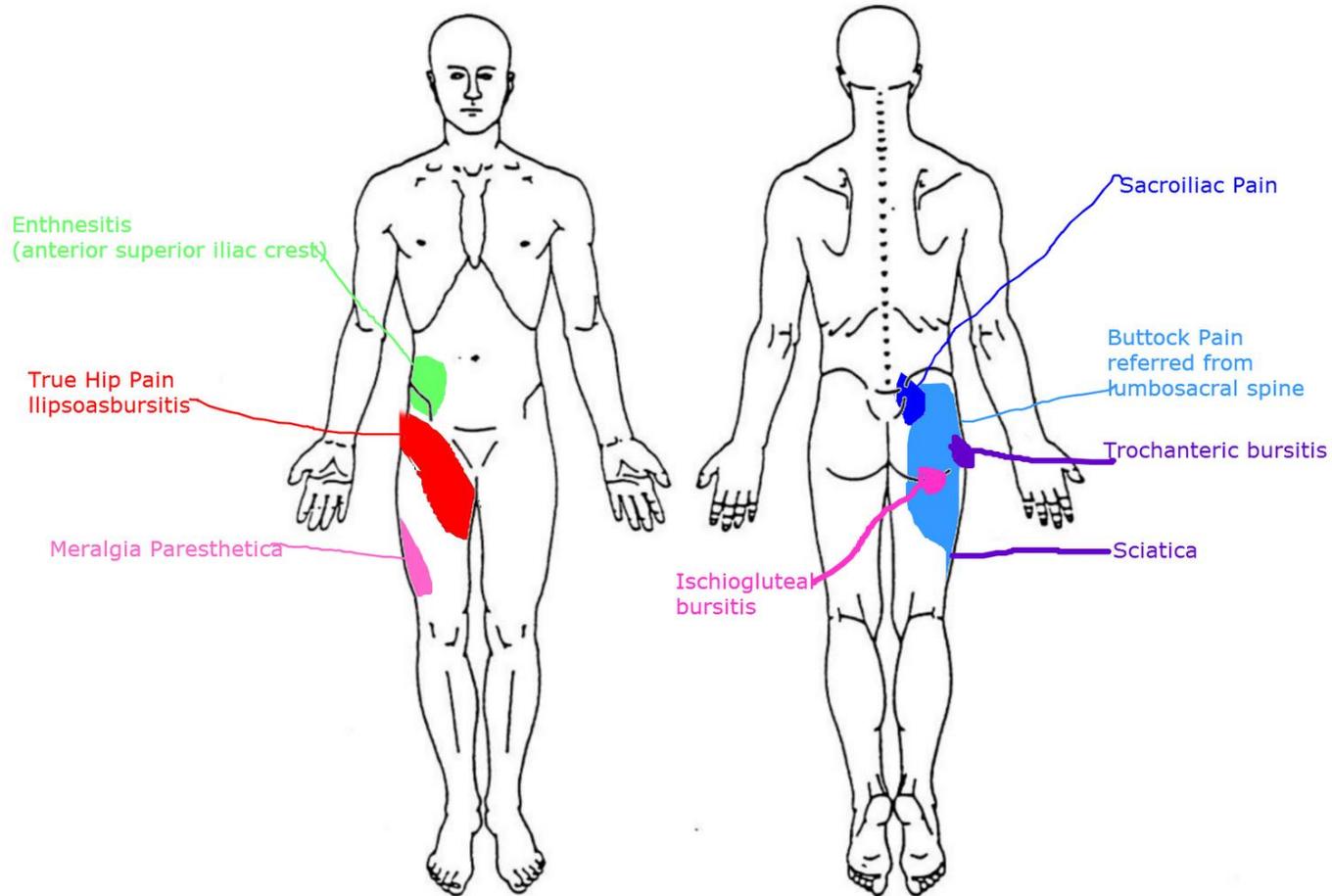


# Enthesitis - Other sites

**Inflammation at the ligaments attachment sites**

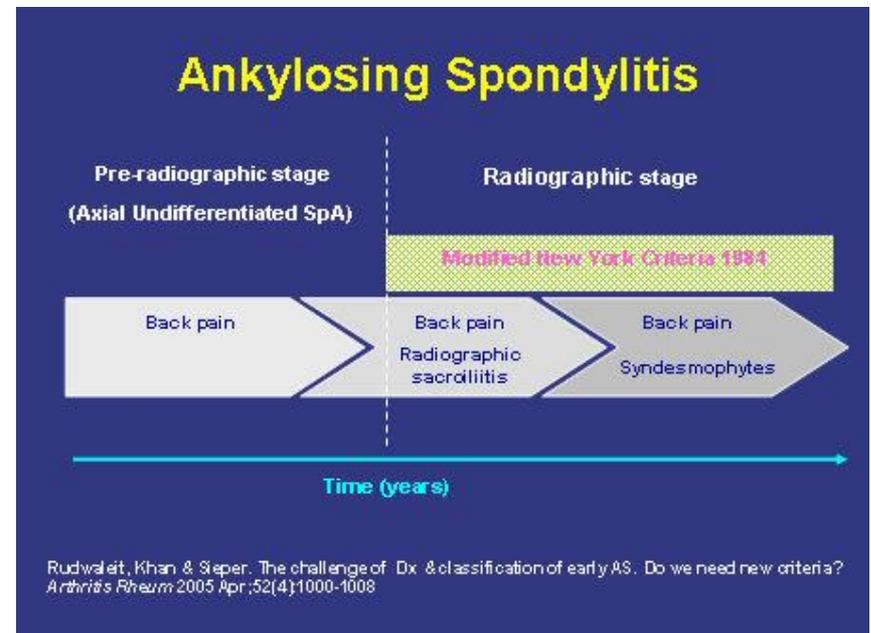


# Hip Pain in Ankylosing Spondylitis Patients



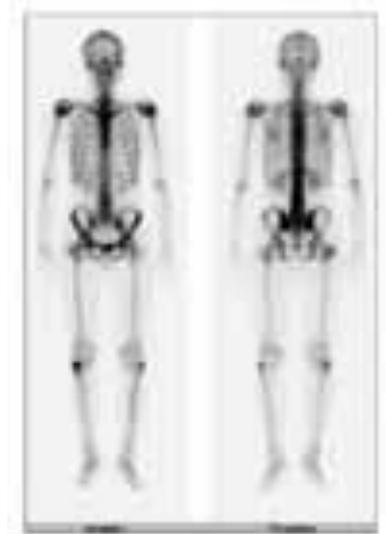
# Why do we need to stop the inflammation early?

- There is a chance to prevent damage and bony fusion. MRI can help in identifying the inflammatory process in the spine before any changes appear in the X-ray.



# How AS Damage Progresses Without Treatment

Progressive deformity due to AS  
over a period of 36 years

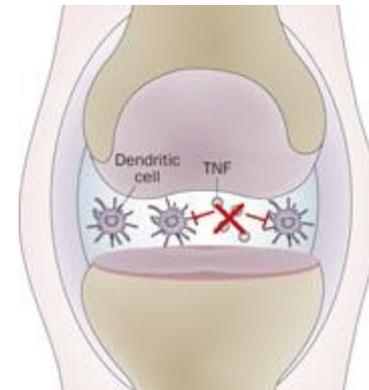


# What is Biologic therapy?

- These are not chemicals, but proteins. They also work to reduce inflammation, but do it differently than the Anti-inflammatory Drugs (e.g. Naproxen) and Disease modifying drugs (e.g. Methotrexate). They target the inter-communicating proteins (messengers) which activate inflammatory cells.

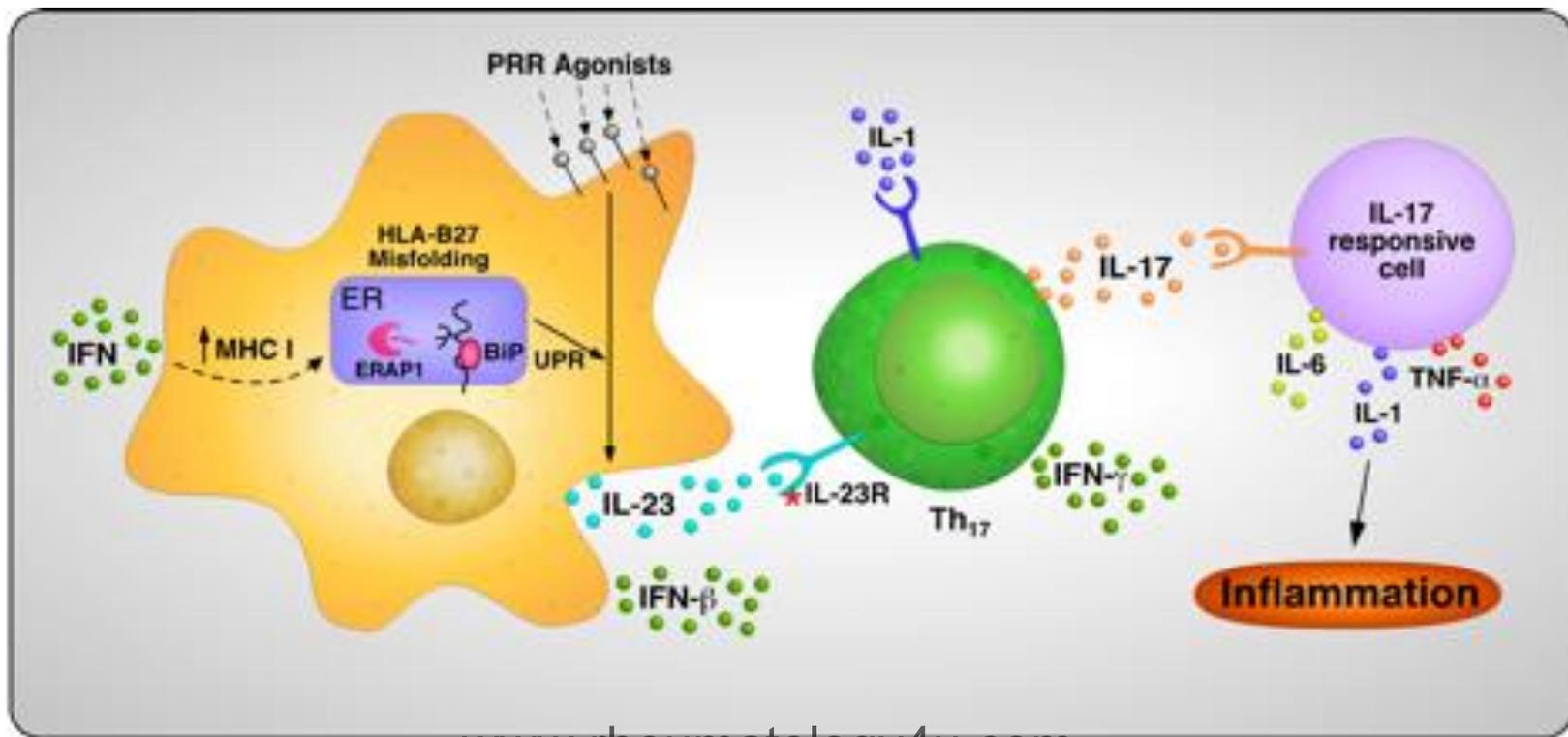
# Still not clear?

- To better understand the role of biologic therapy, imagine that your inflamed spine/ joint acts like a local post office receiving several messages from variable activated inflammatory cells in your body. These messages, which are carried via proteins (messengers), aggravate the inflammation in your joints. Stopping these messengers, will suppress the inflammation in your joints. It is called Biologic therapy as it stops proteins that are already present and formed in the human body.
- One type of the messengers is tumor necrosis factor (TNF).



# HLA-B27 and Ankylosing Spondylitis

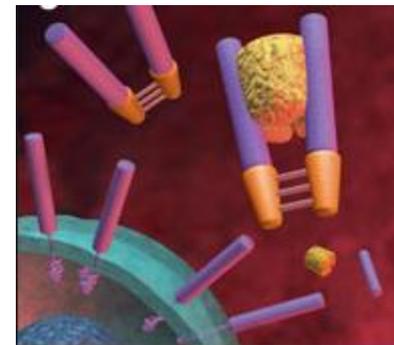
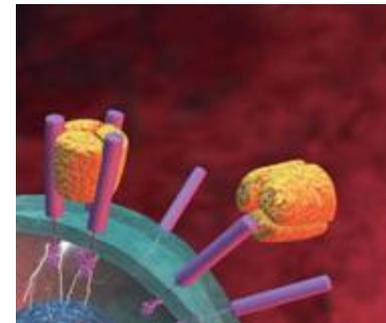
Though the development of AS is primarily determined by one's genetic make-up, which is HLA-B 27 , having HLA-B27 gene does not mean that you have or will develop Ankylosing Spondylitis. Our knowledge of how these genes and their variants work together to promote the inflammation and bone formation that occurs in AS is incomplete. However, it leads to activation of the inflammatory process and release of inflammatory mediators such as TNF, IL-6 and IL-17.



# Anti-TNF Biologic Therapy act like a magnet

In this booklet, we'll discuss the proteins used to remove the TNF messengers. These proteins are called TNF alpha blockers. There are many types of TNF blockers. Each have different structures, but they all **work like a magnet, attracting excess TNF from the blood and body tissues.** This prevents TNF from giving your inflammatory cells the message to turn on.

Anti-TNF binds work like a magnet attracting the harmful TNF from tissues and blood

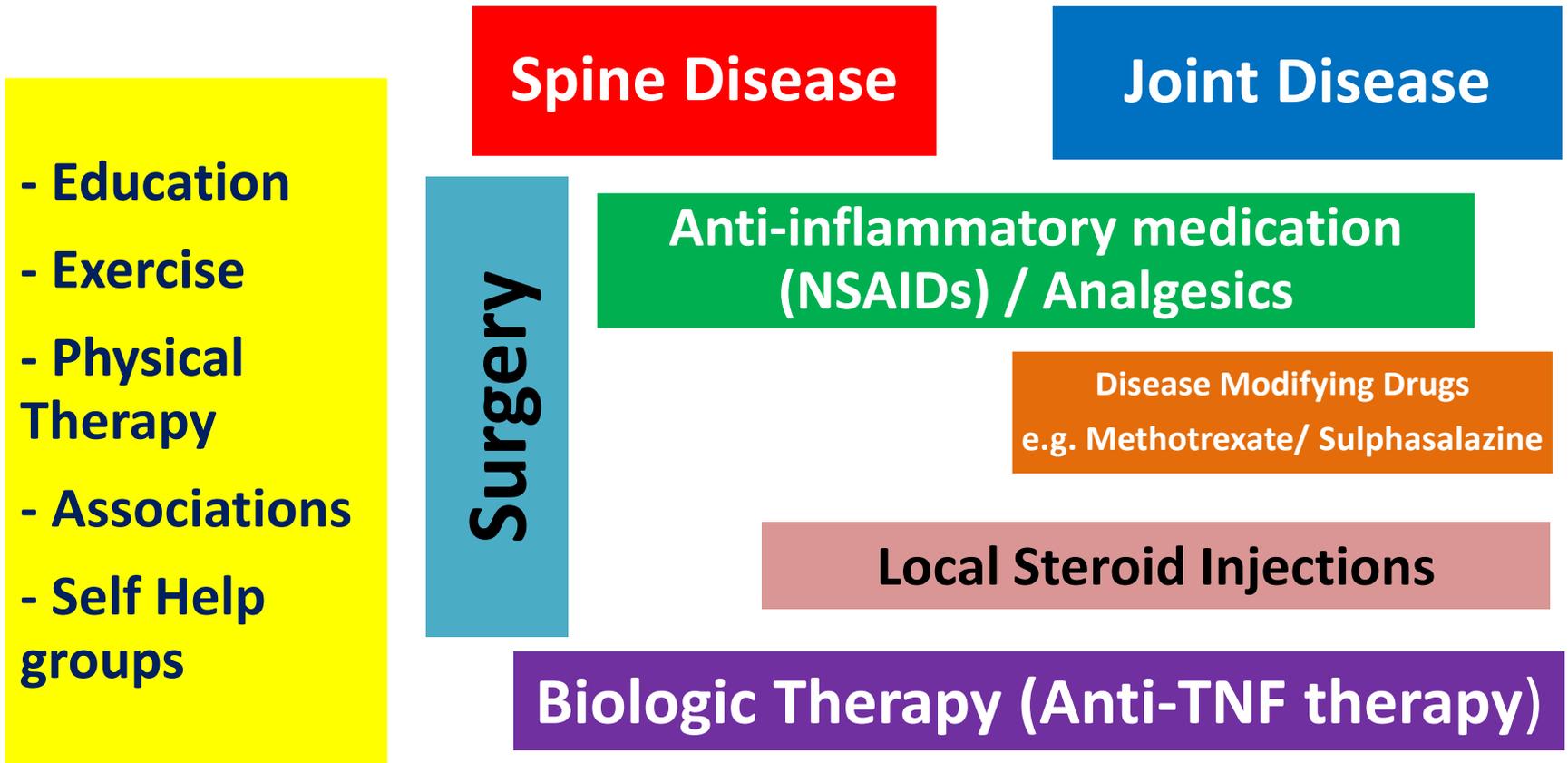


## **Anti-TNF therapy are not chemicals but proteins**

**Anti-TNF medications are simply proteins. Proteins cannot be taken orally because they would be broken down in your stomach before they could do their job. Therefore, they are given either as an injection in the skin (subcutaneous, or SC) or intravenously (drip into vein, or IV).**

**“Now as we have identified  
the problem,  
it’s time to think what to do  
next”**

# Ankylosing Spondylitis Treatment





# Treatment Options for Persistent Active disease

**You have 3 options to choose from**

**Continue  
your  
current  
Treatment**

**Start Biologic  
therapy  
together**

**Defer your  
treatment  
for the  
time being**

# Anti-TNF therapy medications available

	Infliximab*	Enbrel	Humira	Simponi	Cimzia
Experience: Used since	1999	1998	2003	2009	2009
How it works	hampering the inter-communicating proteins (messengers) which activate inflammatory cells.				
Fully Human	Part human/ part mouse	Yes	Yes	Yes	Yes
Forms of medication	IV infusion	Sub cut. injection	Sub cut. injection	Sub cut. injection	Sub cut. injection
Frequency of Injections	Every 2 months	Weekly	Every 2 weeks	monthly	Every 2 weeks
Time to kick in	2-6 weeks	2-6 weeks	2-6 weeks	2-6 weeks	2-6 weeks
Full benefit expected by	3-6 months	3-6 months	3-6 months	3-6 months	3-6 months

\* Though Infliximab is licensed for Ankylosing Spondylitis, NICE was not in favor of giving it for NHS patients for cost implications.

# Why do you need to take Biologic therapy?

## Understanding the Benefits

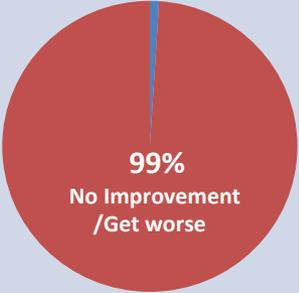
Stop or suppress spine / joint inflammation	Minimize Pain and swelling	Hamper / prevent Spine / Joint Damage	Allow you to continue living in the way you like and able to do your job.
---	----------------------------	---------------------------------------	---

Improvements from Anti-TNF are usually sustained, which allows many patients to continue it for 5 years or more.

# What are my Chances of Improvement?

## Spine Affection

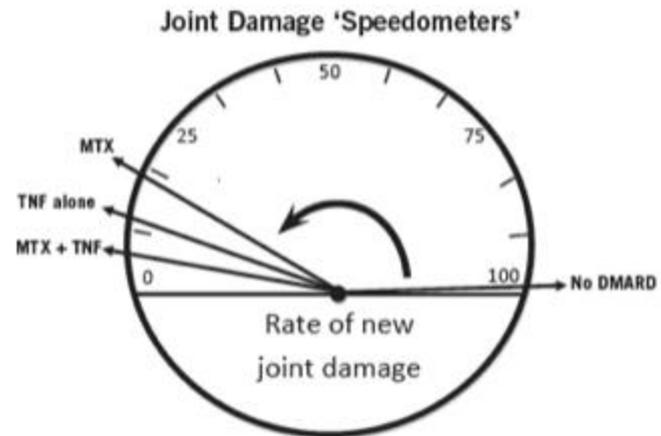
Some patients improve more than others with a new treatment

No Treatment	Anti-TNF
 <p>A pie chart with a very small blue slice representing 1% and a large red slice representing 99%. The text '99% No Improvement / Get worse' is centered in the red area.</p>	 <p>A pie chart with a blue slice representing 70% and a red slice representing 30%. The text '70% Improve' is in the blue area and '30% No' is in the red area.</p>
<p><b>No Treatment:</b></p> <ul style="list-style-type: none"><li>-Disease will get worse</li><li>- Spine Damage</li><li>-Difficulty in doing Activities of daily life.</li></ul>	<p><b>After starting Anti-TNF therapy:</b></p> <ul style="list-style-type: none"><li>- 70% of patients will have major improvement</li></ul>

# Understanding the Benefit

## Slowing the Joint Damage

Treatment	Approximate reduction of Joint damage each year
No Treatment	0%
Methotrexate (MTX)	85%
Anti-TNF	90%
Anti-TNF + MTX	95%



# Understanding Side Effects

**All drugs have the potential for benefit and harm**

- **Because TNF blockers reduce the activity of the hyperactive immune cells, it can also reduce your ability to fight off infections.**
- **There are three types of infections:**
  - **acute,**
  - **chronic,**
  - **Latent (The organism is present in the body but not causing any symptoms).**

# Understanding Side Effects (2)

## Acute Infections

These are infections that begin rapidly and usually go rapidly with treatment. They have a known cause and can be cured if given the proper treatment. Examples:

### Non-serious Acute infection

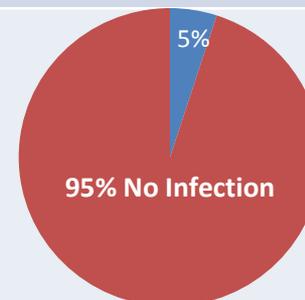
- Examples are: Bronchitis / Sinusitis.
- Can be easily treated.

### More serious acute infection

- Examples are: pneumonia, kidney or skin infections
- Infections can be severe enough for you to be admitted to hospital for one or more days to receive antibiotics through the vein and/or other care like IV fluids and oxygen.

**Who is At higher risk: If you are >65 years old, have other medical problems such as diabetes or chronic lung disease, or take prednisone, your risk may be higher. If you are young and healthy your risk may be lower. TNF blockers should not be taken by persons with HIV (Human Immunodeficiency Virus).**

**What are my chances of having a serious infection over 1-year of treatment?**



# Understanding Side Effects (3)

## Chronic Infections

Chronic infections are infections that begin slowly and can last for many years.

If a TNF blocker is used in a person with chronic infection, the body's ability to control this infections can be reduced, resulting in the spread of the infection throughout the body.

Examples:

Chronic Hepatitis B & C

chronic skin ulcer, bone infections or another ongoing chronic infection

it is important that your doctor knows if you have any of these chronic infections. These types of infections must be completely removed from your body before treatment with a TNF blocker is safe.

# Understanding Side Effects (4)

## Latent Infections

These are inactive infections which can be reactivated by Biologic Anti-TNF therapy.

If a TNF blocker is used in a person with latent infection, the body's ability to control this infections can be reduced, resulting in the spread of the infection throughout the body.

Tuberculosis (T.B.)	chicken pox (varicella) & shingles (herpes zoster).	Fungal Infections
<p>-30% of people in the world carry TB in a latent state.</p> <p>-Latent TB sleeps in a person's lungs. Similar to shingles, the TB virus can be awoken if someone is given treatments (like TNF blockers) that reduce the activity of the immune system.</p> <p>-If TB wakes up, it becomes active and spread to other parts of the body. This can be a danger to you and others. You could infect people around you- like your family and co workers- because TB is spread through the air.</p>	<p>Even after a child's acute chicken pox infection is over, the virus is never completely removed from the body. Instead, the virus stays in your body and 'sleeps'. When the virus is asleep, you do not have any symptoms of the virus. Later in life, it is possible for the skin infection to flare. This is called herpes zoster, or shingles. It is possible that TNF blockers can wake up the sleeping virus.</p>	<p>Examples:</p> <p>-histoplasmosis, coccidioidomycosis, candidiasis, aspergillosis, blastomycosis, &amp; pneumocystosis.</p> <p>-You can get these infections if you inhale dust from the soil of areas where these fungi live. If you inhale the fungi, it enters your lungs.</p>

### Advice for reducing TB reactivation:

1. Have a test for TB before starting anti- TNF therapy e.g. T-spot / IGRA test.
2. If you have a positive latent T-spot test, you have to have a course of anti-tuberculous therapy for 3 months before starting your biologic therapy. This will make the chance of TB becoming active very small. If you do not take a preventative course, the chance of TB becoming active is 2-10 times

# Understanding Side Effects (5)

## Immune Reactions

Although TNF blockers can be used to treat diseases like Ankylosing Spondylitis, there are some immune diseases, like multiple sclerosis (MS), which can get worse if you take a TNF blocker.

**Therefore, people who have MS should not use TNF blockers.**

Rarely, protein treatments- like TNF blockers- activate the body's defense (immune) system. A reaction like this can become a serious problem. It may lead to nerve damage, lupus-like reactions, low blood counts, or other problems. It is not known how often this occurs, but some experts estimate that 1 person out of 5,000 on a TNF blocker will have this kind of problem.

- Advice for reducing Immune Reactions:

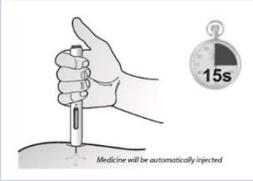
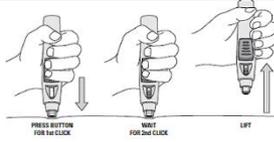
1. Tell your doctor about any unusual symptom or illness you sustain.
2. Get blood tests and urine check regularly.
3. Do not take anti-TNF therapy if you have MS.

# Understanding Side Effects (6)

## Advice for Reducing Serious side effects

- 1. Before starting the therapy, have a blood check, TB test and chest X-ray.**
- 2. After starting the therapy, check the blood every 2-3 months.**
- 3. Have your regular vaccinations (flu injection).**
- 4. See the treating doctor regularly.**
- 5. If you have a chest cold or other infection that is more severe or lasts longer than expected, seek medical advice.**

# Simple comparison of the anti-TNF medications

	Infliximab	Enbrel	Humira	Simponi	Cimzia
Injecting Device					
Method of Injection	IV	Sub Cut	Sub Cut	Sub Cut	Sub Cut
Frequency	Every 2 month	Weekly	Fortnightly	Monthly	Fortnightly
% of patients continue taking the medicine after 2-yr of treatment	<b>78%</b>	<b>70%</b>	<b>80%</b>	<b>82%</b>	
Reaction at the site of injection	Not Applicable	<b>36%</b>	<b>13.6%</b>	<b>5.1%</b>	<b>5.8%</b>
Development of auto antibodies to the medication	<b>10-44%</b>	<b>0-5.6%</b>	<b>1-87%</b>	<b>0-6.5%</b>	<b>5-8.1%</b>

# Weighing up the Facts

Possible Benefits	Possible Side effects
<ul style="list-style-type: none"><li>• Less pain, stiffness and fatigue</li><li>• Improve physical function</li><li>• Reduce progression of Spine / joint damage</li><li>• Prevent complications of active Ankylosing Spond.</li><li>• Use less anti-inflammatory drug therapy or steroids</li></ul>	<ul style="list-style-type: none"><li>• Infusion or injection site reactions</li><li>• TB reactivation</li><li>• Serious infection</li><li>• Immune reactions</li></ul>

# Sorting it out

## What is most important for me?

Please tick

	Very Important	Somewhat Important	Not Important
Improve Pain & Function			
Reduce Spine /Joint Damage			
Possibility of infection			
Possibility of immune reaction			
Other side effects			

# Moving Toward a Decision

Please tick in front of your decision. You may find it helpful to write the Pros & Cons

Your decision	Pros	Cons
Continue current medication <input type="checkbox"/>		
Start Anti-TNF medic. <input type="checkbox"/>		
Which Medication? .....		
Think more about other options <input type="checkbox"/>		
Defer Choice for now <input type="checkbox"/>		

# Reflecting on Your Decision

- **As you work towards making a decision for your inflammatory arthritis, please tick the box to let us know whether these statements are true for you:**
- **I have been informed about my treatment options, as well as its benefits and possible risks.**
- **I am clear about which benefits and risks matter most to me.**
- **I am fully aware of my choices and have been given the chance to be involved in the decision.**
- **I feel I had enough support and advice enabling me to make a choice.**
- **I am aware of the nature of my disease and feel satisfied with my decision.**
- **If most or all of these statements are true for you, you are on your way to a good decision.**
- **If not, you may want to talk further with your doctor, nurse, family or other important support persons**

Signature: .....

Date:        /        /201

# Thank you

- **You may hand this over now to your treating Health Care Professional.**

# References

- Donahue KE. Systematic Review: Comparative Effectiveness and Harms of Disease-Modifying Medications for Rheumatoid Arthritis. *Annals Intern Med* 2008;148:124-134.
- Bathon J. A comparison of etanercept and MTX in patients with early rheumatoid arthritis. *N Engl J Med*. 2000 Nov 30;343:1586-93.
- Walker AM. Determinants of serious liver disease among patients receiving low-dose methotrexate for rheumatoid arthritis. *Arthritis Rheum*. 1993;36:329-35.
- Carroll GJ. Incidence, prevalence and possible risk factors for pneumonitis in patients with rheumatoid arthritis receiving MTX. *J Rheumatol*. 1994;21:51-4.
- Katchamart W, Trudeau J, Phumethum V, Bombardier C. Methotrexate monotherapy versus methotrexate combination therapy with non-biologic disease modifying anti-rheumatic drugs for rheumatoid arthritis. *Cochrane Database Syst Rev*. 2010 Apr 14;(4):CD008495.
- Singh JA et al. 2012 update of the 2008 American College of Rheumatology recommendations for the use of disease-modifying antirheumatic drugs and biologic agents in the treatment of rheumatoid arthritis. *Arthritis Care Res (Hoboken)*. 2012 May;64(5):625-39.
- <http://www.mi-arthritis.com/patient-decision-aids/>

# Origin of Hip Pain

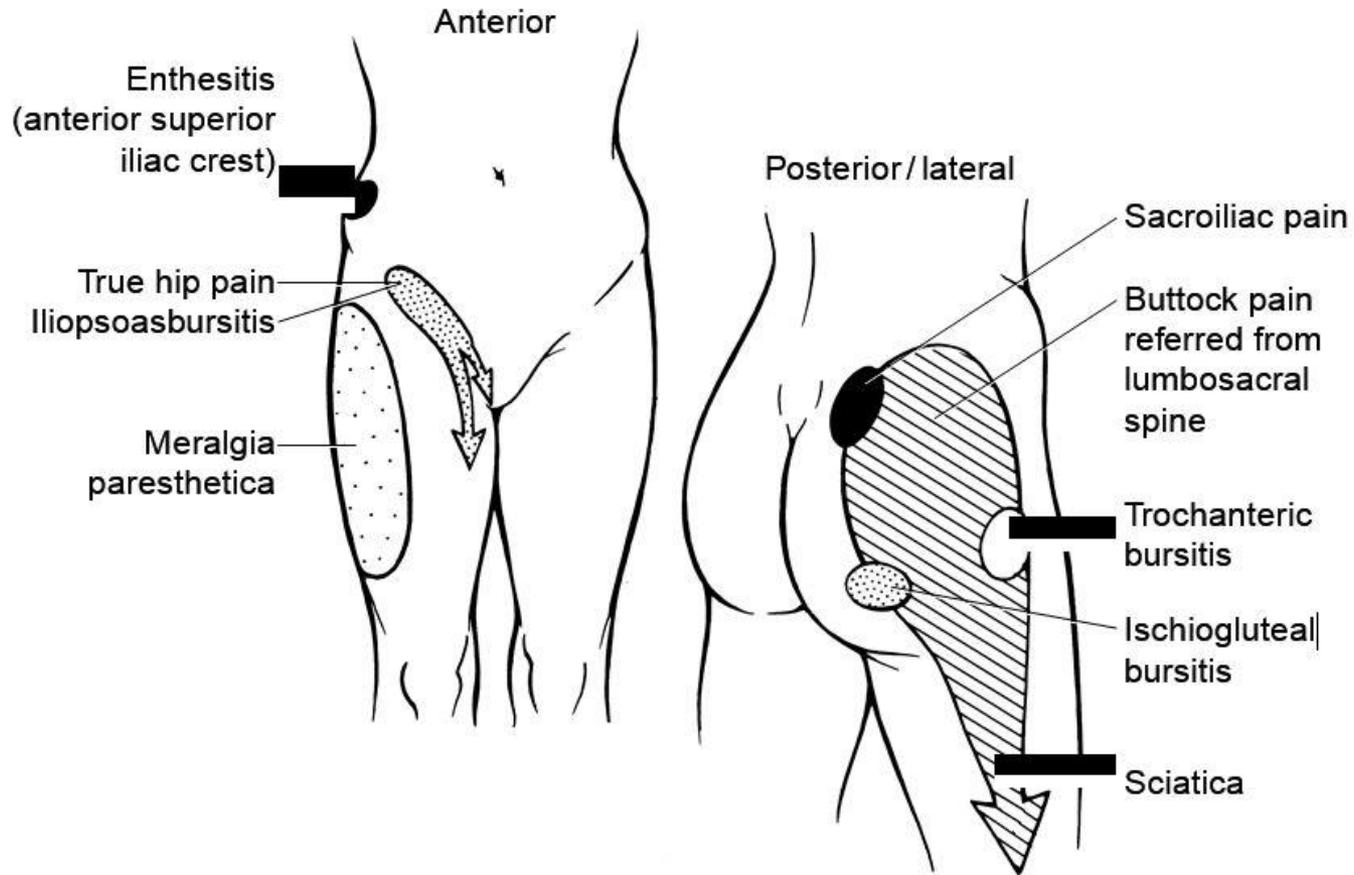


Figure 5. Origins of hip pain.