

# Rheumatoid Arthritis from Untreatable Condition to Cure in one Working Lifetime

Medicine For Members  
Tuesday 26 September.



# Brine Baths



# No Future !

Pincus T.

Rheumatoid arthritis:  
disappointing long-term  
outcomes despite successful  
short-term clinical trials. *J Clin  
Epidemiol.* **1988**;41(11):1037-  
41.



# I have arthritis then what.....





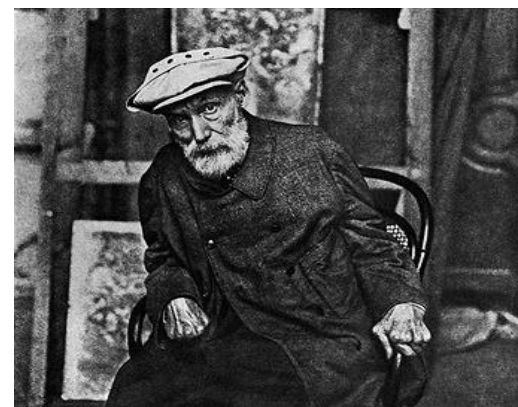
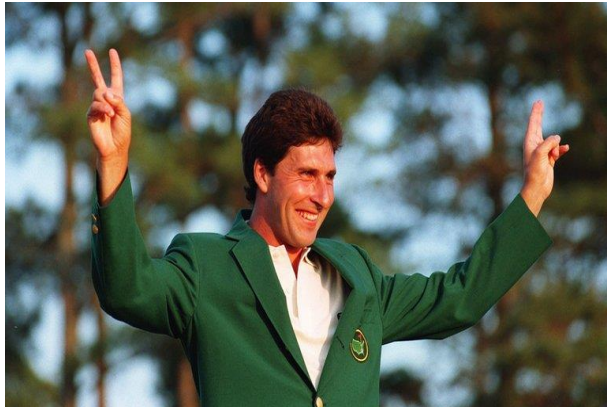
# Rheumatoid Arthritis



It's the second-most common form of arthritis, affecting one per cent of the UK population - approximately 690,000 people - and there are 20,000 new cases per year, according to The British Society for Rheumatology.



# Who?



ST. MARY'S

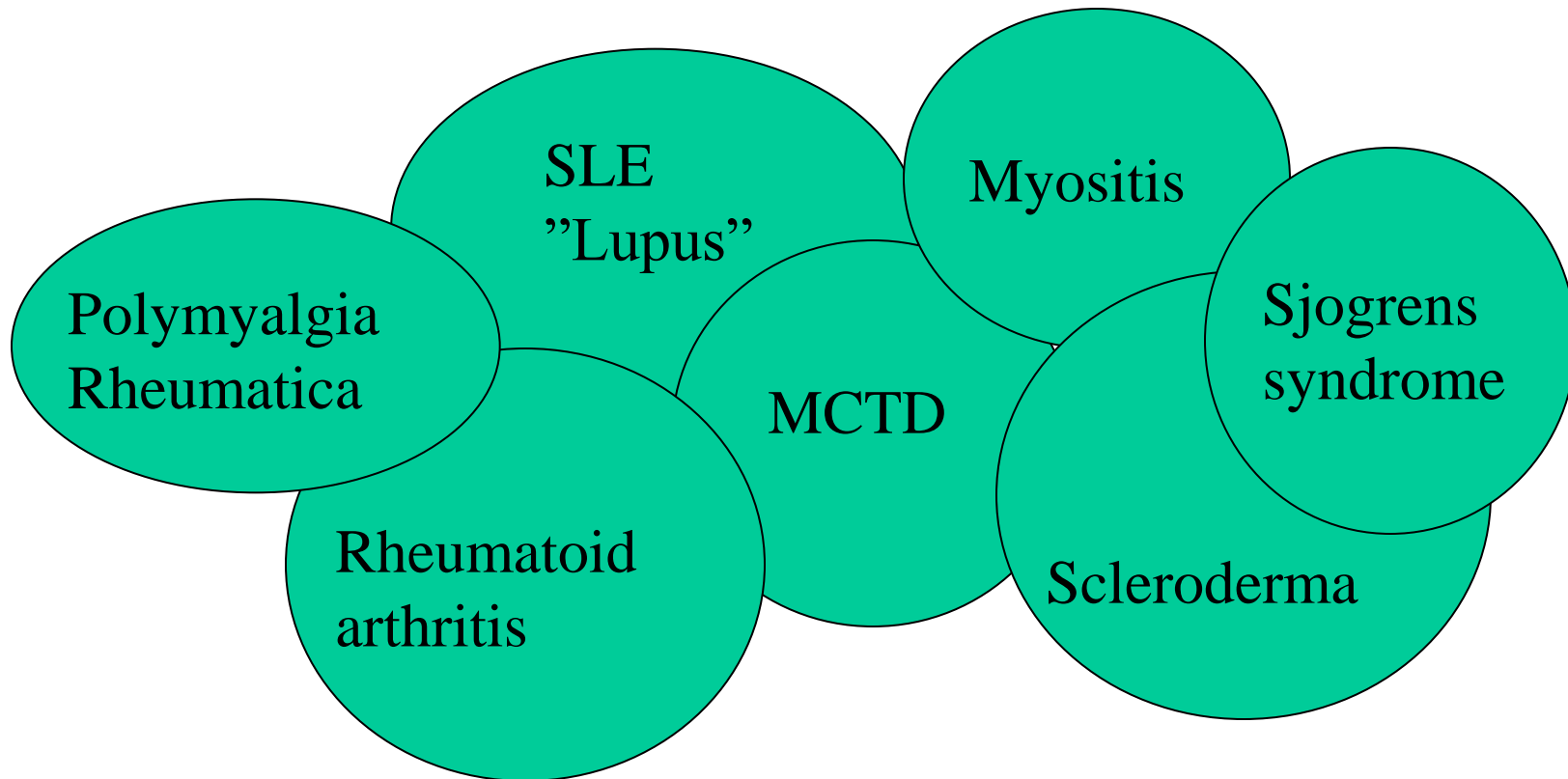
Chimeric A2 (cA2) Monoclonal Antibody

Influenza

- Obtains immunoreactivity for influenza antigens
- Binds to TPA with high affinity and specificity

Year	Value
1998	10
1999	20
2000	30
2001	40
2002	50
2003	60
2004	70
2005	80
2006	90
2007	100

# The Family of Connective Tissue Disorders



# Features:

## Rheumatoid Arthritis

- Symmetrical arthritis
- Tendonitis
- Muscle atrophy
- Nodules
- Nerve entrapment
- Lung Involvement
- Eye Disease
- Jaw disease
- Muscle disease
- Liver disease
- Stroke and Heart Disease
- Secondary: amyloid, drug induced, infections





# What is Rheumatoid Arthritis ?

- Loss of normal inflammatory balance
- Switch to indefinite inflammatory response
- Joint lining converted into a tissue which in some ways acts like a
- Cancer like tissue destroys cartilage and then bone



# Improved Use of What we Have

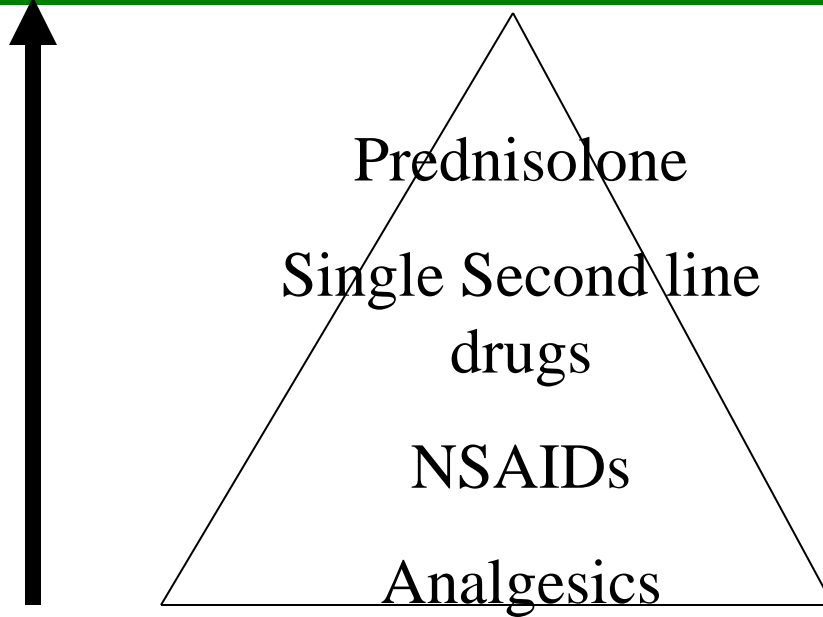


# Conventional Drugs

- D-penicillamine, Gold Salts
- Hydroxychloroquine
- Sulphasalazine
- Anti cancer drugs, methorexate
- Leflunomide
- (Prednisolone)



# Treating RA in the last Millennium

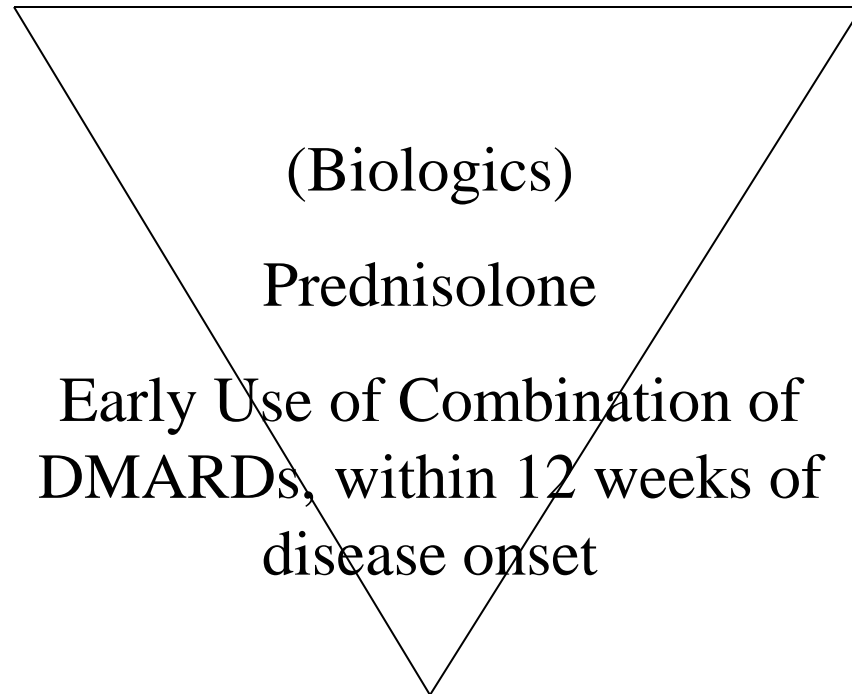
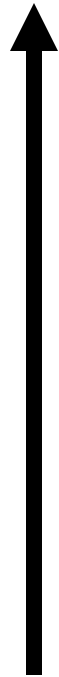


Admission, injection, immunosuppressive therapy, surgery





# The Shifted Paradigm

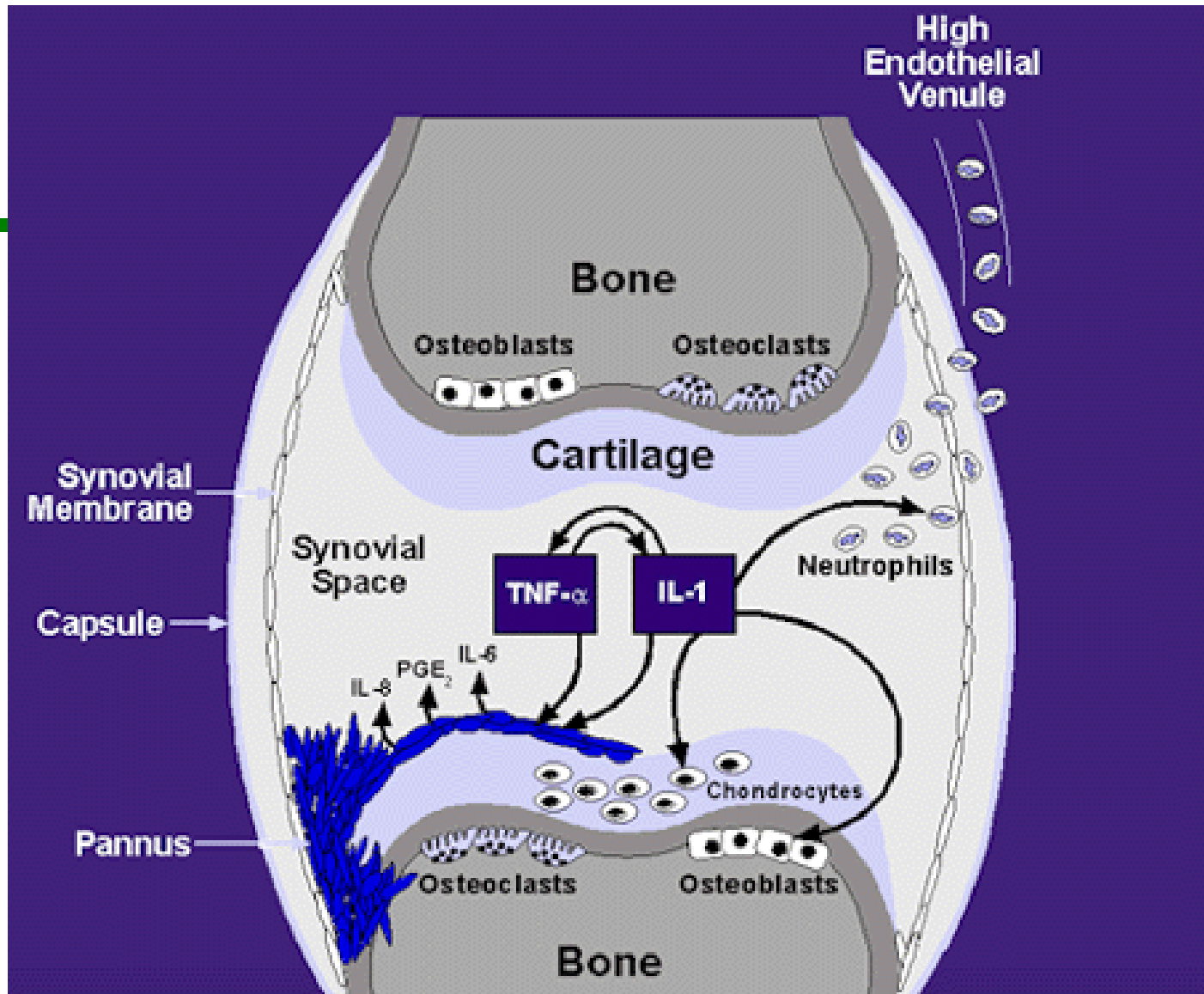


Positive rheumatoid factor, high ESR, genetic markers, nodules



# New Therapies





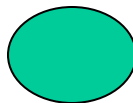
# Chemical Messengers and Inflammation

## Inflammation Stimulating

- TNF alpha
- IL-1
- IL-6

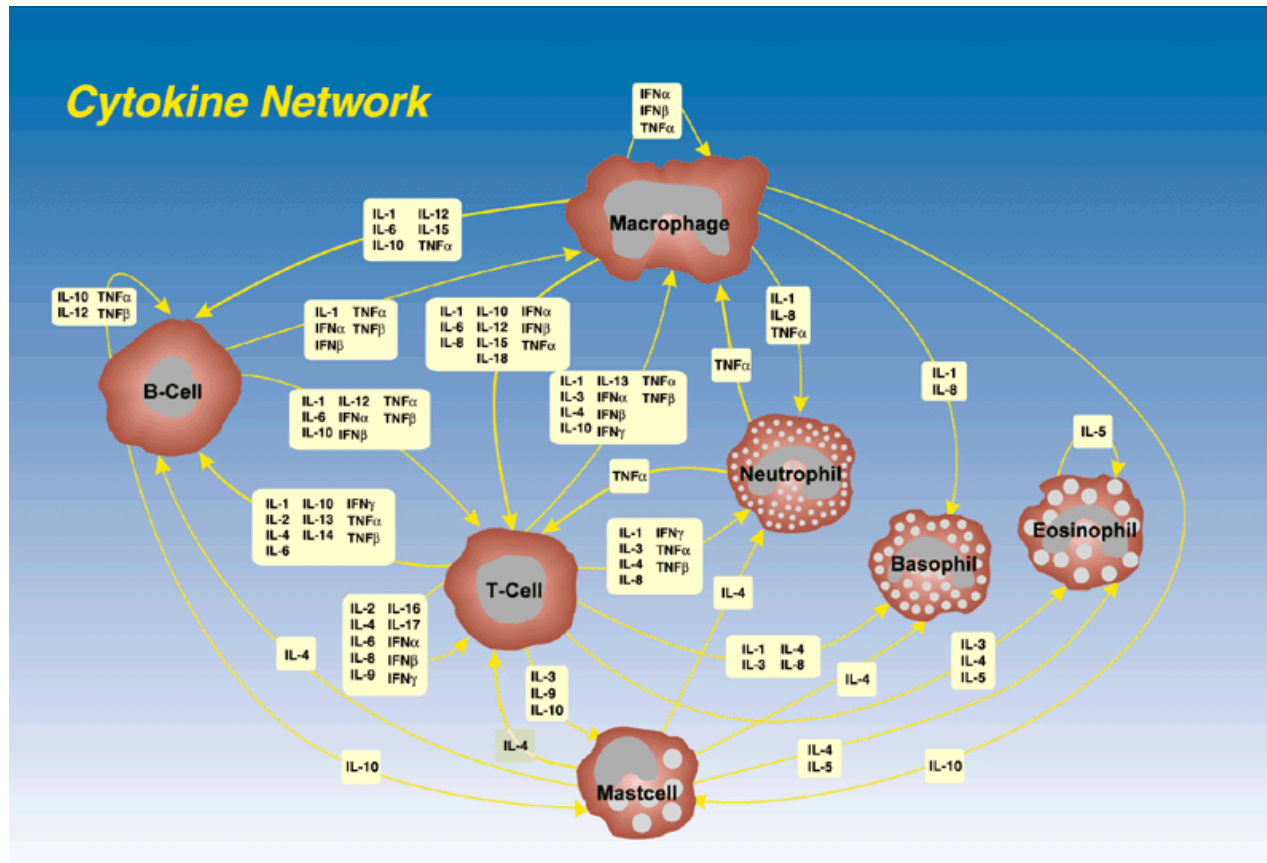
## Inflammation Suppressing

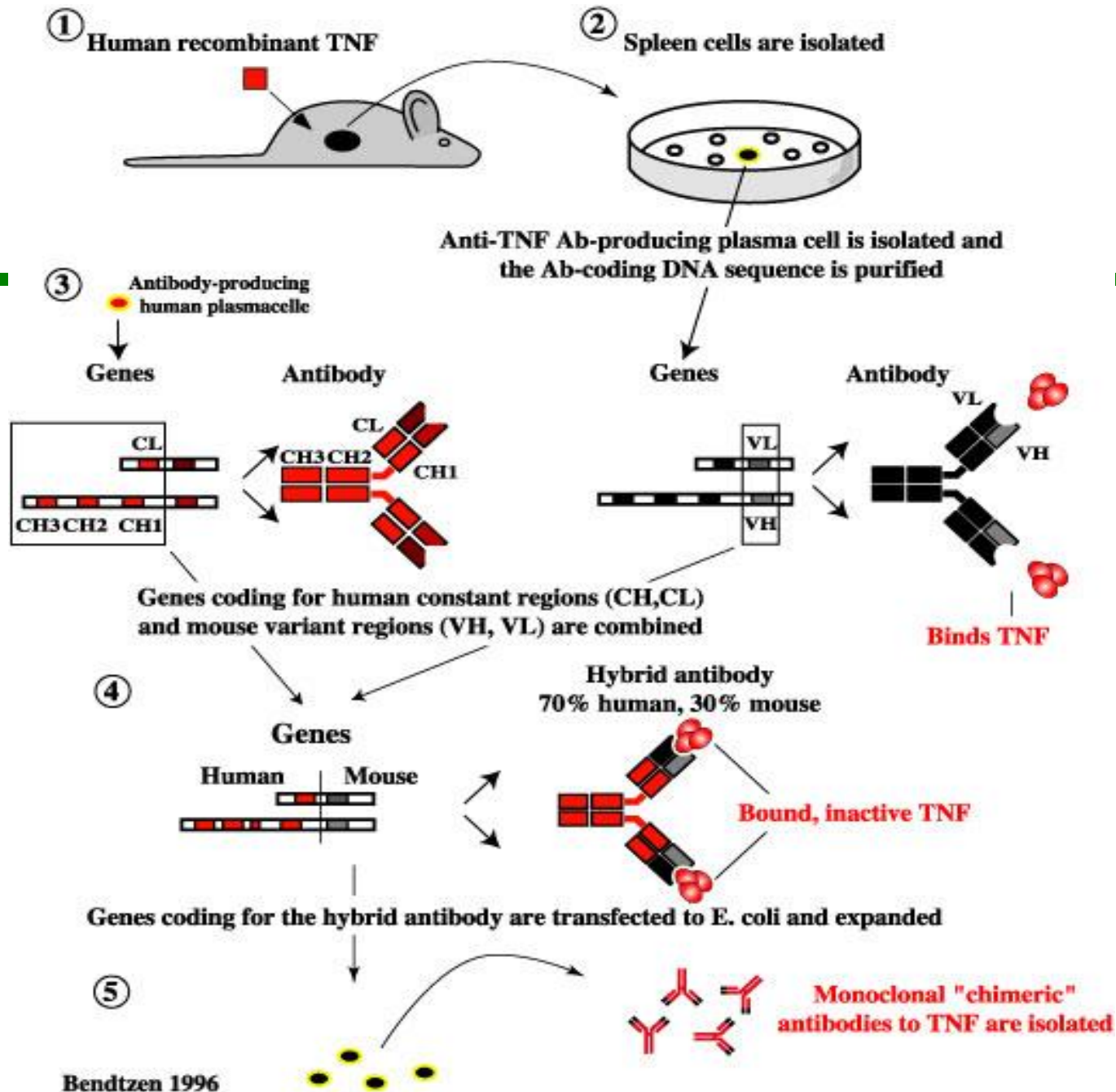
- Soluble TNF receptor
- Soluble IL-1 receptor
- IL-4
- IL-10
- TGF beta





# Cytokine Network



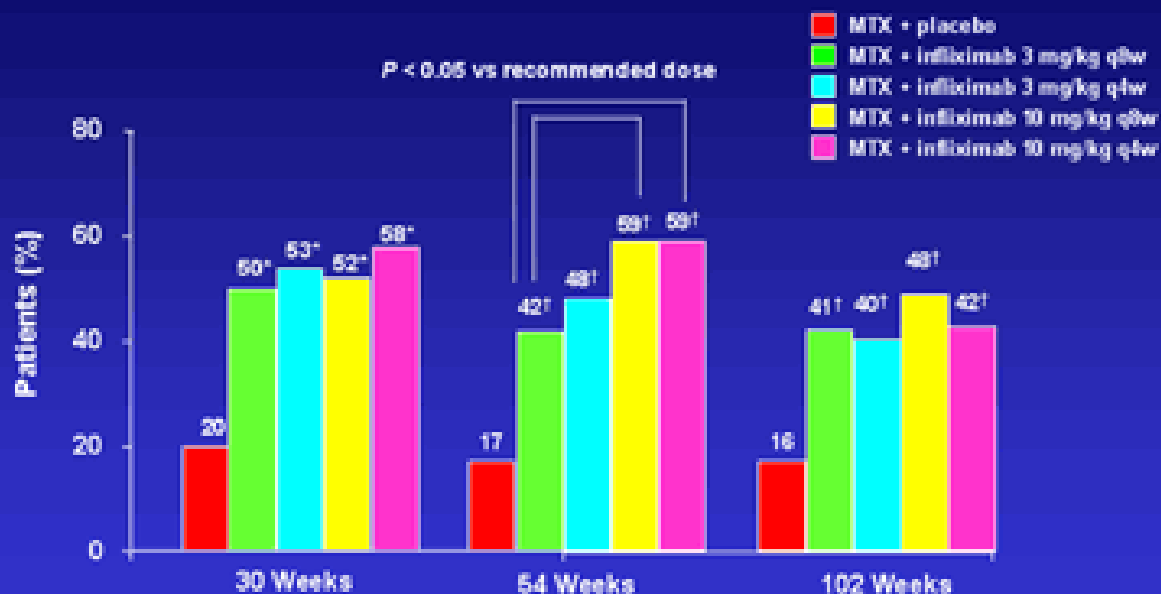


Bendtsen 1996



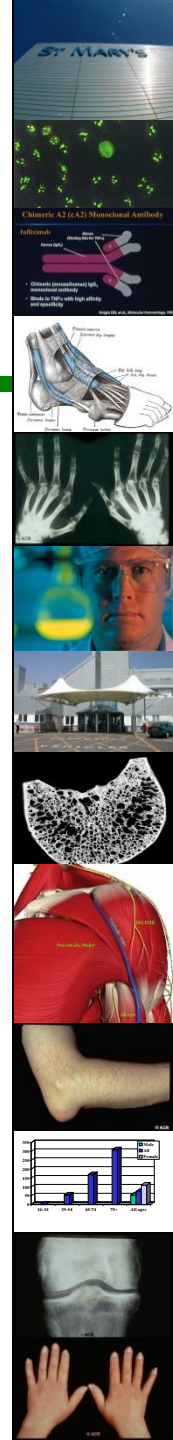
# Infliximab

## ATTRACT Trial: Infliximab/Methotrexate (MTX) Combination: ACR20 Response

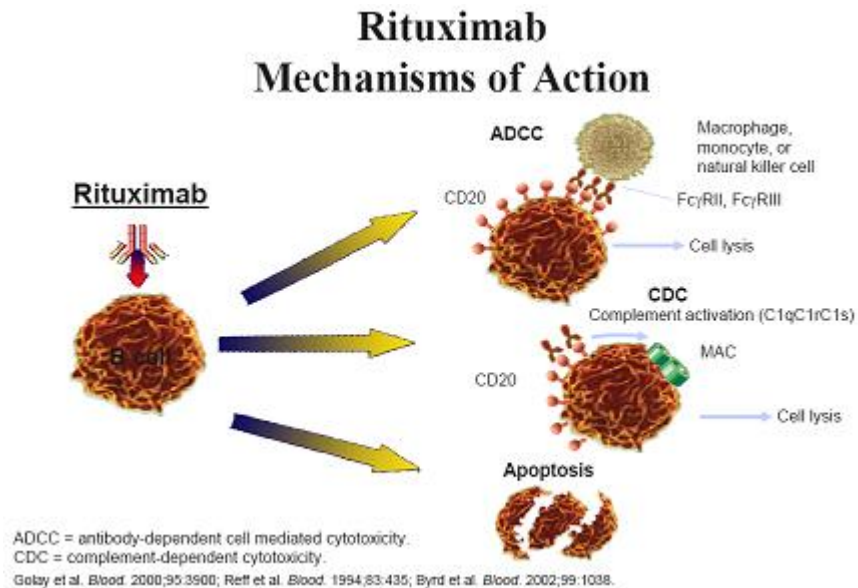


\**P* < 0.001 vs control  
 †*P* < 0.05 vs control.

Maini R et al. *Lancet* 1999; 354(9194): 1932-1939.  
 Lipsky PE et al. *Arthritis Rheum.* 1999.  
 Lipsky PE et al. *Arthritis Rheum.* 2000;43 (suppl): S269.



# Rituximab

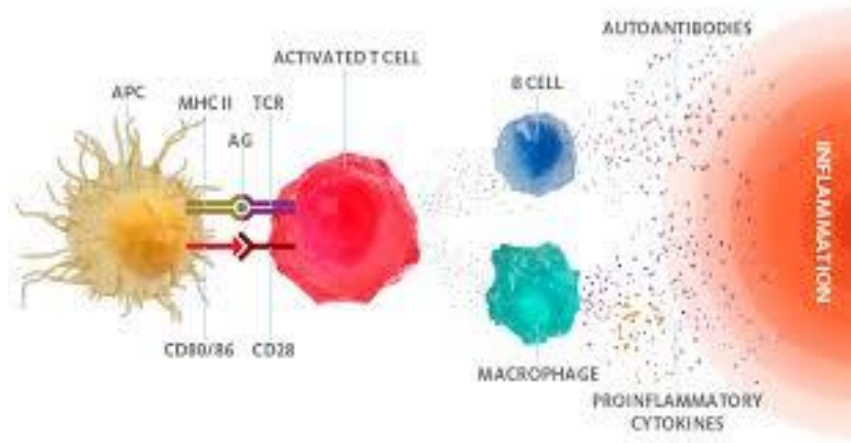


Anti B-Cell therapy binds to CD-20





# Abetacept



Anti CTLA-4Ig



# Tocilizumab (Actemra)

- IL-6 receptor, binds free IL-6
- Regulates immune responses, haematopoiesis, acute phase Responses and bone metabolism
- 98% good or moderate response in DAS 28 scores
- Viral infection, pneumonitis, secondary bacterial infection



# Contra-indications to treatment

- Active significant infection
- Septic arthritis of a native joint within 12 months
- Indefinitely in the case of a septic replaced joint if the joint remains in situ
- NY Heart Association grade 3 or 4
- Clear history of demyelinating disease
- Pregnant or breast feeding women



# Baricitinib

- Baricitinib, an oral JAK-1/JAK-2 inhibitor for the treatment of rheumatoid arthritis (March 2017)
- Tablet treatment as effective as biologics





# Rheumatoid Arthritis

- 20% of patients will have mild disease
- 5% will have severe disease
- 75% will have ongoing disease of which about half can be maintained in remission



# Can treatment be stopped?

- More likely if you start treatment early e.g. within 6 months of symptom onset
- Most patients can reduce treatment once remission is achieved
- About 1 in 8 patients can stop treatment and stay off treatment at 12 months



# What Can Patients Do To Manage Themselves

- Stop smoking
- Take exercise
- Correct being overweight
- Learning about condition, being able to recognise flare ups





# Rheumatoid Arthritis and Diet

A study published in 2017 in the Annals of Rheumatic Disease found a healthier diet when you're younger can reduce risk, particularly in women who experience an onset of the condition before the age of 55. The researchers also found lowering BMI, increasing fatty acid intake and having a modest alcohol consumption has a positive effect.



# Rheumatology: A Team Approach

- Primary Care Doctor
- Rheumatologist
- Surgeons
- Physiotherapist
- Occupational Therapist
- Nurse (Specialists)
- Pharmacists
- Appliance Makers
- Medical Social Workers
- Orthotists







# Osteoarthritis



# Conclusion

- The basic immunology
- Better understanding of early disease
- Development of combination therapy and new drugs

