CHILDHOOD ARTHRITIS

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My Granny had arthritis….children don’t get arthritis!

Do They???

Musculoskeletal Examination

- PGALS
  - Paediatric
  - Gait
  - Arms
  - Legs
  - Spine

REPORTS ON THE RHEUMATIC DISEASES SERIES 5

Hands On

Practical advice on management of rheumatic disease

pGALS – A SCREENING EXAMINATION OF THE MUSCULO-SKELETAL SYSTEM IN SCHOOL-AGED CHILDREN

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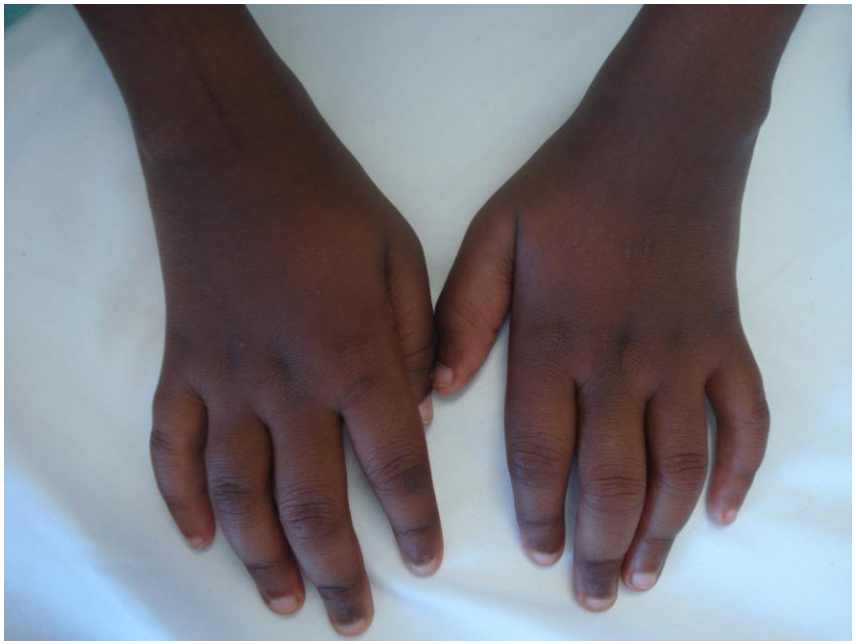
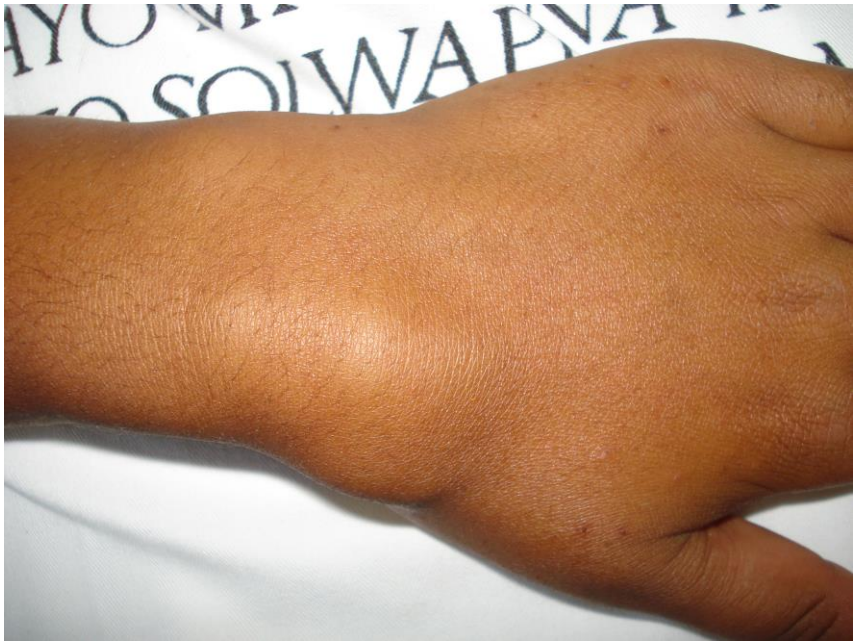
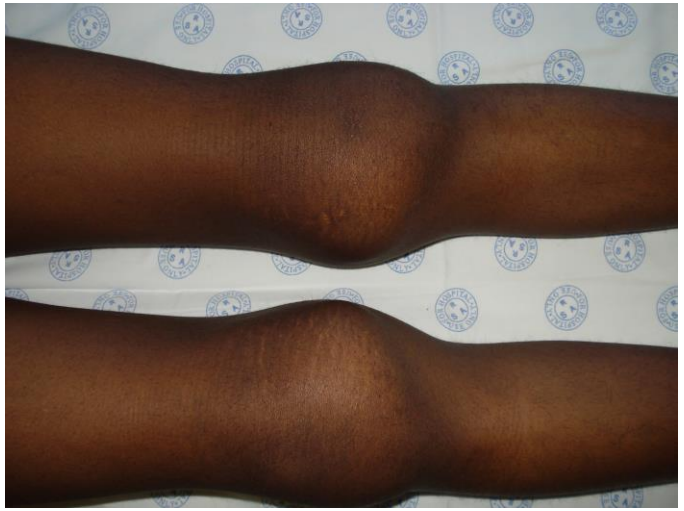
June 2008 No 15

Joint swelling







	'Try and touch your shoulder with your ear'	• Cervical spine lateral flexion
	**'Open wide and put three (*child's own*) fingers in your mouth'**	• Temporomandibular joints (and check for deviation of jaw movement)

	Passive movement of hip (knee flexed to 90°, and internal rotation of hip)	• Hip flexion and internal rotation
	'Bend forwards and touch your toes?'	• Forward flexion of thoraco-lumbar spine (and check for scoliosis)

Practical Tip – while performing the pGALS screening examination

- Get the child to copy you doing the manoeuvres
- Look for verbal and non-verbal clues of discomfort (e.g. facial expression, withdrawal)
- Do the full screen as the extent of joint involvement may not be obvious from the history
- Look for asymmetry (e.g. muscle bulk, joint swelling, range of joint movement)
- Consider clinical patterns (e.g. non-benign hypermobility and Marfanoid habitus or skin elasticity) and association of leg-length discrepancy and scoliosis)

Practical Tip – normal variants: indications for referral

- Persistent changes (beyond the expected age ranges)
- Progressive or asymmetrical changes
- Short stature or dysmorphic features
- Painful changes with functional limitation
- Regression or delayed motor milestones
- Abnormal joint examination elsewhere
- Suggestion of neurological disease or developmental delay

Diagnosis?

- Arthritis?
  - Trauma?
  - Septic?
  - Haemarthrosis?
  - Malignancy?
  - Infection-TB,HIV
  - Rheumatic Fever?
  - Avascular Necrosis?
  - Reactive Arthritis?
  - Benign Hypermobility Syndrome?
  - Growing Pains?

Practical Tip – when inflammatory joint disease is suspected

- The lack of reported pain does not exclude arthritis
- There is a need to probe for symptoms such as
  - gelling (e.g. stiffness after long car rides)
  - altered function (e.g. play, handwriting skills, regression of motor milestones)
  - deterioration in behaviour (irritability, poor sleeping)
- There is a need to examine all joints as joint involvement is often 'asymptomatic'

RED FLAGS

(Raise concern about infection, malignancy or non-accidental injury)

- Fever, malaise, systemic upset (reduced appetite, weight loss, sweats)
- Bone or joint pain with fever
- Refractory or unremitting pain, persistent night-waking
- Incongruence between history and presentation (such as the pattern of the physical findings and a previous history of neglect)

Differential

- **Trauma?**
  - History, Don't be fooled
  - NAI
- **Septic?**
  - Sick, fever
  - Single joint (not always!!)
  - Severe pain-joint frozen
- **Haemarthrosis?**
  - Family history
  - Boys
  - bruising

- **Infectious**
  - TB (Poncets or Joint infection)
  - HIV
  - Rubella, Parvovirus
- **Malignancy?**
  - FTT
  - Fever, constant symptoms
  - Pallor/Petechiae
  - Bone pain vs joint
- **Rheumatic Fever?**
  - Jones Criteria
  - Flitting Polyarthritis

Differential ctd

Growing Pains?

- Benign Nocturnal Musculosketal pains
- Never in the day
- Always recovered by the morning

Benign Hypermobility

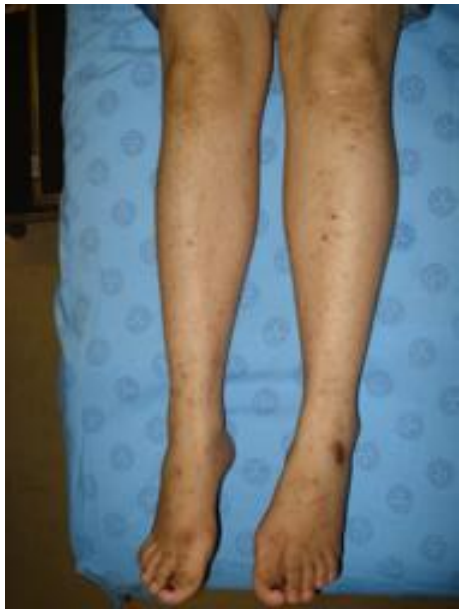
Reactive Arthritis

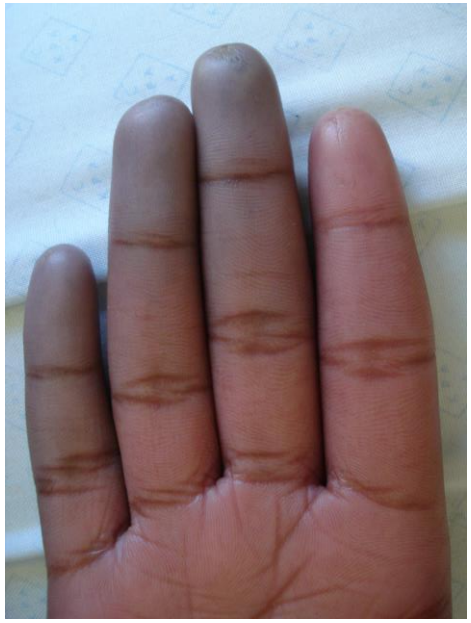
- HLA B27 associated- shigella, salmonella, campylobacter, chlamydia
- Post streptococcal
- Post viral (irritable hip)

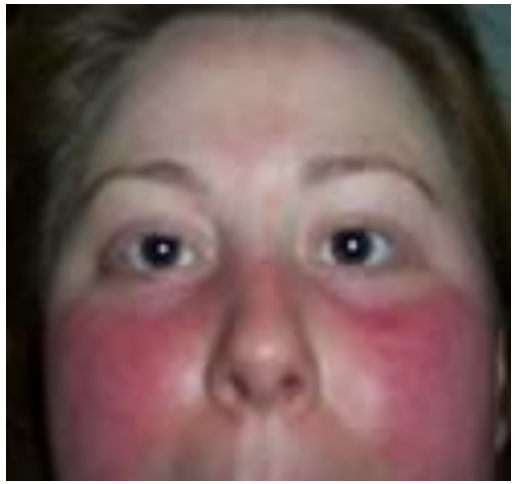
- **Mechanical**
  - Osgood Schlatter
  - SUFE
  - Overuse
- **Avascular Necrosis**
  - Mostly hips
  - Kohler(Navicular)
  - Freibergs (2nd metatarsal)

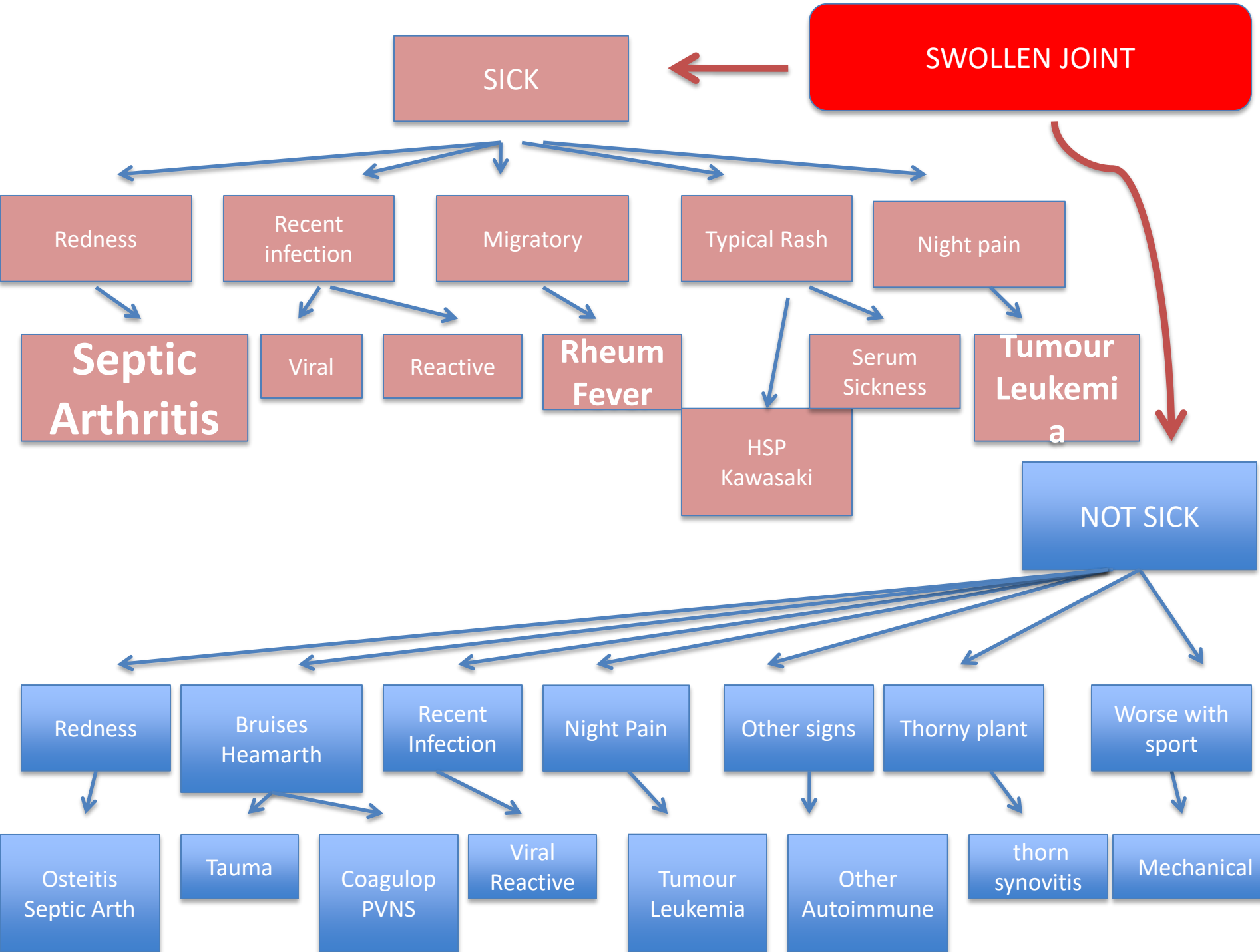
Differential CTD

- SLE
- Juvenile dermatomyositis
- Sclerdoderma
- Mixed Connective Tissue disease

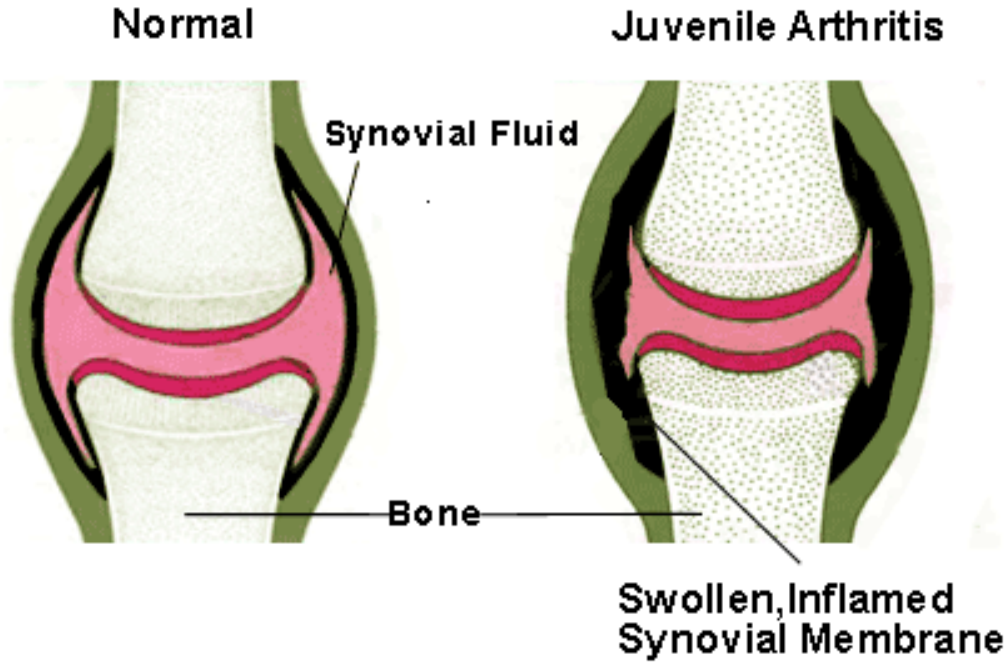







SWOLLEN JOINT
SICK
NOT SICK
Redness
Recent infection
Migratory
Typical Rash
Night pain
Septic Arthritis
Viral
Reactive
Rheum Fever
HSP Kawasaki
Serum Sickness
Tumour Leukemia
Redness
Bruises Heamarth
Recent Infection
Night Pain
Other signs
Thorny plant
Worse with sport
Osteitis Septic Arth
Tauma
Coagulop PVNS
Viral Reactive
Tumour Leukemia
Other Autoimmune
thorn synovitis
Mechanical

Juvenile Idiopathic Arthritis

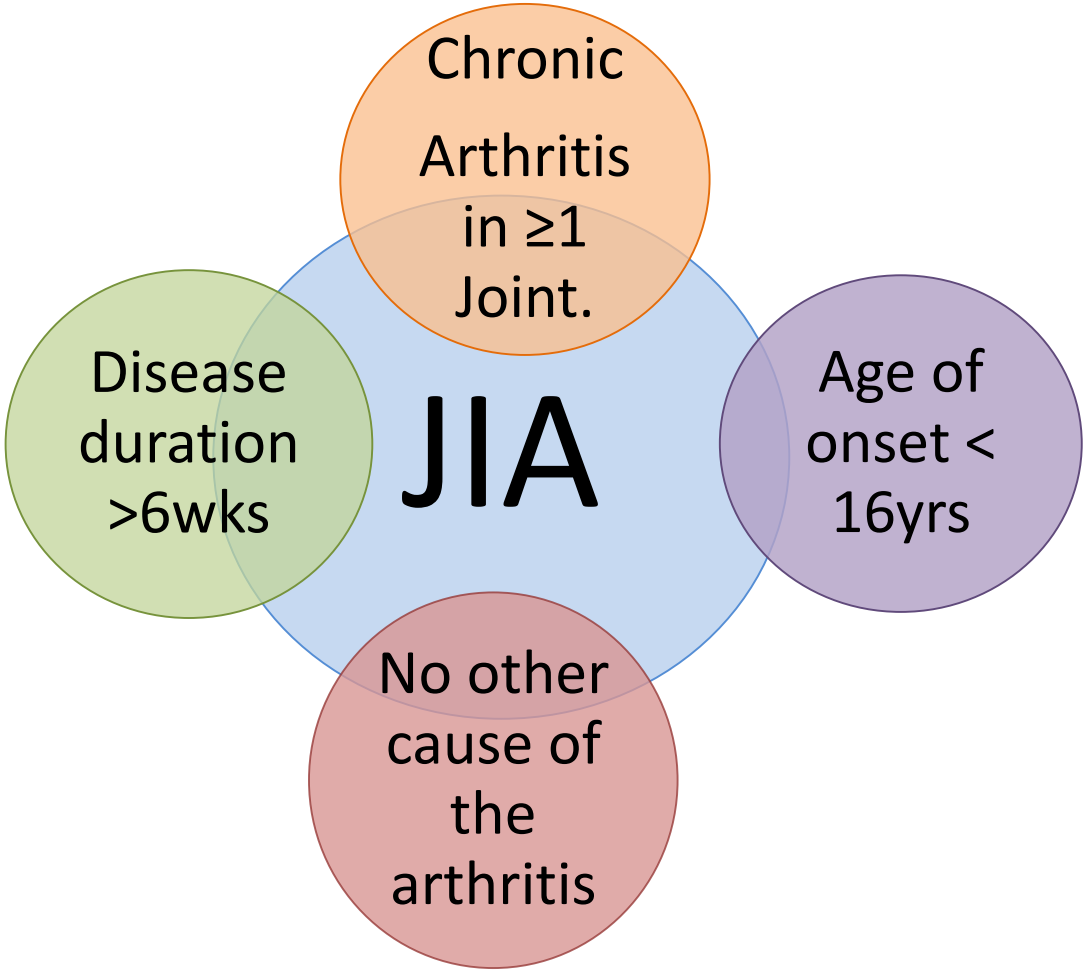


JIA: Introduction

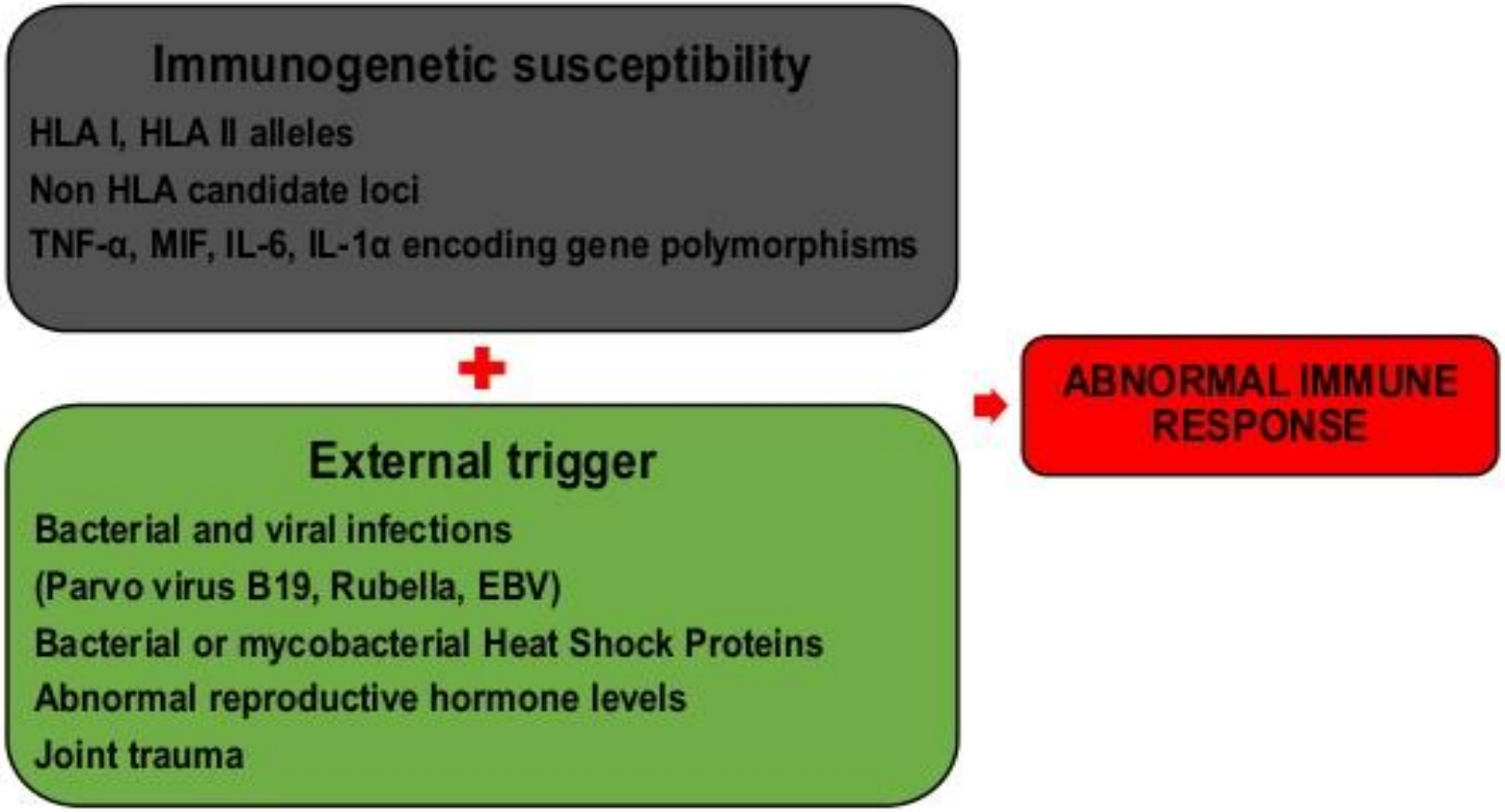
- is the most common paediatric rheumatologic disease and an important cause of long term morbidity
- World wide the incidence ranges from 0.8-22.6/100,000 children/yr and the prevalence ranges from 1-4/000 children.
- Described in all races and geographic areas
- Females predominate 2:1 , but with no variation in systemic type

Nelson Textbook of paediatric 20th edition

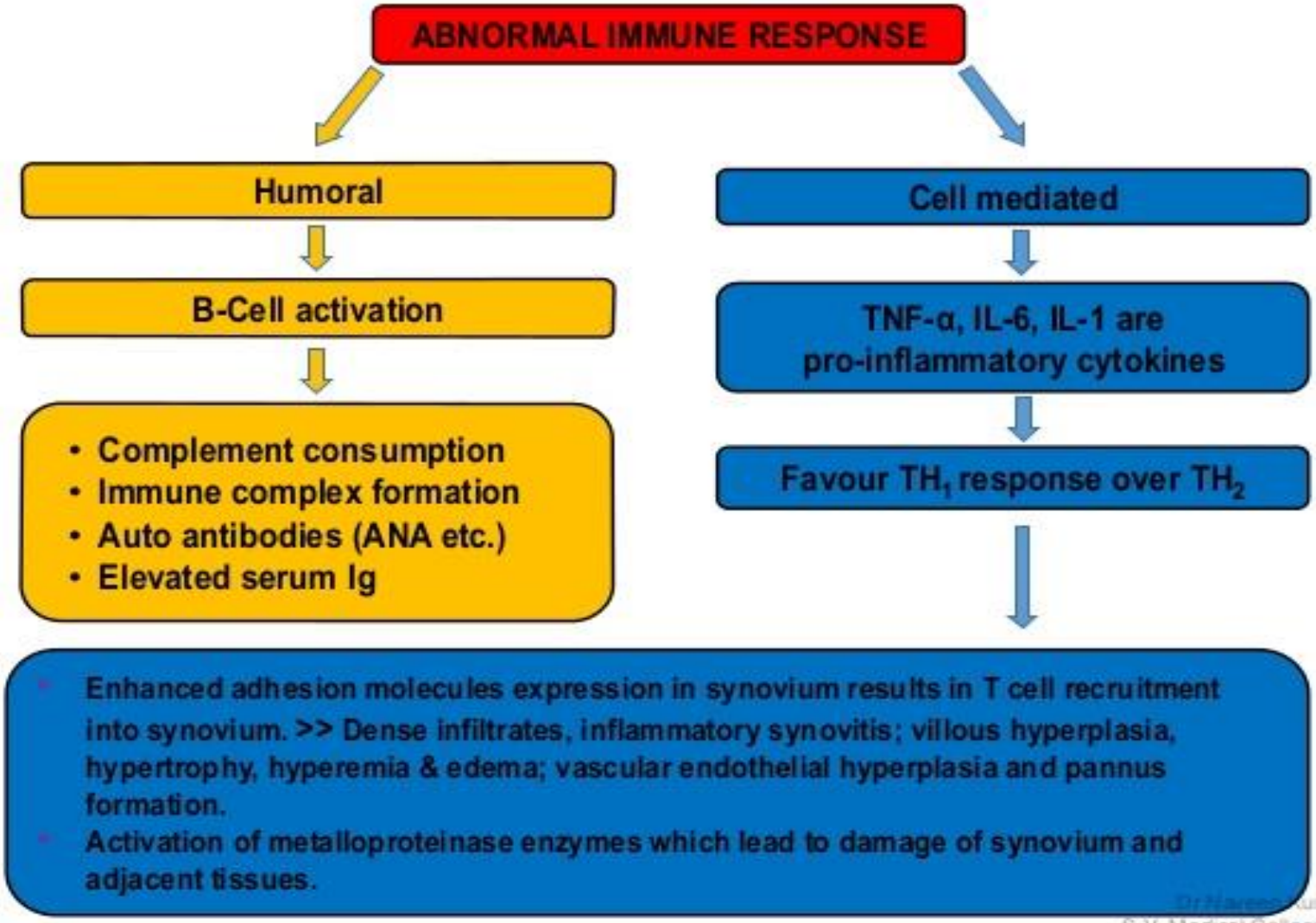
JIA: Definition



Etiology & Pathogenesis



Dr Naveen Kumar Cheri
S.V. Medical College, Tirupati



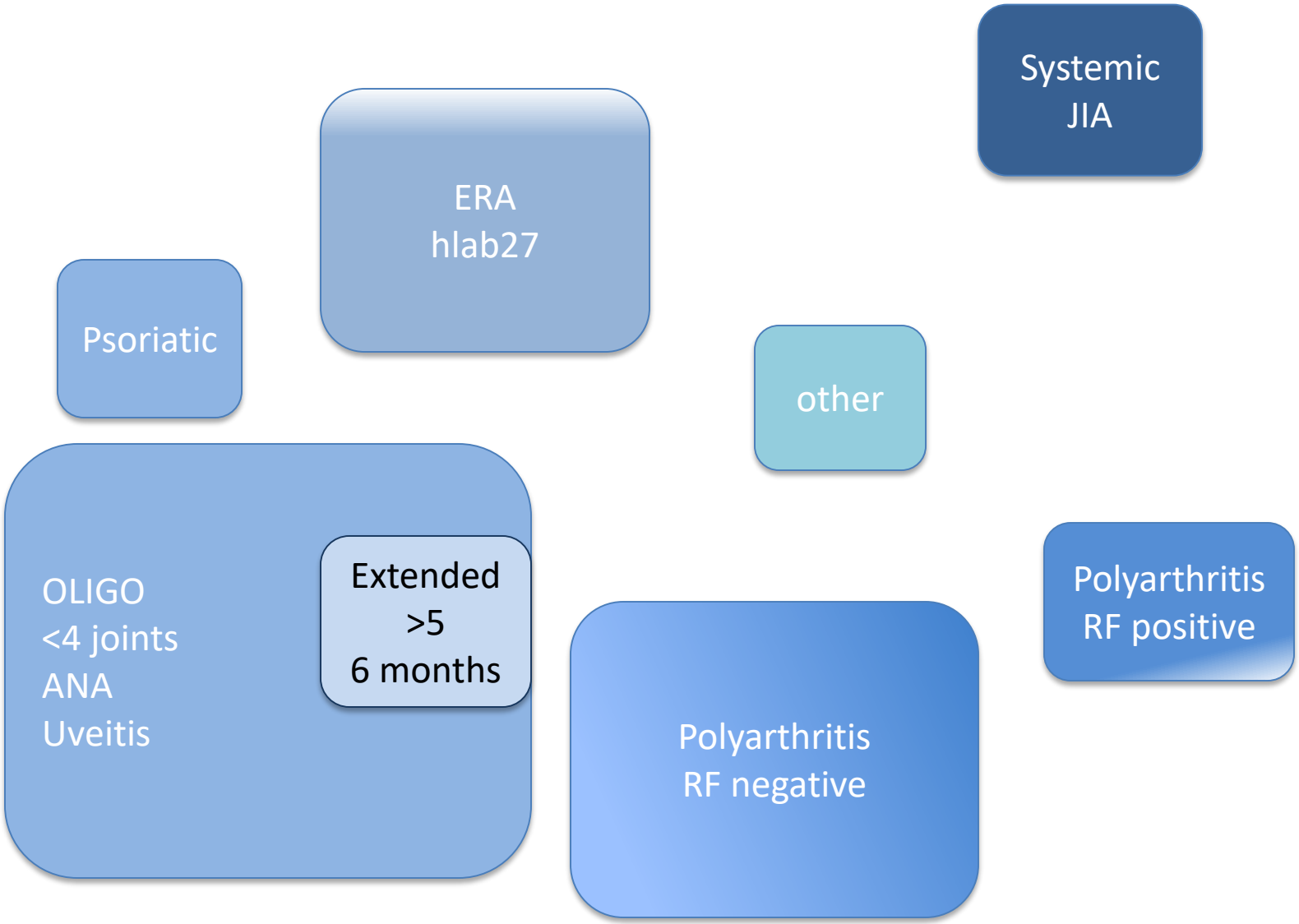
Clinical Presentation

-May differ according to subtype.

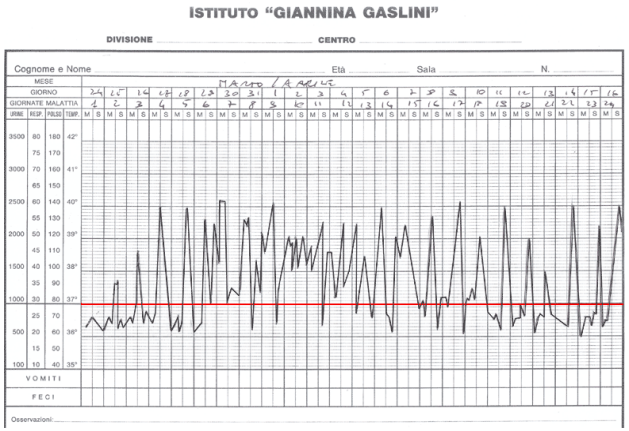
-Morning stiffness or post activity gelling: Duration of stiffness proportional to degree of inflammation.

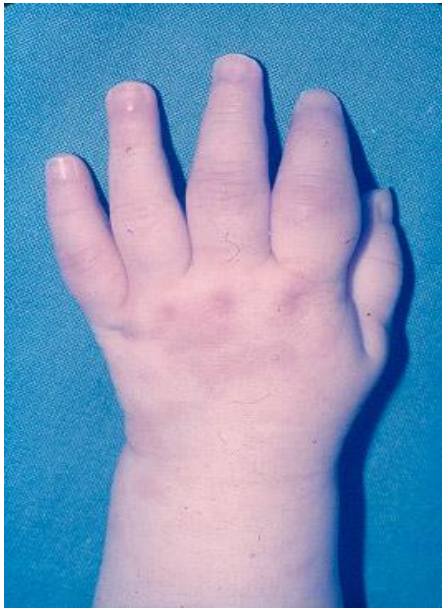
- Joint pain and swelling.
- May manifest as increase irritability, guarding of involved joint or refusal to walk
- Low grade fever, fatigue, malaise, wt loss may occur.
- **Painless anterior uveitis in upto 20% of JIA patients.**

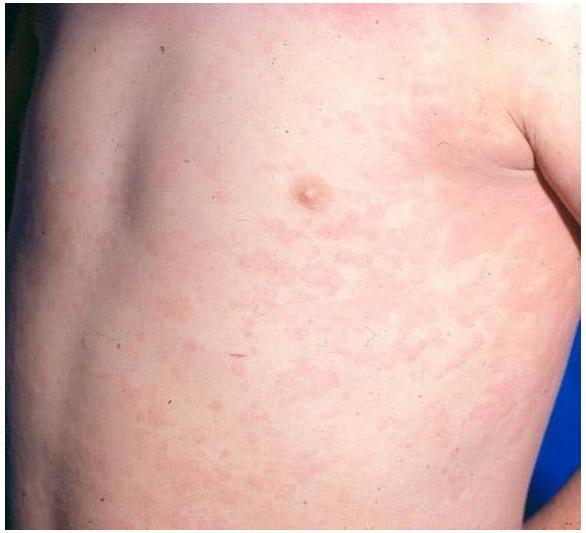
JIA SUBTYPES

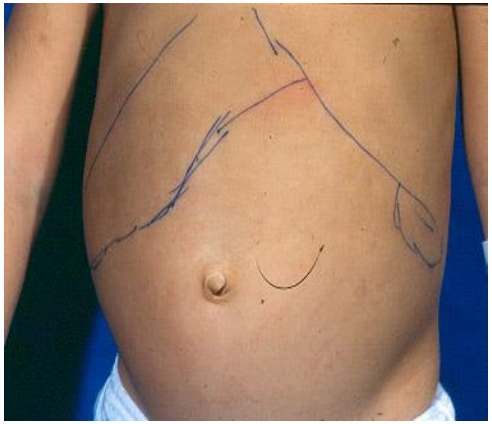


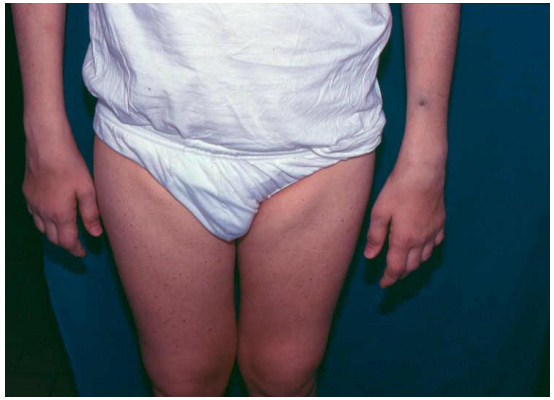
Systemic JIA

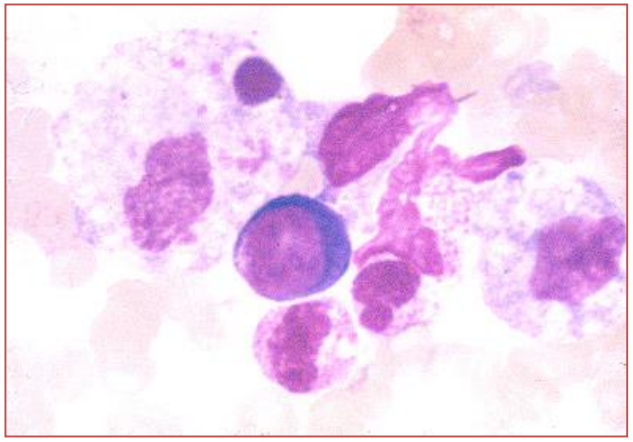


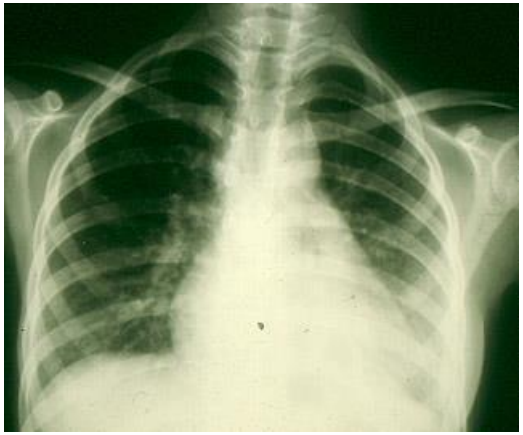












Slide from Dr Angelo Ravelli

Laboratory investigations

- **RF**…..Classification of Polyarticular disease
- **ACCP**…. Not recommended. Most ACCP positive children are RF positive.
- **ANA**…. For uveitis risk stratification; and rule out differentials.
  - ANA seen in up to 80% of children with JIA
  - ANA seen in up to 10% of children without arthritis.
- **ESR/CRP:** Acute phase reactants for assessing disease activity. ESR most commonly used.
- **Other tests:** as per specific differential.

Imaging in JIA

- Radiograph is still the Gold Standard
- Ultrasonography
  - Increasing use in the clinic
  - An extension of the physical examination
- Magnetic Resonance Imaging
  - Most sensitive imaging modality
  - Can show “sub-clinical” joint inflammation
  - Utility limited by cost and access

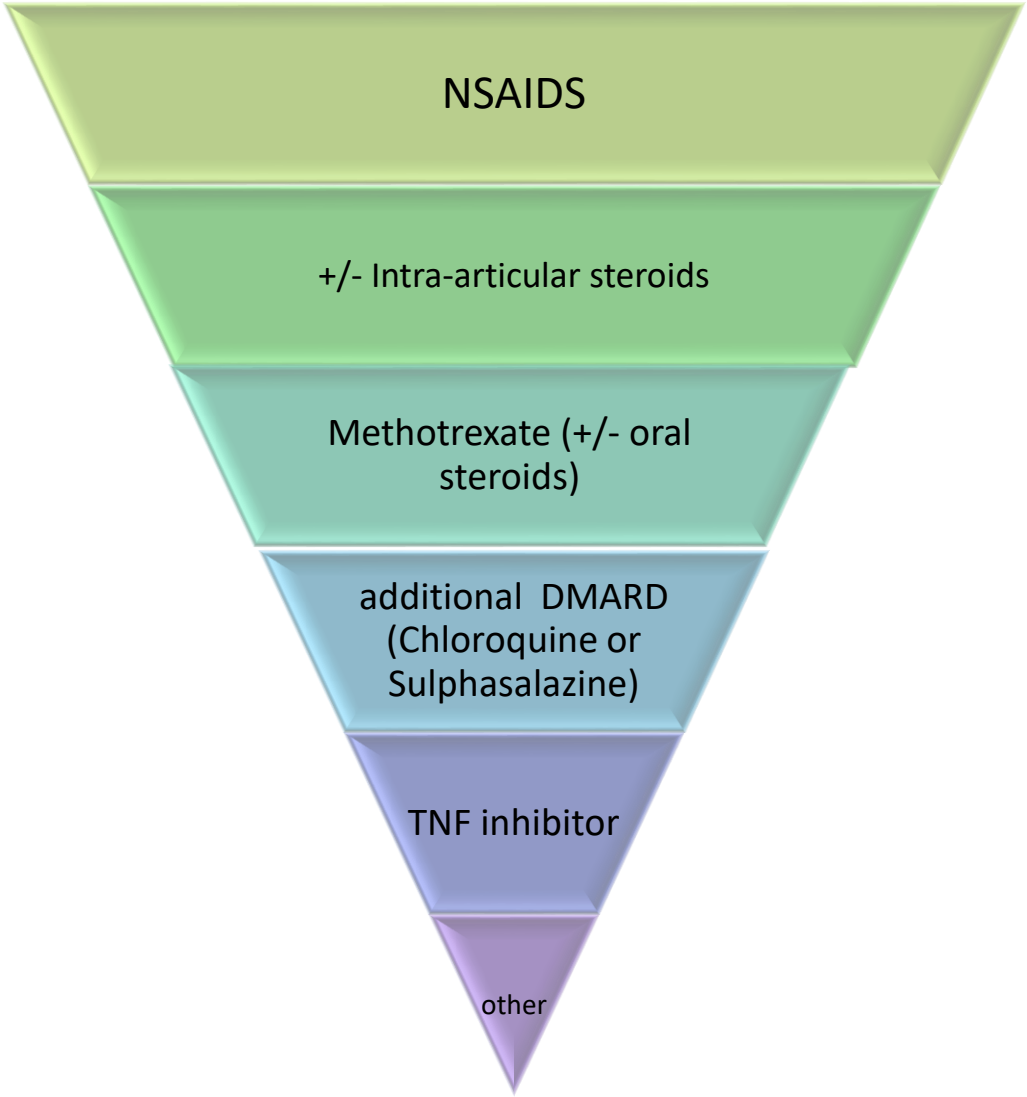
Management

- Non pharmacological management includes
  - physiotherapy
  - occupational therapy
  - social support
  - pain management

Counseling

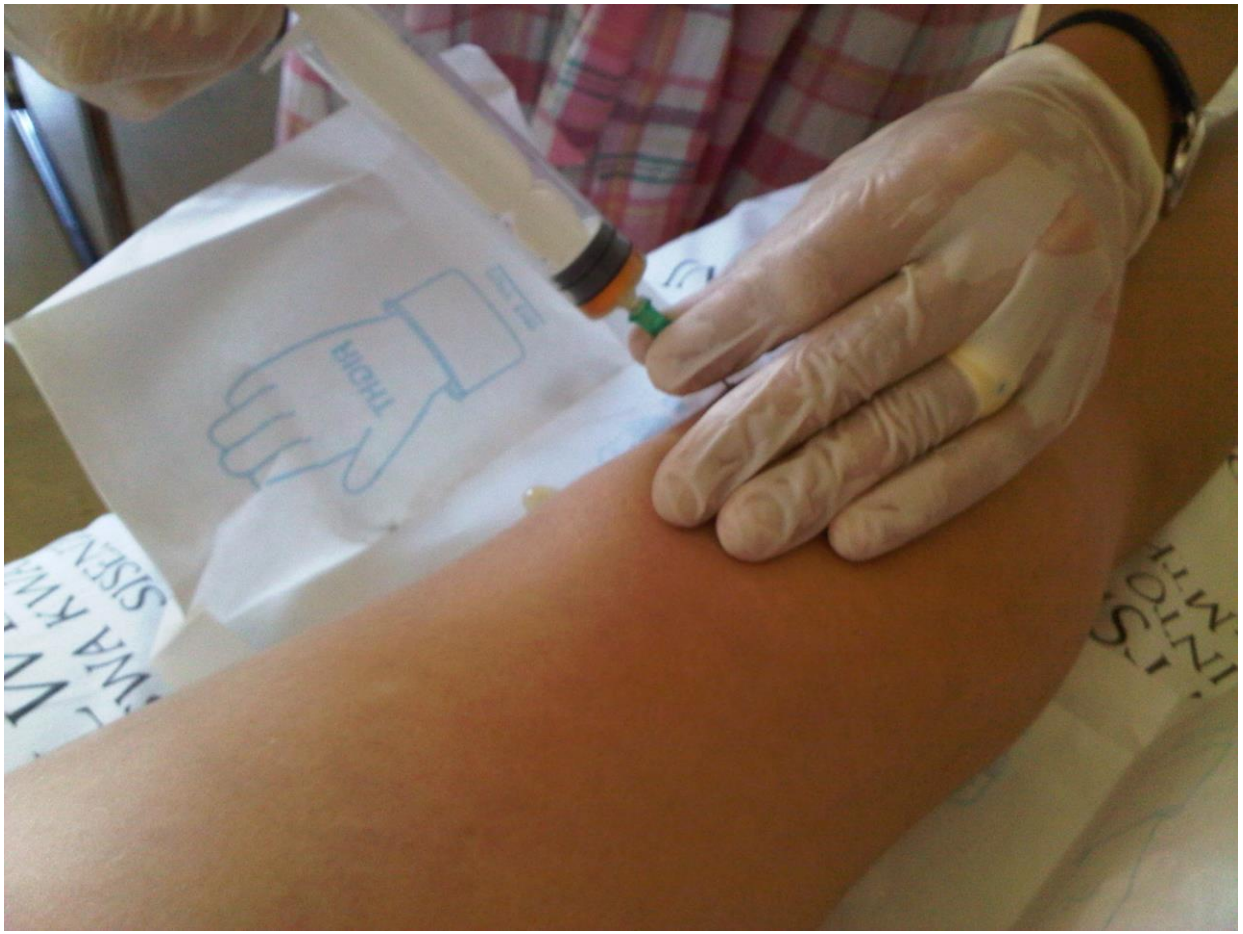
- paramount importance
  - shock, disbelief and fear
- prognosis and implications of the diagnosis
  - goals of therapy
  - side effect of medication.
- well considered, scientifically valid sources of information on JIA
  - avoid bewildering/misleading information and alternative therapies
- counseling and advice regarding sporting activities and schooling

Pharmaceutical Treatment of JIA



Intra-articular steroids

- Can inject multiple joints at once
- May need anaesthetic



Disease Modifying Drugs (DMARDS)

- Methotrexate
  - The first revolution in JIA
  - Massive improvement in outcome, Low toxicity
  - Start 0,3-0.5mg/kg once a week
  - take with Folic Acid
  - Nausea and GIT side effects a problem
  - Monitor FBC and LFT 3 - 6 monthly
  - Can wean after 6 months of inactive disease

OTHER AGENTS

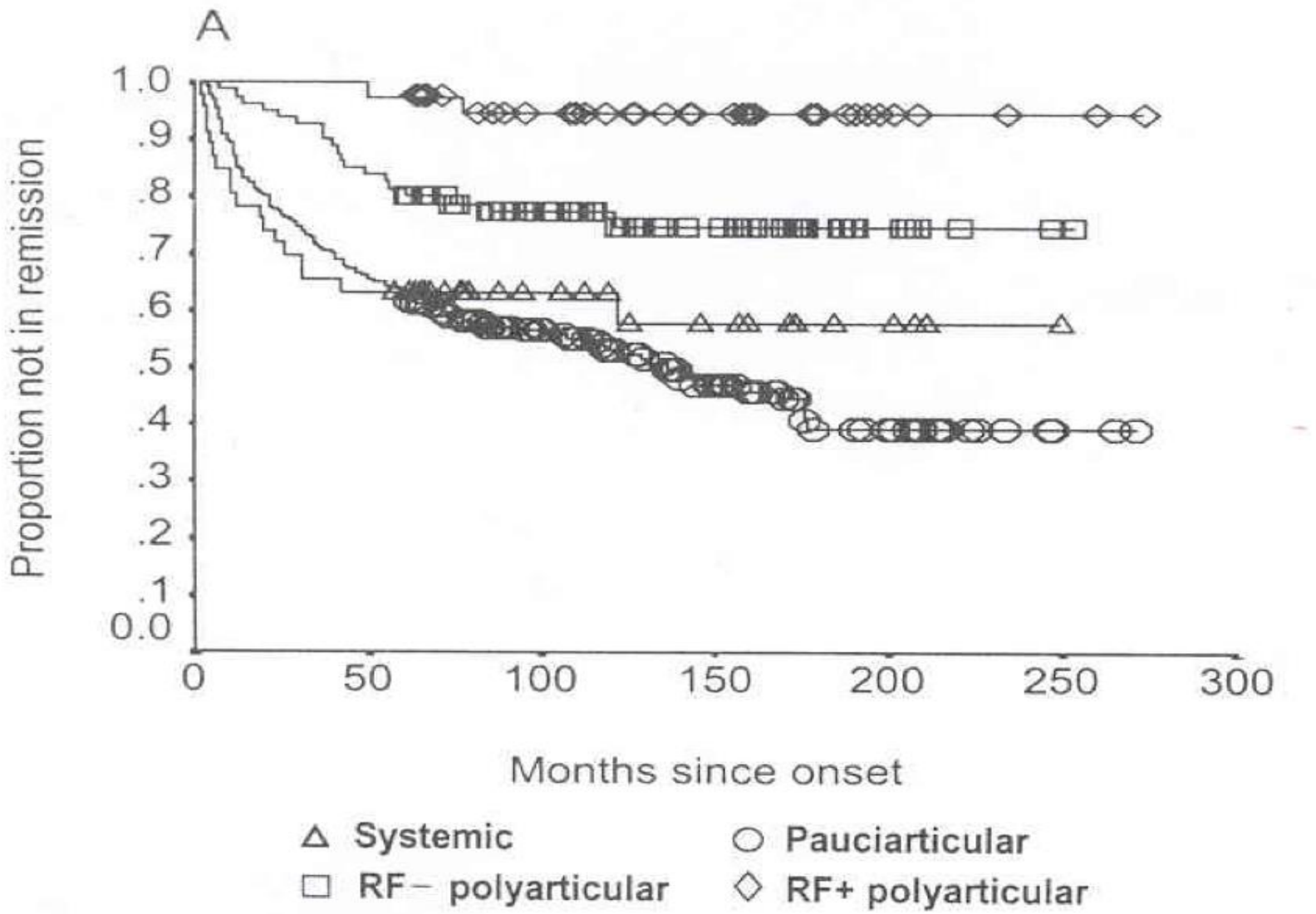
- Sulphasalazine, Chloroquine, Leflunamide,

Biologics

- Anti-TNF agents
  - The second revolution
  - Very effective, very expensive

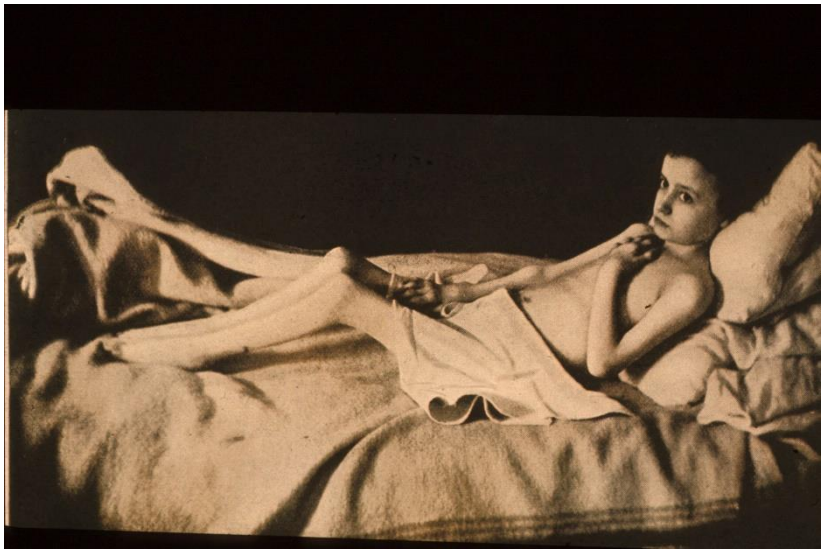
- Etanercept:
  - TNF receptor: FC fusion protein 0.4 mg/kg subcutaneously two times per week
- Infliximab:
  - chimeric IgG1 monoclonal antibody to TNF-⟨ 3 6 mg/kg IV baseline, 2, 6 weeks, 8-weekly
- Adalimumab:
  - humanized monoclonal antibody to TNF-⟨ 24 mg/m2 subcutaneously every other week (0.4-0.8 mg/kg/14d)

Outcomes

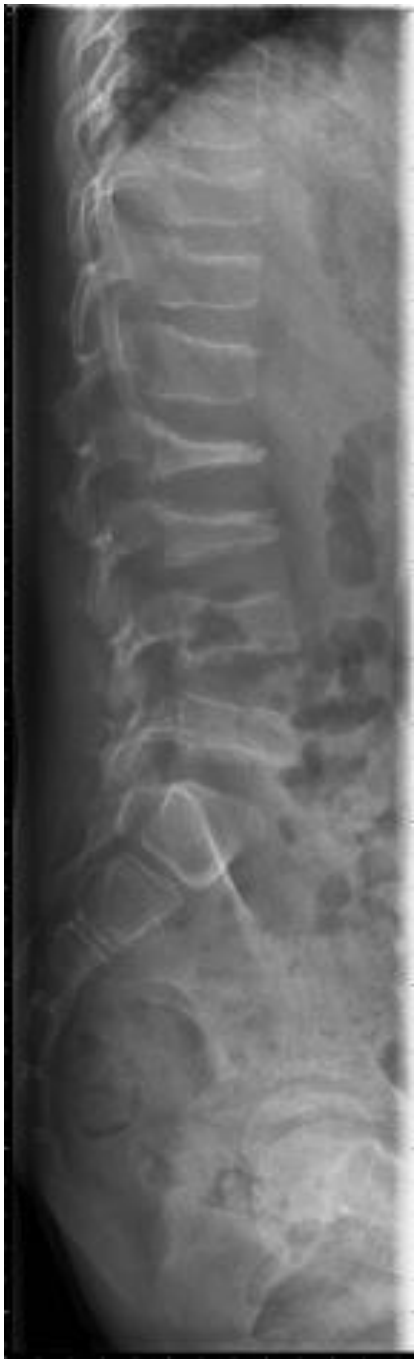


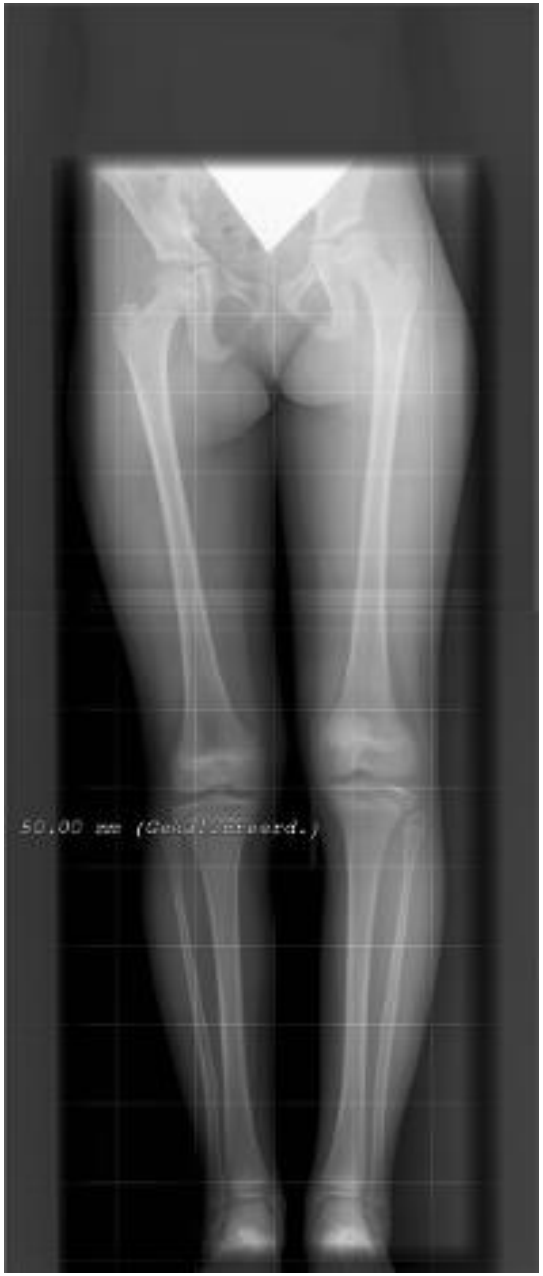
Oen et al, J Rheumatol 200

Childood arthritis; the disease hasn’t changed



Outcomes

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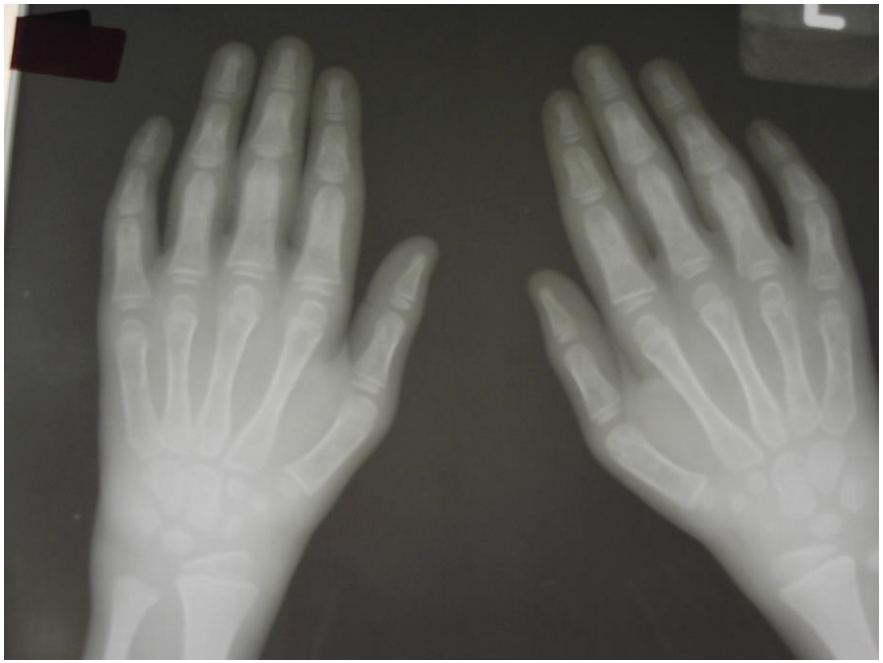

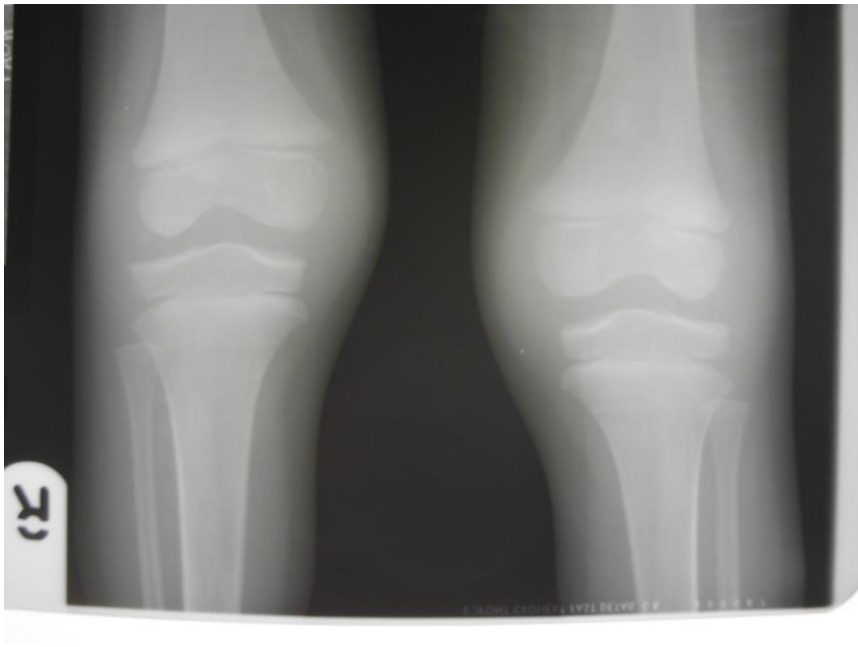

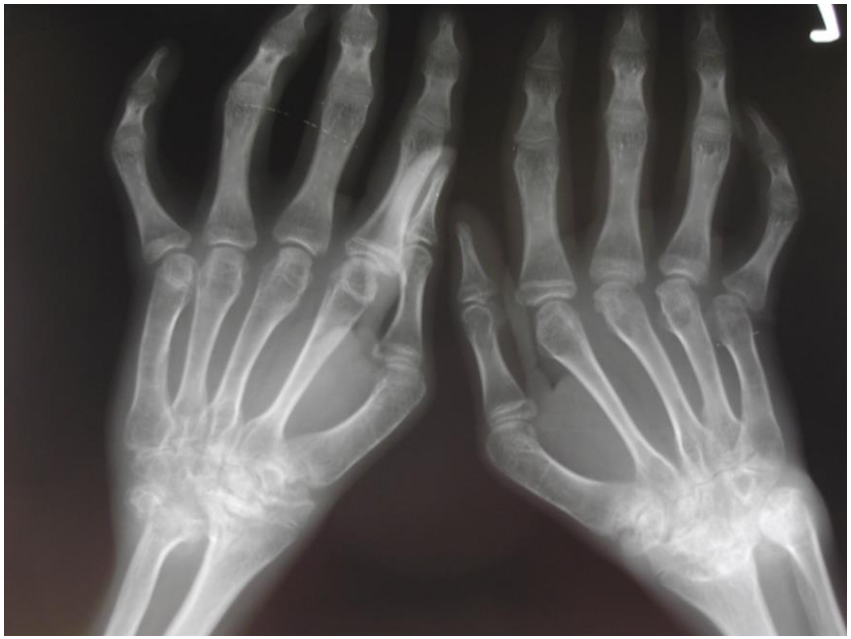

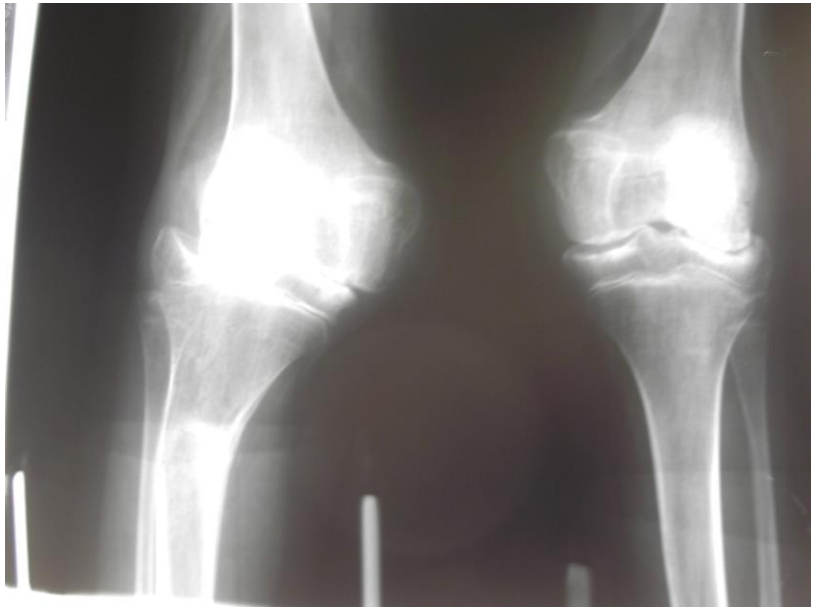

Message

- JIA is a chronic but manageable disease
- If not managed effectively, the outcome can be devastating
- Children with joint symptoms should be seen and referred early to maximise chances of good recovery.
- IT'S NOT JUST GROWING PAINS!!