PEDIATRIC RHEUMATOLOGY
-
MEDICAL HISTORY AND PHYSICAL EXAMINATION

WWW.PMMONLINE.ORG

PEDIATRIC RHEUMATOLOGY - DISEASES

- **Juvenile idiopathic arthritis, JIA**

  Incidence 10/100.000 children. Prevalence 15-150/100.000 children.

- **(Post)Infectious musculoskeletal diseases**
  - Septic arthritis
  - Reactive arthritis
  - Lyme arthritis
  - Acute rheumatic fever and post-streptococcal arthritis
- **Connective tissue diseases**
  - SLE
  - JDM
  - Scleroderma and systemic sclerosis
  - Overlap diseases
- **Vasculitides**
  - Henoch-Schönlein purpura
  - Kawasaki disease
  - Polyarteritis nodosa
  - Wegener granulomatosis
- **Autoinflammatory syndromes** rare
- **Non-inflammatory mechanical pain syndromes**

JIA CATEGORIES

	Frequency	Onset age	Sex ratio
Systemic arthritis	4_17%	Throughout	F=M
Oligoarthritis	27_56%	Peak at 2_4 ys	F>>>M
RF+ polyarthritis	2_7%	Adolescence	F>>M
RF- polyarthritis	11_28%	Biphasic	F>>M
Enthesitis-related a.	3_11%	Adolescence	M>>F
Psoriatic arthritis	2_11%	Biphasic	F>M
Undifferentiated a.	11_21%		

OBJECTIVES

1.PRESENT COMPLAINTS _ GOOD QUESTION

2. PHYSICAL EXAM _ KEY ORGANS

1. JOINTS
2. MUSCLE
3. SKIN
4. OTHER

1. PRESENT COMPLAINTS

Usual Chief complaint categories:

- **JOINTS:** pain, limping, swelling of joints, stop in developmental milestones
- **MUSCLE:** decreased activity, weakness, unable to do something earlier easy tasks
- **SKIN:** changes of the color of fingers, rashes

COMMON NOTIFICATIONS

- Limping, whether intermittent or persistent always warrants further assessment.
- Abnormal gait, waddling in child over 3 years of age is abnormal.
- Deterioration in school performance (e.g. sport, handwriting) is always significant.
- Joint swelling is always significant but can be subtle and easily overlooked by the parent (and even health care professionals!), especially if the changes are symmetrical.
- Falls, child seems unsteady on feet and falls more than his friends.
- Difficulty getting up from the floor once sitting down, unable to jump and struggling to climb stairs all imply muscle weakness.

WHAT TO ASK – JOINTS

- **Where does i**t hurt? (joints, bones, other) _ Radiation?
- **What is difficult** to do? Developmental regression (infants,toddlers)?
- **When:** morning, **night,** all day, PROGRESSIVE
- **Associated symptoms:** fever, rash, weight change, weakness, cough, respiratoric symptoms...
- **Since when:** acute, chronic (›6 weeks)?
- **How:** stabbing, burning, freezing, aching, spasms, crushing
- **How is he/she in the mornings** and during the day?
- **Influence of daily program: change of motion?** school, activities of daily living?
- **Previous:** history of infection (URTI, UTI), trauma in the last 4-8 weeks, tick bite, relapsing URTI

http://www.pmmonline.org/doctor/approach-to-clinical-assessment/history/staged-history

PRESENT COMPLAINTS - TARGETED QUESTIONS 2.

SUPPORTING QUESTIONS – muscle

- **A**ble/Difficult/Unable to: sit up from lying position; stand up from sitting position; climb stairs; squat; hold up the arms
- **S**ince when: acute, chronic (›6 weeks)
- **A**ppaerance: immediately, gradual, (non)progressive
- **A**ssociated symptoms
- **P**revious: hard physical activity, infections in the last 4-6 weeks
- **P**roblem with: swallowing, breathing

SUPPORTING QUESTIONS – skin

- Finger colour changes:tricolor: what does induce it?
- Rashes: permanent or transient

RED FLAGS

Typically refer to features that may suggest serious life threatening disease such as malignancy (leukaemia), infection (septic arthritis or osteomyelitis) or non-accidental injury.

- **Malaise or / systemic upset**
- **Night pain**
- **Behavioural changes**
- **Pain in bones**
- **Bony tenderness**
- **Recurrent fever**
- **Incongruence in history**
- **Swollen joints**

2. PHYSICAL EXAMINATION

- Physical examination may require more than one attempt
- Sometimes engage the child to play
- Little children: on parent's lap
- Physical exam begins with general appearance and growth chart
- Pay special attention to the skin, muscle and eye

PGALS: PEDIATRIC GAIT ARMS LEGS SPINE

When to perform pGALS:

- Unwell child with Pyrexia.
- Child with limp.
- Delay or regression of motor milestones.
- The 'clumsy' child in the absence of Neurological Disease.
- Child with chronic disease and known association with musculoskeletal presentations (such as with Inflammatory Bowel Disease).

http://www.pmmonline.org/video.aspx?id=757

JOINT EXAMINATION: LOOK, FEEL, MOVE

- observe symmetry at rest
- loss of normal contour and landmarks
- distention and fullness - surface anatomy
- erythema
- atrophy
- angulations
- deformities
- limb length
- muscle bulk

4 years old girl. Reluctant to walk alone.

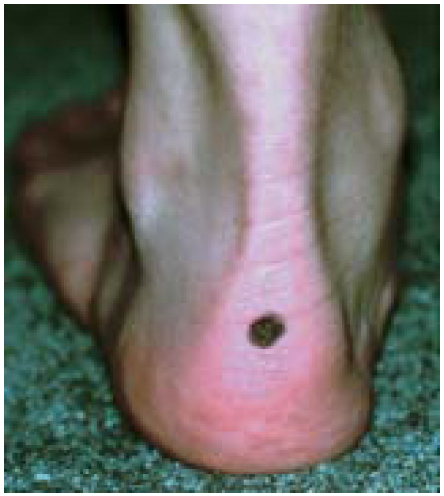
Micrognathia. Flexion contractures in the hips, elbows and in the knees.

JOINT EXAMINATION: LOOK, FEEL, MOVE

- PALPATION:
  - palpate for joint swelling: Is it effusion (fluid), soft tissue or bone?
  - skin warmth (compare with the other side)
  - presence of enthesitis?
  - joint tenderness?
  - effusions in the knees are generally easily felt and may be balloted

FEEL - ENTHESITIS

The enthesis is where tendons attach to bone. The sites that are the most commonly involved entheses in enthesitis-related arthritis are shown with arrows.



JOINT EXAMINATION: LOOK, FEEL, MOVE

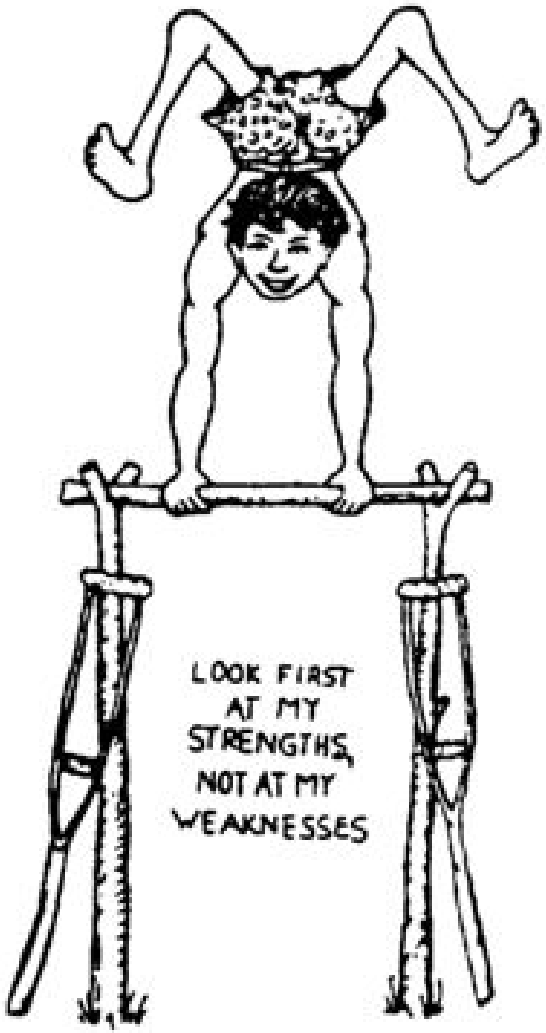
- RANGE OF MOTION all directions
  - Active = by the patient
  - Passive = by the examiner
  - flexion contractures are a hallmark of JIA !

Important: examination of **all joints.**

Common: significantly reduced range of motion (wrists, elbows, and hips) without complaints


Wrist dorsiflexion
is 70° normally


2010



MUSCLE

MUSCLE POWER

Grade	Description	Power
0	No visible muscle contraction or movement	None
1	A flicker of muscle contraction but insufficient to cause limb movement	Minimal
2	No limb movement against gravity but complete movement of limb with no gravity i.e. movement in horizontal plane	Poor
3	Complete movement of limb against gravity but no resistance	Fair
4	Complete range of movement against gravity but without full resistance	Good
5	Complete range of movement against gravity with full resistance i.e. Normal muscle strength	Normal

MUSCLE POWER

SITTING POSITION

- M. trapezius: shoulder elevation. Shrug your shoulder up! I'm try to push your shoulder _ you hold it, dont't let me push your shoulder!
- M. deltoideus: shoulder abduction. Hold your arm up. I'm going to push down _ don't let me push it down.
- M. biceps brachii: elbow flexion. Bend your elbow. I'm try to pull down it.
- M. iliopsoas: hip flexion. Bring your knee up. I try to push it down.
- M. qudriceps femoris: knee extension. Kick your leg out. I try to bend it.
- Wrist extensors: wrist dorsiflexion. Bring your hand back. I try to straighten it.
- Wrist flexors: wrist volarflexion
- Ankle dorsiflexors: Bring your foot up like this. I try to push it down.

SUPINE POSITION

- Neck flexors: head raise. Bring your head off the table. Hold it up.

SIDE-LYING

- M. gluteus medius: hip abduction. Lift your leg. I try to push down.

PRONE

- Neck extensors: raise your head
- M. gluteus maximus: hip extension. Lift your leg. I try to push down.
- Hamstrings: knee flexion. Bend your knee. I try to pull it down.
- Ankle plantarflexors

SKIN

SLE

SLE

Hard palate

Discoid rash

Discoid

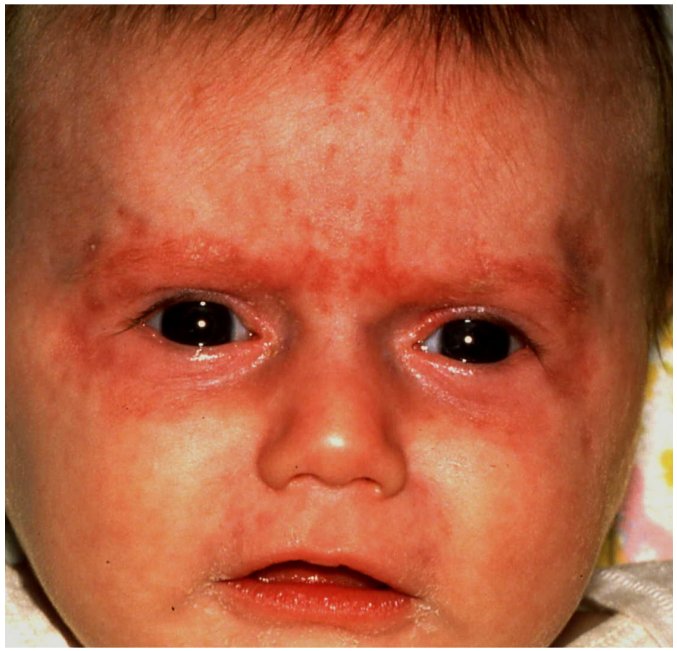
SLE

Vascu
litis

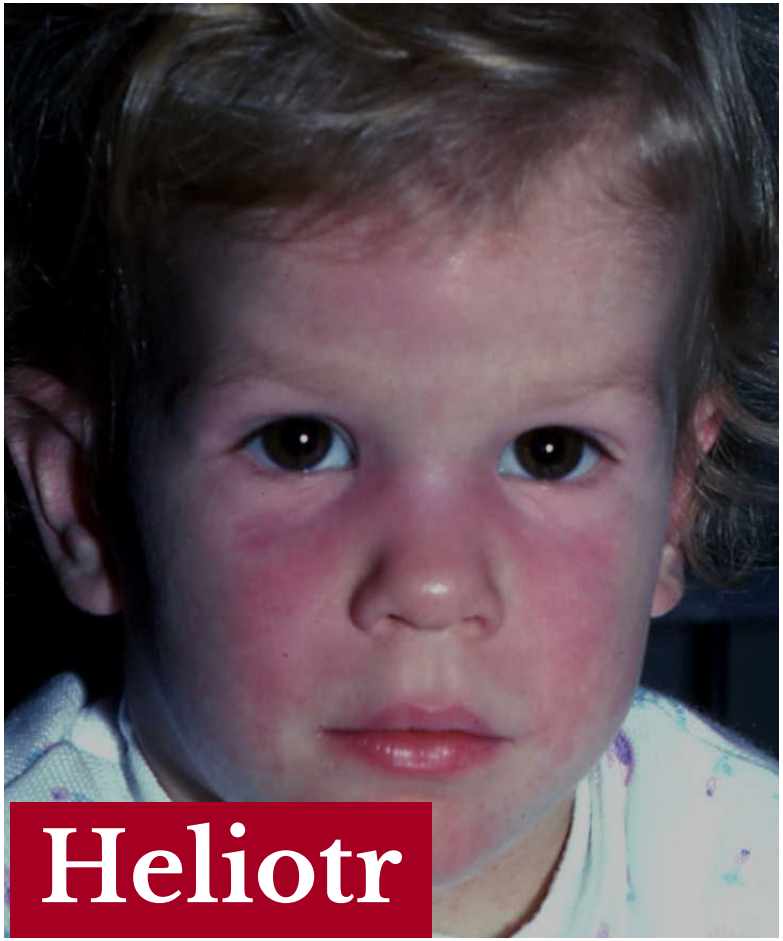
Photosensi

SLE

NEONATAL



SLE/JDM



SLE

JDM

SLE/JDM

SLE

JDM

JDM

JDM

Vasculopathy

Courtesy of David D. Sherry


SSC
SCLERODAC

SCLERODERMA

En coup de

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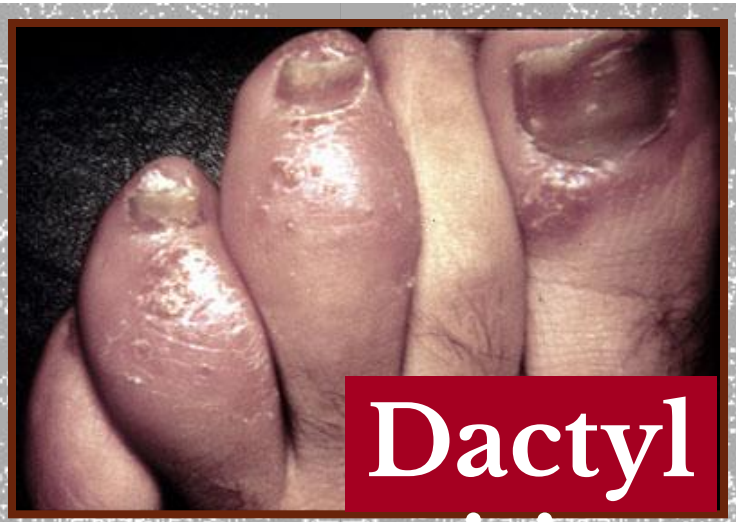
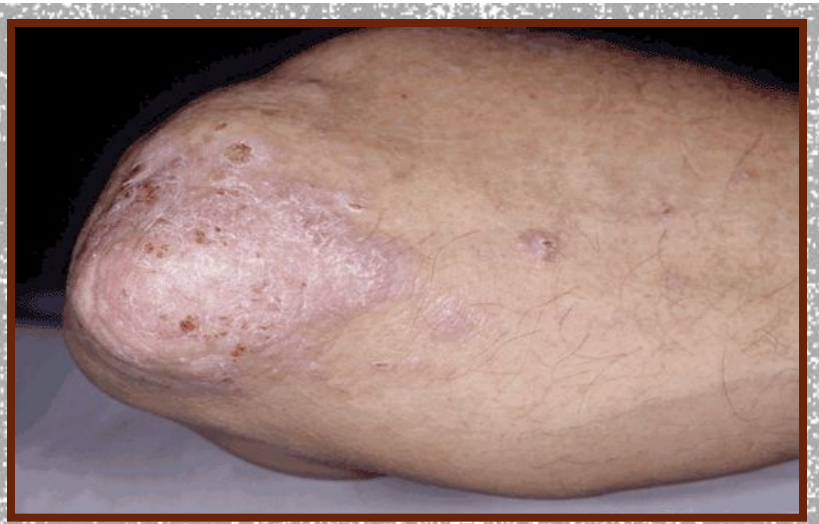
Morphea

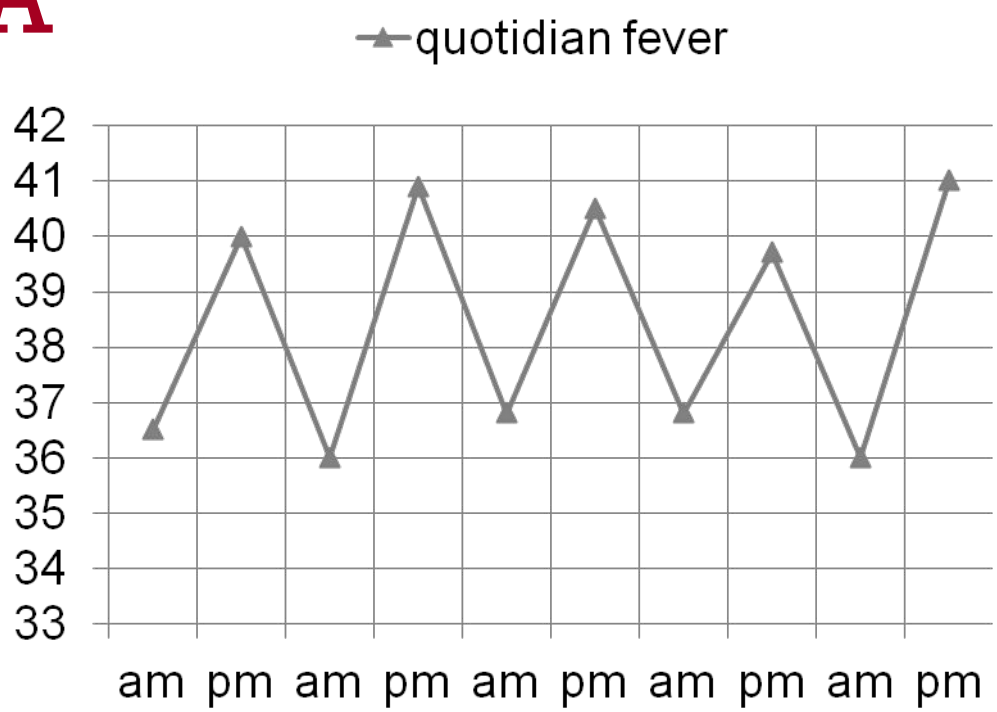
Linear

SKIN: Psoriatic arthritis





sJIA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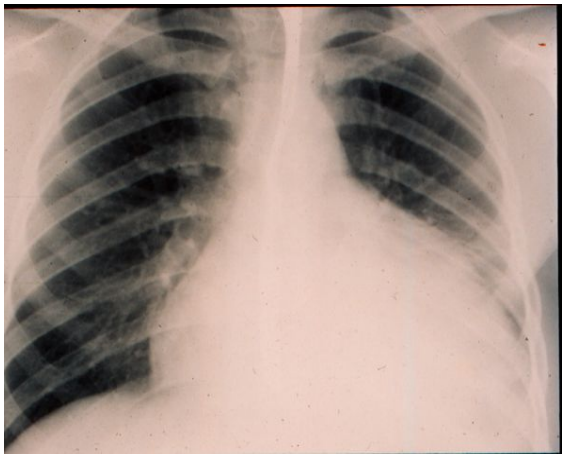


SUMMARY

Use or read at least once www.pmmonline.org

(main aim: education of med.students)

Targeted questions

Key organs: joints, skin, eye, muscle

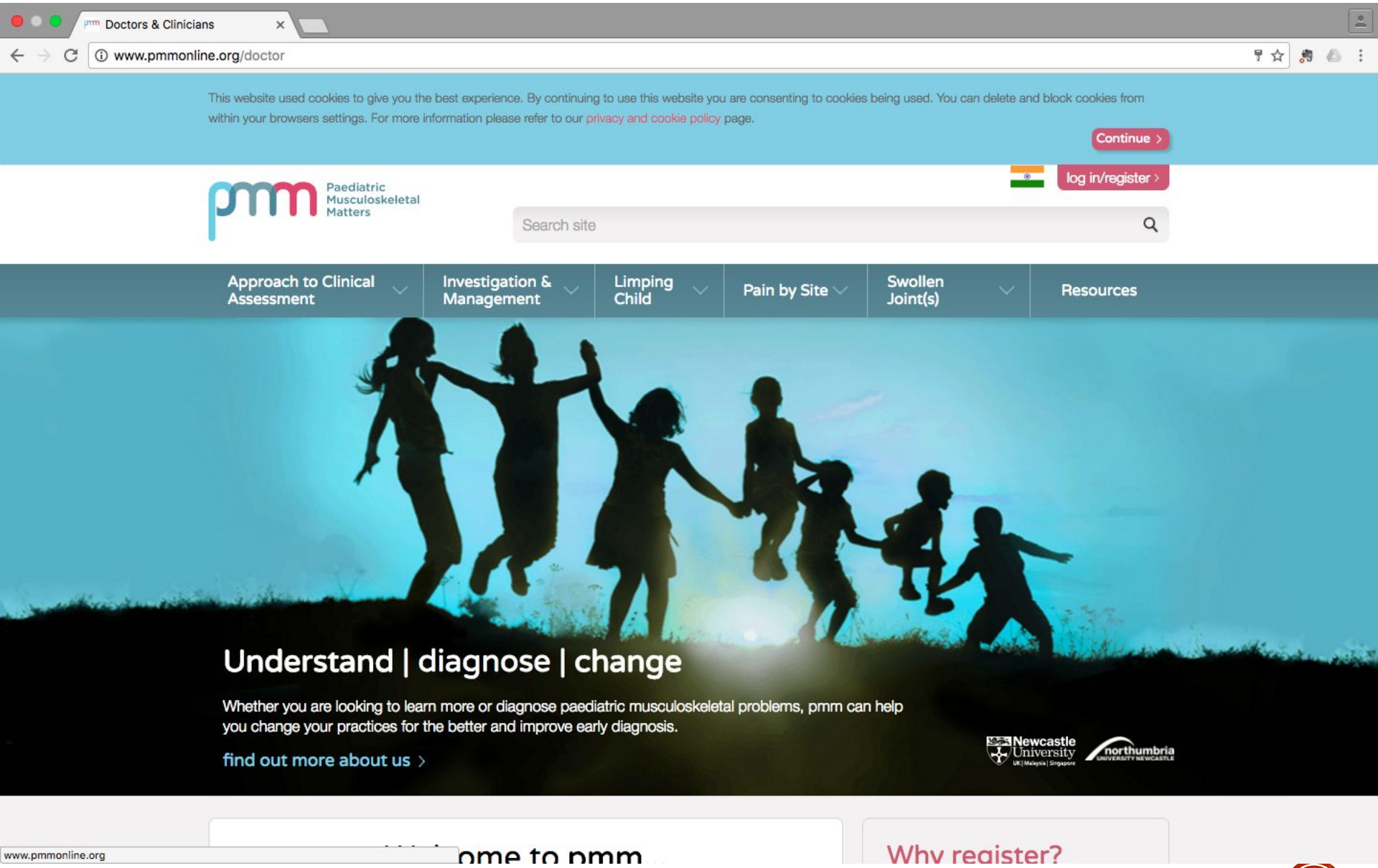
Learn pGALS

Compare symmetric joints

Sometimes Arthritis is NOT painful: LOOK, FEEL, MOVE all of the joints

Next semester:

- differential dg of arthritis
- When refer the patient with MS complaint to ped.rheum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