

Gigtsjúkdómar í börnum

Barnaspítali Hringssins

Judith Amalía Guðmundsdóttir
Barnalæknir

EFNI DAGSINS

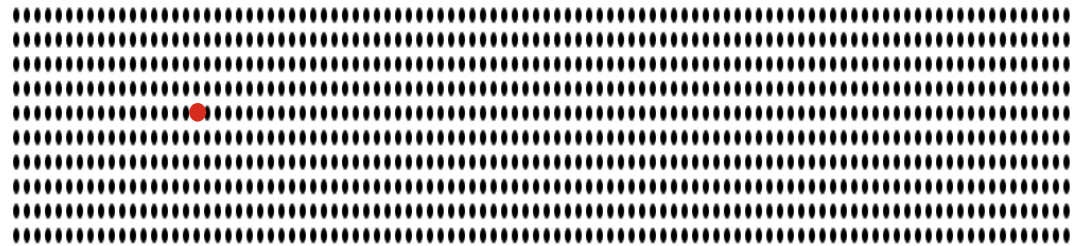
- Gigtsjúkdómar barna
 - JIA (juvenile idiopathic arthritis)
 - Almennir bólgusjúkdómar
 - Æðabólgusjúkdómar
 - Autoinflammatory diseases
- Liðbólga og liðverkir
- Liðskoðun

LIÐVERKIR VS LIÐBÓLGUR

- Stoðkerfisverkir
 - Algengir
 - Fjöldi greininga
 - meira eða minna þekkt etiologia
 - Betri horfur í börnum



- Liðbólgrur
 - Sjaldgæfari
 - Mismunagreiningar margar
 - Klínísk greining



Liðbólga

- Bólga + hiti, verkur og hreyfiskerðing
- Ef ekki bólga þá 2/3
 - Verkur við passíva hreyfingu
 - Hitaaukning
 - Hreyfiskerðing

- Bráð bólga

- Liðsýking
- Beinsýking
- Reactive - fylgiliðagigt
- Acute rheumatic fever
- HSP/Kawasaki / vasculitis
- Illkynja sjúkdómur

- Langvinn bólga

- Barnagigt
- Systemic lupus erythematosus
- Inflammatory bowel disease

Náum áttum...

	Bólga	Mekanískt	Geðvefrænt
Verkur	+/-	+	+++
Stirðleiki	++	+/-	+
Bólga	+++	+/-	+/-
Svefntruflun	+/-	-	++
Liðóstöðugleiki	+/-	++	+/-
Líkamleg einkenni	++	+	+/- (or ++++)

P-GALS

Arthritis Rheum. 2006 Oct 15;55(5):709-16.

Musculoskeletal screening examination (pGALS) for school-age children based on the adult GALS screen.

Foster HE¹, Kay LJ, Fritswell M, Goady D, Myers A.

Author information

Erratum in

Arthritis Rheum. 2006 Dec 15;55(6):981.

Abstract

OBJECTIVE: To develop and validate a musculoskeletal screening examination applicable to school-age children based on the adult Gait, Arms, Legs, Spine (GALS) screen.

METHODS: Adult GALS was tested in consecutive school-age children attending pediatric rheumatology clinics and was compared with an examination conducted, on the same day, by a pediatric rheumatologist who classified children as having abnormal or normal joints. Adult GALS was tested for validity compared with the pediatric rheumatologist's assessment and deficiencies in adult GALS were identified. Experts proposed amendments to adult GALS, achieving consensus by modified Delphi techniques. The resultant pediatric screening tool (pGALS) was tested (methodology identical to the testing of adult GALS) in an additional group of children.

RESULTS: Adult GALS was tested in 50 children (median age 11 years, range 4-16), of whom 37 (74%) had juvenile idiopathic arthritis. Adult GALS missed important abnormalities in 18% of children, mostly at the ankle, foot, and temporomandibular joints. The pGALS was tested in 65 children (median age 13 years, range 5-17 years) and demonstrated excellent sensitivity (97-100%) and specificity (98-100%) at all joints, with high acceptability scored by child and parent/guardian. The median time to perform pGALS was 2 minutes (range 1.5-3 minutes).

CONCLUSION: The pGALS musculoskeletal screening tool has excellent validity, is quick to perform, and is acceptable to school-age children and parents/guardians. We propose that pGALS be incorporated into undergraduate and postgraduate medical training to improve pediatric musculoskeletal clinical skills and facilitate diagnosis and referral to specialists.

PMID: 17013854 [PubMed - Indexed for MEDLINE]

The pGALS musculoskeletal screen

Screening questions

- Do you (or does your child) have any pain or stiffness in your (their) joints, muscles or back?
- Do you (or does your child) have any difficulty getting yourself (him/herself) dressed without any help?
- Do you (or does your child) have any problem going up and down stairs?






FIGURE	SCREENING MANOEUVRES (Note the manoeuvres in bold are additional to those in adult GALS)	WHAT IS BEING ASSESSED?
	Observe the child standing (from front, back and sides)	<ul style="list-style-type: none"> • Posture and habitus • Skin rashes – e.g. psoriasis • Deformity – e.g. leg length inequality, leg alignment (valgus, varus at the knee or ankle), scoliosis, joint swelling, muscle wasting, flat feet
	Observe the child walking and 'Walk on your heels' and 'Walk on your tiptoes'	<ul style="list-style-type: none"> • Ankles, subtalar, midtarsal and small joints of feet and toes • Foot posture (note if presence of normal longitudinal arches of feet when on tiptoes)
	'Hold your hands out straight in front of you'	<ul style="list-style-type: none"> • Forward flexion of shoulders • Elbow extension • Wrist extension • Extension of small joints of fingers
	'Turn your hands over and make a fist'	<ul style="list-style-type: none"> • Wrist supination • Elbow supination • Flexion of small joints of fingers
	'Pinch your index finger and thumb together'	<ul style="list-style-type: none"> • Manual dexterity • Coordination of small joints of index finger and thumb and functional key grip








FIGURE	SCREENING MANOEUVRES	WHAT IS BEING ASSESSED?
	<p>'Touch the tips of your fingers'</p>	<ul style="list-style-type: none"> • Manual dexterity • Coordination of small joints of fingers and thumbs
	<p>Squeeze the metacarpophalangeal joints for tenderness</p>	<ul style="list-style-type: none"> • Metacarpophalangeal joints
	<p>'Put your hands together palm to palm' and 'Put your hands together back to back'</p>	<ul style="list-style-type: none"> • Extension of small joints of fingers • Wrist extension • Elbow flexion
	<p>'Reach up, "touch the sky"' and 'Look at the ceiling'</p>	<ul style="list-style-type: none"> • Elbow extension • Wrist extension • Shoulder abduction • Neck extension
	<p>'Put your hands behind your neck'</p>	<ul style="list-style-type: none"> • Shoulder abduction • External rotation of shoulders • Elbow flexion

FIGURE	SCREENING MANOEUVRES	WHAT IS BEING ASSESSED?
	<p>'Try and touch your shoulder with your ear'</p>	<ul style="list-style-type: none"> • Cervical spine lateral flexion
	<p>'Open wide and put three (child's own) fingers in your mouth'</p>	<ul style="list-style-type: none"> • Temporomandibular joints (and check for deviation of jaw movement)
	<p>Feel for effusion at the knee (patella tap, or cross-fluctuation)</p>	<ul style="list-style-type: none"> • Knee effusion (small effusion may be missed by patella tap alone)
	<p>Active movement of knees (flexion and extension) and feel for crepitus</p>	<ul style="list-style-type: none"> • Knee flexion • Knee extension
	<p>Passive movement of hip (knee flexed to 90°, and internal rotation of hip)</p>	<ul style="list-style-type: none"> • Hip flexion and internal rotation
	<p>'Bend forwards and touch your toes?'</p>	<ul style="list-style-type: none"> • Forward flexion of thoraco-lumbar spine (and check for scoliosis)

ARTHRITIS MNEMONIC

- **A**vascular necrosis and epiphyseal disorders
- **R**eactive
- **T**rauma
- **H**ematologic
- **R**ickets, metabolic and endocrine disorders
- **I**nfection
- **T**umor
- **I**diopathic pain
- **S**ystemic rheumatologic diseases

HVERJAR ERU SPURNINGARNAR?

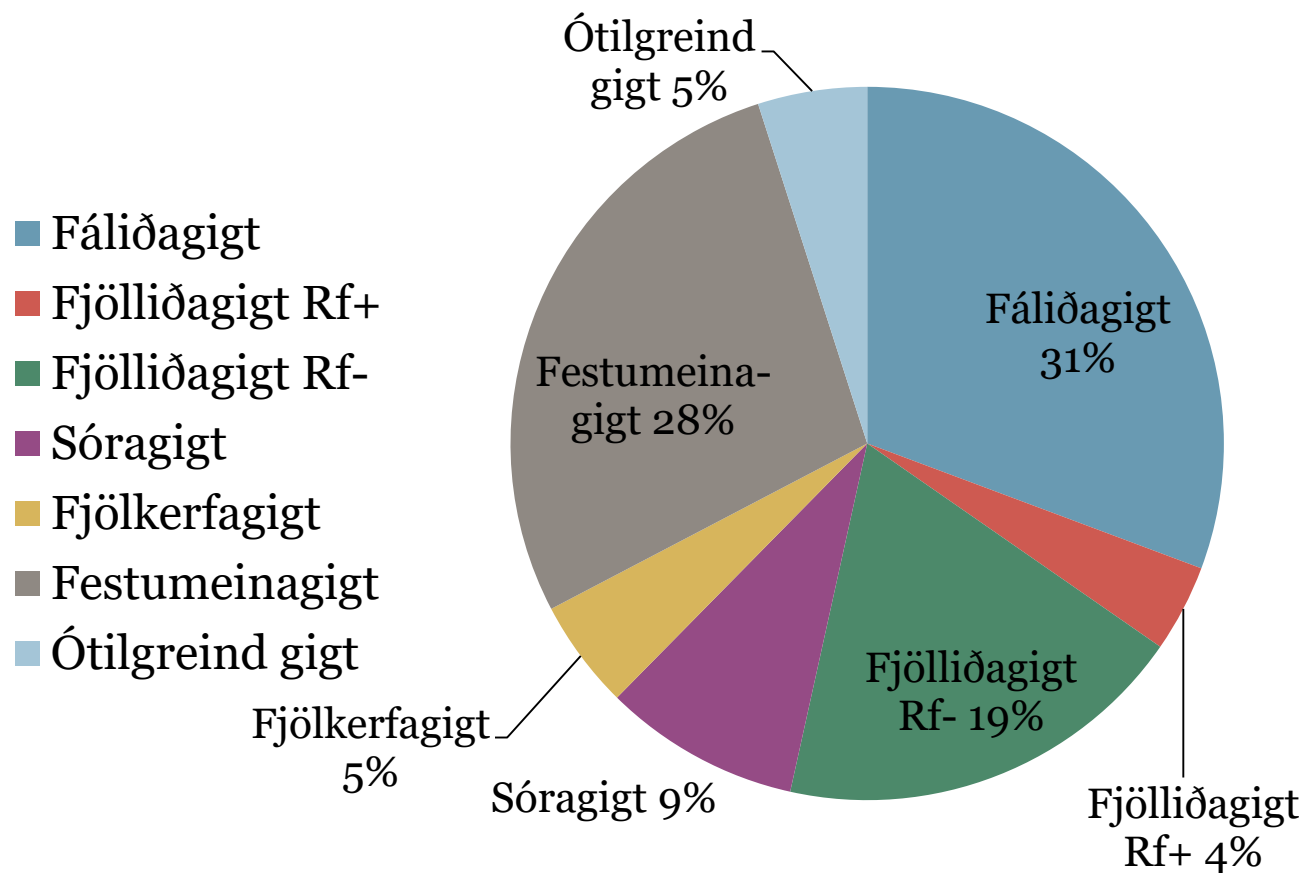
- Hvaða prufur á að taka?
- Á að gera röntgen?
- Á að gera MR?
- Á að stinga á liðnum?
- Á að meðhöndla með sýklalyfjum?

BARNAGIGT – JUVENILE IDIOPATHIC ARTHRITIS

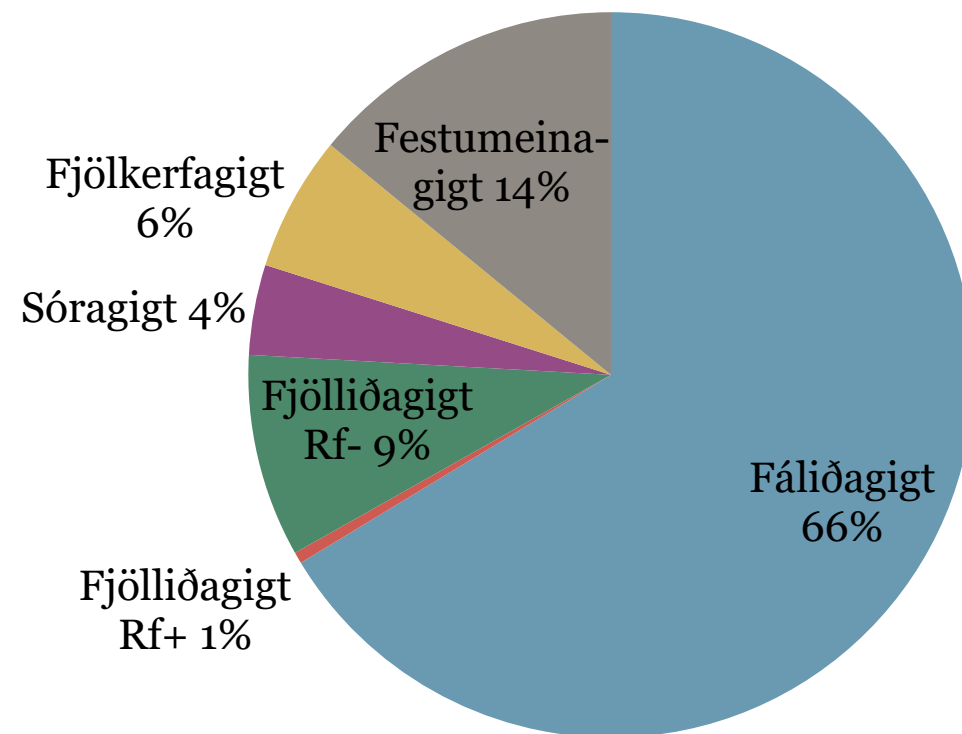
- Liðbólga
 - í einum eða fleiri liðum
 - hófst fyrir 16 ára aldur
 - Hefur staðið í > 6 vikur
 - á sér ekki aðrar þekktar orsakir
- ILAR greiningarskilmerki
- Skilgreining og flokkun
 - Annars vitum við ekkert um hvað við tölum
- Hvernig gengur?
 - Tól og tæki til mælinga
 - Virkir liðir
 - Hreyfiskertir liðir
 - Almenn heilsa 0-10
 - Mat læknis 0-10
 - CHAQ
 - Sökk



BARNAGIGT - UNDIRFLOKKAR

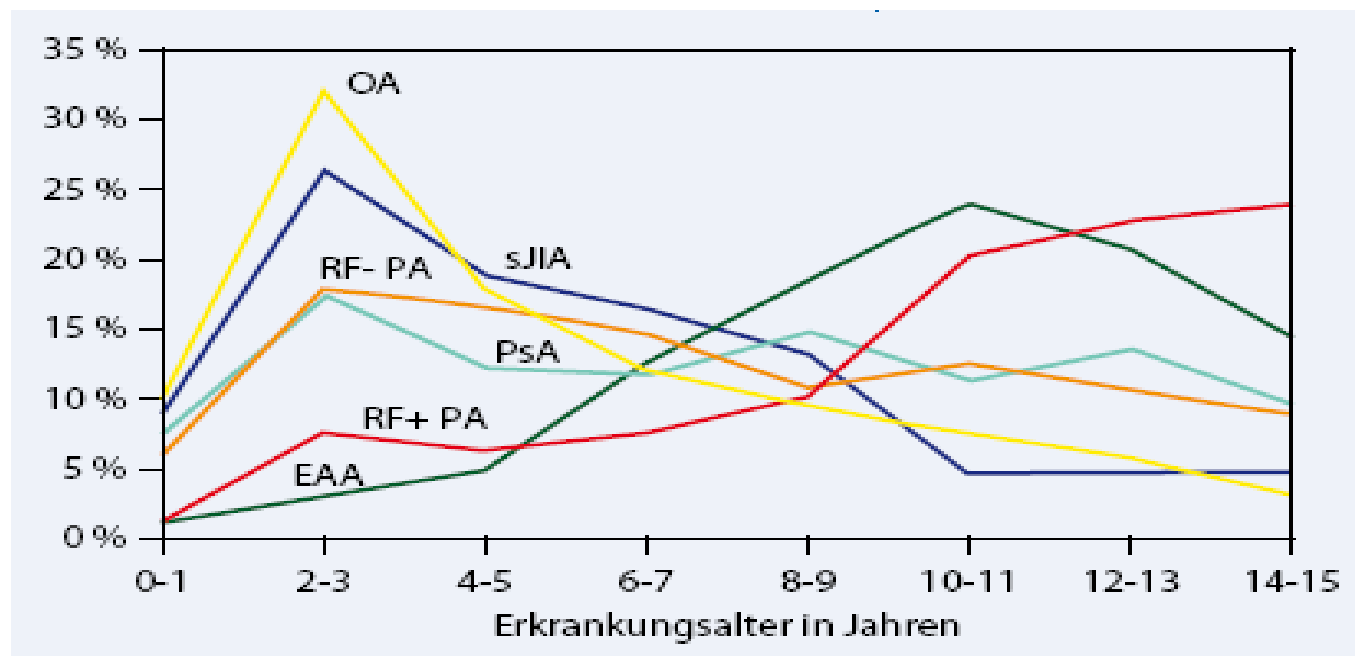


Minden, Niewerth, Klinische Formen der juvenilen idiopathischen Arthritis und ihre Klassifikation, Z. Rheumatol. 2008



Jónsson, G.G. o.fl., Helstu gigtarsjúkdómar í íslenskum börnum, Heilbrigðisvísindasvið, Læknadeild Háskóla Íslands. 2012

BARNAGIGT - FARALDSFRÆÐI



Minden, Niewerth, Klinische Formen der juvenilen idiopathischen Arthritis und ihre Klassifikation, Z. Rheumatol. 2008

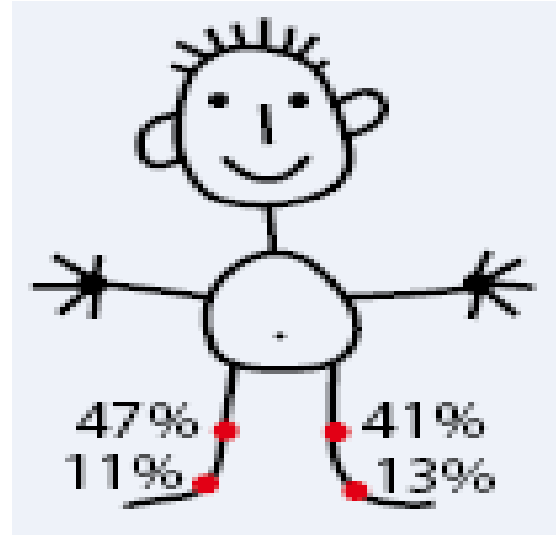
- > 100 < 200 börn á Íslandi með barnagigt
 - Greinast um 8 á ári
- Fáliðaform algengast
 - 3 stúlkur:1 drengur

HELSTU EINKENNI BARNAGIGTAR

- Bólga í liðhimnu sem veldur lið- og beinskemmdum
- Morgunstirðleiki, holti, dettur oft
- Þreyta, orkuleysi
- Liðbólga – en ekki áberandi liðverkur
- Liður ekki rauður eða hvellaumur
- Hegðunarbreytingar – kyrrseta, íþróttir...
- Hreyfiskerðing

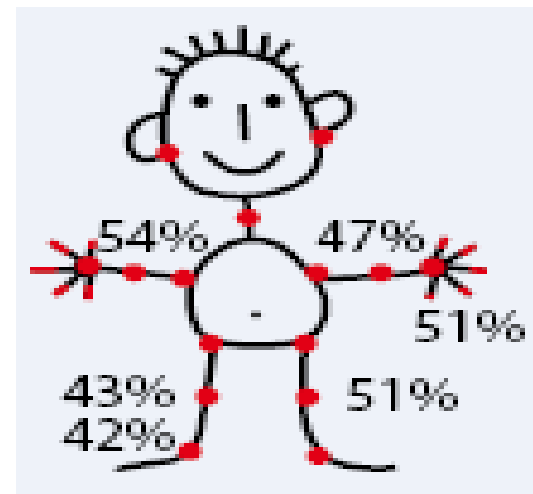
FÁLIDAGIGT

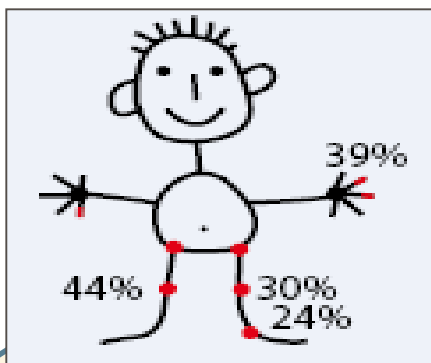
- 4 eða færri liðir
 - Viðvarandi (e. persistent) - betri horfur
 - Útbreidd (e. extended) – fjöldi liða eykst eftir 6 mánuði
- Ungar stúlkur
- Rannsóknir oft eðlilegar
- ANA jákvæðni 1/2
 - Tengsl við uveit



FJÖLLIÐAGIGT

- 5 eða fleiri liðir
 - RF neikvæð – ? útbreidd fáliðagigt
 - RF jákvæð – barnaformið af RA
 - Anti - CCP
- Stórir og litlir liðir

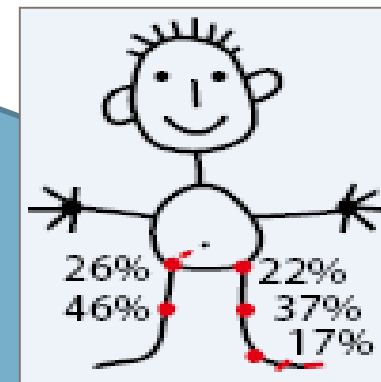
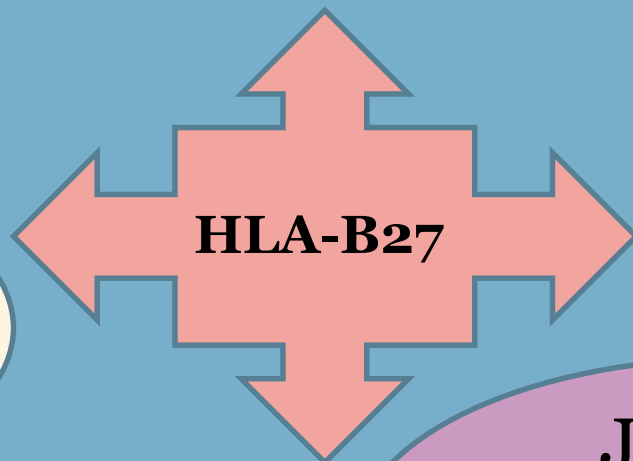




Sórágigt

Reactive
arthritis

FESTUMEINATENGD
BARNAGIGT

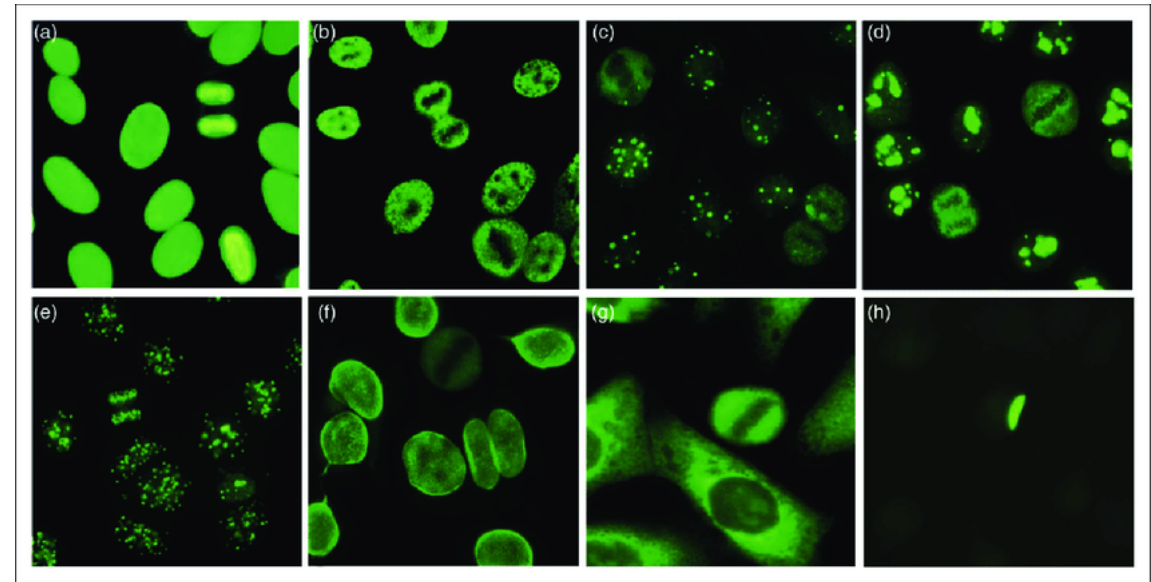


IBD
arthropathy

Juvenile
ankylosing
spondylitis

RANNSÓKNIR VIÐ BARNAGIGT

- ANA
 - Jákvæð í helming fáliðagigtar
 - SLE, aðrir fjölkerfasjúkdómar
- RF, anti-CCP
 - Sjaldgæft
 - snemmgreind liðagigt/RA
- Status, diff
 - ALL, anemia, thrombocytosis
- Sökk og CRP
 - Oft eðlilegt



Krause et al: EUROPattern Suite technology for computer-aided immunofluorescence microscopy in autoantibody diagnostics, *Lupus*, 2015

MEÐFERÐ

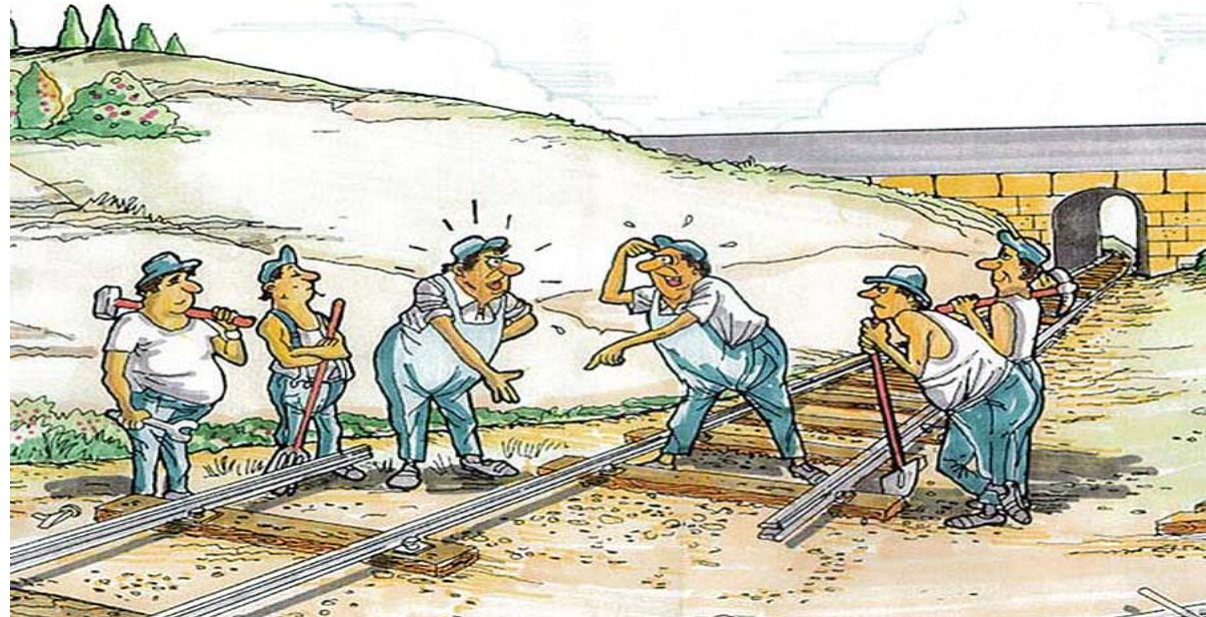
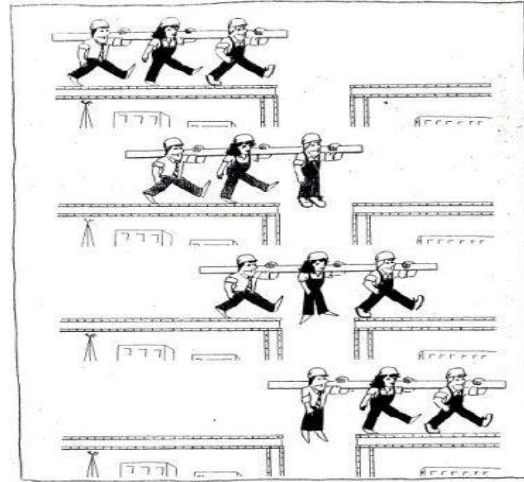
- NSAIDs
 - Ibuprofen, naproxen...
- DMARDs
 - Disease modifying anti rheumatic drugs
 - Metótrexat fólshýruantagónisti
 - Sulfasalazin
 - Anti – TNF
 - Infliximab, adalimumab, etanercept, golimumab, certrolizumabpegol...
- Sterar
 - Liðinnspýtingar
 - Prednisolon um munn



Teymisvinna

- Hjúkrunarfræðingur
- Sjúkraþjálfari
- Sálfræðingur
- Félagsráðgjafi
- Iðjuþjálfari

- Barnalæknir
- Augnlæknir
- Bæklunarlæknir
- Handarskurðlæknir
- Tannlæknir



HORFUR VEX EKKERT ENDILEGA BURT

- Fáliðagigt
 - 18 ára - > 1/2 í remission
- RF jákvæð fjölliðagigt -> fáir ná langvinnri remission
- RF neikvæð fjölliðagigt -> misjafnt
- 1/2 er áfram á DMARD við 18 ára aldur
- Bertilsson et al, J. Rheum. 2013
 - 86 einstaklingar
 - 60% voru áfram með sinn sjúkdóm
 - 40% þeirra sem voru í remission við 5 ára eftirlit voru það ekki við 17 ára eftirlit

FYRSTA GREININ 1896...

ON A
FORM OF CHRONIC JOINT DISEASE
IN CHILDREN

BY

GEORGE F. STILL, M.A., M.D., M.R.C.P.
MEDICAL REGISTRAR AND PATHOLOGIST TO THE HOSPITAL FOR SICK
CHILDREN, GREAT ORMOND STREET, LONDON

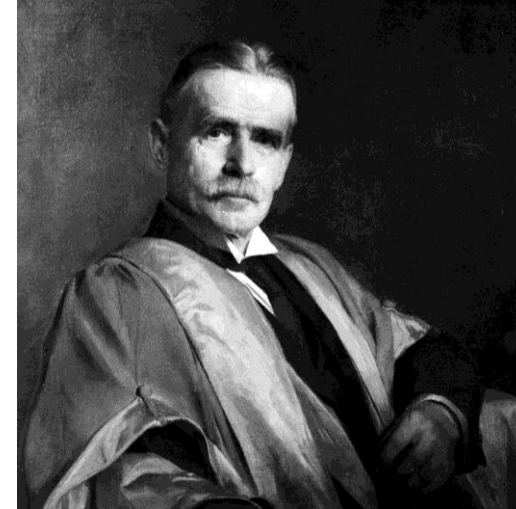
COMMUNICATED BY DR. ARCHIBALD E. GARROD

Received April 23rd—Read November 10th, 1896

THE occasional occurrence in children of a disease closely resembling the rheumatoid arthritis of adults has been recognised for several years. The identity of the disease seen in children with that in adults has never, so far as I am aware, been called in question.

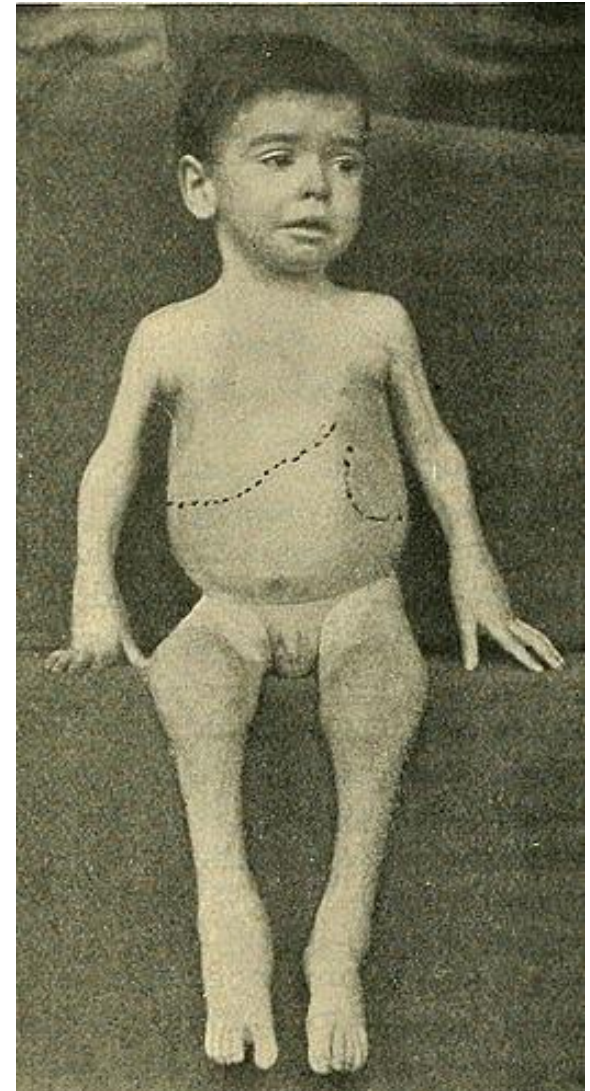
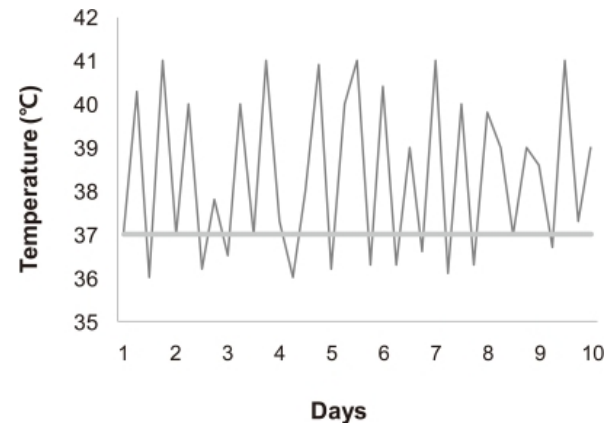
The purpose of the present paper is to show that although the disease known as rheumatoid arthritis in adults does undoubtedly occur in children, the disease which has most commonly been called rheumatoid arthritis in children differs both in its clinical aspect and in its morbid anatomy from the rheumatoid arthritis of adults; it presents, in fact, such marked differences as to suggest that it has a distinct pathology.

The cases hitherto grouped together as rheumatoid



FJÖLKERFAGIGT

- Toppóttur óútskýrður hiti í minnst 2 vikur
- Liðbólga í einum eða fleiri liðum í >6 vikur
- Að minnsta kosti eitt þessara einkenna:
 - Breytileg útbrot (e. evanescent – hverfa, hjaðna á stundum)
 - Útbreiddar eitlastækkunir
 - Lifrar- og/eða miltisstækkun
 - Lífhimnubólgur (e. Serositis)



FJÖLKERFAGIGT – GREININGARSKILMERKI FRAMTÍÐARINNAR


- Toppóttur endurtekinn óútskýrður hiti í minnst 3 daga af 14
- Að minnsta kosti 2 major criteria eða 1 major ásamt 2 minor:
 - Major criteria:
 - Breytileg útbrot (e. evanescent – hverfa, hjaðna á stundum)
 - Liðbólga
 - Minor criteria:
 - Útbreiddar eitlastækkar og/eða lifrar- og/eða miltisstækkun
 - Lífhimnubólgur (e. serositis)
 - Liðverkir í ≥ 2 vikur án liðbólgu
 - Leukocytosis $>15.000/\mu\text{L}$ ásamt neutrofilaukningu



FJÖLKERFAGIGT

- Algengara í yngri börnum
 - > 1/2 fyrir 5 ára
- Jöfn kynjadreifing
- Nýgengi 0,4-0,9/100.000
- Af öðrum toga
 - Cytokine dysregulation
 - Innate immune abnormalities
 - Autoinflammatory disease

Basic and translational research
Extended report

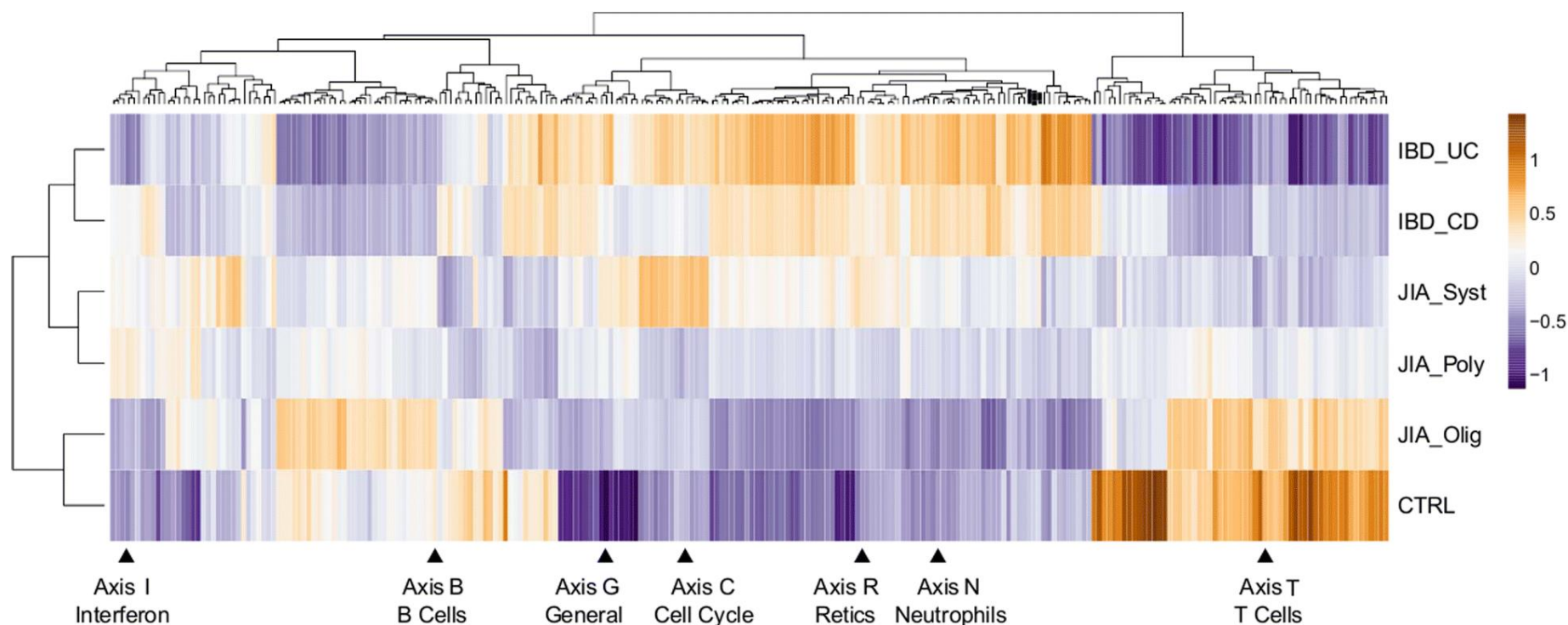
Genetic architecture distinguishes systemic juvenile idiopathic arthritis from other forms of juvenile idiopathic arthritis: clinical and therapeutic implications 

Michael J Ombrello¹, Victoria L Arthur¹, Elaine F Remmers², Anne Hinks³, Ioanna Tachmazidou⁴, Alexei A Grom^{5, 6}, Dirk Foell⁷, Alberto Martini^{8, 9}, Marco Gattorno⁹, Seza Özen¹⁰, Sampath Prahalad^{11, 12}, Andrew S Zeff¹³, John F Bohnsack¹⁴, Norman T Ilowite¹⁵, Elizabeth D Mellins¹⁶, Ricardo Russo¹⁷, Claudio Len¹⁸, Maria Odete E Hilario¹⁸, Sheila Oliveira¹⁹, Rae S M Yeung^{20, 21, 22}, Alan M Rosenberg²³, Lucy R Wedderburn^{24, 25}, Jordi Anton²⁶, Johannes-Peter Haas²⁷, Angela Rosen-Wolff²⁸, Kirsten Minden^{29, 30}, Klaus Tenbrock³¹, Erkan Demirkaya¹⁰, Joanna Cobb^{3, 32}, Elizabeth Baskin¹, Sara Signa⁸, Emily Shuldiner¹, Richard H Duerr^{33, 34}, Jean-Paul Achkar^{35, 36}, M Ilyas Kamboh³⁴, Kenneth M Kaufman^{5, 6}, Leah C Kottyan^{5, 6}, Dalila Pinto³⁷, Stephen W Scherer³⁸, Marta E Alarcón-Riquelme^{39, 40}, Elisa Docampo^{41, 42}, Xavier Estivill^{42, 43}, Ahmet Gül⁴⁴, British Society of Pediatric and Adolescent Rheumatology (BSPAR) Study Group, Inception Cohort of Newly Diagnosed Patients with Juvenile Idiopathic Arthritis (ICON-JIA) Study Group, Childhood Arthritis Prospective Study (CAPS) Group, Randomized Placebo Phase Study of Rilonacept in sJIA (RAPPORT) Investigators, Sparks-Childhood Arthritis Response to Medication Study (CHARMS) Group, Biologically Based Outcome Predictors in JIA (BBOP) Group, Carl D Langefeld⁴⁵, Susan Thompson^{5, 6}, Eleftheria Zeggini⁴, Daniel L Kastner², Patricia Woo²⁵, Wendy Thomson^{3, 32}



BARNAGIGT OG BÓLGUSJÚKDÓMAR Í ÞÖRMUM

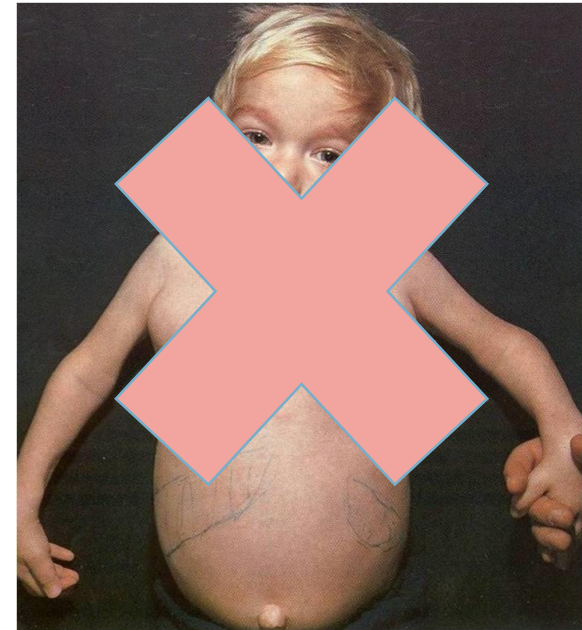
Heat map of gene expression using blood transcript modules



Mo et al, Disease-specific regulation of gene expression in a comparative analysis of juvenile idiopathic arthritis and inflammatory bowel disease, Genome Medicine, 2018

EINKENNI OG BLÓÐRANNSÓKNIR

- Hiti
 - Stundum toppóttur
- Útbrot
- Liðbólгур?
 - Úlnliðir, hné, ökkjar
- Eitlastækkunir
- Lifrar- og miltisstækkun
- Gollurshúsbólga
- Leukocytosis
- Thrombocytosis
- Anemia
- Hækkun bólguparametra
 - Sökk, crp, ferritin
- Transaminasahækkun

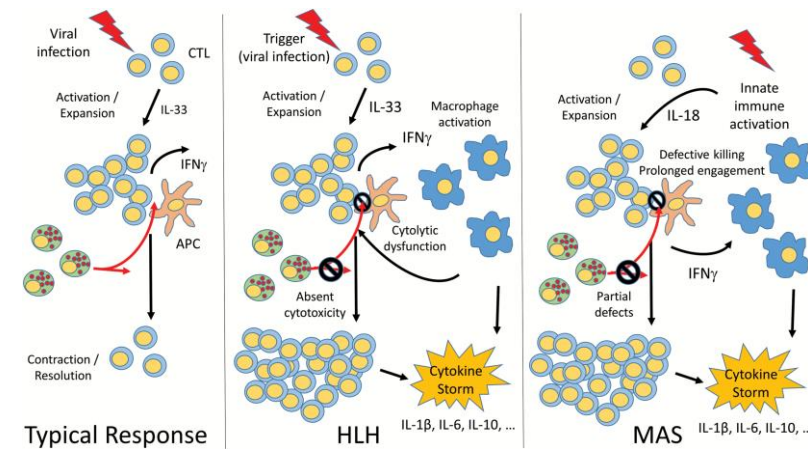


Þau líta bara oft út eins og hvert annað barn með hita...

FYLGIVILLAR

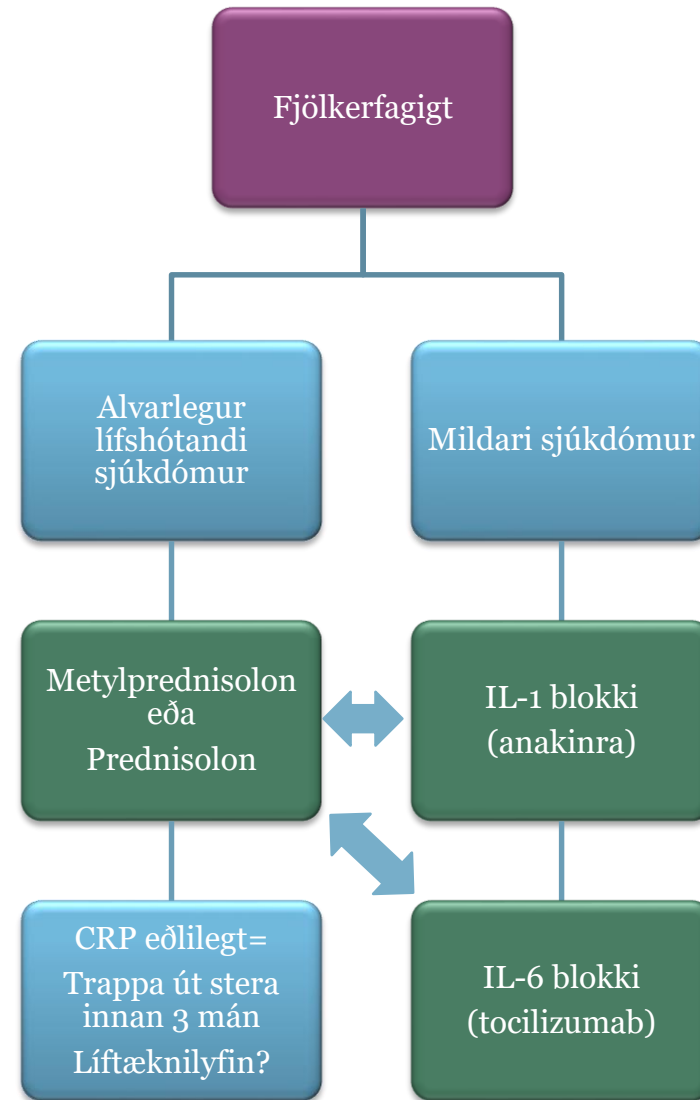
- HLH/MAS
 - Hiti, útbrot, eitlastækkarir, cytopeniur, lifrartruflun, storkubrenslun, taugakerfiseinkenni
 - Erfið greining – svipuð einkenni
 - 10% fá, 10% deyja
- Amyloidosis
 - Nýru, lifur, hjarta, meltingarvegur
 - Sárastaldgæft nú til dags

Fig. 1. Convergent pathways of the hyperferritinemic syndromes HLH and MAS. In a typical immune response, infectious ...

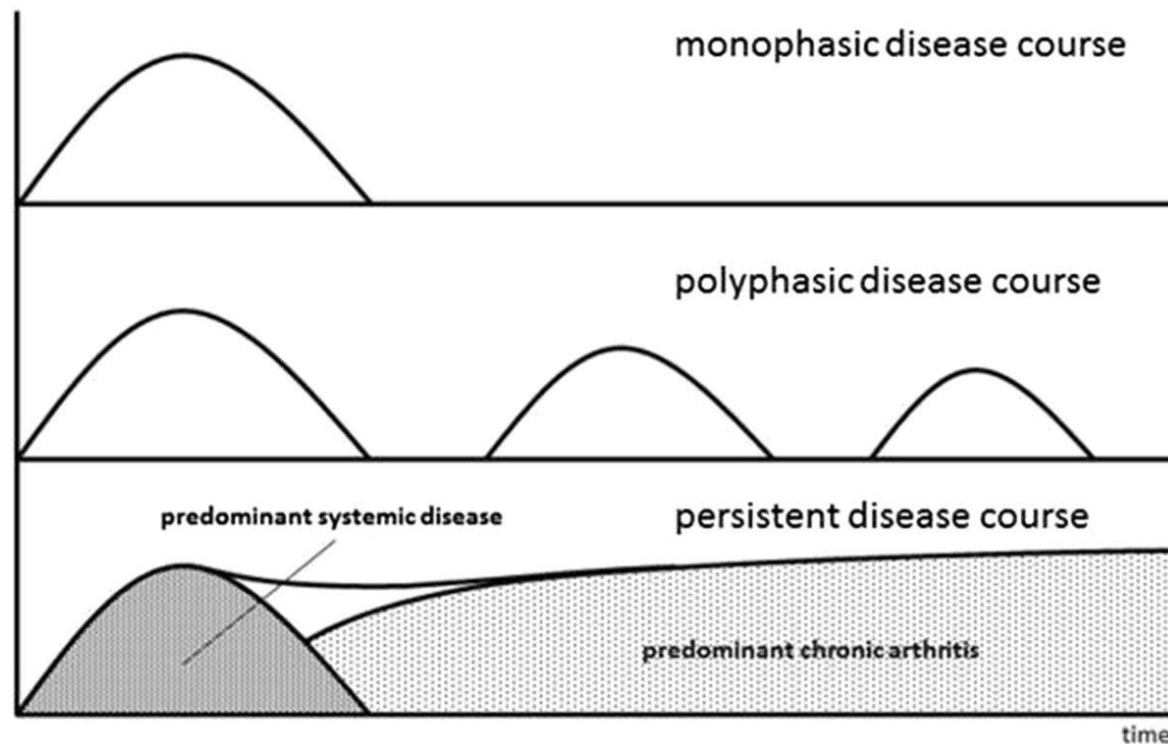


MEÐFERÐ

- **NSAIDS**
- **Sterar**
 - Iv púlsar, pö
- (Cyclophosphamide)
- **IL-1 blokkar:** Anakinra, Riloncept og Canakinumab
- **IL-6 blokkar:** Tocilizumab
- **CD80/CD86-CD28 blokkar:** Abatacept (Ræsing T fruma)
- Metotrexat
- **TNF-alfa blokkar:** infliximab, etanercept, adalimumab, golimumab
- **CD20 blokkar:** rituximab
- Cyclosporin, thalidomide



HORFUR



Hügler et al, Development of positive antinuclear antibodies and rheumatoid factor in systemic juvenile idiopathic arthritis points toward an autoimmune phenotype later in the disease course, Pediatric Rheumatology 2014

AUTOINFLAMMATORY DISEASES

- Sjaldgæfir
 - FMF, TRAPS, CAPS, HIDS, PAPA, Blaus syndrome
- PFAPA
 - Periodic
 - Fever
 - Aphthous stomatitis
 - Pharyngitis
 - Adenitis (cervical)

ACUTE RHEUMATIC FEVER

JONES CRITERIA

MAJOR CRITERIA (1-2)

- Carditis
- Polyarthritits
- Chorea
- Erythema marginatum
- Subcutaneous nodules

MINOR CRITERIA (2)

- Áður RF
- Liðverkir
- Hiti
- Hækkun bólguparametra
- Lengt PR bil

- Sannreynd streptokokkasýking

ALMENNIR BÓLGUSJÚKDÓMAR JUVENILE -

- Systemic Lupus erythematosus
 - Neonatal lupus erythematosus
- Dermatomyositis / Myositis
- Systemic sclerosis
- Localized scleroderma
- Sjögrens syndrome
- Mixed connective tissue disease

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Lok