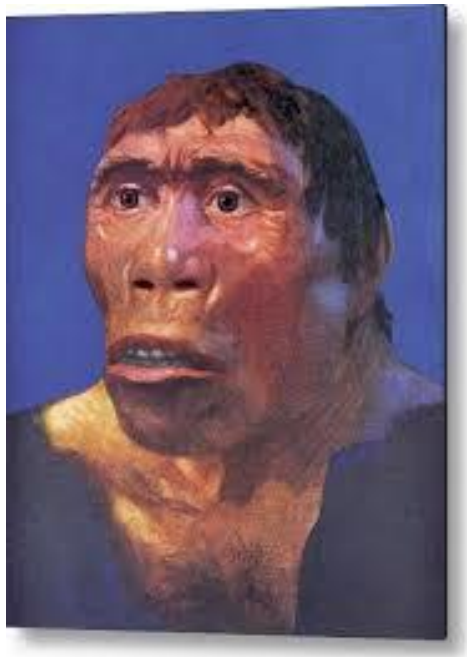
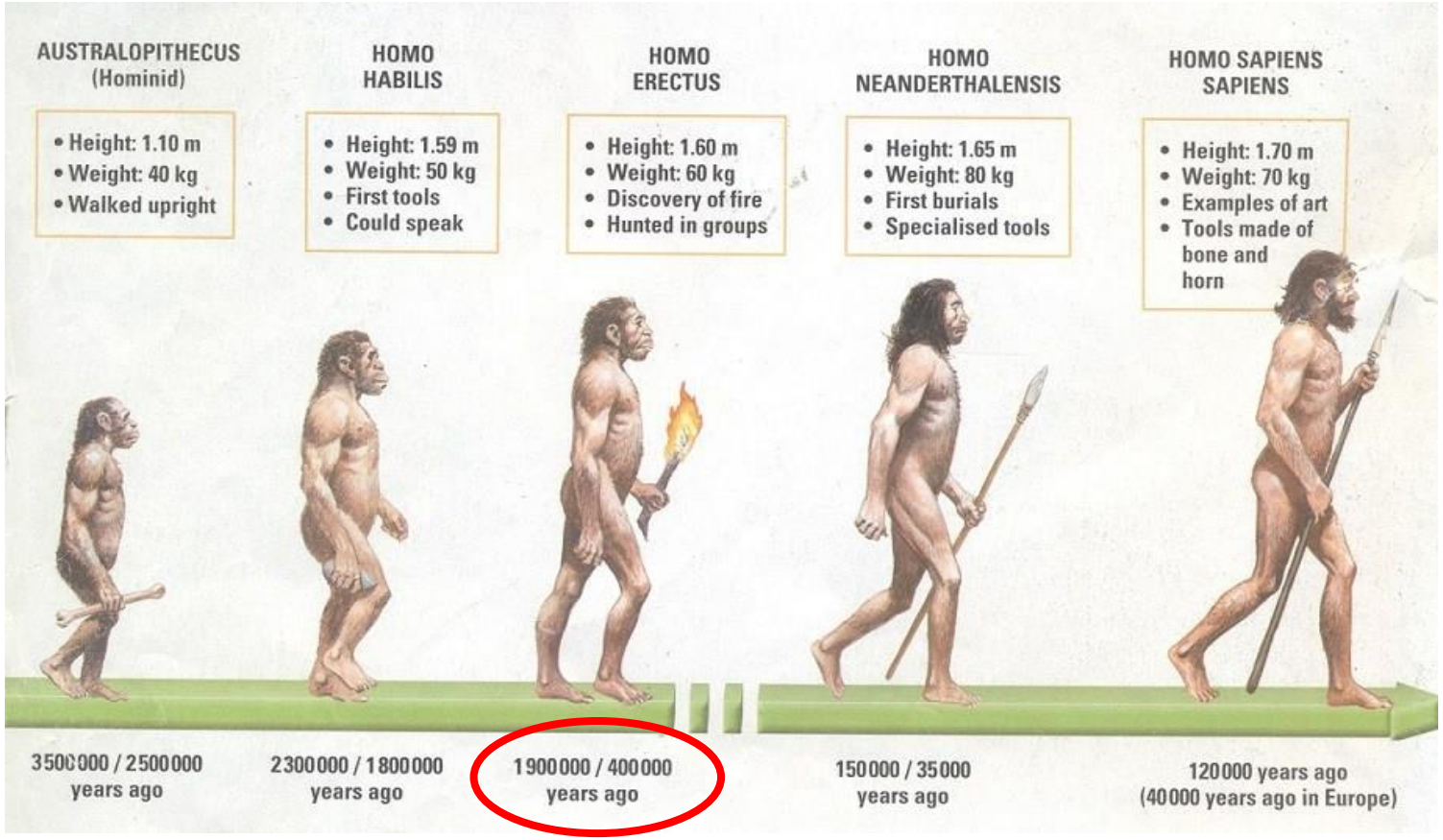


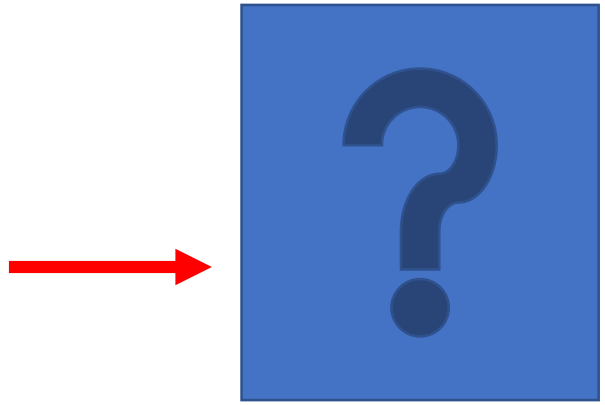
Puusa- ja põlveartroos

Vahur Metsna

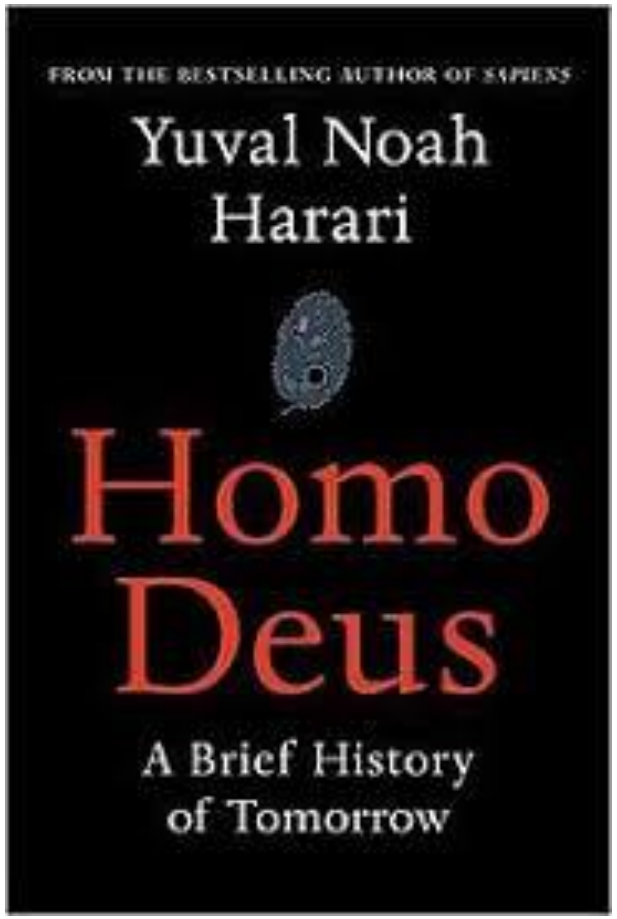
Ortopeed

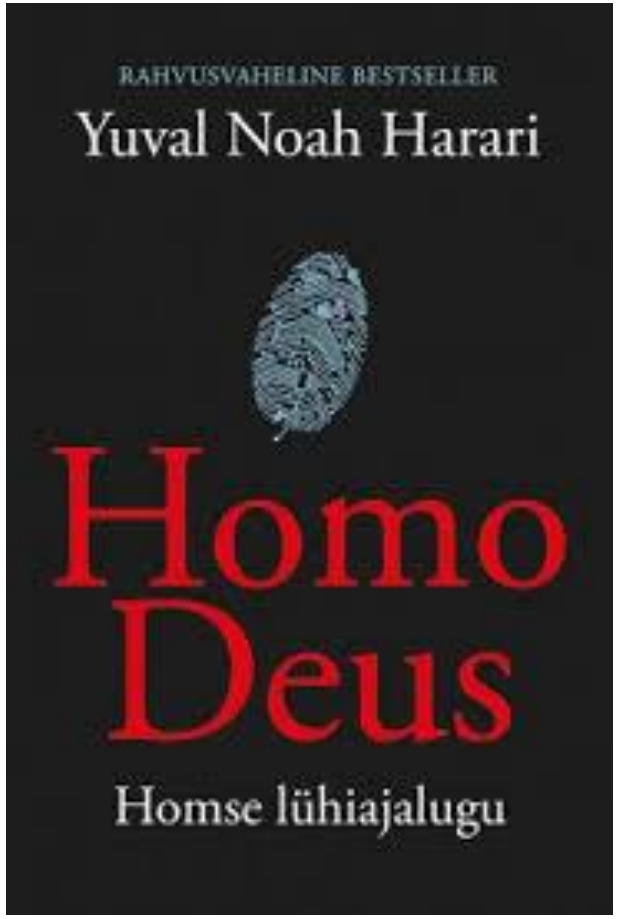
Inimese areng



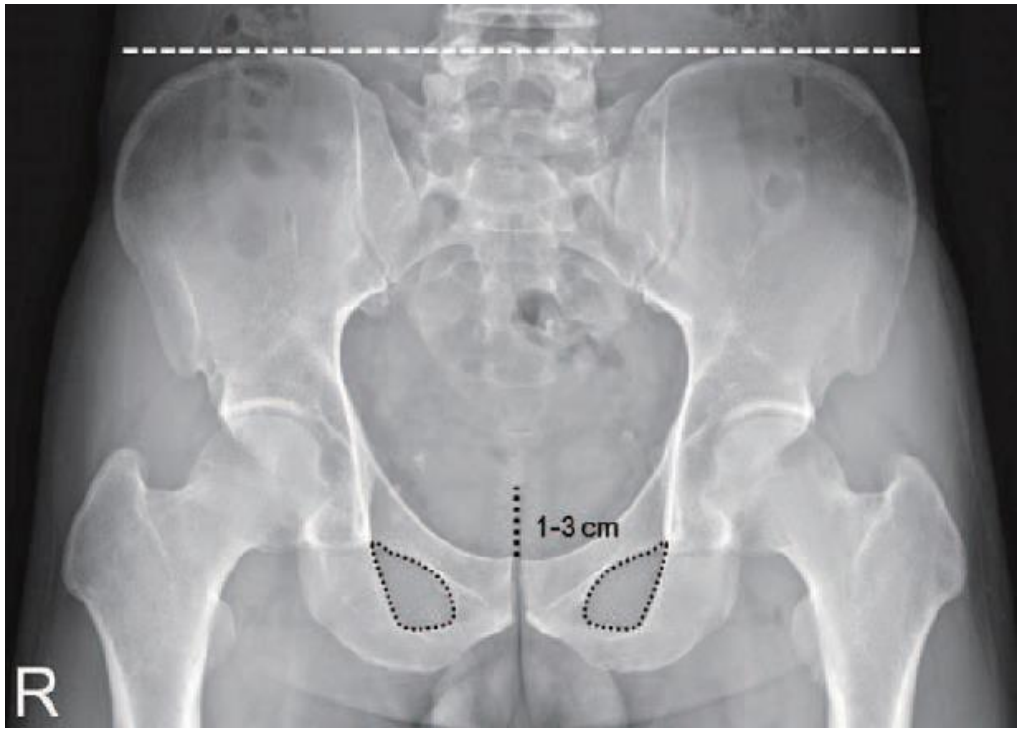


Homo deus


FROM THE BESTSELLING AUTHOR OF SAPIENS
Yuval Noah Harari
Homo Deus
A Brief History of Tomorrow

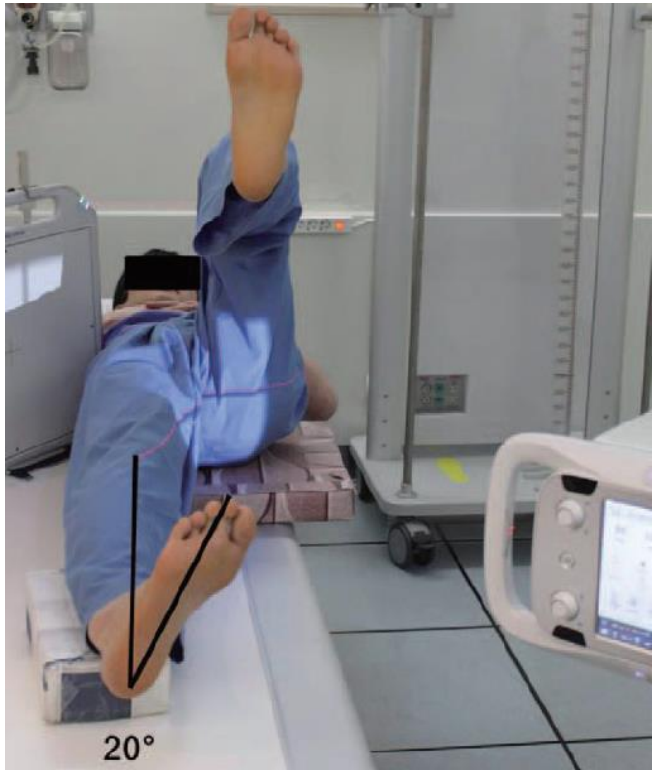

RAHVUSVAHELINE BESTSELLER
Yuval Noah Harari
Homo Deus
Homse lühiajalugu

Mõlemad puusad AP ülesvõttele



Lim, S. J. and Y. S. Park (2015). "Plain Radiography of the Hip: A Review of Radiographic Techniques and Image Features." Hip Pelvis **27**(3): 125-134

Puusaröntgen: cross-table



Lim, S. J. and Y. S. Park (2015). "Plain Radiography of the Hip: A Review of Radiographic Techniques and Image Features." Hip Pelvis **27**(3): 125-134

Puusaröntgen: Löwenstein

Lim, S. J. and Y. S. Park (2015). "Plain Radiography of the Hip: A Review of Radiographic Techniques and Image Features." Hip Pelvis **27**(3): 125-134

Kellgren-Lawrence klassifikatsioon

Excellent inter-reader variability ...

Gold, G. E., et al. (2015). "OARSI Clinical Trials Recommendations: Hip imaging in clinical trials in osteoarthritis."
Osteoarthritis Cartilage **23**(5): 716-731.

Röntgenpildid

Fujii, M., et al. (2011). "Effect of intra-articular lesions on the outcome of periacetabular osteotomy in patients with symptomatic hip dysplasia.„
J Bone Joint Surg Br **93**(11): 1449-1456.

Tönnis klassifikatsioon

Grade	Description
0	No signs of osteoarthritis
1	Increased sclerosis, slight narrowing of the joint space, no or slight loss of head sphericity or lipping at the joint margins
2	Small cysts, moderate narrowing of the joint space, moderate loss of head sphericity
3	Large cysts, severe narrowing or obliteration of the joint space, severe deformity of the head

Parameters such as sclerosis, osteophytes or head sphericity can easily be over- or underestimated, thus, leading to unequal grading.

Variance in grading no and slight osteoarthritis was the most frequent cause for intra- and interobserver disagreements (76.3 and 73.01 % of the non-concordant observations, respectively).

Valera, M., et al. (2016). "Reliability of Tonnis classification in early hip arthritis: a useless reference for hip-preserving surgery." Arch Orthop Trauma Surg **136**(1): 27-33.

Põlveartroosi klassifikatsioonid

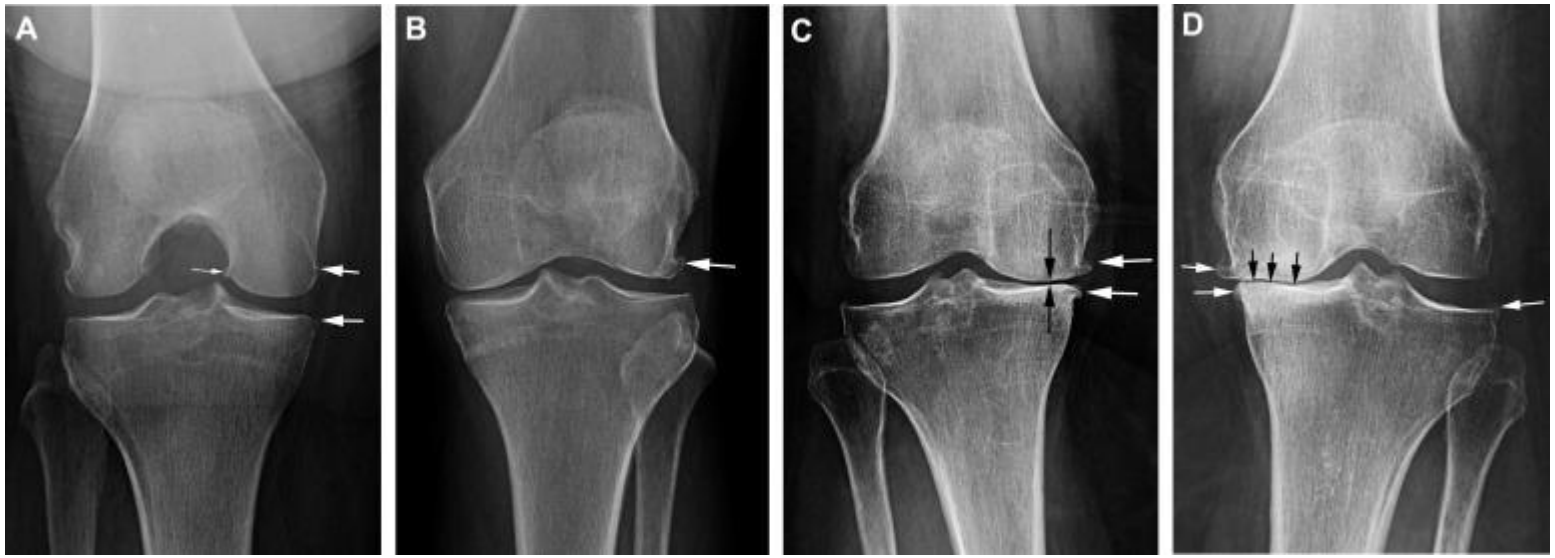
- Kellgren-Lawrence
- Ahlbäck

Ahlbäck grade	*Ahlbäck definition*	*Kellgren & Lawrence grade*	*Kellgren & Lawrence definition*
		Grade 1 'Doubtful'	Minute osteophyte, doubtful significance
		Grade 2 'Minimal'	Definite osteophyte, unimpaired joint space
Grade I	Joint space narrowing (joint space < 3 mm)	Grade 3 'Moderate'	Moderate dimunition of joint space
Grade II	Joint space obliteration	Grade 4 'Severe'	Joint space greatly impaired with sclerosis of subchondral bone
Grade III	Minor bone attrition (0–5 mm)	Grade 4 'Severe'	Joint space greatly impaired with sclerosis of subchondral bone
Grade IV	Moderate bone attrition (5–10 mm)	Grade 4 'Severe'	Joint space greatly impaired with sclerosis of subchondral bone
Grade V	Severe bone attrition (>10 mm)	Grade 4 'Severe'	Joint space greatly impaired with sclerosis of subchondral bone

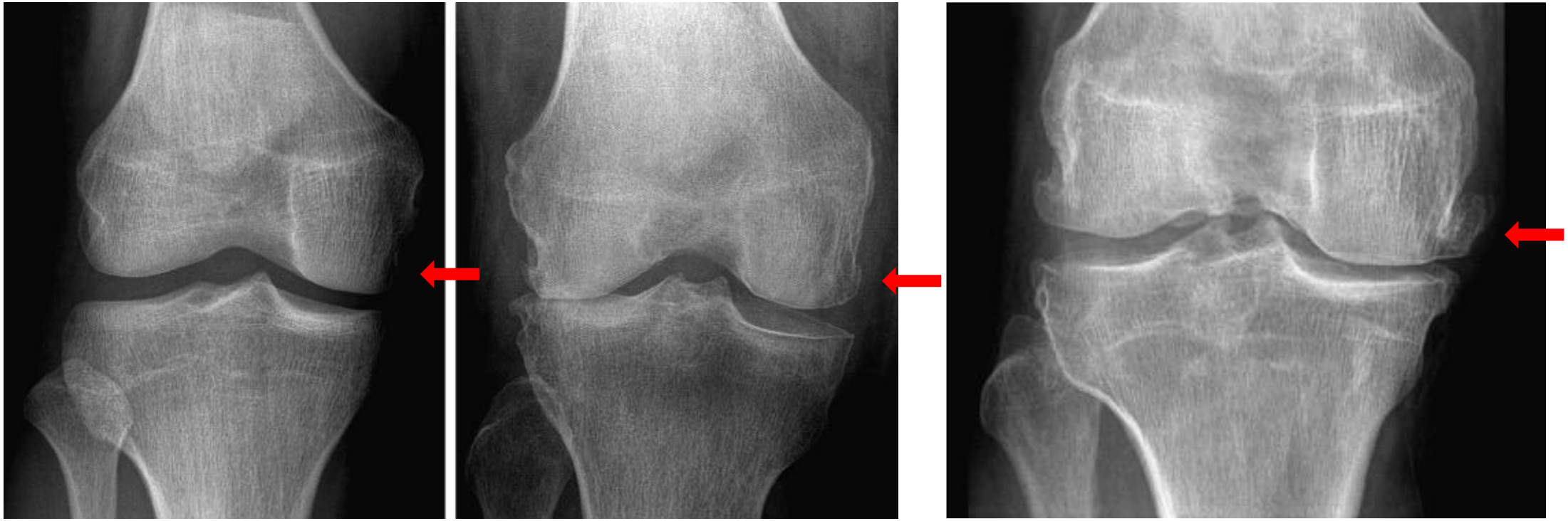
Kellgren JH, Jeffrey M, Ball J. *Atlas of standard radiographs. Vol 2.* Oxford: Blackwell Scientific, 1963.

Ahlbäck S. Osteoarthrosis of the knee: a radiographic investigation. Acta Radiol Stockholm 1968; (suppl 277):7-72.

Kellgren-Lawrence



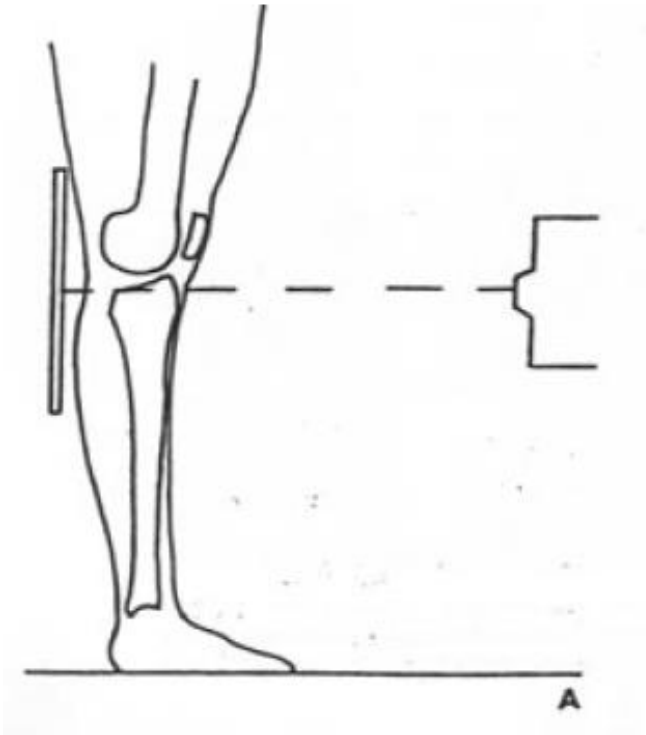
OARSI atlas



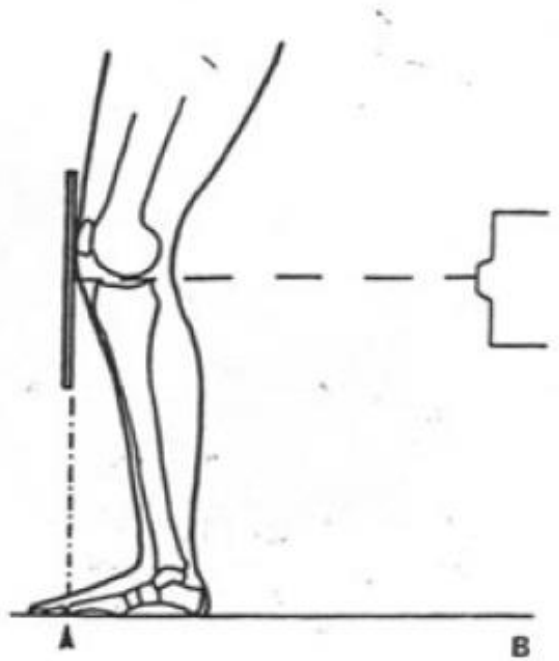
Altman, R. D. and G. E. Gold (2007). "Atlas of individual radiographic features in osteoarthritis, revised." Osteoarthritis Cartilage **15 Suppl A**: A1-56.

Röntgenkiire suund

AP

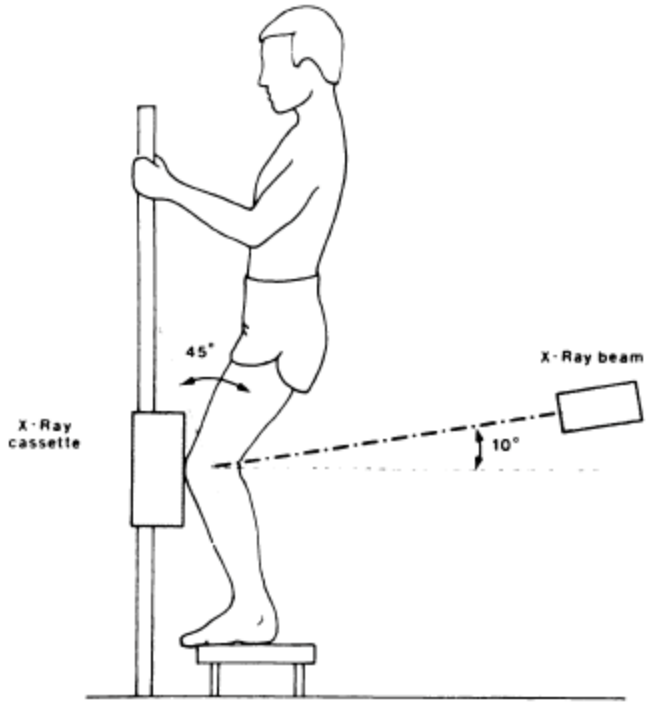


PA



Põlve PA röntgenülesvõte

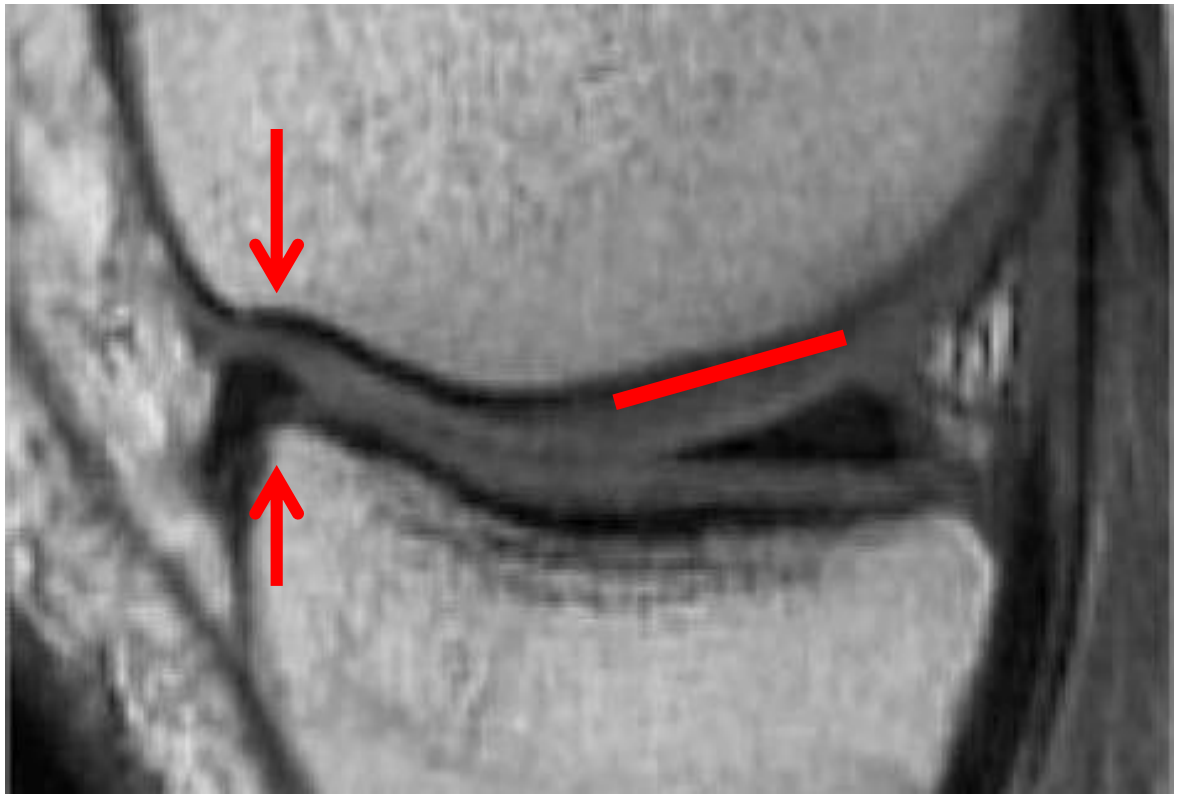
Rosenbergi vaade 45 °



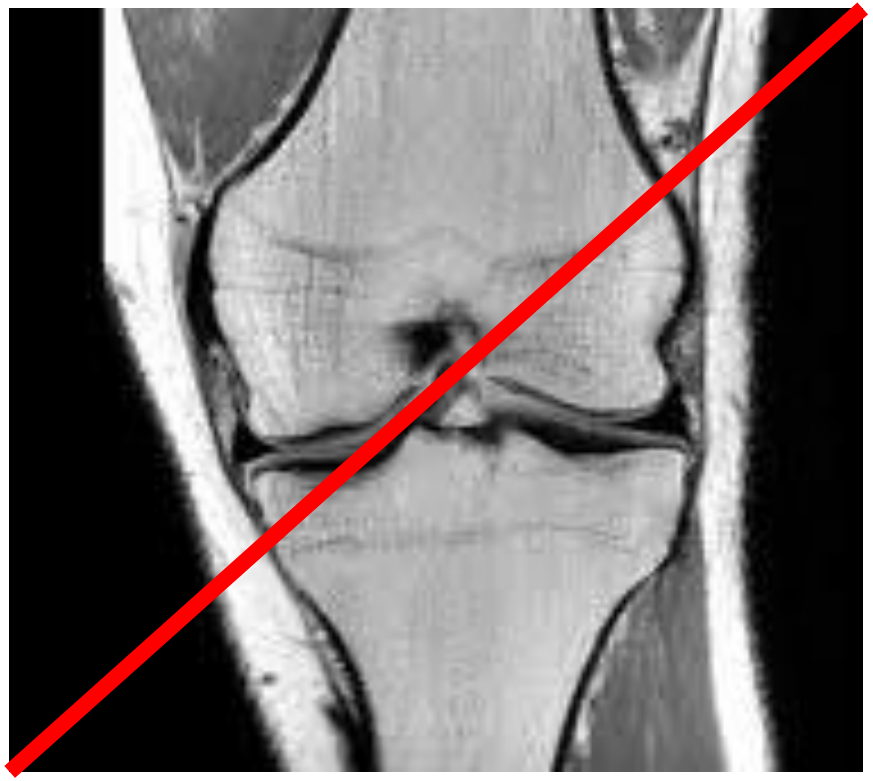
Artroskoopial kõige enam kõhrekahjustusi tibia ja reie kontaktalal põlve 30-60 kraadises fleksioonis

J Bone Joint Surg Am **70**:10, 1479-83 (1988)

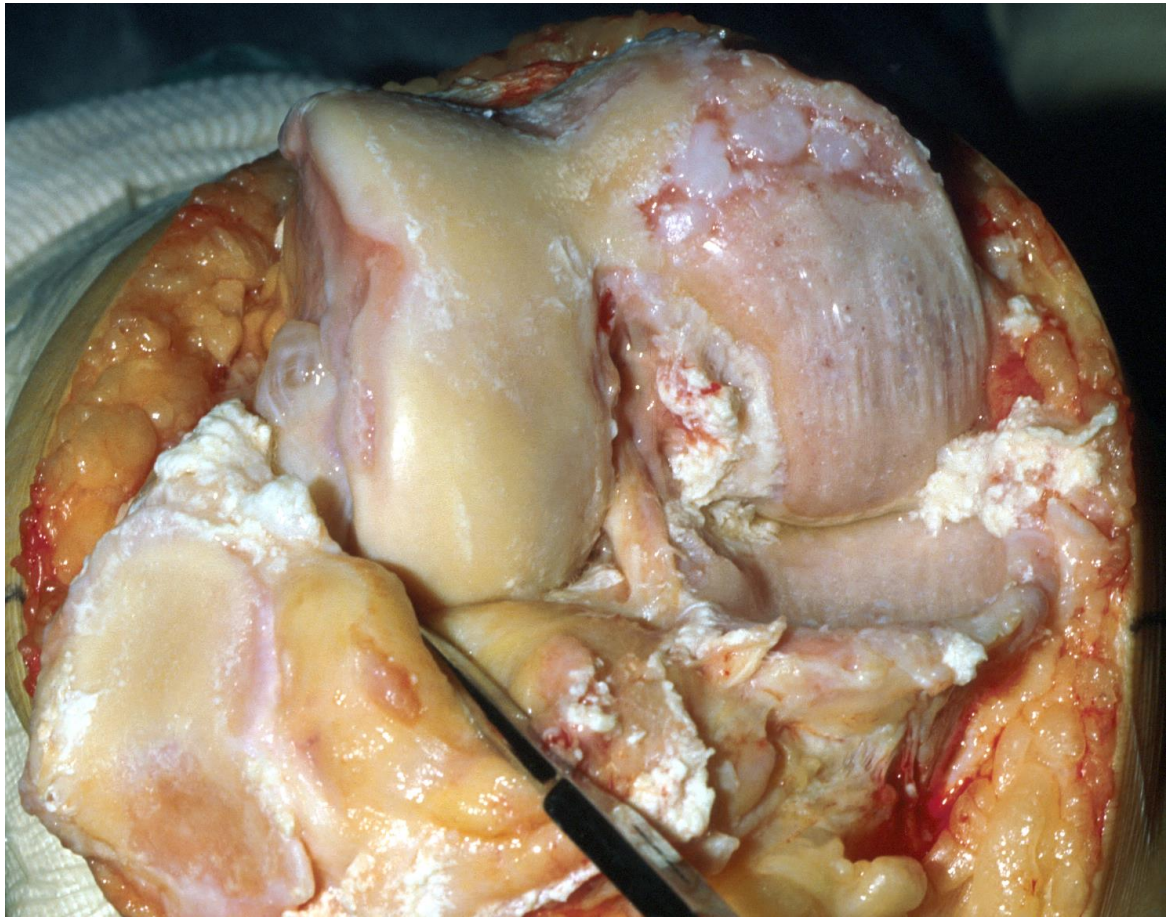
Põlveliigese kõhre kulumine



MRT pole vajalik



Kulunud põlv

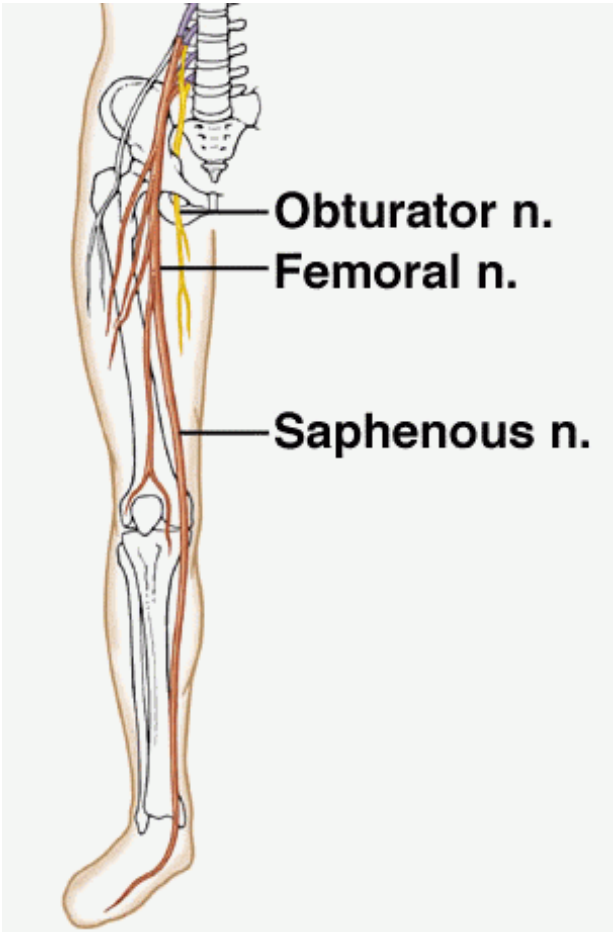


Kulunud põlv seestpoolt

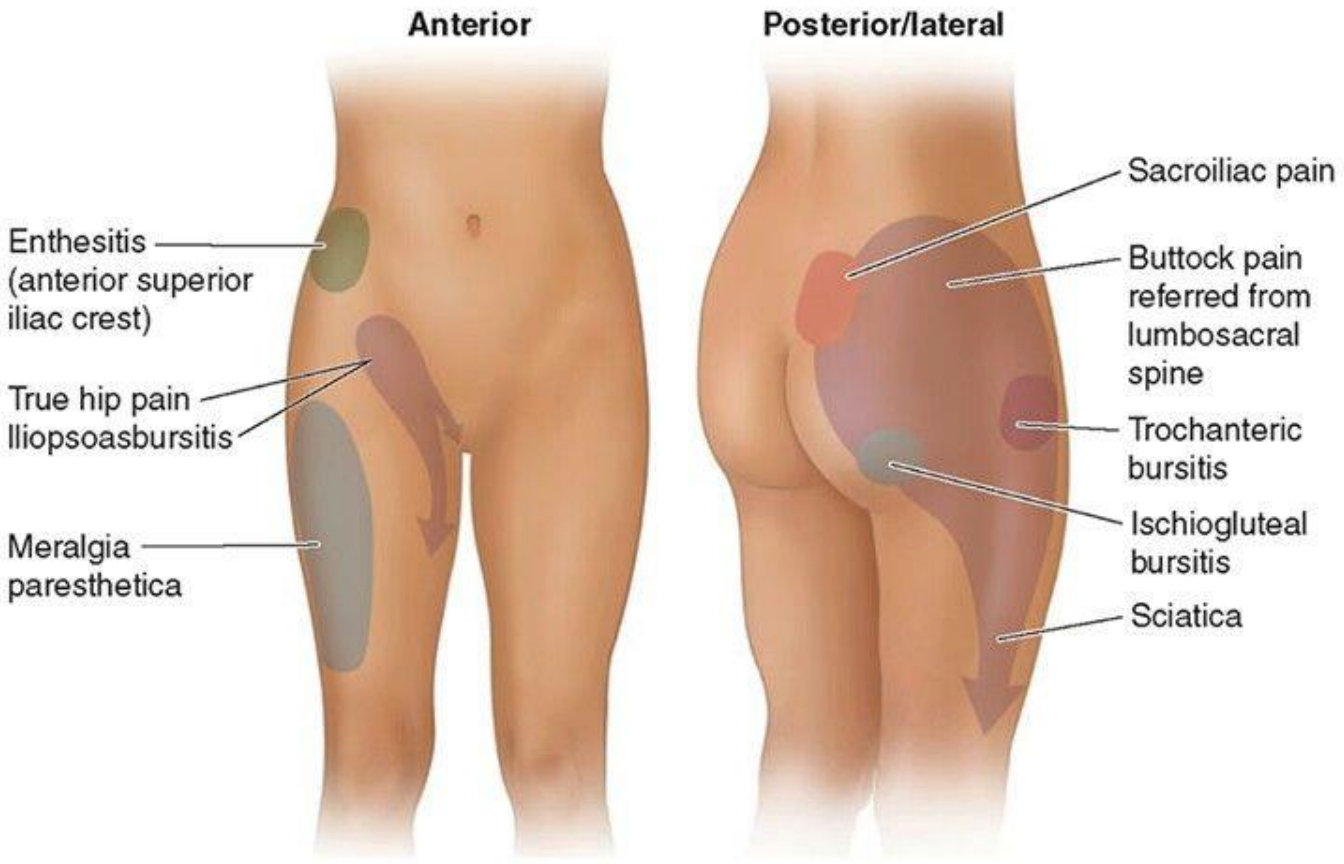
Puusa- või põlvehaigus

- Puusaliigese artroos + **<u>põlvevalu</u>** (eespinnal)

kuni 70%



Puusa- või seljahaigus



Põlveartroosi diagnoosimine

In adults aged >40 years with usage-related knee pain, only short-lived morning stiffness, functional limitation and one or more typical examination findings (crepitus, restricted movement, bony enlargement), a confident diagnosis of knee OA can be made without a radiographic examination. This applies even if radiographs appear normal

EULAR evidence-based recommendations for the diagnosis of knee osteoarthritis

W Zhang,[1] M Doherty,[1] G Peat,[2] S M A Bierma-Zeinstra,[3] N K Arden,[4] B Bresnihan,[5] G Herrero-Beaumont,[6] S Kirschner,[7] B F Leeb,[8] L S Lohmander,[9] B Mazières,[10] K Pavelka,[11] L Punzi,[12] A K So,[13] T Tuncer,[14] I Watt,[15] J W Bijlsma[16]

Ann Rheum Dis 2010;**69**:483–489

Osteoartroosi ravijuhend Eestis

American College of Rheumatology 2012 Recommendations for the Use of Nonpharmacologic and Pharmacologic Therapies in Osteoarthritis of the Hand, Hip, and Knee

MARC C. HOCHBERG,[1] ROY D. ALTMAN,[2] KARINE TOUPIN APRIL,[3] MARIA BENKHALTI,[3] GORDON GUYATT,[4] JESSIE McGOWAN,[3] TANVEER TOWHEED,[5] VIVIAN WELCH,[3] GEORGE WELLS,[3] AND PETER TUGWELL[3]

Osteoarthritis and Cartilage

OARSI guidelines for the non-surgical management of knee osteoarthritis

T.E. McAlindon †*, R.R. Bannuru
S.M. Bierma-Zeinstra ¶
K. Kwoh ¶¶
†, N.K. Arden ‡, F. Berenbaum §‖,
tin †††‡, D.J. Hunter §§, H. Kawaguchi ‖‖,
. Roos ‡‡‡, M. Underwood §§§

OARSI OSTEOARTHRITIS RESEARCH SOCIETY INTERNATIONAL

CrossMark

AAOS AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS

MANAGEMENT OF OSTEOARTHRITIS OF THE HIP
EVIDENCE-BASED CLINICAL PRACTICE GUIDELINE

Adopted by the American Academy of Orthopaedic Surgeons
Board of Directors
3.13.17

EULAR evidence based recommendations for the management of hip osteoarthritis: report of a task force of the EULAR Standing Committee for International Clinical Studies Including Therapeutics (ESCISIT)

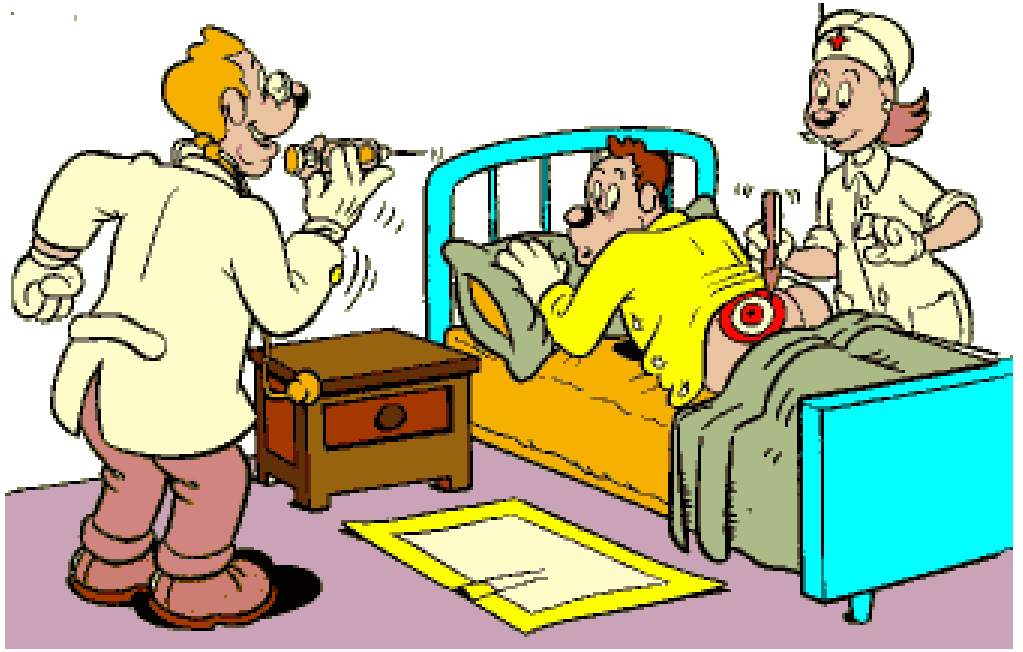
AMSSM Scientific Statement Concerning Viscosupplementation Injections for Knee Osteoarthritis: Importance for Individual Patient Outcomes

Thomas H. Trojian, MD, Andrew L. Concoff, MD,† Susan M. Joy, MD,‡*
John R. Hatzenbuehler, MD,§ Whitney J. Saulsberry, PharmD,¶ and
Craig I. Coleman, PharmD‖

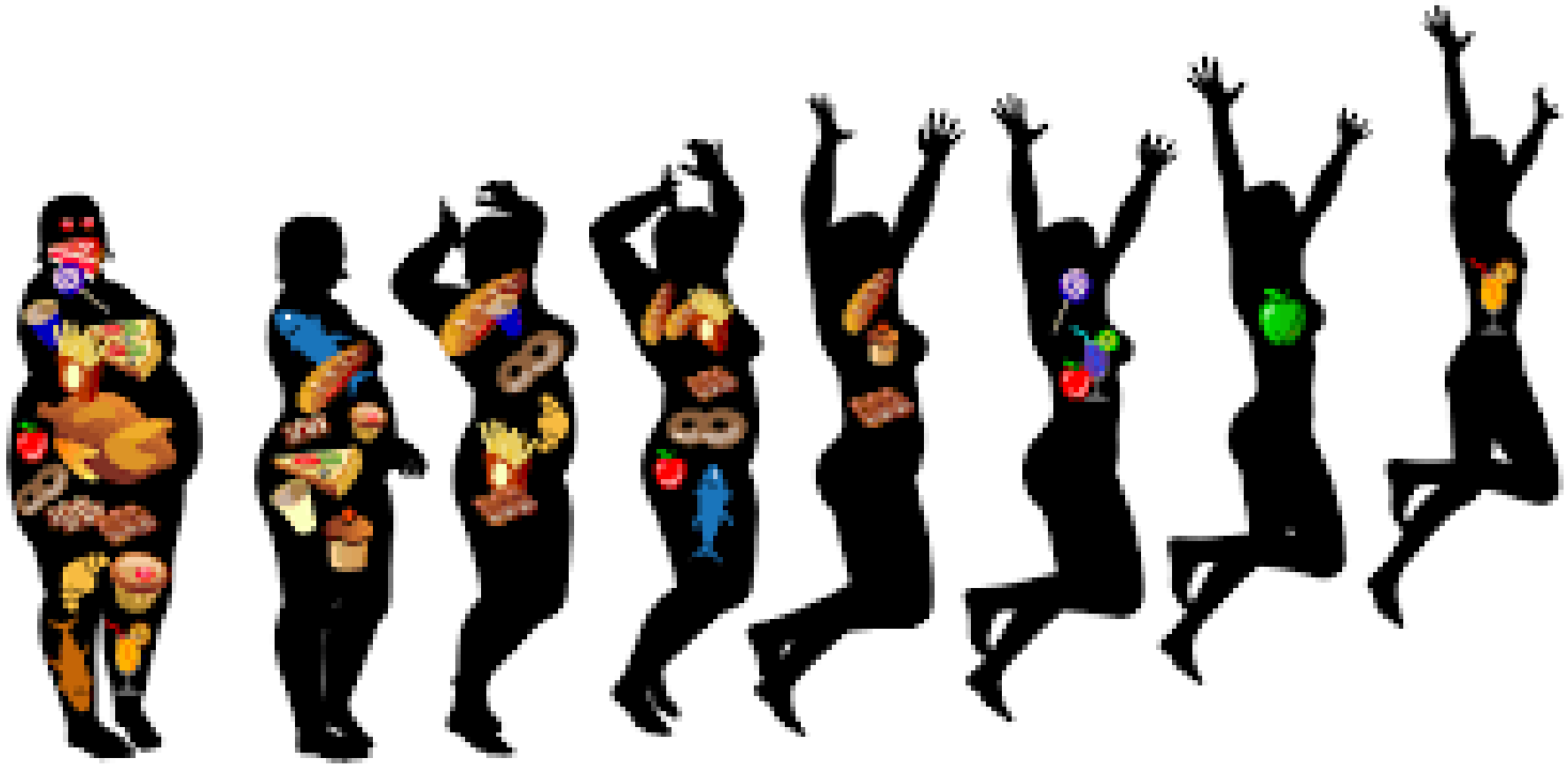
Mis on õige ?

Kindlasti teame

- Konservatiivne ravi on sümptomaatiline
- Ükski ravim ei taasta kulunud liigeskõhre



Kehakaalu langetamine ülekaalulistel



Ravivõimlemine: puusa- ja põlveartroos

- Kõik ühel nõul
  - Parandab funktsiooni
  - Vähendab valu
- Efekt tõestatud just (enne operatsiooni) konservatiivse ravi osana
- Vähendab endoproteesimise haiglapäevi

Osteoartroosi ravijuhend Eestis

Eesti Arst 2013;92(Lisa1):1–40

Tabel 7. Liigeseid vähem ja rohkem koormavad spordialad (38)

Väike koormus	Ujumine tervisespordina, statsionaarne velotrenažöör, sõudetrenažöör või elliptiline masin, *taiji*, väikese koormusega aeroobika, golf, tavaline kõnd, vesiaeroobika, võimlemine
Mõõdukas koormus	*Bowling*, vehklemine, jalgrattasõit, uisutamine, raskuste tõstmine, purjetamine, kiire kõnd, murdmaasuusatamine, lauatennis, kanuuga sõitmine, matkamine, ratsutamine, rulluisutamine siseruumides
Suur koormus	Korv-, võrk-, jalg-, käsipall, jooks võistlusalana, tennis, *squash*, ragbi, Ameerika jalgpall

Operatsioonijärgne ravivõimlemine

- Mis on mõõdik?
  - Patsiendi parem rahulolu teenusega ?
  - Emotsionaalne kindlustunne, et kõik võimalik tehtud?
- Funktsiooni erinevus puudub
- Pigem sõltub taastumine kaasuvatest haigustest ja rasvumisest

Ravivõimlemise intensiivsus

We found very low-quality to low-quality evidence for no important clinical benefit of high-intensity compared to low-intensity exercise programs in improving pain and physical function in the short term. There was insufficient evidence to determine the effect of different types of intensity of exercise programs.

Regnaux, J. P., et al. (2015). "High-intensity versus low-intensity physical activity or exercise in people with hip or knee osteoarthritis." Cochrane Database Syst Rev(10): CD010203.

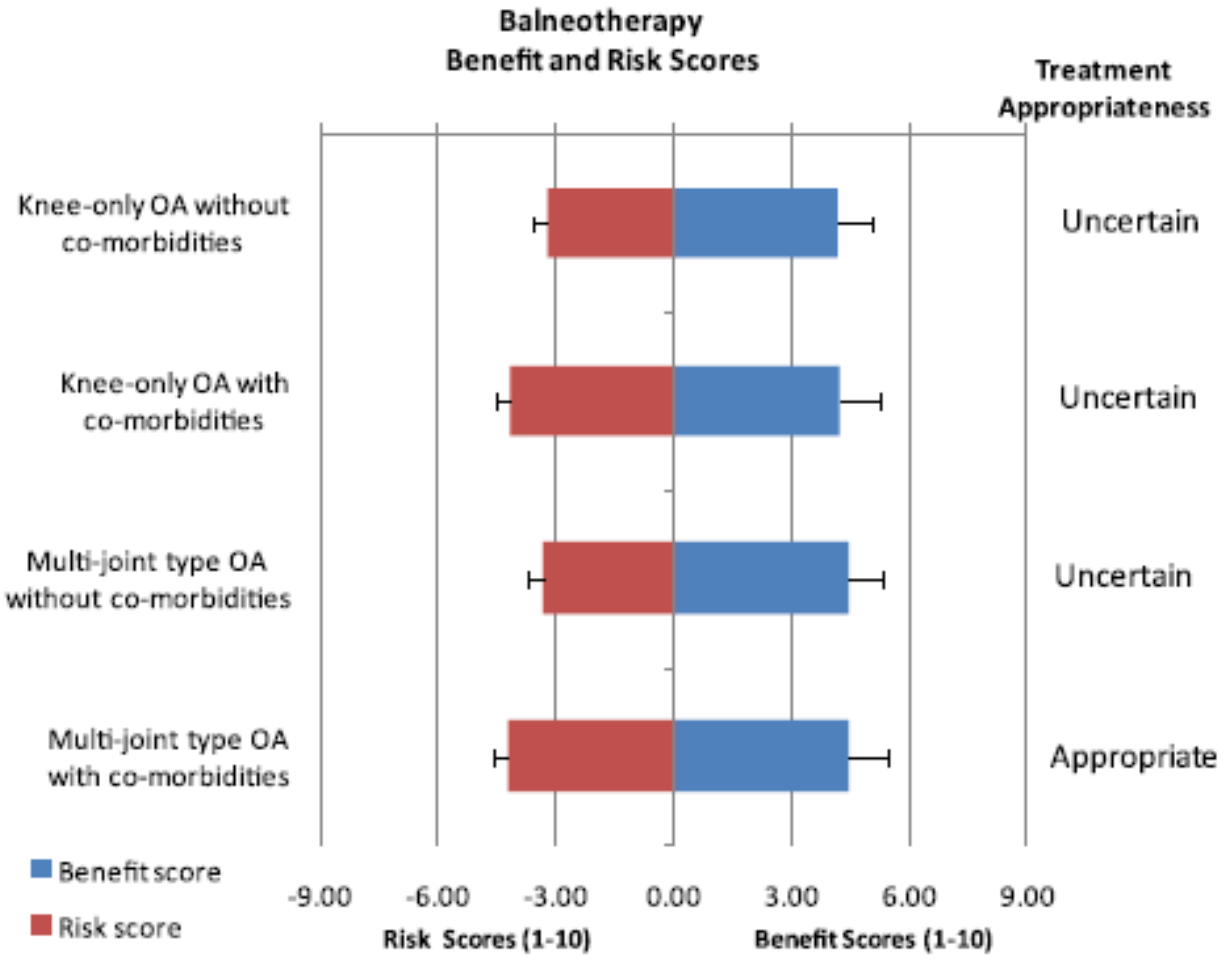
Vesivõimlemine

There is moderate quality evidence that aquatic exercise may have small, short-term, and clinically relevant effects on patient-reported pain, disability, and QoL in people with knee and hip OA.

Bartels, E. M., et al. (2016). "Aquatic exercise for the treatment of knee and hip osteoarthritis." Cochrane Database Syst Rev **3**: CD005523.

Balneoteraapia

OARSI 2014



Osteoarthritis and Cartilage 22 (2014) 363e388

Ortoosid

Evidence was inconclusive for the benefits of bracing for pain, stiffness, function and quality of life in the treatment of patients with medial compartment knee OA.

The optimal choice for an orthosis remains unclear, and long-term implications are lacking.

Duivenvoorden, T., et al. (2015). "Braces and orthoses for treating osteoarthritis of the knee." Cochrane Database Syst Rev(3): CD004020.

Ortoosid

AAOS 2013

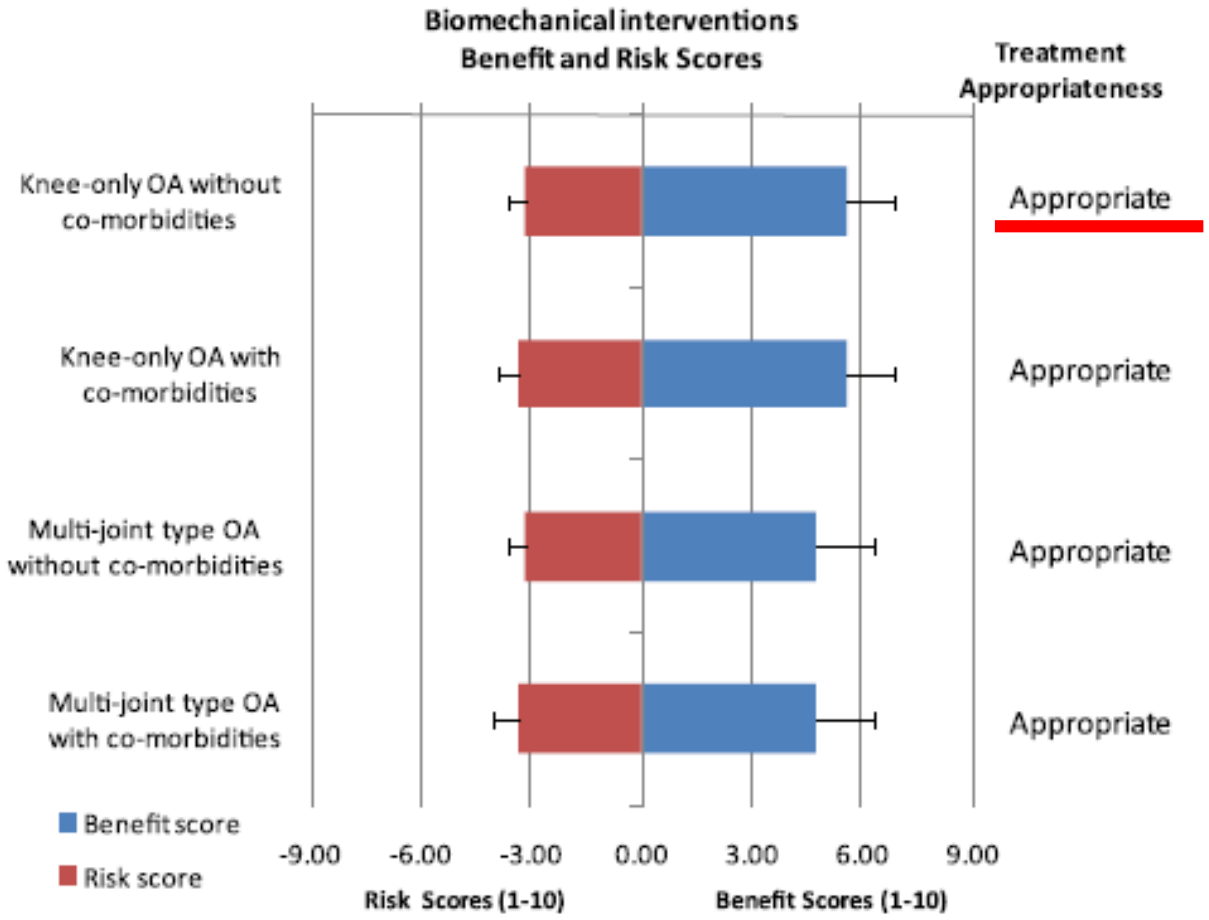
Table 1

American Academy of Orthopaedic Surgeons Evidence-Based Clinical Practice Guidelines for Osteoarthritis of the Knee[1]

Therapeutic Modality	AAOS Position	Strength of Supporting Evidence
Strengthening exercises with neuromuscular education	Recommend	Strong
NSAIDs	Recommend	Strong
Total knee arthroplasty	Recommend	Strong
Appropriate weight loss (body mass index ≥25 kg/m^2)	Recommend	Moderate
Valgus-producing proximal tibial osteotomy	Might recommend	Limited
Intra-articular corticosteroids	Cannot recommend for or against	Inconclusive
Acetaminophen (oral) or opioids (oral or transdermal patch)	Cannot recommend for or against	Inconclusive
Manual therapy	Cannot recommend for or against	Inconclusive
Physical agents, including electrotherapeutic modalities	Cannot recommend for or against	Inconclusive
Arthroscopic partial meniscectomy	Cannot recommend for or against	Inconclusive
Intra-articular hyaluronic acid	Cannot recommend	Strong
Braces (to unload medial compartment)	Cannot recommend	Strong
Arthroscopic intervention (eg, lavage, débridement)	Cannot recommend	Strong
Glucosamine and chondroitin	Cannot recommend	Strong
Acupuncture	Cannot recommend	Strong
Insoles (eg, lateral wedge)	Cannot recommend	Moderate
Needle lavage	Cannot recommend	Moderate
Free-floating (unfixed) interpositional device	Cannot recommend	Consensus (no reliable evidence)

Ortoosid

OARSI 2014



T.E. McAlindon et al.
Osteoarthritis and Cartilage 22 (2014) 36

Ortoosid

ACR 2012

Arthritis Care & Research
Vol. 64, No. 4, April 2012, pp 465–474
DOI 10.1002/acr.21596

Table 3. Nonpharmacologic recommendations for the management of knee OA

We strongly recommend that patients with knee OA should do the following:
Participate in cardiovascular (aerobic) and/or resistance land-based exercise
Participate in aquatic exercise
Lose weight (for persons who are overweight)
We conditionally recommend that patients with knee OA should do the following:
Participate in self-management programs
Receive manual therapy in combination with supervised exercise
Receive psychosocial interventions
Use medially directed patellar taping
Wear medially wedged insoles if they have lateral compartment OA
Wear laterally wedged subtalar strapped insoles if they have medial compartment OA
Be instructed in the use of thermal agents
Receive walking aids, as needed
Participate in tai chi programs
Be treated with traditional Chinese acupuncture*
Be instructed in the use of transcutaneous electrical stimulation*
We have no recommendations regarding the following:
Participation in balance exercises, either alone or in combination with strengthening exercises
Wearing laterally wedged insoles
Receiving manual therapy alone
Wearing knee braces
Using laterally directed patellar taping

VALURAVI

- Konsensus olemas, et aitab
- Tänapäeval mitmeetapiline valuravi

MANAGEMENT OF OSTEOARTHRITIS OF THE HIP
EVIDENCE-BASED CLINICAL PRACTICE GUIDELINE

Adopted by the American Academy of Orthopaedic Surgeons
Board of Directors
3.13.17

Puusaartroosi AAOS soovitused

- Ravimid `+`
  - NSAID
  - i/a glükokortikoidid (lühiaegseks valuraviks)
- Ravimid `-`
  - Glükoosamiinid
  - i/a hüaluroonhape
- Ravivõimlemine
  - Konservatiivse ravina vähendab valu ja parandab funktsiooni (väheste ja mõõdukate sümptomite korral)
  - Postoperatiivselt samuti kasulik

ACR PUUS 2012

Table 6. Pharmacologic recommendations for the initial management of hip OA*

We conditionally recommend that patients with hip OA should use one of the following:
- Acetaminophen
- Oral NSAIDs
- Tramadol
- Intraarticular corticosteroid injections

We conditionally recommend that patients with hip OA should not use the following:
- Chondroitin sulfate
- Glucosamine

We have no recommendation regarding the use of the following:
- Topical NSAIDs
- Intraarticular hyaluronate injections
- Duloxetine
- Opioid analgesics

Arthritis Care & Research
Vol. 64, No. 4, April 2012, pp 465–474
DOI 10.1002/acr.21596

EULAR PUUS 2005

7	SYSADOA (glucosamine sulphate, chondroitin sulphate, diacerhein, avocado soybean unsaponifiable, and hyaluronic acid) have a symptomatic effect and low toxicity, but effect sizes are small, suitable patients are not well defined, and clinically relevant structure modification and pharmacoeconomic aspects are not well established
8	Intra-articular steroid injections (guided by ultrasound or x ray) may be considered in patients with a flare that is unresponsive to analgesic and NSAIDs

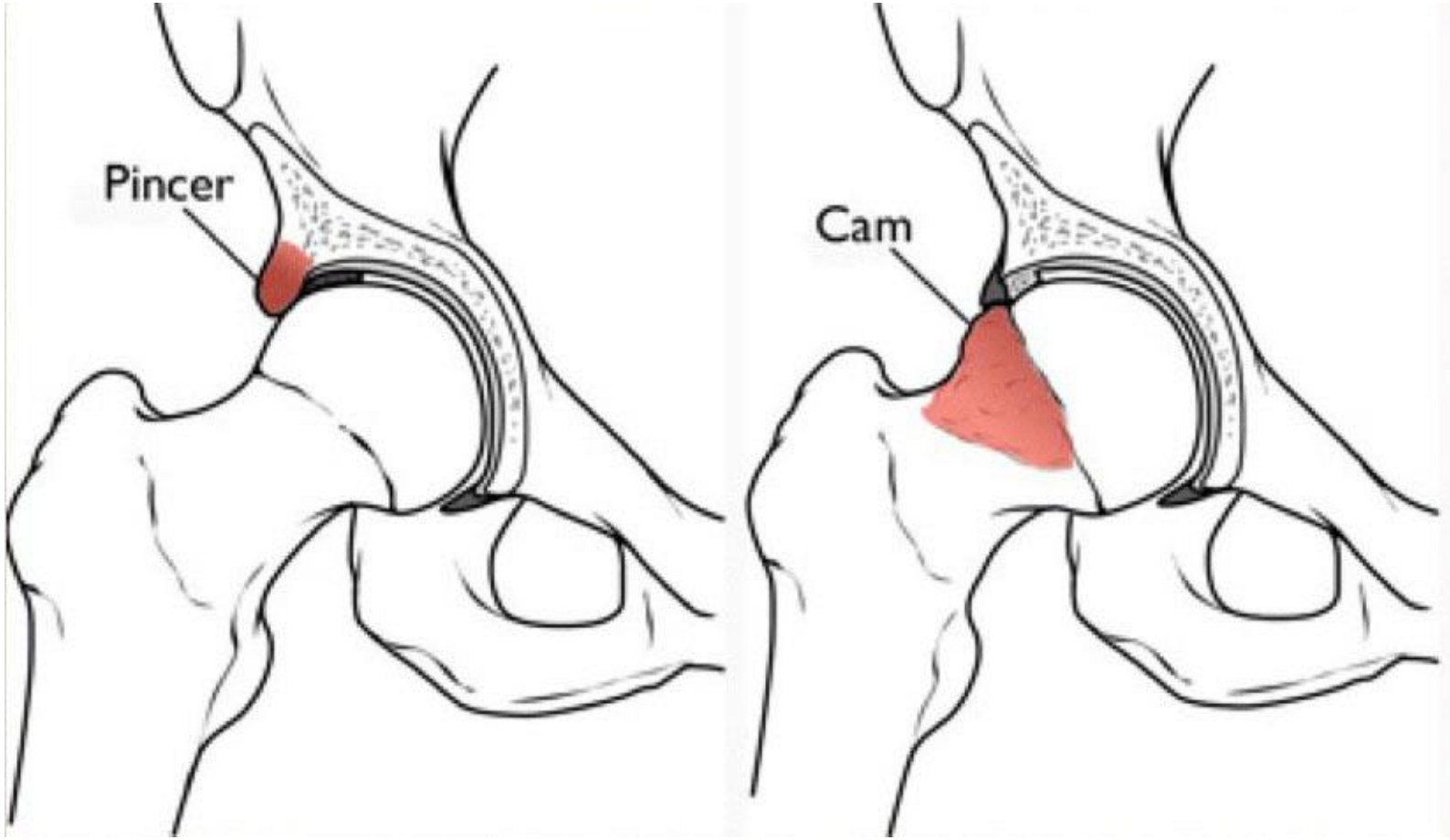
Zhang, W., et al. (2005). "EULAR evidence based recommendations for the management of hip osteoarthritis: report of a task force of the EULAR Standing Committee for International Clinical Studies Including Therapeutics (ESCISIT)." Ann Rheum Dis **64**(5): 669-681.

Puusa viskosuplemendid

The vast majority of viscosupplementation studies have been related to knee OA. The studies describing the use of HA in hip OA have shown conflicting results. The ACR (American College of Rheumatology) has cited no evidence in support of HA use in hip OA

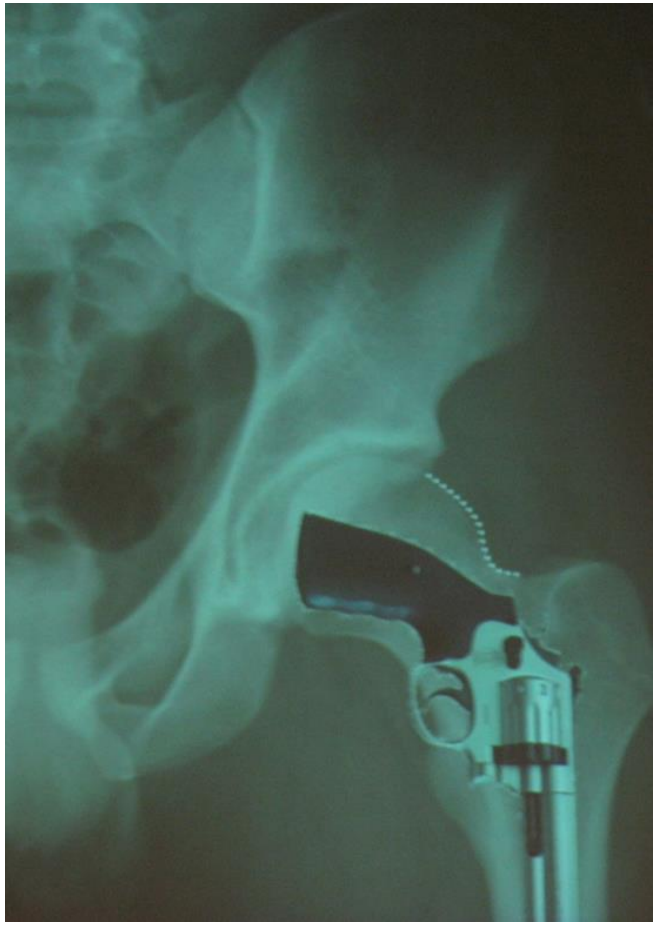
Yaftali, N. A. and K. Weber (2019). "Corticosteroids and Hyaluronic Acid Injections." Clin Sports Med **38**(1): 1-15.

Puusaliigese pitsumine



CAM pitsumine

- Pistol grip



Puusaliigese pitsumise ravi

Endoproteesimine

+ Artroos -

Liigese säilitamine

- Artroskoopia
- Kirurgiline nihestus

Puuslaiigese düsplaasia + liiges säilinud

Periatsetabulaarne osteotoomia

Puusaliigese düsplaasia + artroos

Endoproteesimine

TREATMENT OF OSTEOARTHRITIS OF THE KNEE

EVIDENCE-BASED GUIDELINE
2ND EDITION

Adopted by the American Academy of Orthopaedic Surgeons
Board of Directors
May 18, 2013

AAOS

Põlveartroosi ravisoovitused

2013

Table 1

American Academy of Orthopaedic Surgeons Evidence-Based Clinical Practice Guidelines for Osteoarthritis of the Knee[1]

Therapeutic Modality	AAOS Position	Strength of Supporting Evidence
Strengthening exercises with neuromuscular education	Recommend	Strong
NSAIDs	Recommend	Strong
Total knee arthroplasty	Recommend	Strong
Appropriate weight loss (body mass index ≥25 kg/m^2)	Recommend	Moderate
Valgus-producing proximal tibial osteotomy	Might recommend	Limited
Intra-articular corticosteroids	Cannot recommend for or against	Inconclusive
Acetaminophen (oral) or opioids (oral or transdermal patch)	Cannot recommend for or against	Inconclusive
Manual therapy	Cannot recommend for or against	Inconclusive
Physical agents, including electrotherapeutic modalities	Cannot recommend for or against	Inconclusive
Arthroscopic partial meniscectomy	Cannot recommend for or against	Inconclusive
Intra-articular hyaluronic acid	Cannot recommend	Strong
Braces (to unload medial compartment)	Cannot recommend	Strong
Arthroscopic intervention (eg, lavage, débridement)	Cannot recommend	Strong
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Acupuncture	Cannot recommend	Strong
Insoles (eg, lateral wedge)	Cannot recommend	Moderate
Needle lavage	Cannot recommend	Moderate
Free-floating (unfixed) interpositional device	Cannot recommend	Consensus (no reliable evidence)

J Am Acad Orthop Surg 2018;0:1-5

DOI: 10.5435/JAAOS-D-17-00164

AAOS

Tegelikkus

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Physical agents, including electrotherapeutic modalities	Cannot recommend for or against	Inconclusive
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Intra-articular hyaluronic acid	Cannot recommend	Strong
Braces (to unload medial compartment)	Cannot recommend	Strong
Arthroscopic intervention (eg, lavage, débridement)	Cannot recommend	Strong
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J Am Acad Orthop Surg 2018;0:1-5

DOI: 10.5435/JAAOS-D-17-00164

Põlve OA ravi maksumus 1 aasta enne TAP

Table 2
Breakdown of Costs for Treatments of Knee Osteoarthritis.

Treatment	Number of Patients	Total Cost for Treatment	Average Cost per Patient Receiving Treatment	Average Cost per Treatment Event	Percent of Total Non-Inpatient Knee OA Cost (%)	AAOS Knee OA Clinical Practice Guideline
HA injection	15,489	$12,735,154	$822	$294	29.2	Cannot recommend
CS injection	39,679	$5,427,796	$137	$83	12.5	Unable to recommend
Physical therapy	11,698	$4,735,630	$405	$84	10.9	Recommend
Knee brace	3473	$1,195,769	$344	$331	2.7	Unable to recommend
Wedge insole	32	$682	$21	$21	0.0	Cannot suggest use
Opioids	13,320	$427,317	$32	$21	1.0	Unable to recommend
NSAID	9688	$527,117	$54	$45	1.2	Recommend
Tramadol	4705	$49,454	$10	$9	0.1	Recommend
Any treatment	56,690	$25,098,919	$443	$132	57.6	

Bedard, N. A., et al. (2017). "The AAHKS Clinical Research Award: What Are the Costs of Knee Osteoarthritis in the Year Prior to Total Knee Arthroplasty?" J Arthroplasty **32**(9S): S8-S10 e11.

Glükoosamiinid

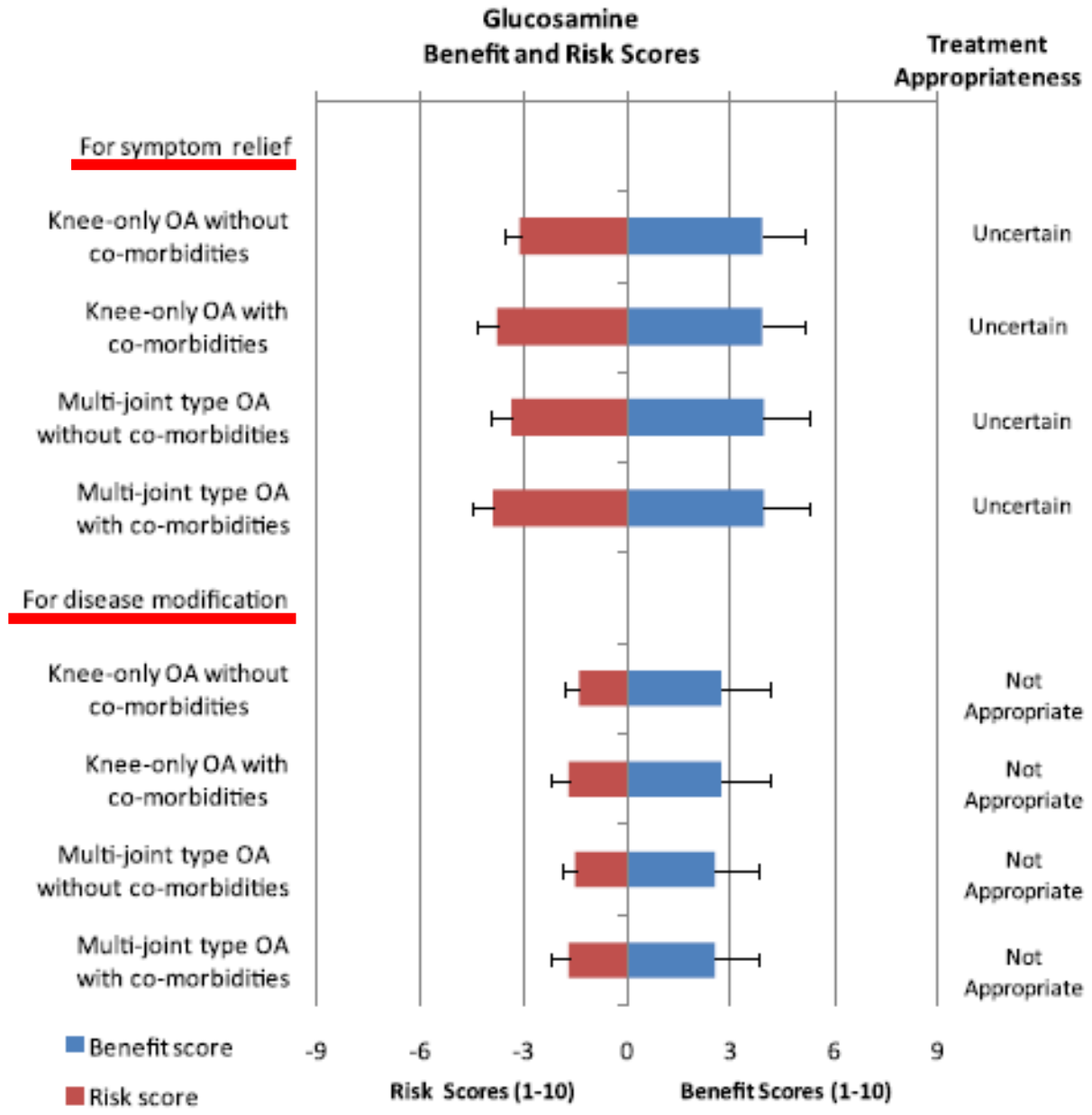
EULAR 2003

SYSADOA (glucosamine sulphate, chondroitin sulphate, ASU, diacerein, hyaluronic acid) have symptomatic effects and may modify structure

Ann Rheum Dis 2003;**62**:1145–1155.

Glükoosamiinid

OARSI 2014



T.E. McAlindon et al.
Osteoarthritis and Cartilage 22 (2014) 363e388

Glükoosamiinid

AAOS 2013

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Arthritis Care & Research
Vol. 64, No. 4, April 2012, pp 465–474
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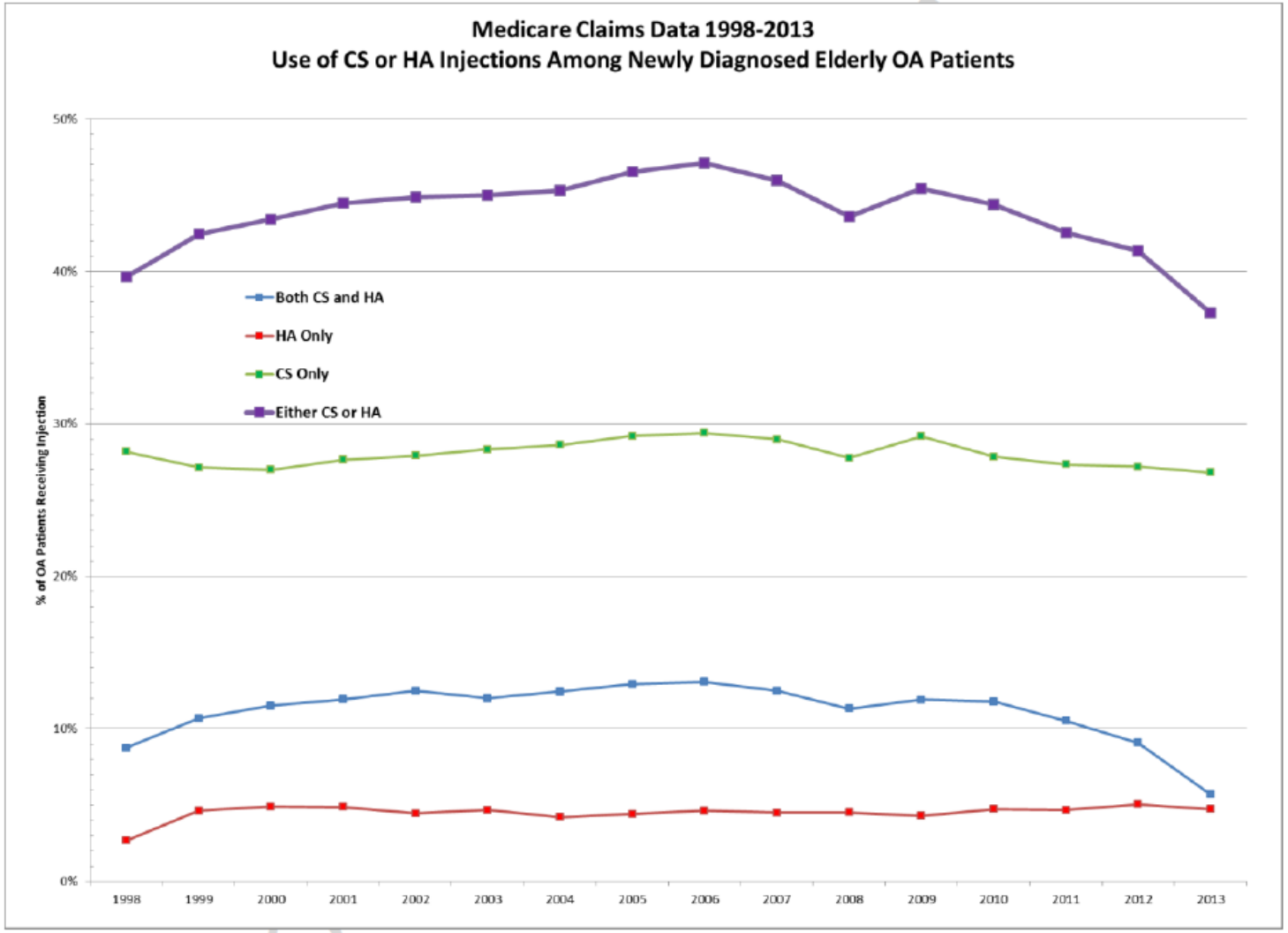
USA i/a süsteravi trendid 1999-2013



Koenig, K. M., et al. (2016). "The Use of Hyaluronic Acid and Corticosteroid Injections Among Medicare Patients With Knee Osteoarthritis."
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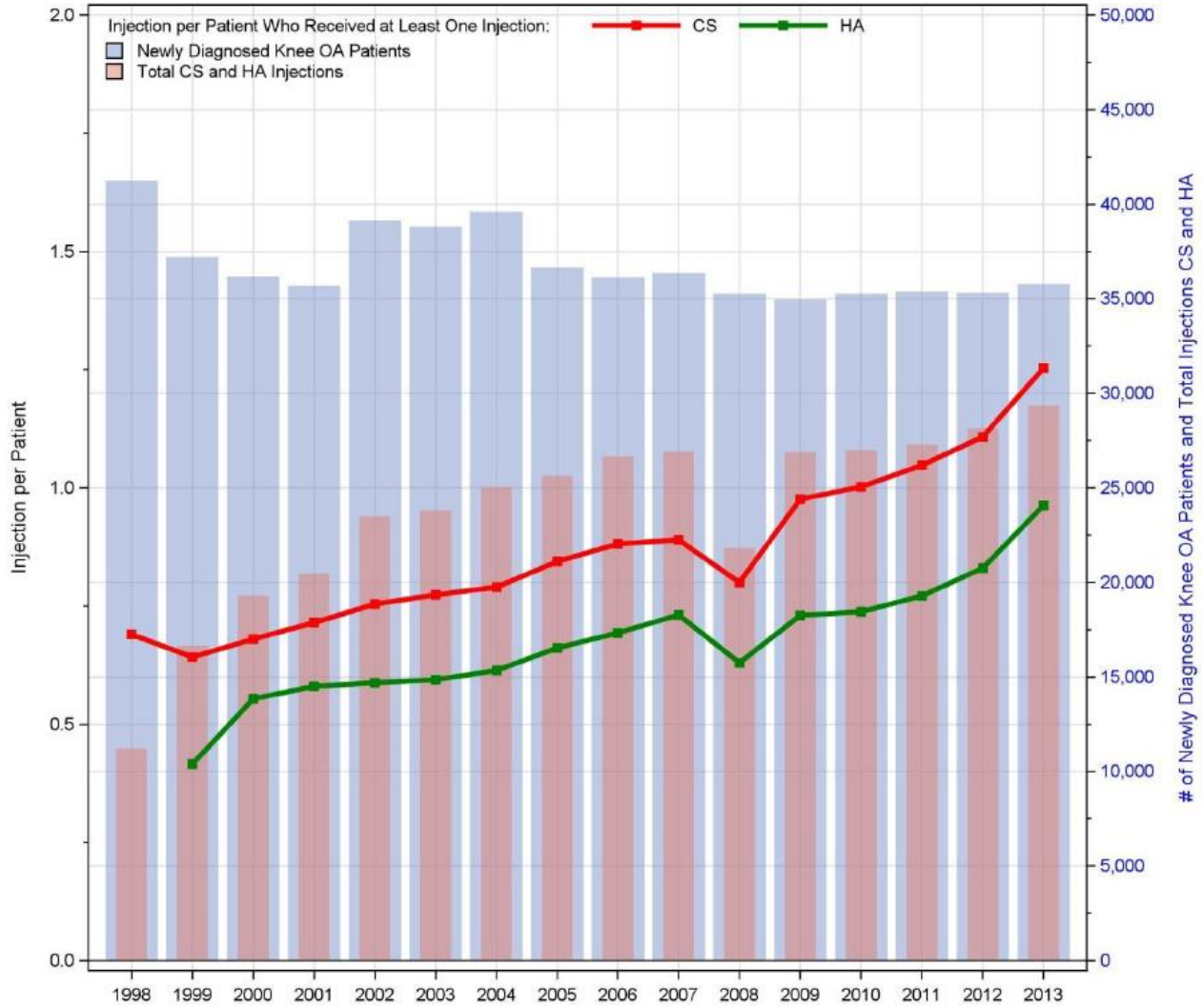

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Kortikoidid

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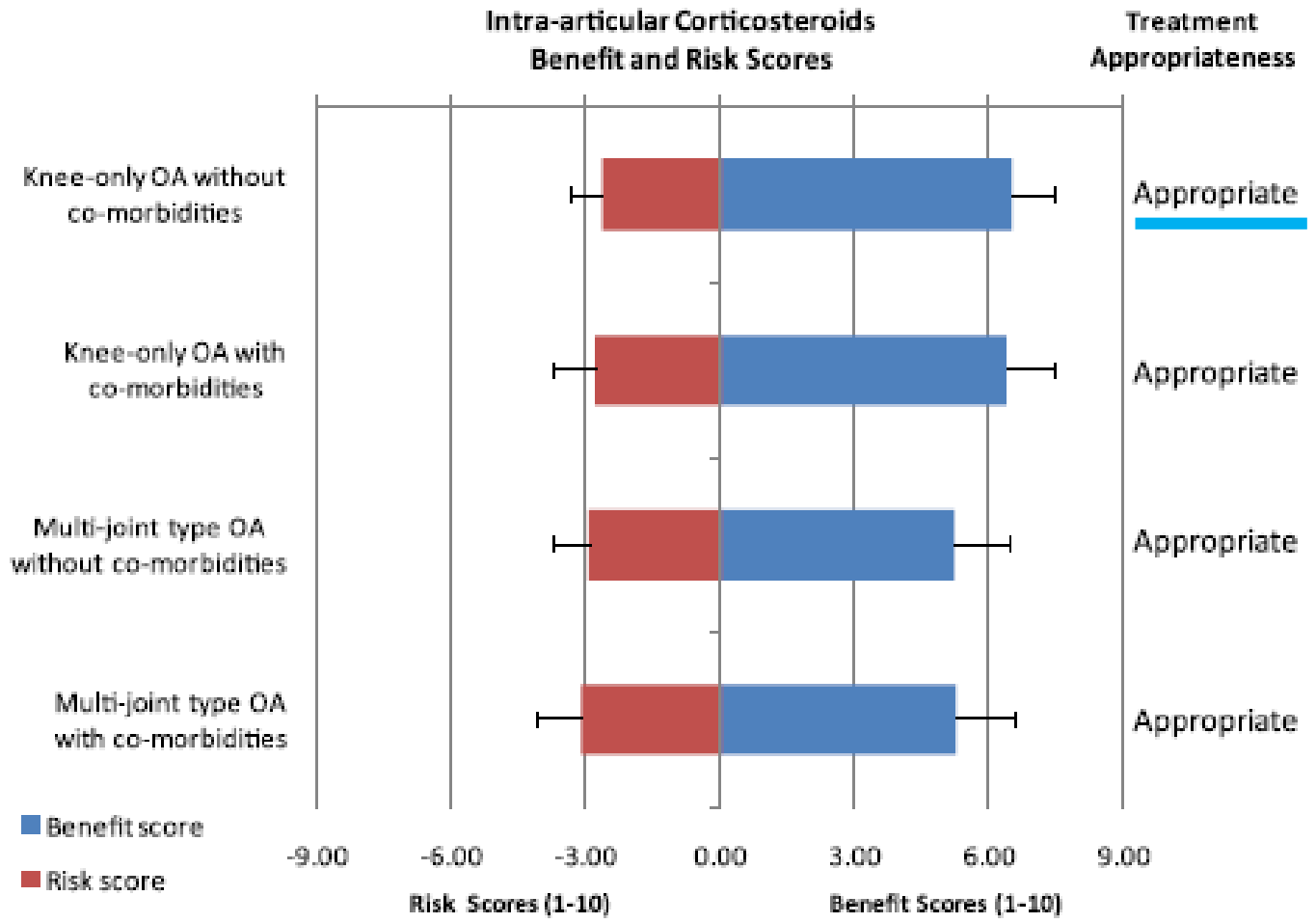

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10	Joint replacement has to be considered in patients with radiographic evidence of knee OA who have refractory pain and disability

Ann Rheum Dis 2003;**62**:1145–1155.

Kortikoidi efekt

Whether there are clinically important benefits of intra-articular corticosteroids after one to six weeks remains unclear in view of the overall quality of the evidence, considerable heterogeneity between trials, and evidence of small-study effects.

Effects decrease over time, and our analysis provided no evidence that an effect remains six months after a corticosteroid injection.

Juni, P., et al. (2015). "Intra-articular corticosteroid for knee osteoarthritis." Cochrane Database Syst Rev(10): CD005328.

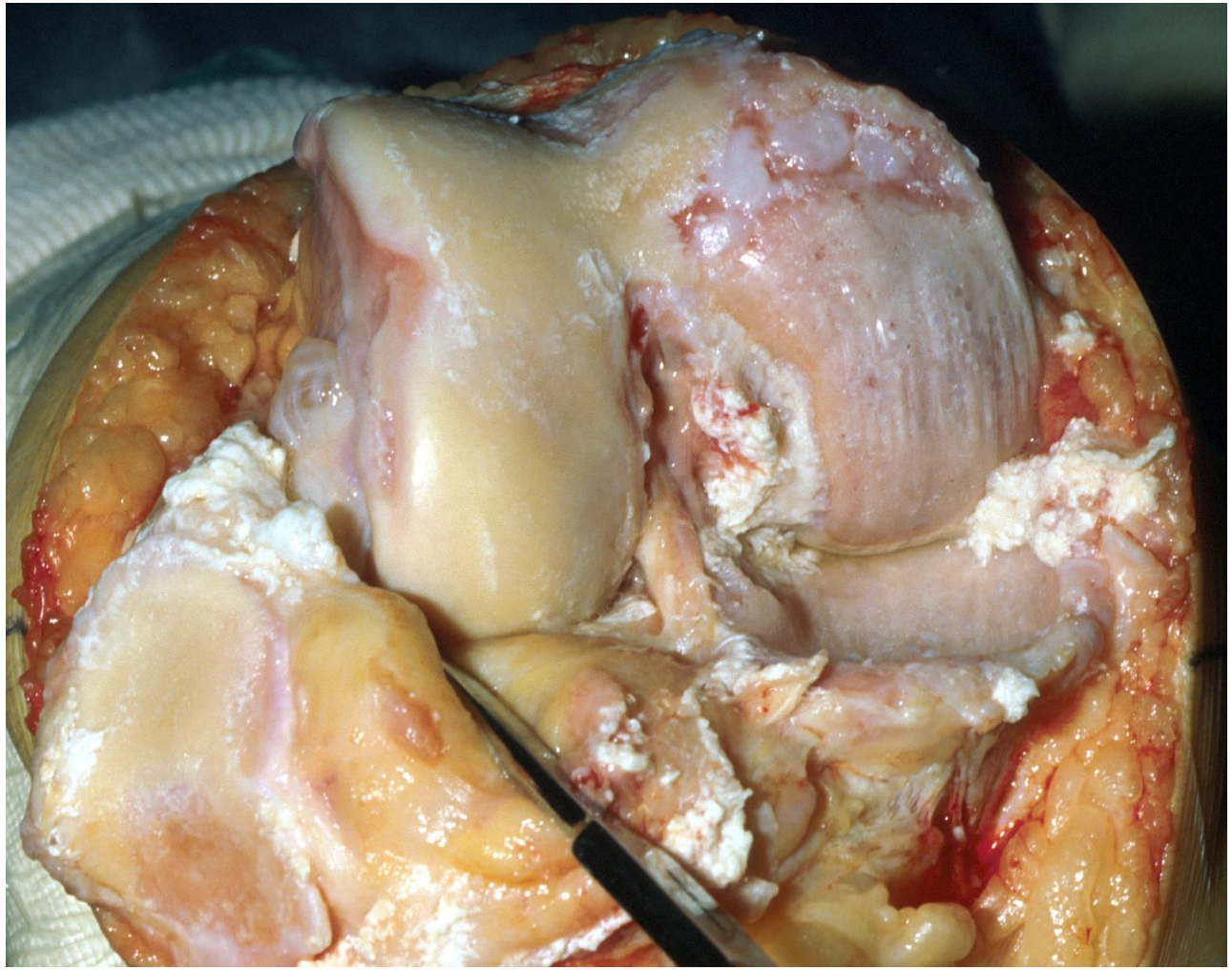
Kortikoidid

Table 1
Formulations of corticosteroids

Particulate (Nonsoluble)	Nonparticulate (Soluble)
Betamethasone acetate	Betamethasone sodium phosphate
Hydrocortisone acetate	Dexamethasone acetate
Methylprednisolone acetate	
Prednisone tebutate	
Triamcinolone acetonide	
Triamcinolone acetonide ER	
Triamcinolone hexacetonide	

Yaftali, N. A. and K. Weber (2019). "Corticosteroids and Hyaluronic Acid Injections." Clin Sports Med **38**(1): 1-15.

Kortikoidi kogumikud põlveliigeses



Kenalog või DepoMedrol ?

The aim of the present study was to compare the efficacy of triamcinolone hexacetonide (TH) and methylprednisolone acetate (MA) injections in knee OA.

Both IA therapies are equally effective. and improvement in pain and function can be sustained for up to 24 weeks.

Lomonte, A. B., et al. (2015). "Efficacy of Triamcinolone Hexacetonide versus Methylprednisolone Acetate Intraarticular Injections in Knee Osteoarthritis: A Randomized, Double-blinded, 24-week Study." J Rheumatol **42**(9): 1677-1684.

Kortikoidi doos 40mg või 80mg

An 80-mg dose of triamcinolone acetonide had no additional benefit compared with 40 mg as treatment for knee arthritis.

Popma, J. W., et al. (2015). "Comparison of 2 Dosages of Intraarticular Triamcinolone for the Treatment of Knee Arthritis: Results of a 12-week Randomized Controlled Clinical Trial." J Rheumatol **42**(10): 1865-1868.

Kortikoidi manustamise intervall

The American College of Rheumatology advices physicians to only perform an IA steroid injection after 3 months from the previous injection.

Law, T. Y., et al. (2015). "Current concepts on the use of corticosteroid injections for knee osteoarthritis." Phys Sportsmed **43**(3): 269-273.

Kortikoidi manustamiskoht

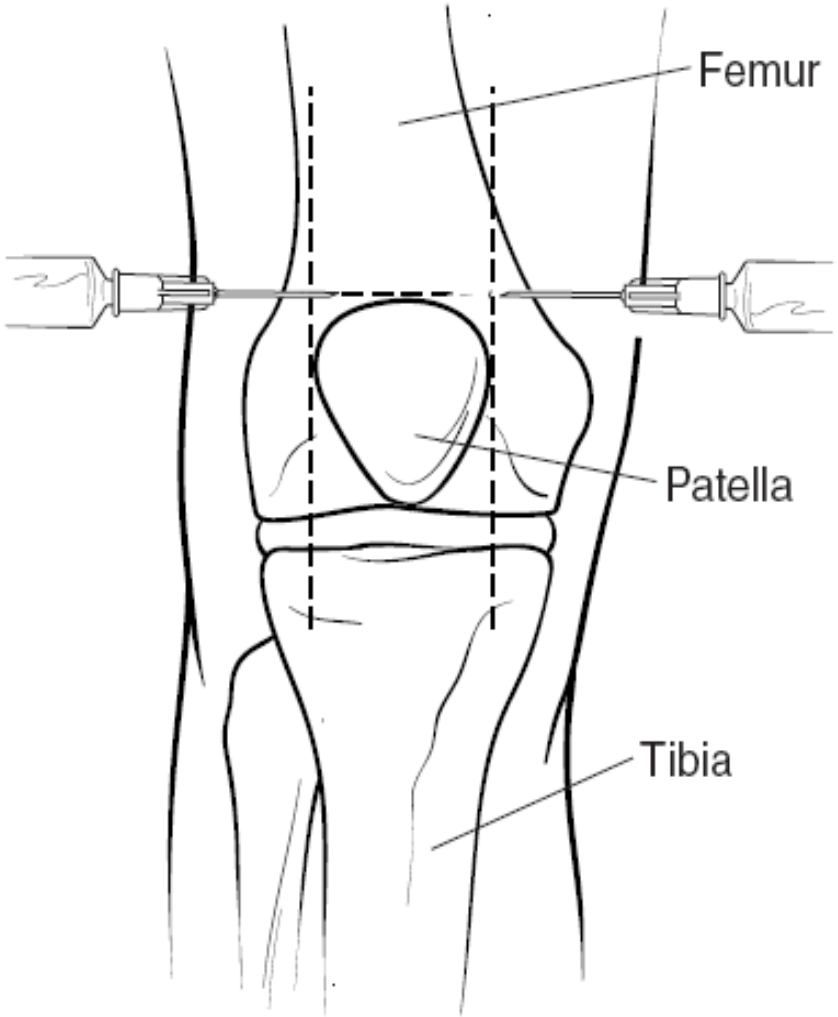
If immediate or incomplete pain relief is not obtained, then either the injection was not placed intraarticularly or the source of pain is only in part intraarticular or not intraarticular at all.

... accuracy of medication placement varies by portal approach. ...lateral midpatellar injection approach being intraarticular 93% of the time, versus the anteromedial (75%) and anterolateral (71%) approaches.

...ultrasound-guided injections are more accurate than landmark-based injection.

Yaftali, N. A. and K. Weber (2019). "Corticosteroids and Hyaluronic Acid Injections." Clin Sports Med **38**(1): 1-15.

Kortikoidi süstetehnika



Liigesesüst ja proteesiinfektsioon

- Approximately 30% of patients have received an intraarticular **corticoid** injection before TKA
- There is an increased risk of postoperative TKA infection when patients have undergone an ipsilateral knee injection before undergoing primary TKA.
- If time between injection and TKA becomes longer than 6 to 7 months, we found no increased risk of infection after subsequent TKA.

Bedard, N. A., et al. (2017). "The John N. Insall Award: Do Intraarticular Injections Increase the Risk of Infection After TKA?" Clin Orthop Relat Res **475**(1): 45-52.

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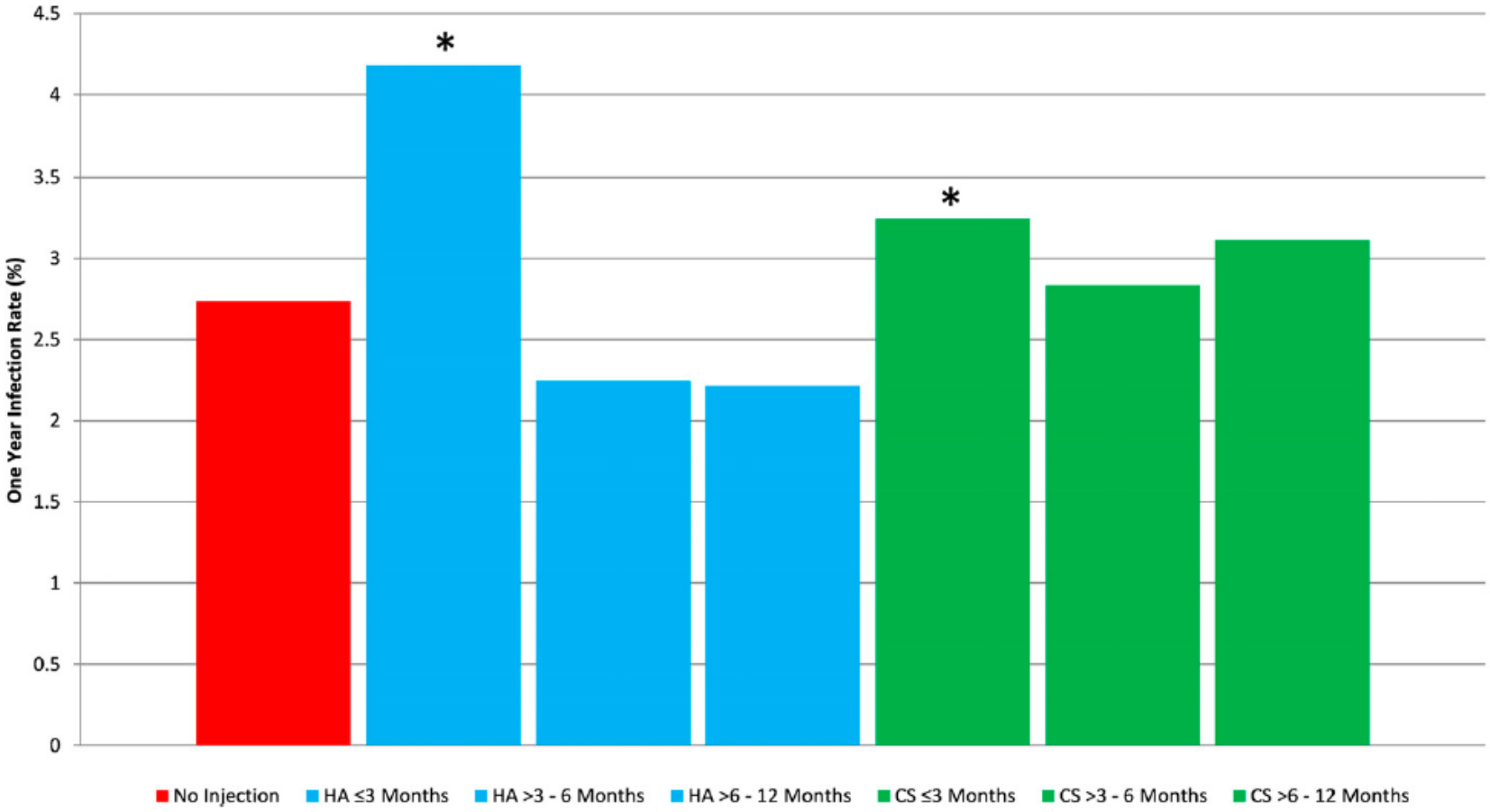


Richardson, S. S., et al. (2019). "Comparison of Infection Risk with Corticosteroid or Hyaluronic Acid Injection Prior to Total Knee Arthroplasty." J Bone Joint Surg Am **101**(2): 112-118.

Kortikoid proteesitud liigesesse

A retrospective chart review identified primary TKA patients who subsequently received a CSI into a replaced knee.

This study suggests that certain patients following TKA may benefit from a CSI (decreased pain, increased motion, decreased swelling)...

Klement, M. R., et al. (2019). "Intra-articular Corticosteroid Injection Following Total Knee Arthroplasty: Is It Effective?" J Arthroplasty **34**(2): 303-308.

Kortikoid enne ravivõimlemist

No additional benefit results from adding an intra-articular injection of 40 mg of corticosteroid before exercise in patients with painful OA of the knee.

Henriksen, M., et al. (2015). "Evaluation of the benefit of corticosteroid injection before exercise therapy in patients with osteoarthritis of the knee: a randomized clinical trial." JAMA Intern Med **175**(6): 923-930.

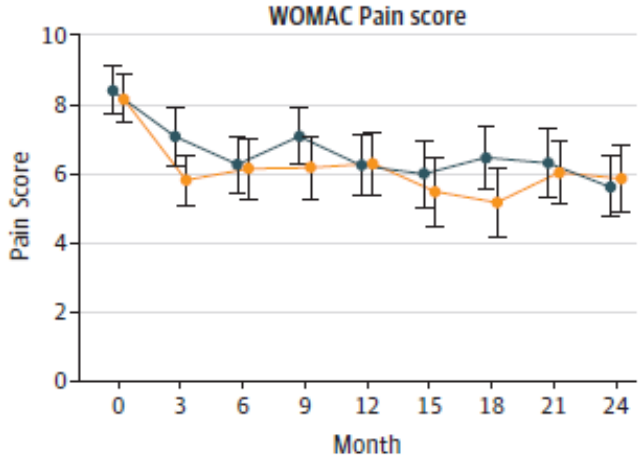
Kortikoidi mõju kõhrele

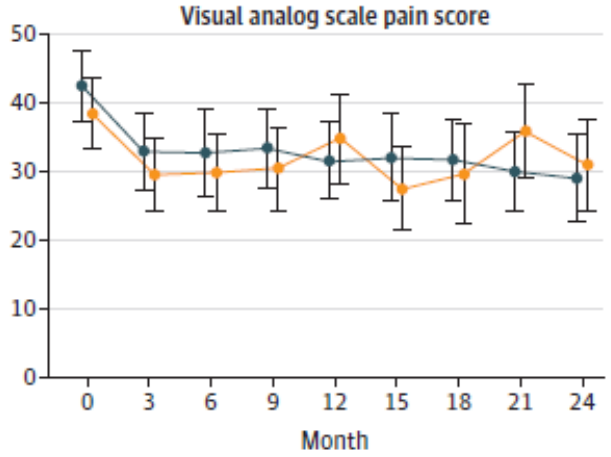
Corticosteroids have a time- and dose-dependent effect on articular cartilage, with beneficial effects occurring at low doses and durations and detrimental effects at high doses and durations. Clinically, beneficial effects are supported for IA administration, but the lowest efficacious dose should be used.

Wernecke, C., et al. (2015). "The Effect of Intra-articular Corticosteroids on Articular Cartilage: A Systematic Review." Orthop J Sports Med **3**(5): 2325967115581163.

1 ml Kenalog või 1 ml 0,9% Na Cl

Among patients with symptomatic knee osteoarthritis, 2 years of intra-articular triamcinolone, compared with intraarticular saline, resulted in significantly greater cartilage volume loss and no significant difference in knee pain. These findings do not support this treatment for patients with symptomatic knee osteoarthritis.





McAlindon, T. E., et al. (2017). "Effect of Intra-articular Triamcinolone vs Saline on Knee Cartilage Volume and Pain in Patients With Knee Osteoarthritis: A Randomized Clinical Trial." JAMA **317**(19): 1967-1975.

Kukeharjast viskosuplemendid

Table 3
Avian hyaluronic acid injections

Brand Name	Description	Molecular Wt (Millions of Daltons)	Weekly Injections (Millions of Daltons)
Synvisc (Sanofi-Aventis)	Hylan G-F 20	5.0–6.0	3
Supartz (Bioventus)	Sodium hyaluronate	0.62–1.17	3–5
Hyalgan (Fidia Pharma)	Sodium hyaluronate	0.5–0.73	3–5
Synvisc One (Sanofi-Aventis)	Hylan G-F 20	6	1
Gel one (Zimmer)	Cross-linked hyaluronate	N/A	1
Visco-3 (zimmer)	Sodium hyaluronate	0.62–1.17	3

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Bakteriaalselt fermenteeritud viskosuplemendid

Table 2
Bacterial hyaluronic acid injections

Brand Name	Description	Molecular Weight (Millions of Daltons)	Weekly Injections
Orthovisc (DepuyMitek)	High molecular wt. Hyaluronan	1–2.9	3
Hymovis (Fidia Pharma)	High molecular wt. Hyaluronan	0.5–0.73	2
Genvisc 850 (Orthogen)	Sodium hyaluronate	0.85	5
Gelsyn-3 (Bioventus)	Sodium Hyaluronate	1.1	3
Durolane (Bioventus)	Sodium hyaluronate	1	1
Euflexxa (Ferring Pharma)	Sodium hyaluronate	2.4–3.6	3
Monovisc (DePuy Synthes)	High molecular wt Hyaluronan	1.0–2.9	1

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Hüaluroonhape

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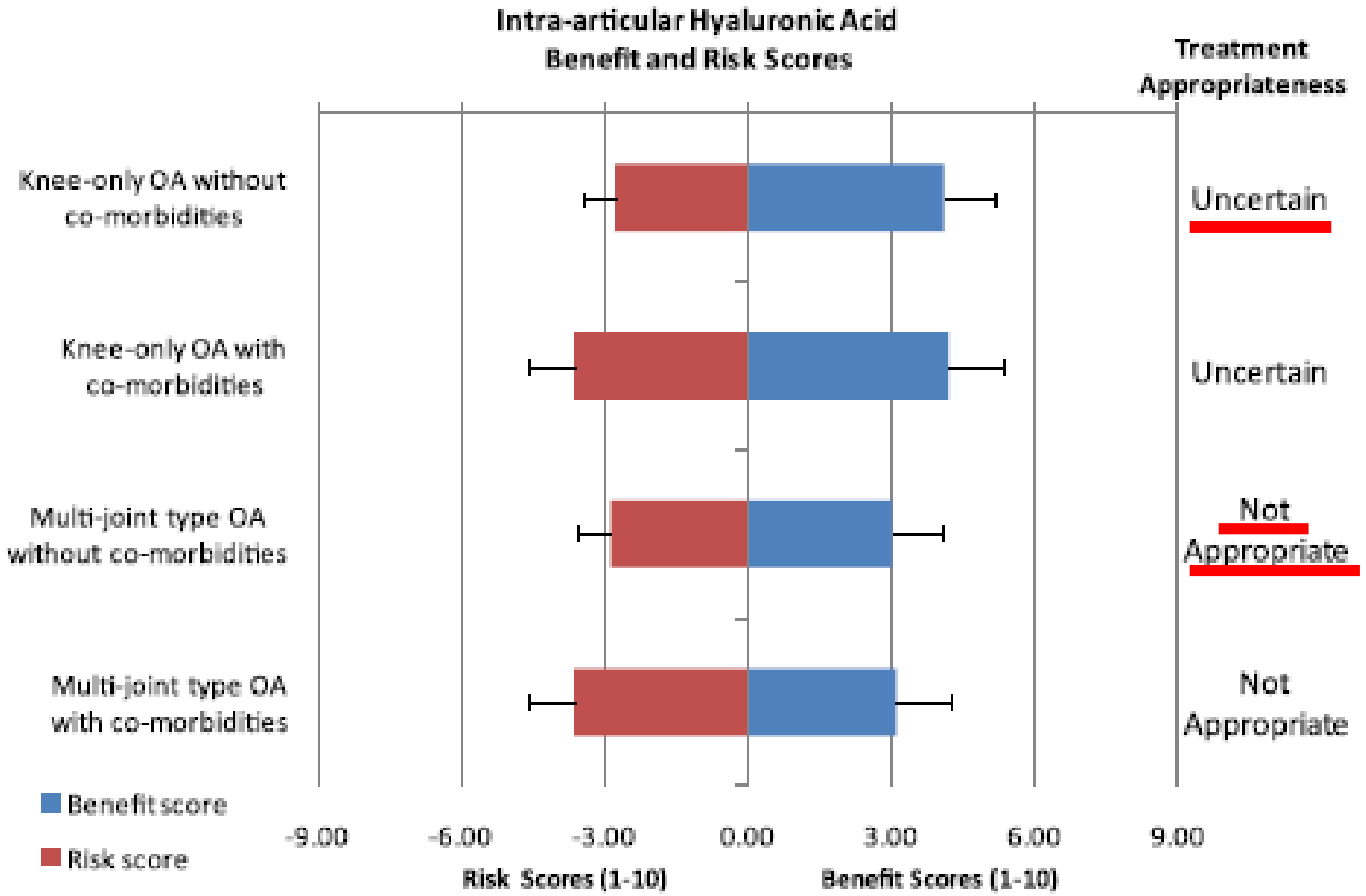

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AMSSM teaduslik seisukoht

AMSSM Scientific Statement Concerning Viscosupplementation Injections for Knee Osteoarthritis: Importance for Individual Patient Outcomes

Thomas H. Trojian, MD, Andrew L. Concoff, MD,† Susan M. Joy, MD,‡ John R. Hatzenbuehler, MD,§ Whitney J. Saulsberry, PharmD,¶ and Craig I. Coleman, PharmD‖*

Trojian, T. H., et al. (2016). "AMSSM Scientific Statement Concerning Viscosupplementation Injections for Knee Osteoarthritis: Importance for Individual Patient Outcomes." Clin J Sport Med **26**(1): 1-11.

Peatoimetaja toetusavaldus

Campbell et al. are also unafraid of controversy, considering that viscosupplementation, also known as hyaluronic acid (HA), has been much maligned by the American Academy of Orthopaedic Surgeons. In contrast to the AAOS Clinical Practice Guidelines, Campbell et al. well demonstrate that viscosupplementation with intra-articular HA injection reduces knee osteoarthritis pain and improves function according to the highest level of evidence meta-analyses.

James H. Lubowitz, M.D. Editor-in-Chief

Lubowitz, J. H. (2015). "Editorial Commentary: Knee Hyaluronic Acid Viscosupplementation Reduces Osteoarthritis Pain." Arthroscopy **31**(10): 2046.

Hüaluroonhape

Higher-molecular-weight HA is thought to have higher clinical efficacy, but these findings remain controversial.

Notably, single-injection viscosupplementation treatment has not been found to be inferior to treatments requiring series of HA injections

Onset of symptom improvement in HA is slower compared with CSI, but the analgesic effect of HA can last for weeks or months

Yaftali, N. A. and K. Weber (2019). "Corticosteroids and Hyaluronic Acid Injections." Clin Sports Med **38**(1): 1-15.

Artroskoopia põlveartroosi ravis

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J Am Acad Orthop Surg 2018;0:1-5
DOI: 10.5435/JAAOS-D-17-00164

Miks siiski artroskoopia ?

The beliefs that there was a pressure from patients to do something, that there were limited other options available, that surgeons wanted to meet patients expectations, and that there was a time pressure in clinic appeared to be the predominant barriers.

Barlow, T. and C. E. Plant (2015). "Why we still perform arthroscopy in knee osteoarthritis: a multi-methods study." BMC Musculoskelet Disord **16**: 85.

Põlveartroskoopia pole vähenenud

Rates of arthroscopy in patients with knee osteoarthritis and conversion to arthroplasty within 2 years have not decreased with time. It may be that evidence alone is not sufficient to alter practice patterns

Adelani, M. A., et al. (2016). "Arthroscopy for Knee Osteoarthritis Has Not Decreased After a Clinical Trial." Clin Orthop Relat Res **474**(2): 489-494.

Randomiseeritud uuringud ???

The New England
Journal of Medicine

VOLUME 347 JULY 11, 2002 NUMBER 2

A CONTROLLED TRIAL OF ARTHROSCOPIC SURGERY FOR OSTEOARTHRITIS OF THE KNEE

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The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 11, 2008 VOL. 359 NO. 11

A Randomized Trial of Arthroscopic Surgery for Osteoarthritis of the Knee

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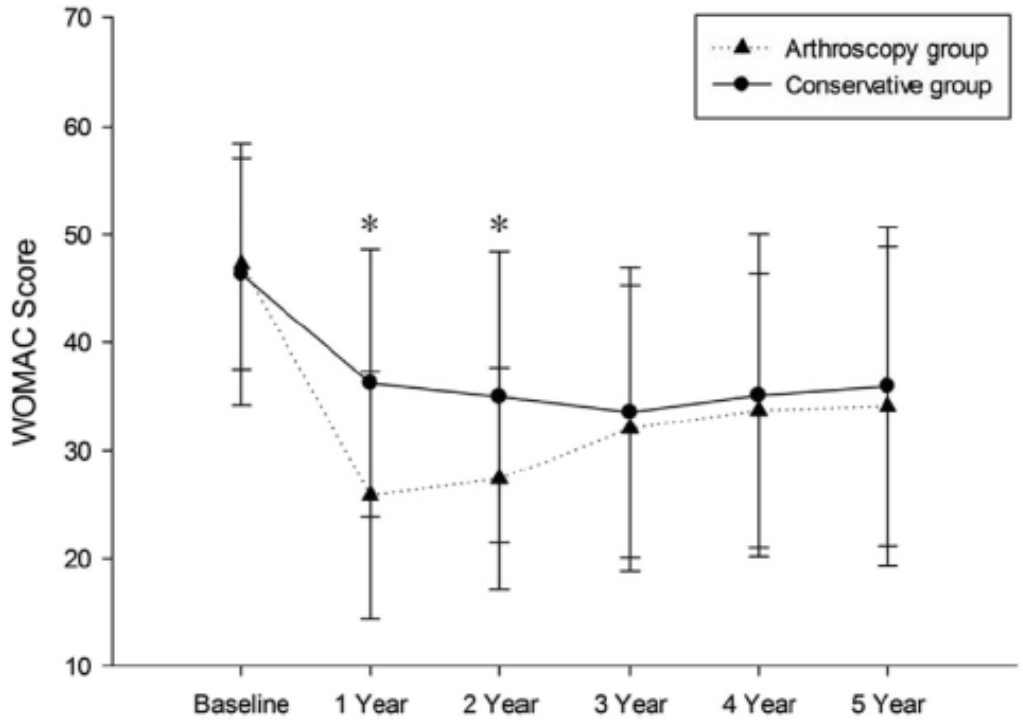
ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Arthroscopic Partial Meniscectomy versus Sham Surgery for a Degenerative Meniscal Tear

Raine Sihvonen, M.D., Mika Paavola, M.D., Ph.D., Antti Malmivaara, M.D., Ph.D., Ari Itälä, M.D., Ph.D., Antti Joukainen, M.D., Ph.D., Heikki Nurmi, M.D., Juha Kalske, M.D., and Teppo L.N. Järvinen, M.D., Ph.D., for the Finnish Degenerative Meniscal Lesion Study (FIDELITY) Group

Artroskoopia või konservatiivne ravi



Su, X., et al. (2018). "Comparison of Arthroscopic and Conservative Treatments for Knee Osteoarthritis: A 5-Year Retrospective Comparative Study." Arthroscopy **34**(3): 652-659.

Põlveartroos ja artroskoopia

AT in OA patients is not useless because there is evidence that a subgroup of patients with non-traumatic flap tears of the medial meniscus or patients with crystal arthropathy benefit from arthroscopy. This topic has a high relevance because several health insurances do not reimburse arthroscopy for patients with OA anymore.

Karpinski, K., et al. (2019). "Subgroups of patients with osteoarthritis and medial meniscus tear or crystal arthropathy benefit from arthroscopic treatment." Knee Surg Sports Traumatol Arthrosc **27**(3): 782-796.

Põlveartroos ja mehhaanilised sümptomid

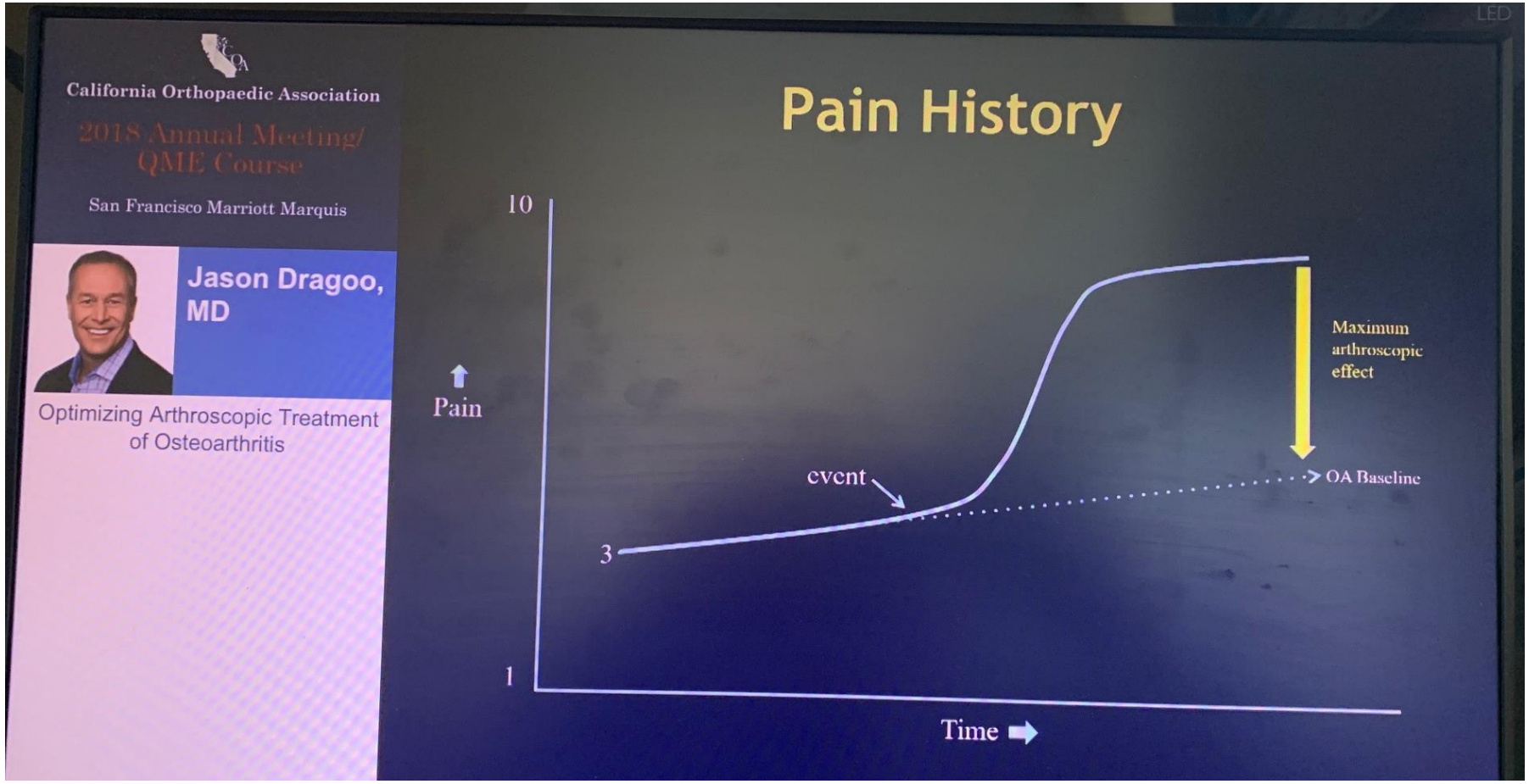
Main outcomes were preoperative mechanical knee symptoms defined as self-reported catching/locking or self-reported inability to straighten knee fully.

Patient-reported mechanical symptoms were equally common irrespective of presence or absence of a meniscal tear in patients undergoing arthroscopy for suspicion of a meniscal tear.

Thorlund, J. B., et al. (2019). "Conundrum of mechanical knee symptoms: signifying feature of a meniscal tear?" Br J Sports Med **53**(5): 299-303.

Põlveartroos ja mehhaanilised sümptomid

Artroskoopia põlveartroosi ravis

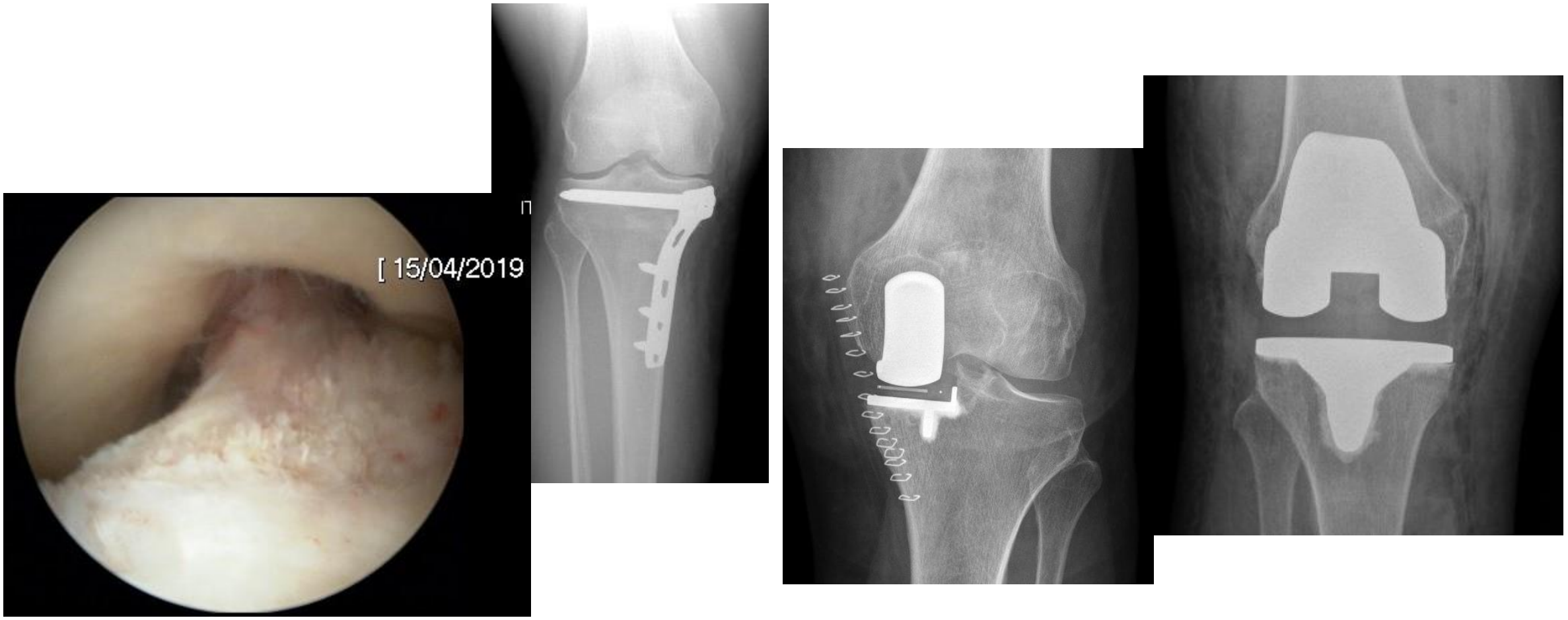


SURGICAL MANAGEMENT OF OSTEOARTHRITIS OF THE KNEE

EVIDENCE-BASED CLINICAL PRACTICE GUIDELINE

Adopted by the American Academy of Orthopaedic Surgeons Board of Directors
12.4.15

Põlveartroosi kirurgiline ravi



Ainult haamri ja naeltega maja ei ehita