


Young Patients Old Knees

OA: not just an old people's disease...

Stefan Lohmander
Lund University, Sweden

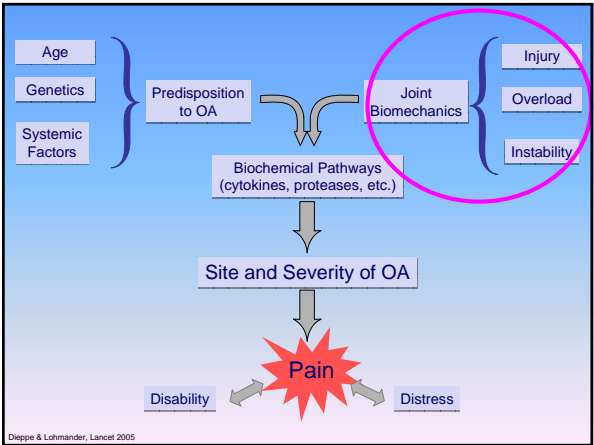
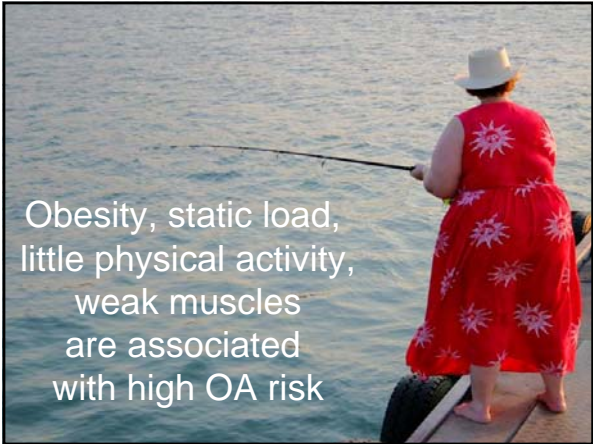


there's a lot of OA
among older people

"Nearly half ... will develop symptomatic knee OA by age 85 years, with lifetime risk highest among obese persons."
Murphy et al. AC&R 2008

but there's also more OA
among the young and
middle-aged than you
think

"young patients – old knees"

Obesity, static load,
little physical activity,
weak muscles
are associated
with high OA risk

MOA

Data from 1991-96 Malmö Diet and Cancer Cohort

N~28,000
Men born 1923-45
Women born 1926-50

Questionnaires: diet, smoking, alcohol, physical activity, social factors, diseases, medications, etc.

MOA methods

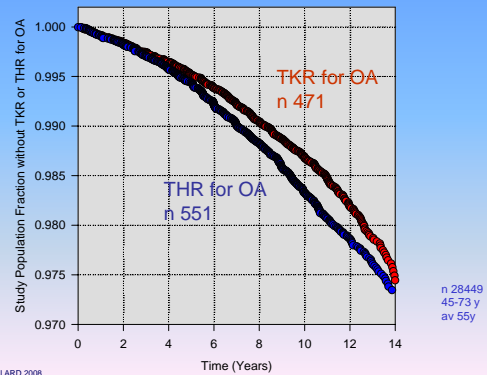
Incidence of TKR and THR for OA was followed by linkage with the Swedish hospital register (concomitant diagnosis & surgical procedure)

Mean follow-up 11 years

Incidence was studied in quartiles of body mass (appr 2776 men and 4258 women in each quartile) and in relation to MetS and CRP

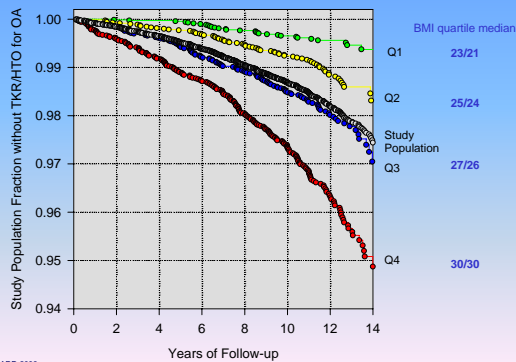
Lohmander et al ARD 2008

Knee and Hip Survival in Relation to BMI Quartiles



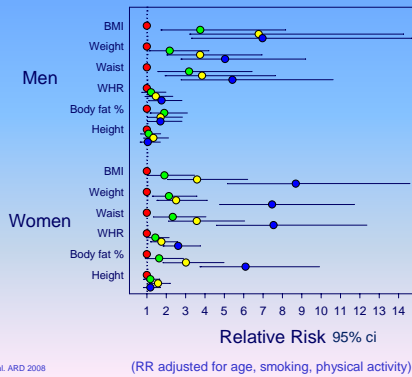
Lohmander et al ARD 2008

Knee Survival in Relation to Population BMI Quartiles



Lohmander et al ARD 2008

Adjusted Relative Risk for TKR by BMI Quartiles



Lohmander et al. ARD 2008

MOA conclusions (1)

- BMI, weight and waist were major risk factors for incident severe knee OA (=TKR-OA)
- WHR and Body Fat% showed substantially weaker associations with incident severe knee OA
- All measures of overweight showed substantially weaker associations with incidence of hip OA

Poster # 324

Lohmander et al ARD 2008

MOA conclusions (2)

- Increased incidence of TKR-OA in women with MetS was explained by increased BMI
- Relationship between CRP and TKR-OA was weak and attenuated after adjustments for other risk factors
- No significant relationships with MetS or CRP in men
- THR-OA showed no relationship with MetS or CRP
- Does not support a metabolic role for obesity in OA
- Supports a "mechanical" OA hypothesis

Poster # 325

Engström, Lohmander et al 2008

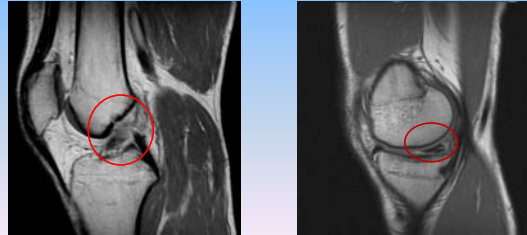
“By far, the most effective disease-modifying OA treatment is food restriction and exercise. It beats all disease modifying drugs tested in my practice.”

In reference to years of studying OA disease modification in animal models

Dr. Alison Bendele, Boulder, CO
personal communication May 2005

Knee ligament lesions are common

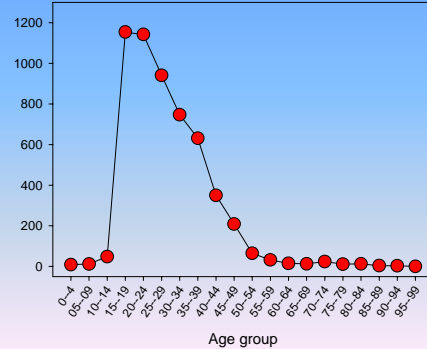
- >80 MRI verified ACL lesions per year per 100 000
- >150 meniscus surgeries per year per 100 000



Frobell et al. 2006, Statistics Sweden 2006



ACL reconstruction population-based data Sweden 1998-2006

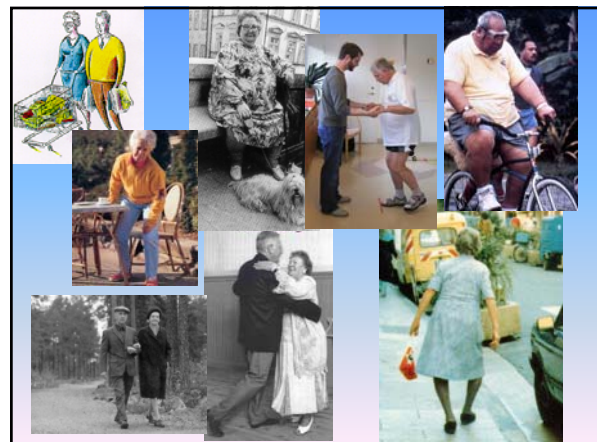


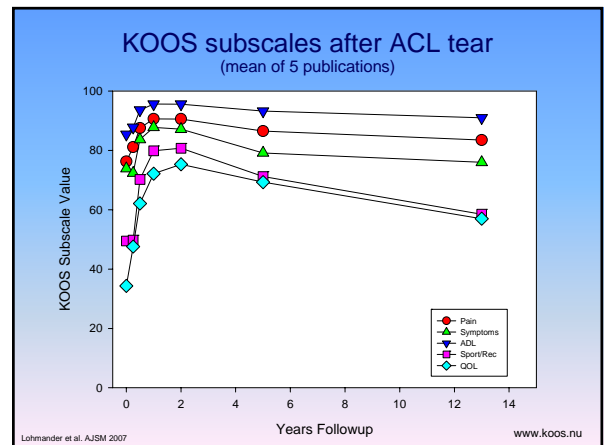
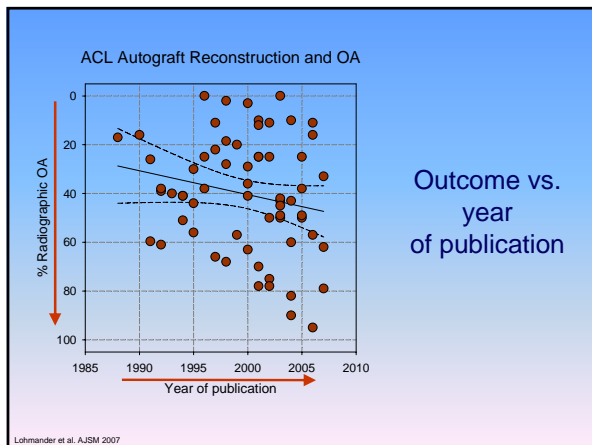
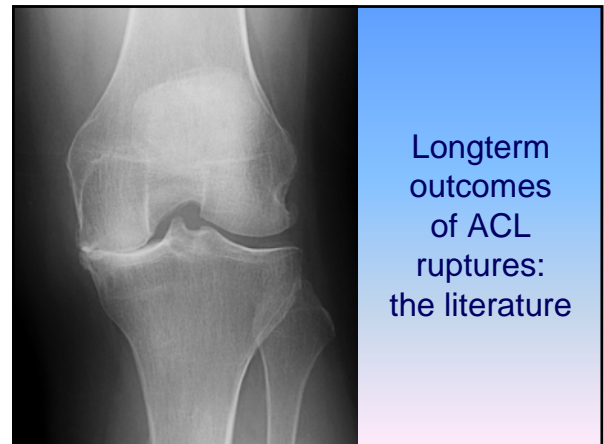
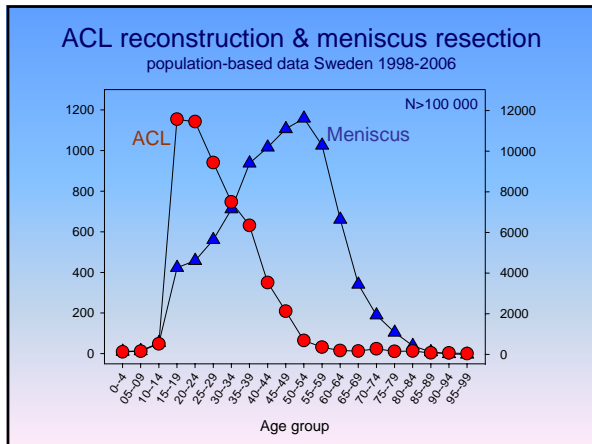
Knee ligament lesions are common in unselected populations > 50y

examined by MRI, often without any history of knee injury:

- ACL-rupture ~5 %
- significant meniscus pathology ~20-60%, increasing w. OA

Hunter et al. 2006, Englund et al. 2006, 2007, 2008





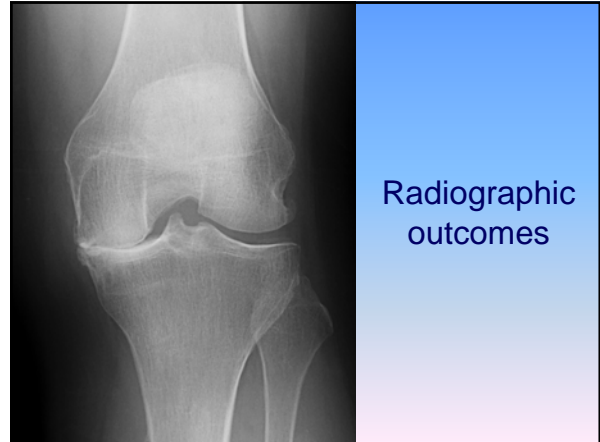
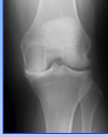
young patients

old knees



LUMEN—Lund Meniscus Cohorts

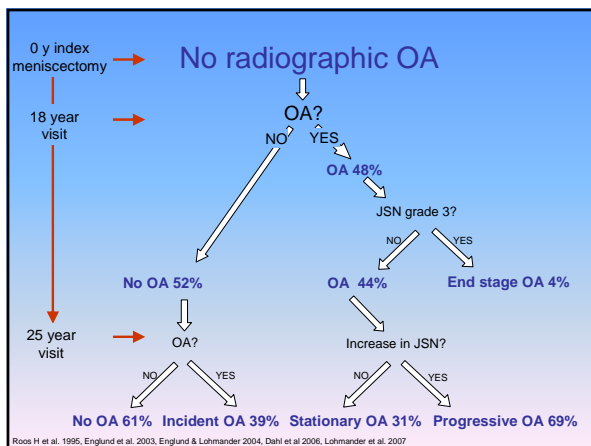
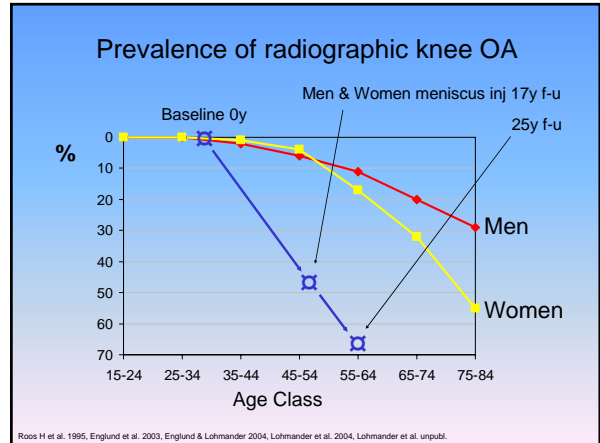
- Isolated unicompartamental meniscus lesion
- No radiographic OA at index arthroscopy
- Follow-up >25 years
- Loss to follow-up <30%
- Cohort size >300 + ctrls
- Standardized outcomes



Radiographic outcomes

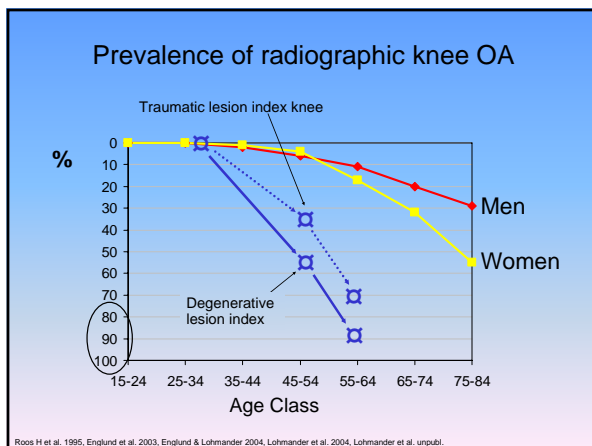
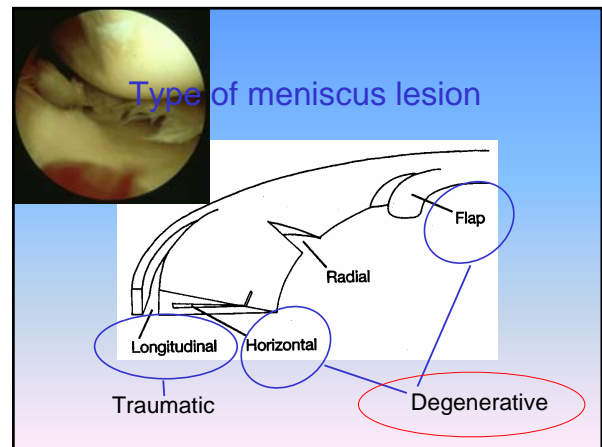
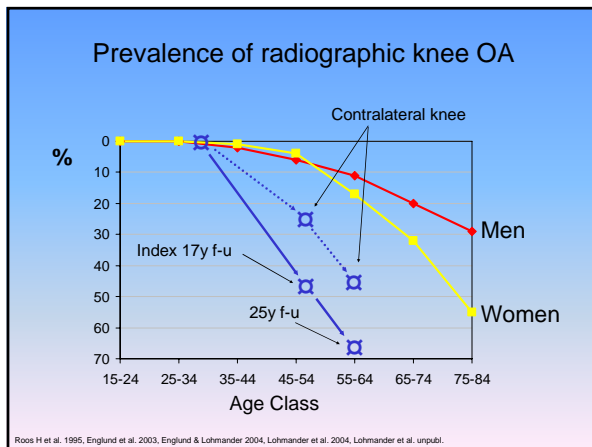
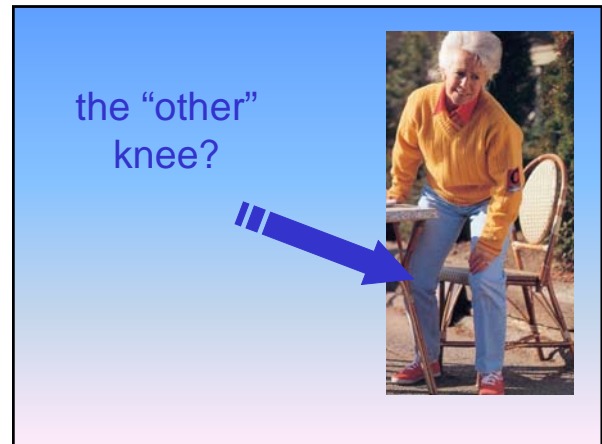
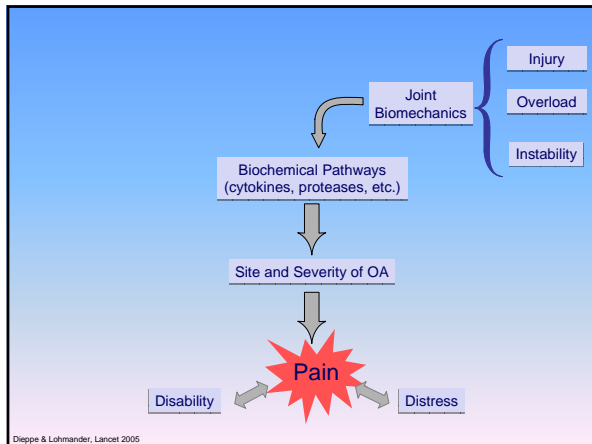


the index knee

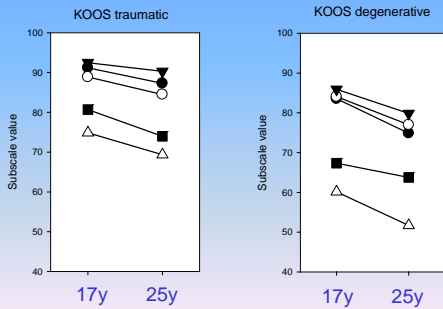


young patients

old knees

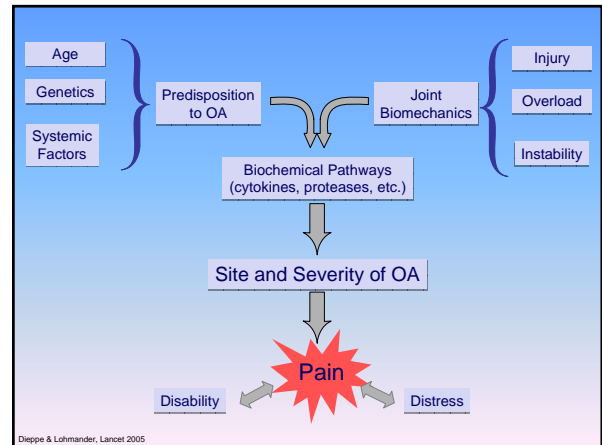


KOOS change over 8 years



Roos et al. ARD 2008

outcome is worse with degenerative lesions



Consider

- ligament lesion in healthy knee
- ligament lesions in knee with incipient (or overt) OA
- “OA of the meniscus” as an integral part of OA pathology

young patients

old knees

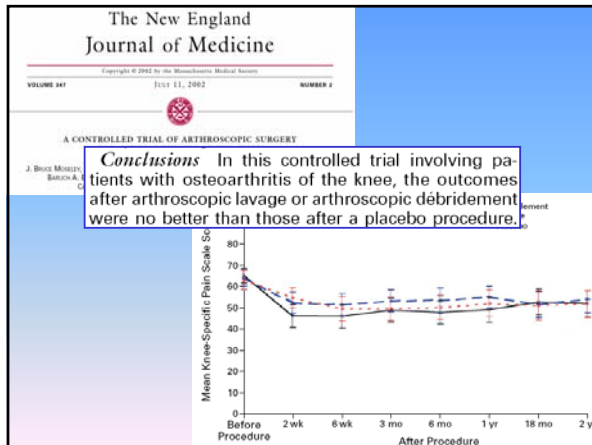




Meniscus surgery

- “.....the lack of randomized trials means that no conclusions can be drawn on the issue of surgical vs non-surgical treatment of meniscal injuries, nor meniscal tear repair vs excision”

Cochrane report 1999



Conclusions (1)

- knee meniscus and ligament lesions often part of OA pathology, may signal incipient OA
- associated with high risk of OA

Conclusions (2)

- insufficient evidence that ACL or meniscus surgery prevents future OA development
- lifestyle modifications & exercise may be as effective as surgery in managing symptoms
- good RCT's are needed for different subgroups