

# DOES MY PATIENT REALLY NEED A KNEE SCOPE?

Kurt Kauenhofen, MD CCFP

MCFP Annual Scientific Assembly 2018

April 19, 2018

# Conflicts of Interest

- ⦿ None

# Disclosures

- ⦿ I am terrified of public speaking
- ⦿ I have never presented to this many people before



So, does my patient REALLY need a knee scope?

No...



So, does my patient **REALLY** need a  
knee scope?

No

Maybe

Yes



# Yes — true mechanical locking

- Loose body, large bucket handle tear
- Uncommon

# No — degenerative, no mechanical symptoms

- Typically patients over 50
- Often no specific traumatic event

# Maybe — most start off here

- Often middle aged patients
- May or may not relate to specific injury
  - Acute or Chronic
  - +/- mechanical symptoms

**Okay, but how do we figure out  
which group a patient fits in?**



~~MIRII~~

# Adelani et al, JAAOS 2015

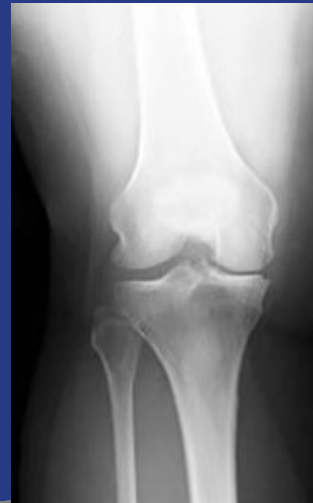
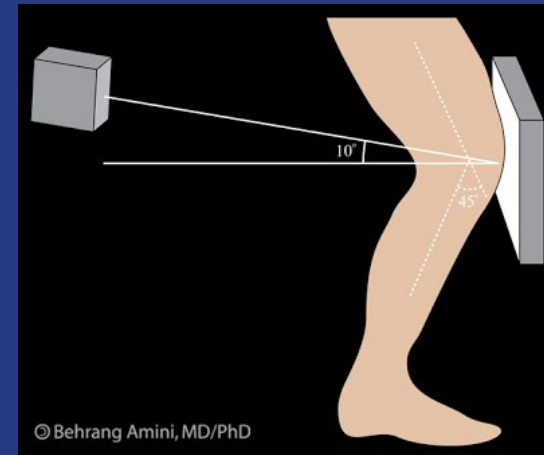
- The Use of MRI in Evaluating Knee Pain in Patients Aged 40 Years and Older
  - Single center, 599 patients enrolled (age range 40 to 81 with average of 51)
  - documented the presence of prereferral MRI/xray, results of weight-bearing xrays, treatment recommendations and the impact of any prereferral imaging
  - Of the 599, 130 (22%) had preferral MRI and 76 of those (58%) had xrays as well, with only 17 (13%) being weight bearing views

# Adelani et al, JAAOS 2015

- ⦿ Patients with **prereferral MRI only**
  - MRI did NOT contribute to specialist treatment recommendations in **63% of cases**
- ⦿ Patients with **weight bearing xrays** that identified joint space loss >50%
  - MRI did NOT contribute to specialist treatment recommendations in **95% of cases**

# Radiographs

- Xray is very helpful for initial evaluation in undifferentiated knee pain, especially when degenerative change is suspected
  - Make sure to order weight bearing views
  - Bonus points for ordering Rosenberg views



**How ELSE do we figure out which  
group a patient fits in?**

A physical exam that includes the following positive findings:

- ~~McMurray~~
- ~~Thessaly~~
- ~~Apley Grind~~
- Joint line tenderness 



Be cautious with reliance on these tests as sensitivity/specificity is quite variable

# Benjamin et al, BMJ 2015

- ⦿ Meta-analysis of nine studies reviewing sensitivity and specificity of tests for diagnosis of meniscal tears
  - McMurray
    - Sensitivity 61% (45-74%), Specificity 84% (69-92%)
  - Apley Grind – not included in study (insufficient data)
    - Other studies have shown similar range to Thessaly
  - Thessaly
    - Sensitivity 75% (53-89%), Specificity 87% (65-95%)
  - Joint line tenderness
    - Sensitivity 83% (73-90%), Specificity 83% (61-94%)

**What about the history?**



- ◎ Typically will provide the most useful information for diagnosis and decision making
  - Patient age
  - Acute vs chronic
  - Traumatic vs insidious
    - Rotational injury, varus/valgus force, "pop" felt/heard
  - Previous knee injuries/surgeries
  - Mechanical symptoms (clicking, catching, locking)
  - Knee "giving out"
    - True instability vs pseudo-instability (weakness/pain)
  - Swelling

What's the big deal? Why is  
all of this important?



We know the meniscus has a poor blood supply and if torn it likely will not heal, so logically it must need to be debrided regardless of etiology in order for the patient to improve...right?

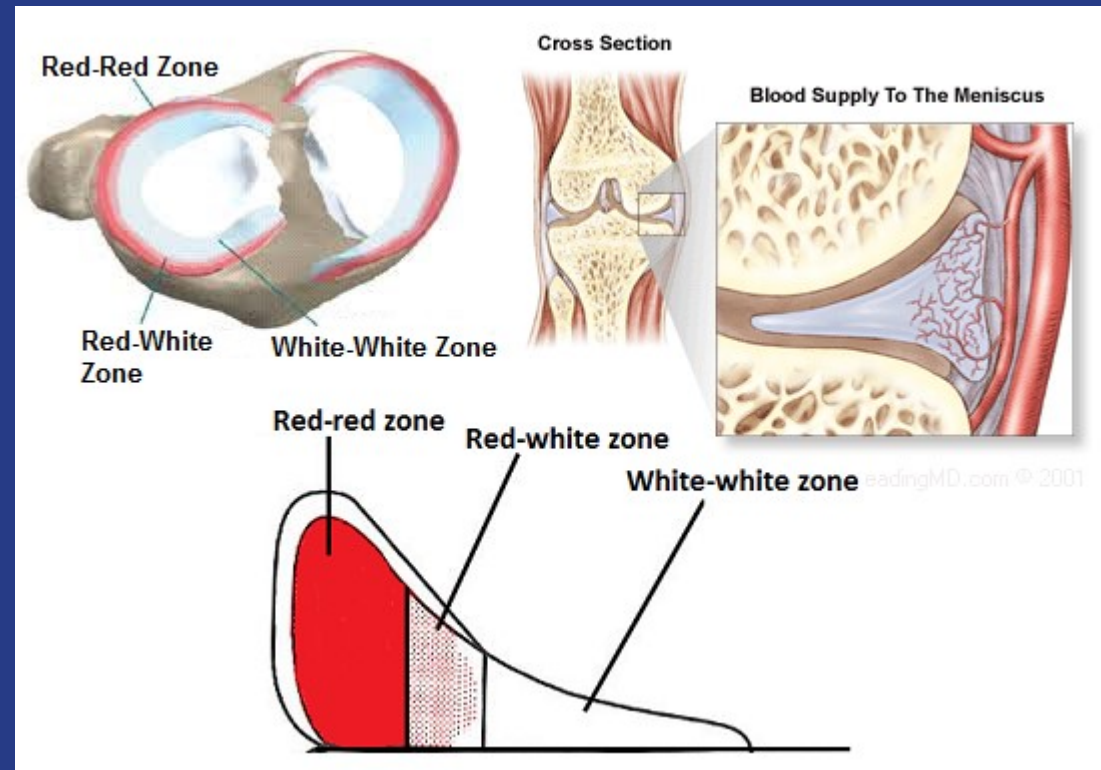
**Not necessarily!**

# Khan et al, CMAJ 2014 CA

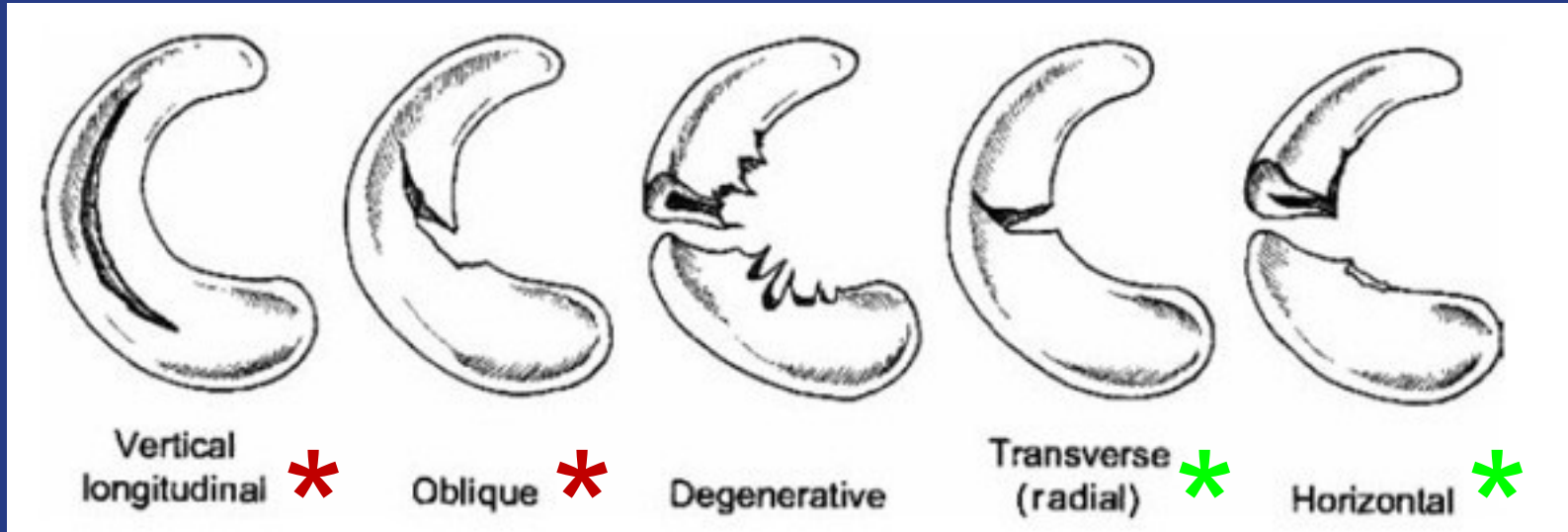
- The raison d'être for this topic
- Systematic review and meta-analysis of 7 RCTs
  - Degenerative meniscal tears with mild or no associated OA
  - Looked at outcomes of pain and function
  - Compared short term (6 month) and long term (2 year) data
- Concluded there is moderate evidence to suggest arthroscopic debridement has **no statistically significant difference in pain or function in both the short and long term compared to conservative treatment**

# How can that be?!

- ⦿ Depends on a few factors that relate to pathoanatomy of meniscal tears
- ⦿ Stable vs unstable tears
  - Peripheral vs rim
    - Red zone more likely to heal
  - Large or small
    - Larger more likely to displace
  - Direction of tear
    - Oblique/longitudinal more likely to displace



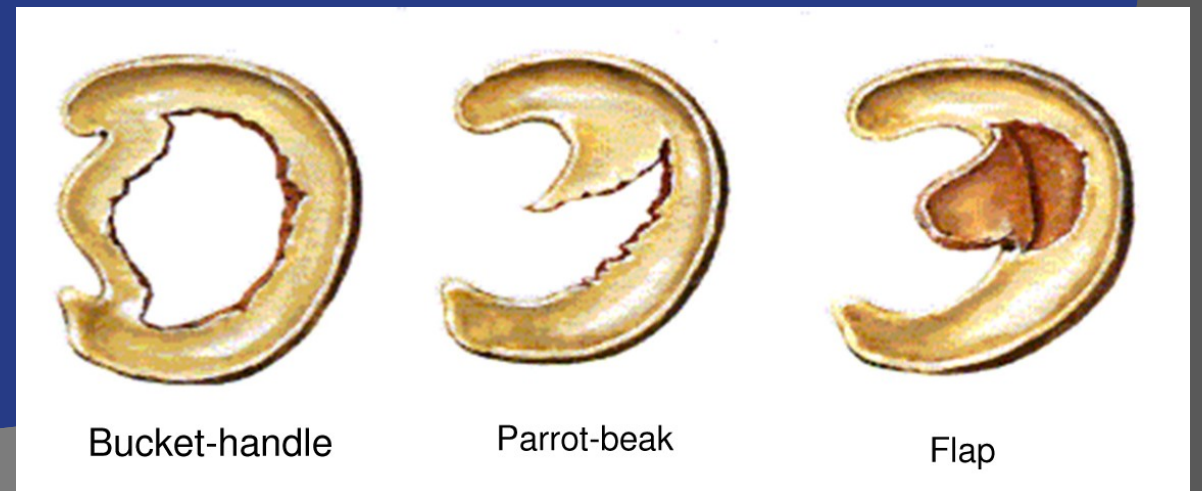
# Meniscal Tear Classification



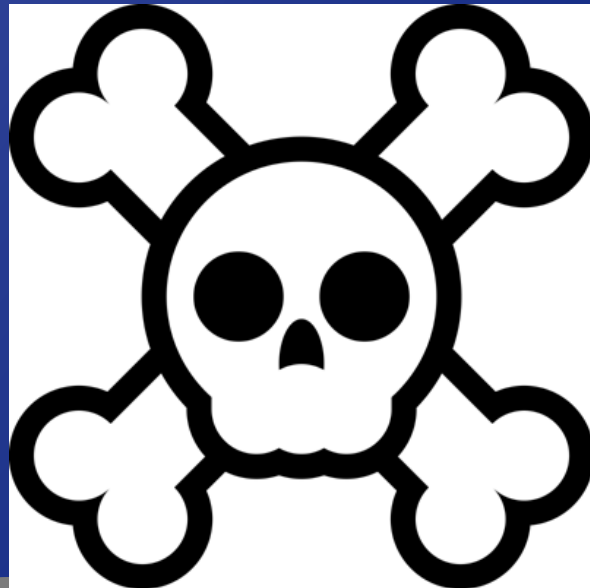
Degenerative also called multidirectional or complex

Acute/unstable

Degenerative/stable



What's so bad about knee scopes  
anyway?



- ⦿ Nothing, when used in the appropriate context, but...
- ⦿ In debriding the tear, inevitably some undamaged meniscus must be trimmed to recreate a relatively smooth edge on the rim (white zone)
  - Relative large chance of tearing through this tissue again
  - Less meniscal tissue → less contact area → uneven distribution of forces in knee → increased cartilage wear
  - Papalia et al, BMB 2011 – systematic review, min 5 year f/u
    - 39.6% develop OA in operative knee vs 6.9% contralateral knee



# Bottom line:

Patient outcome is the same if they have arthroscopy or not, but less meniscal tissue in the knee leads to faster progression towards OA

# Putting it all together



YES

MAYBE

NO

# Troubleshooting



- ⦿ You followed the aforementioned algorithm but at 3 months the patient has still not improved. They do not have any mechanical symptoms but you worry by delaying MRI any longer you may miss an unstable meniscal tear
  - Kauenhofen, unpublished 2018
    - Single center, single physician caseload review of patients diagnosed with meniscal tear between Mar 2016 and April 2018
    - Methods: query in Accuro EMR – 239 patients identified
    - Results: **0% mortality rate**
    - Conclusion...

**No worries!**

The End...

