

# Varus degeneration in ACL-insufficient knee joints showed reduced clinical outcome after high tibial osteotomy compared to varus degeneration with stable ACL

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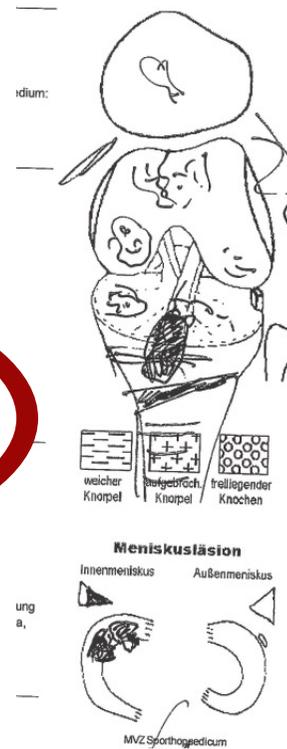
# Introduction

- HTO - pain relief in varus degeneration (Aglietti, 2003, Akizuki, 2008, Sprenger, 2003)
- HTO and ACLR – significant improvement of subjective knee stability (Bonin, 2004, Li, 2015, Noyes, 2000, Trojani, 2014, Stride, 2019)
- HTO without ACLR - significant improvement of subjective knee stability (Mehl, 2017, Dejour, 1994, Lattermann, 1996, Williams, 2003)
- ACL reconstruction in degenerated knees high failure rate (Stride, 2019, Lattermann, 1996, Noyes, 2000)

# Varusdegeneration and anterior knee instability

- HTO with ACL R

- HTO without ACL R



ACL R with implant removal when subjective instability

# Varusdegeneration and anterior knee instability

- HTO with ACL R

- HTO without ACL R

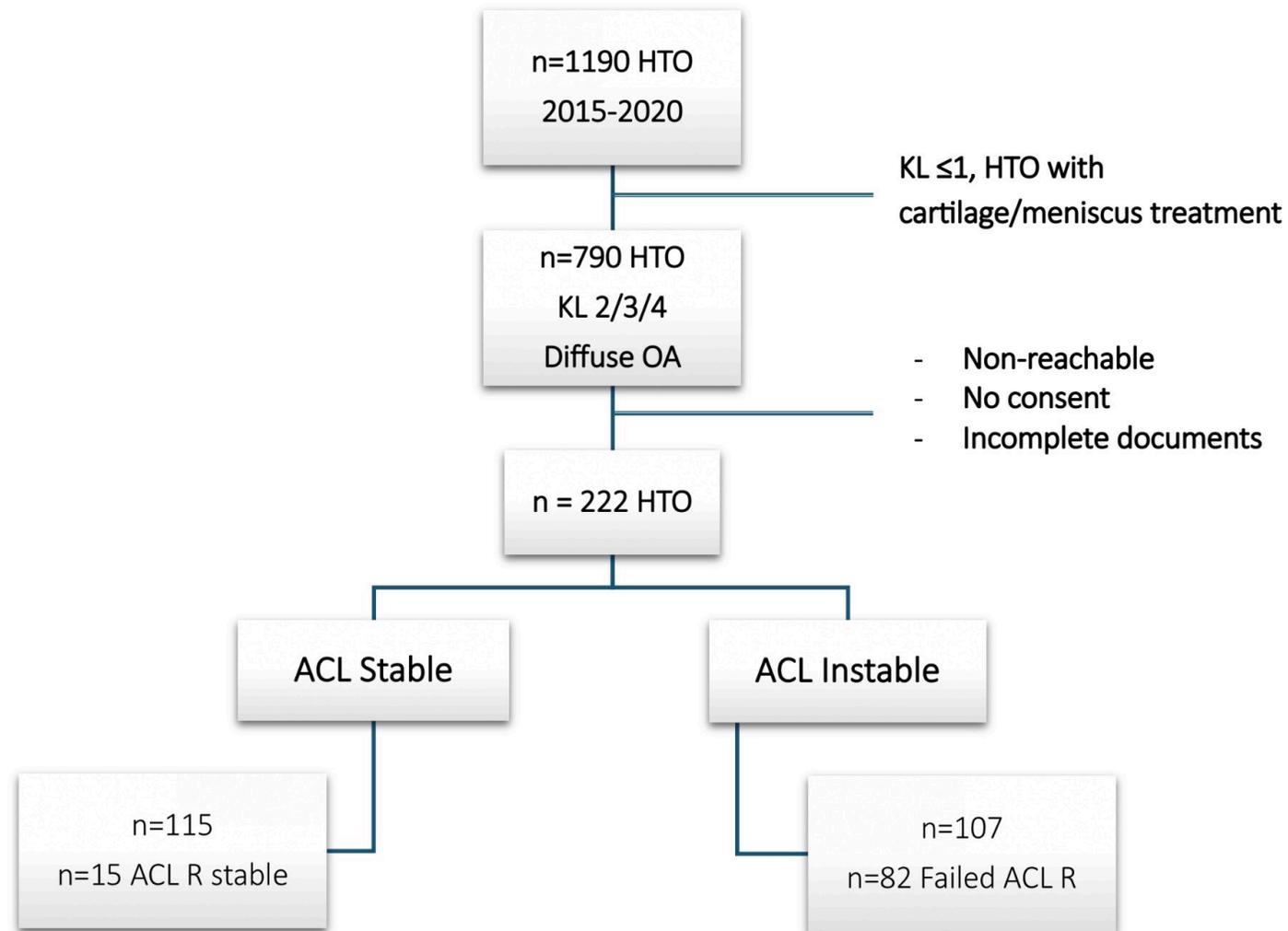


ACL R with implant removal when subjective instability

## Hypothesis:

Reduced outcome after HTO + anterior instability compared to HTO in ACL stable knees

# Study design



1 = LMT negativ

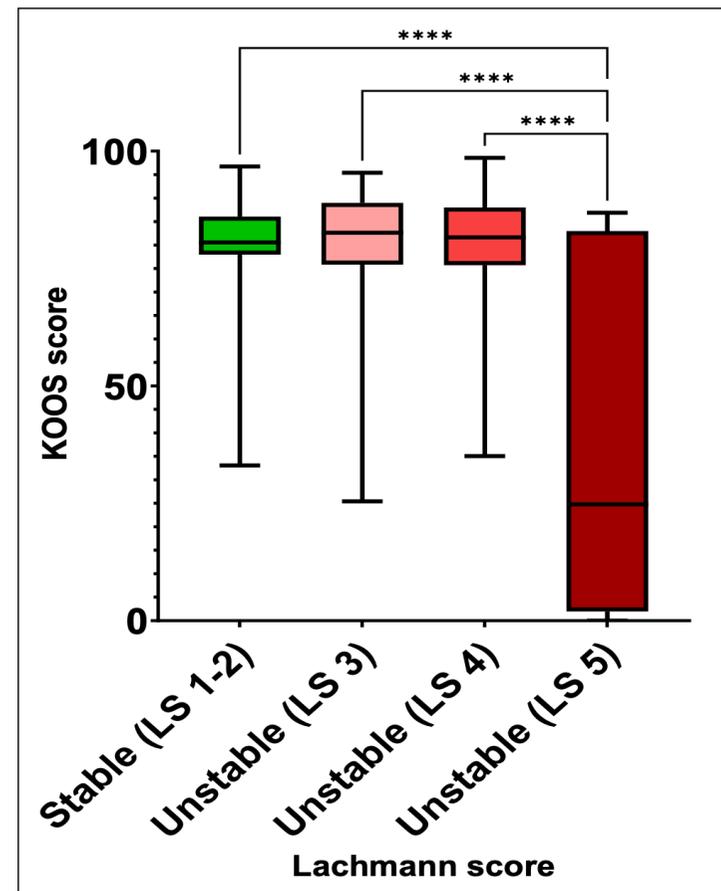
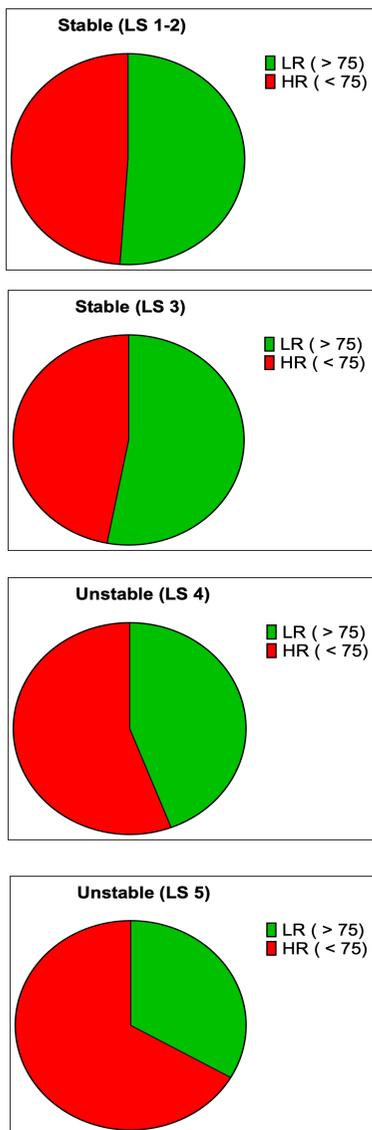
2 = LMT 1 positiv, firm endpoint

3 = LMT 2 positiv, firm endpoint

4 = LMT 2 positiv, soft endpoint

5 = LMT 3 positiv

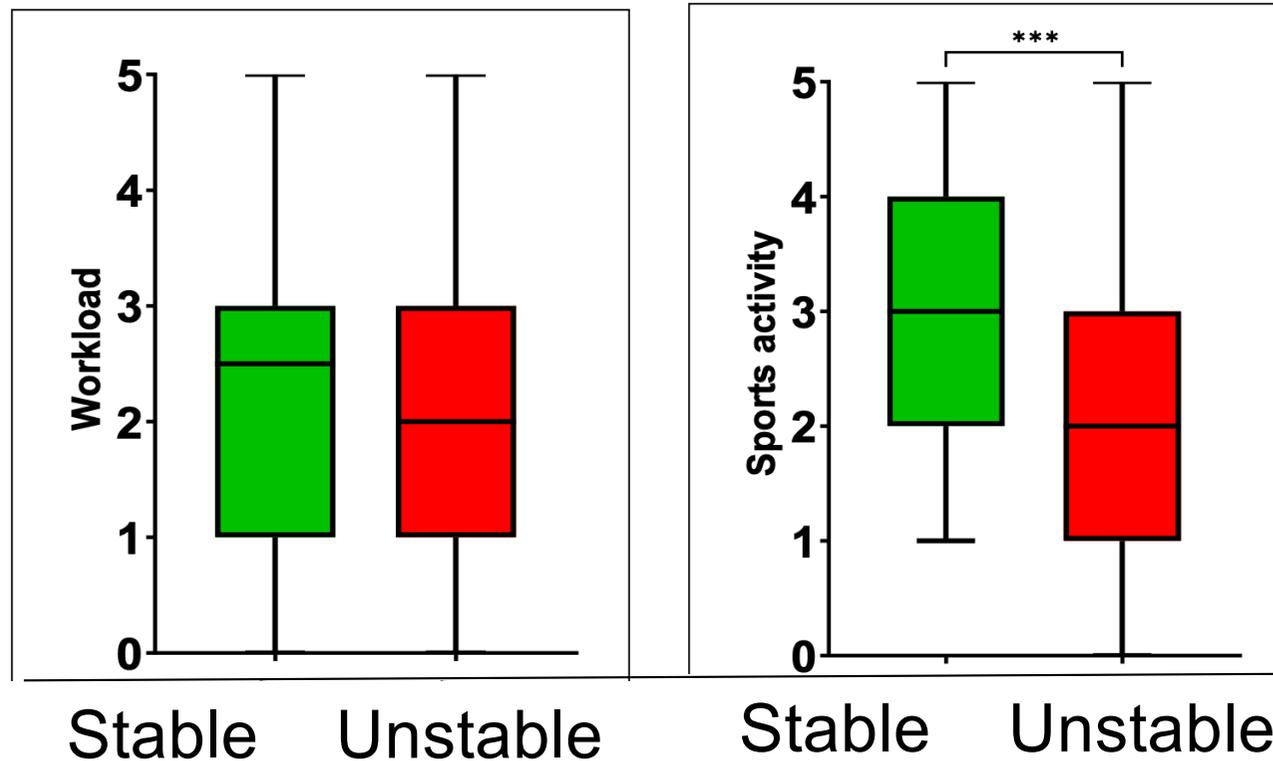
# KOOS after HTO



L5 all failed  
ACL reconstructions

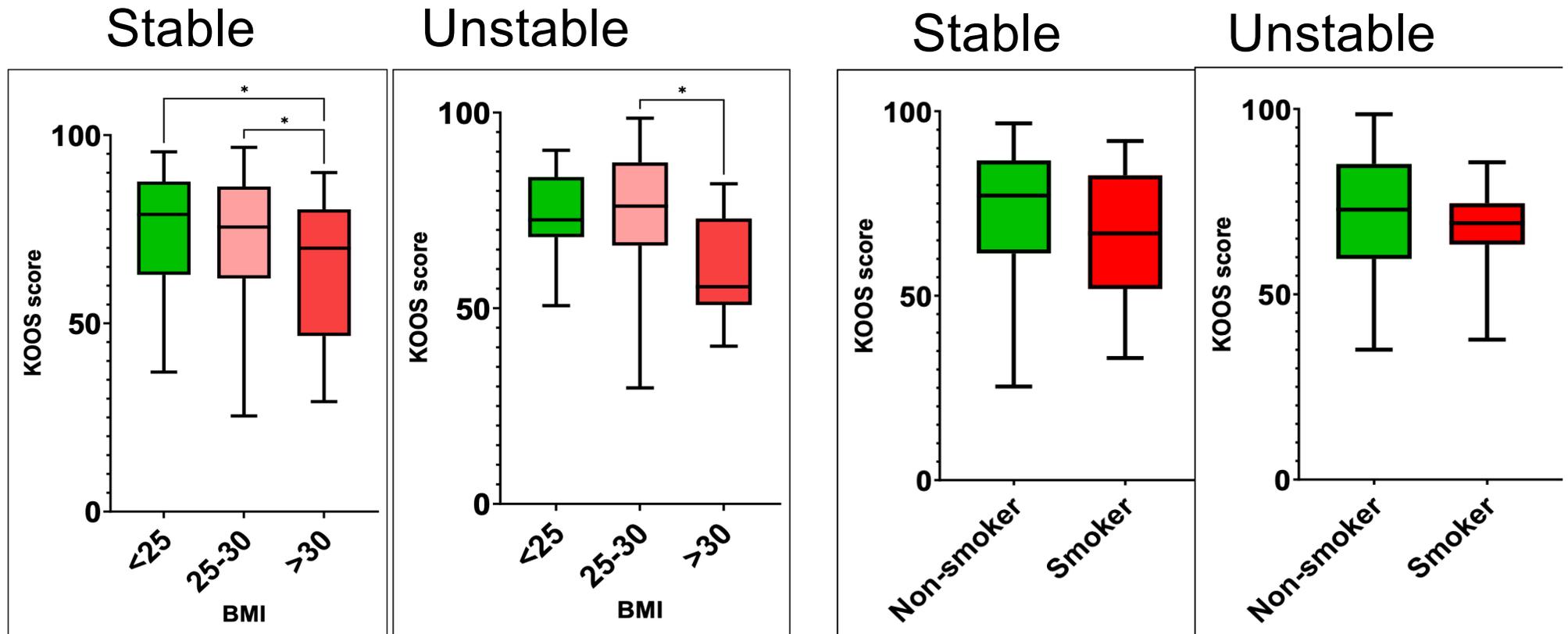
- Increasing instability - increase in High risk patients
- No significant difference in overall KOOS
- Significant low KOOS in highly instable knees  
(failed ACL reconstructions)

# Significant reduction of sport activity after HTO in ACL instable knees



# Outcome of HTO

## Influence of BMI and smoking

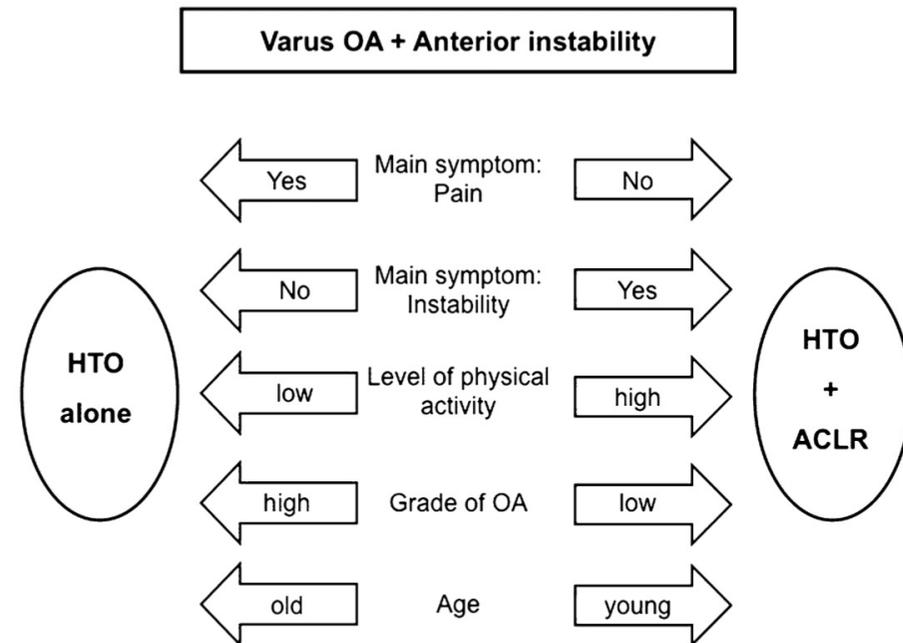


- High BMI significant reduced outcome
- No significant effect on outcome between ACL-stable and ACL-unstable knee

# What do I learn?

- HTO in ACL instable knees makes sense even without ACL R.
- Decision for ACL R based only on presence of subjective instability is not enough.
- HTO plus ACL R is indicated:
  - Highly instable Knee
  - Sport interested patients

**HTO plus ACL-R  
will increase!**



Mehl, 2017

# Thank you for your attention



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