

# One Way to Treat Horizontal Tears of the Medial Meniscus (E-82)

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One way to treat horizontal tears of the medial  
meniscus

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The Author is consultant for Synthes, Smith&Nephew and ITS

## Purpose:

Degenerative disease of the medial compartment of the knee usually starts with pathologic changes, tears, of the meniscus. Suturing of horizontal tears is a new way to enhance and preserve structure and function of medial meniscus tissue. In this study, we present the results of a pilot study of a new suturing technique.

## Material and methods:

From January 2005 till September 2007, 12 patients with horizontal tears of the posterior part of the medial meniscus have been treated using all inside FasT-Fix<sup>®</sup> sutures. Aftercare has been provided following an integrated clinical pathway. The results have been evaluated through a clinical examination with the KOOS instrument.

## Results:

Distribution of age: 51 M, Min 24, Max 73. KOOS results for pain: 92,5 M, for sports 69,58 M. The mean of operation time (skin to skin): 23 minutes, time of aftercare: 31 days. The patient with the worst result had to be treated 122 days. On the day of examination she was free of pain during the activities of daily living but she had sometimes moderate pain during walking downstairs. The patient with the best result was completely free of pain and working full time.

## Ideas behind (1):

### Functions of the Meniscus:

Transmission of forces from femur to tibia

Increase in contact area

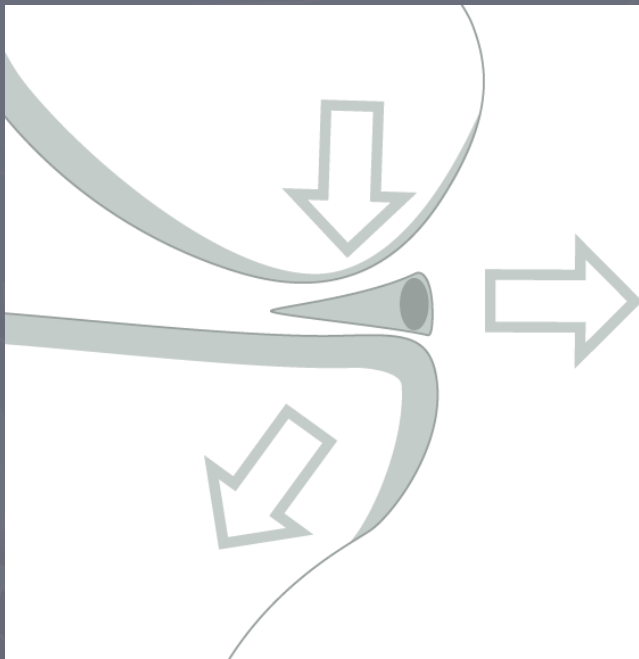
Increase in congruency

Stabilisation in Rotation and Translation

(Dieter Wirtz, Basel 2008)

## Ideas behind (2)

### Vektoranalyse des medial posterior horn



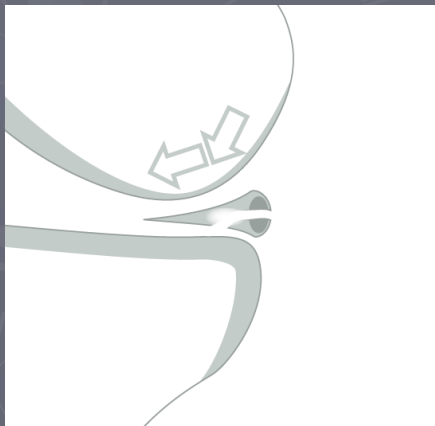
Under load the meniscus will stay in place, only if the peripheral fibrous rim remains intact.

## Ideas behind (3):

### Grading of horizontal tears of the medial posterior meniscal horn



Grad 1: Central degeneration of the meniscus.

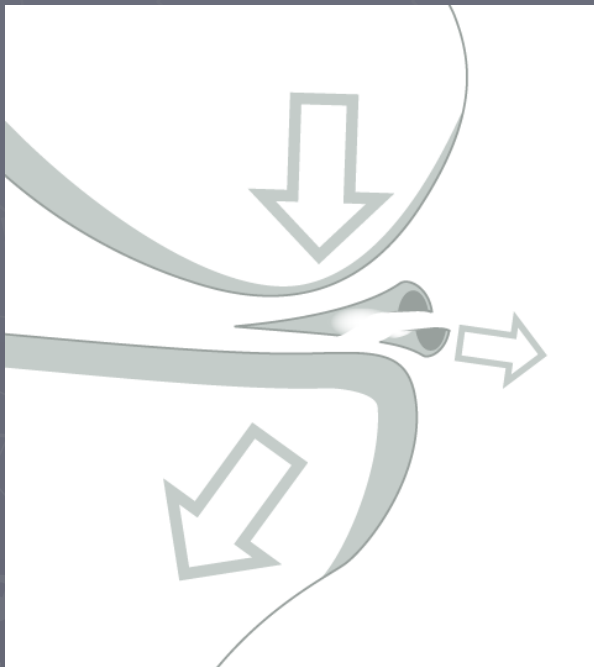


Grad 2: Horizontal split of the peripheral fibrous rim and penetration to the surface of the meniscus.



## Ideas behind (4):

### Grading of horizontal tears of the medial posterior meniscal horn

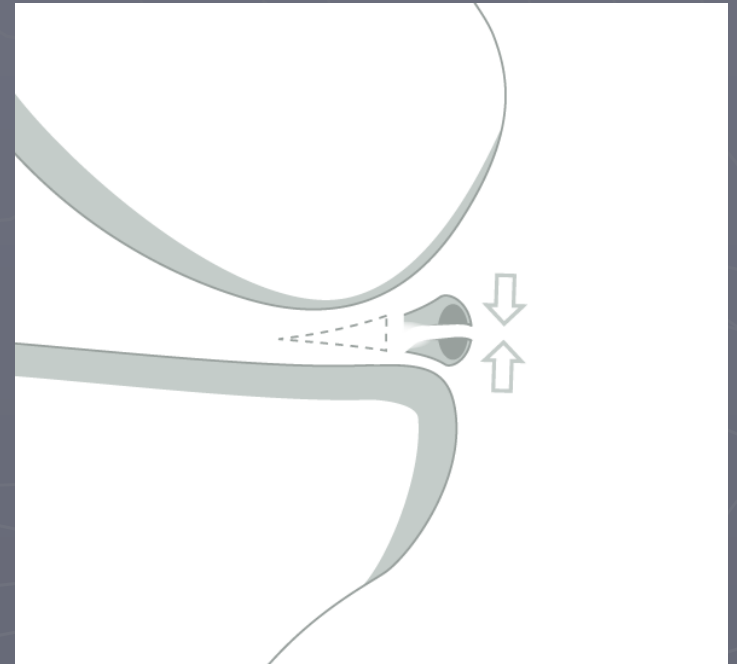


Grad 3: Horizontal tear combined with failure of the peripheral fibrous rim resulting in displacement of one or both peripheral bundles out of the joint.

Ideas behind (5):

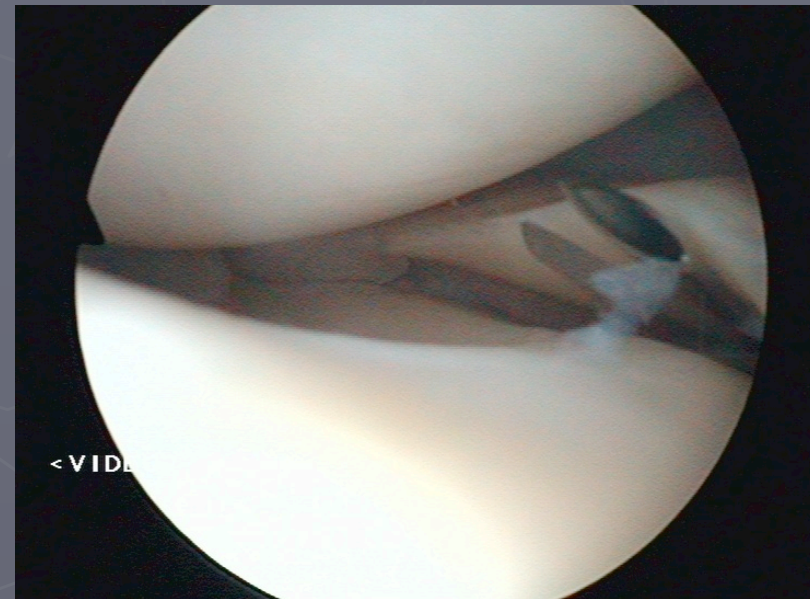
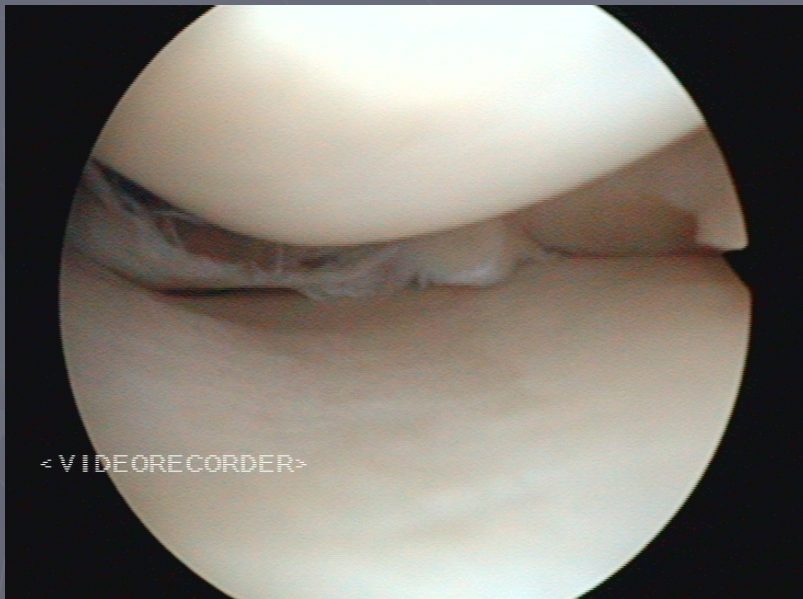
Principles of therapy:

- 1 Remove all mobile fragments.
- 2 Reduce the transmission of forces through downsizing the upper surface of the meniscus.
- 3 Diminish the shearing forces by suturing the two bundles together.



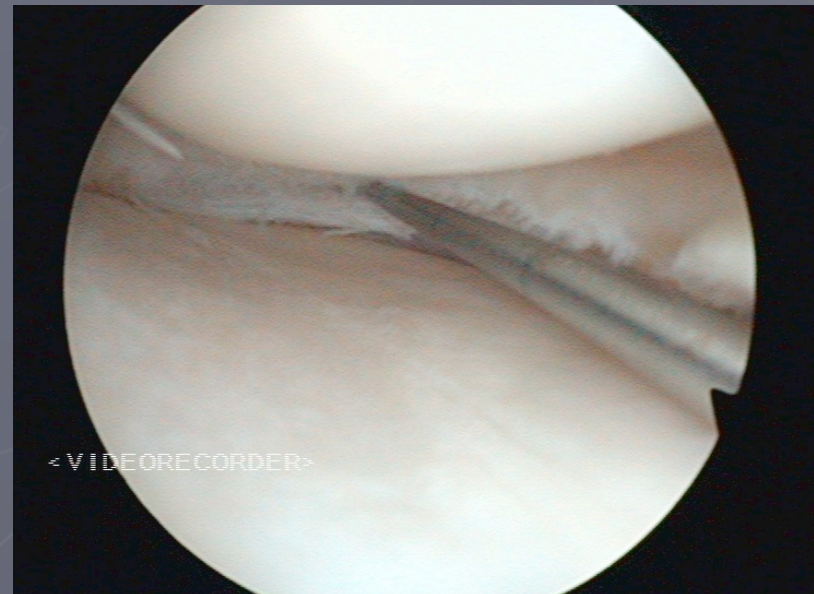
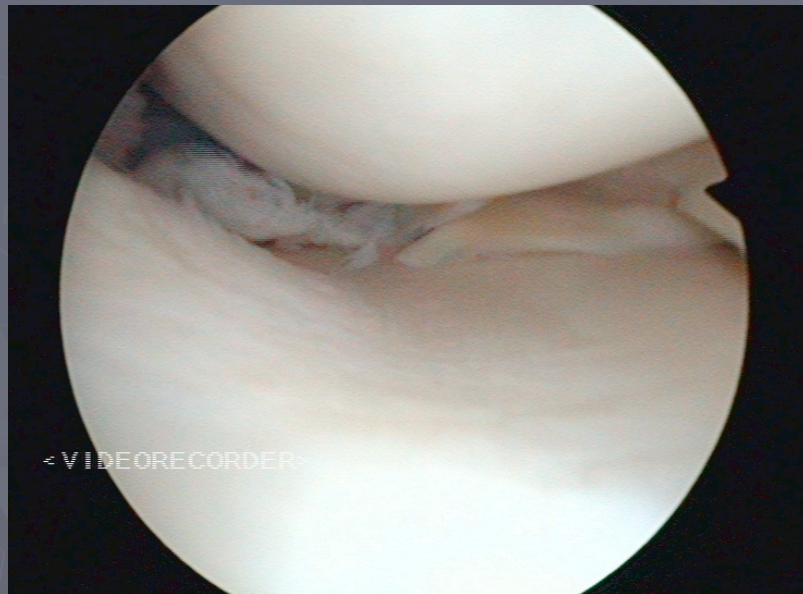
## Operation Technique (1):

Use an inframeniscal arthroscopic portal  
(Medial meniscus in a right knee)



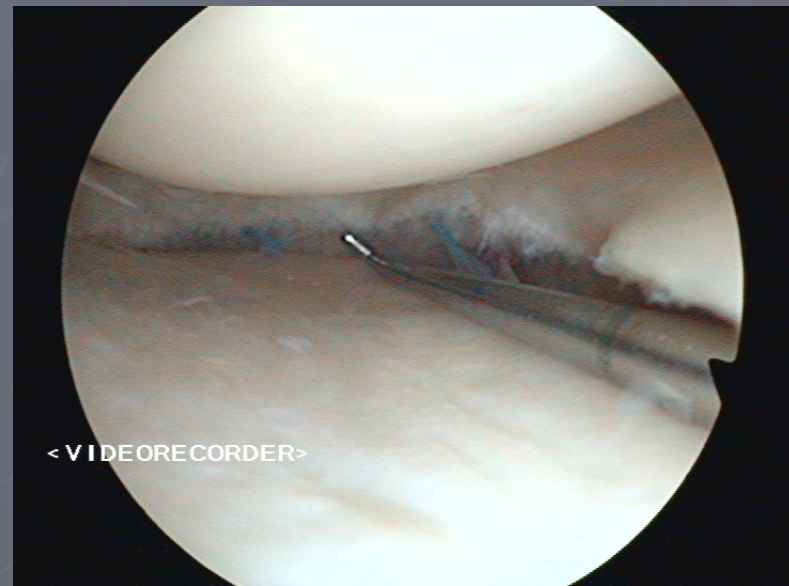
## Operation Technique (2):

Remove loose parts of the meniscus, and shorten the surface of the meniscus



## Operation Technique (3):

Suture the two bundles of the peripheral fibrous rim together.



## Summary:

- 1 Suturing of the two bundles of the peripheral rim of the medial meniscus is technically not difficult
- 2 There is no alternative therapeutic option
- 3 The clinical results of this pilot study are comparable to other series of patients treated with more traditional techniques (step 1 and 2).
- 4 There is level 4 and 5 evidence for a possible benefit in patients after suturing of horizontal meniscus tears.