

LIROMS  
Luxembourg Institute of Research in  
Orthopaedics, Sports Medicine and Science



2022

JULY 07-09

# The Luxembourg Meniscus



5<sup>th</sup> International Conference on Meniscus Science and Surgery

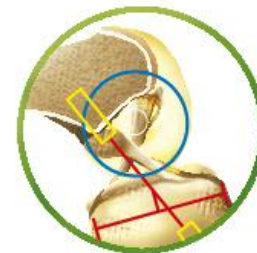
[www.the-meniscus.org](http://www.the-meniscus.org)



## Burt Klos MD PhD

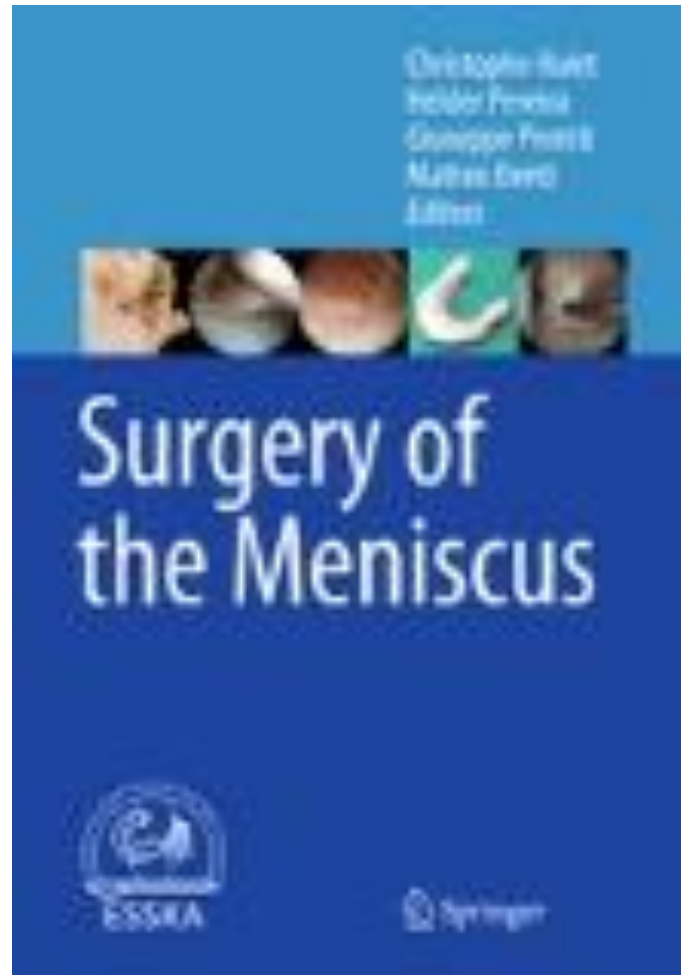
ICONE Orthopedics & Sports traumatology  
The Netherlands

### Meniscus dynamic imaging with **ultrasound**



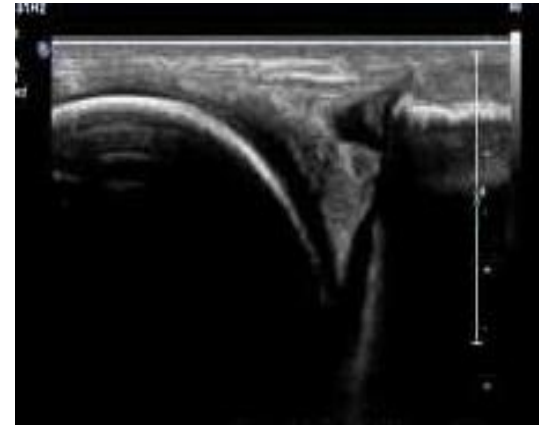
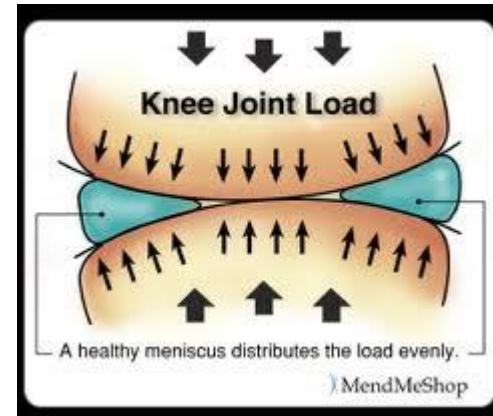
# ICONE

# Book Surgery of the Meniscus ESSKA 2016



# Meniscus lesions

- Conservative treatment
- Operative treatment
- Meniscal repair
  
- Important factor
- Ligamentous insufficiency

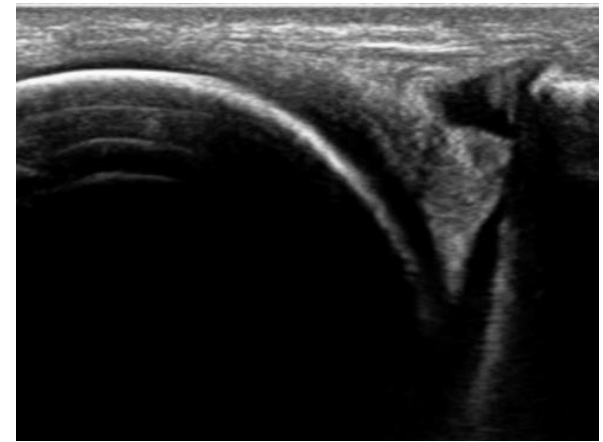
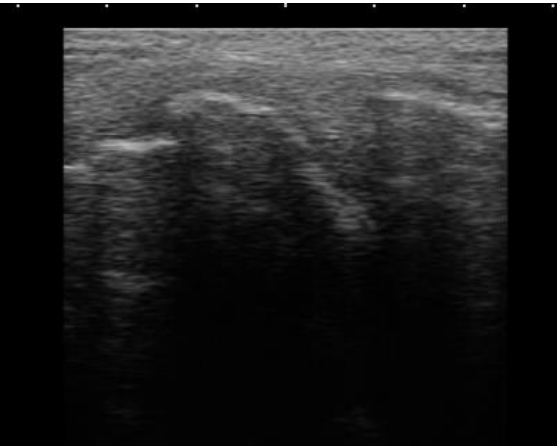


# Ultrasound positions prone ,rotation, supine ,hyperflexion

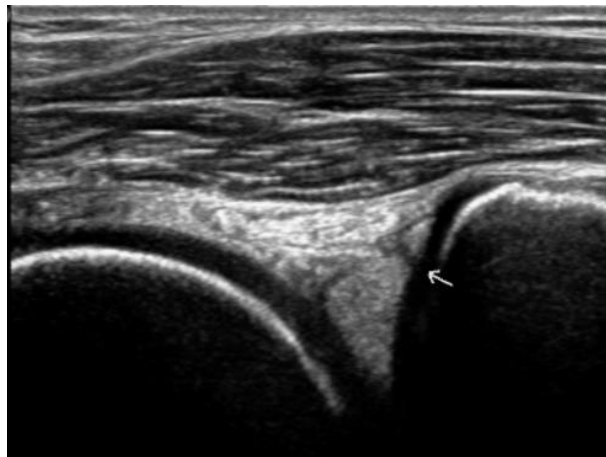


# Improvements image quality

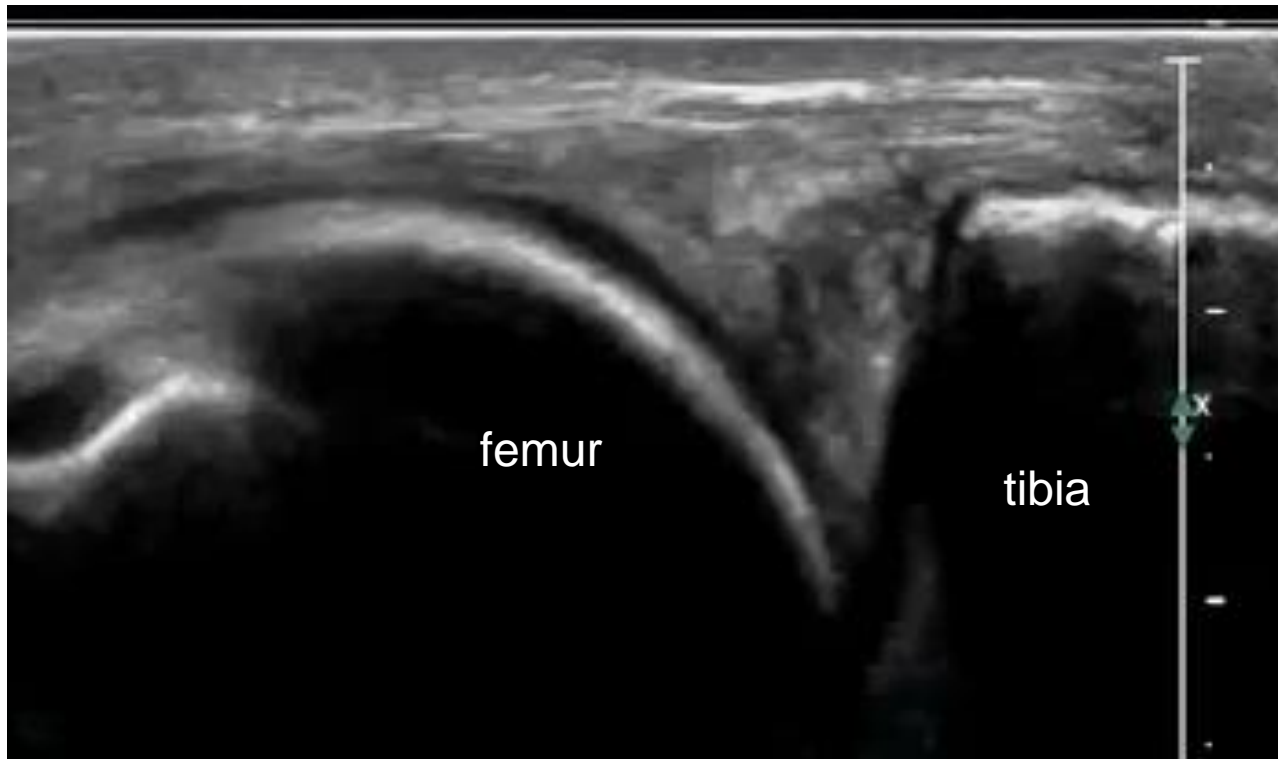
2006-2008    2008-2010    2011-2014



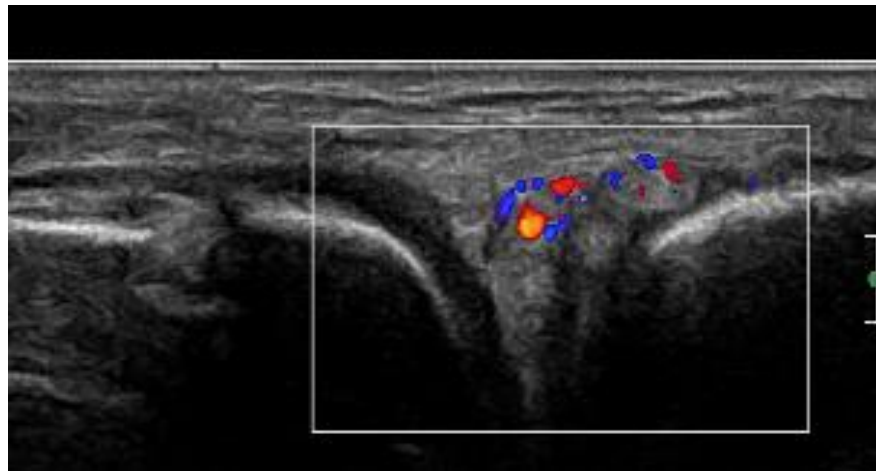
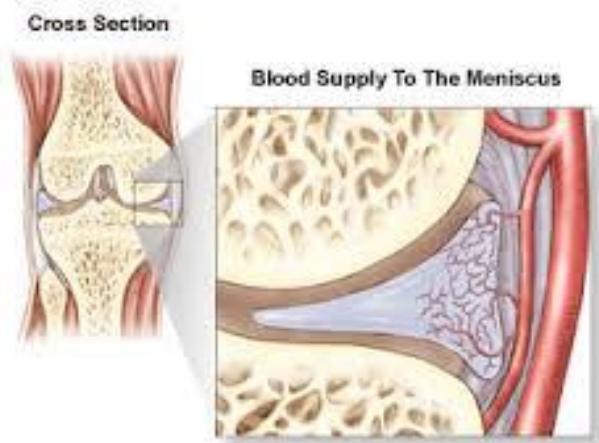
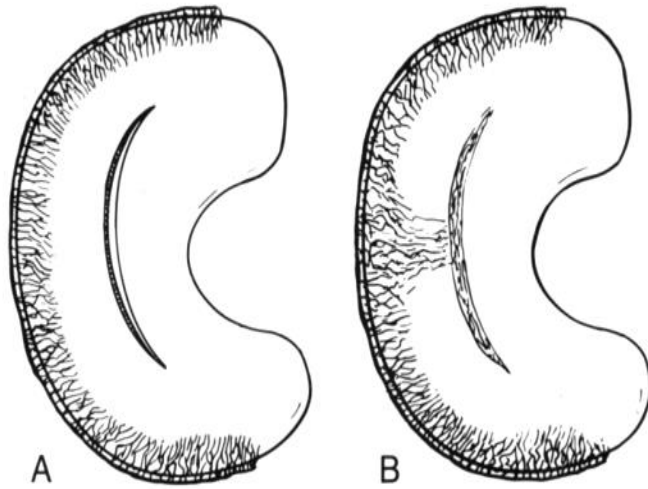
2015-  
2018



# Dynamic HR meniscus ultrasound



# Vascular zones



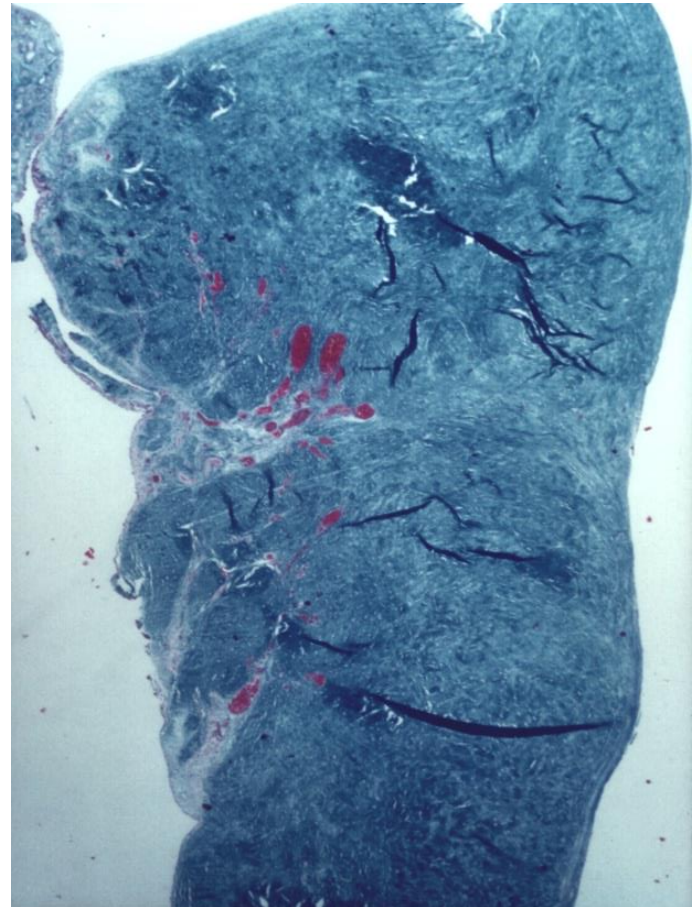
ESSKA 1994

Human meniscal repair >>

Histology meniscus resection after repair

Neovascularisation

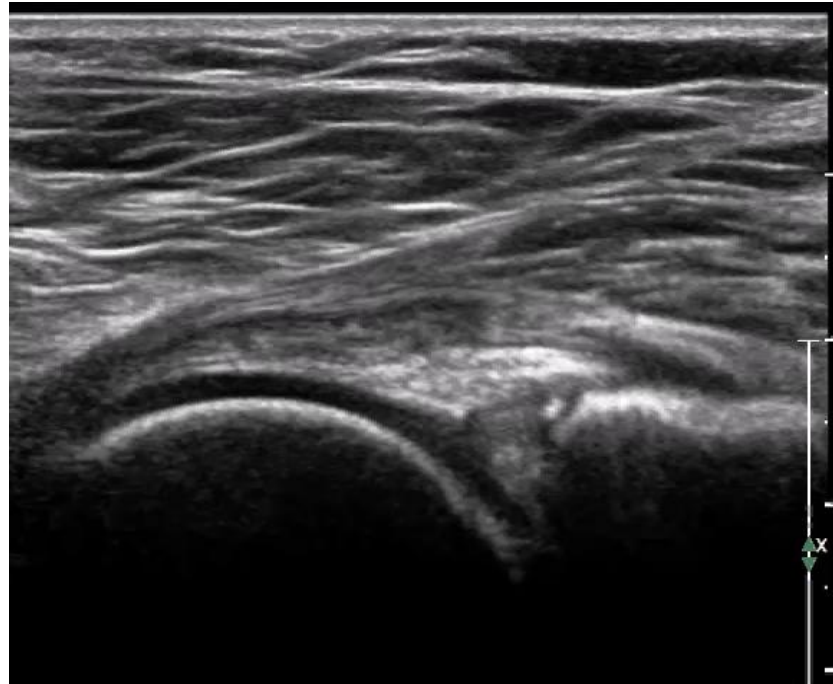
2 months	+++
5 months	++
5 months	+
12 months	+
20 months	0
48 months	0



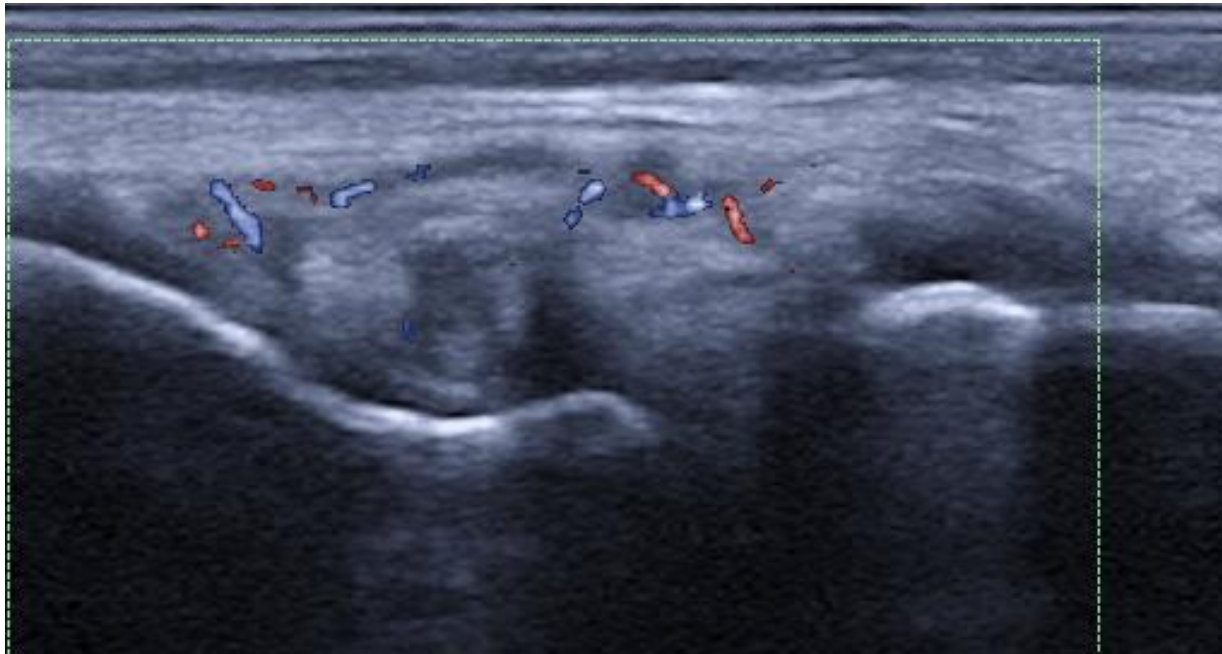


# Meniscus stable repair

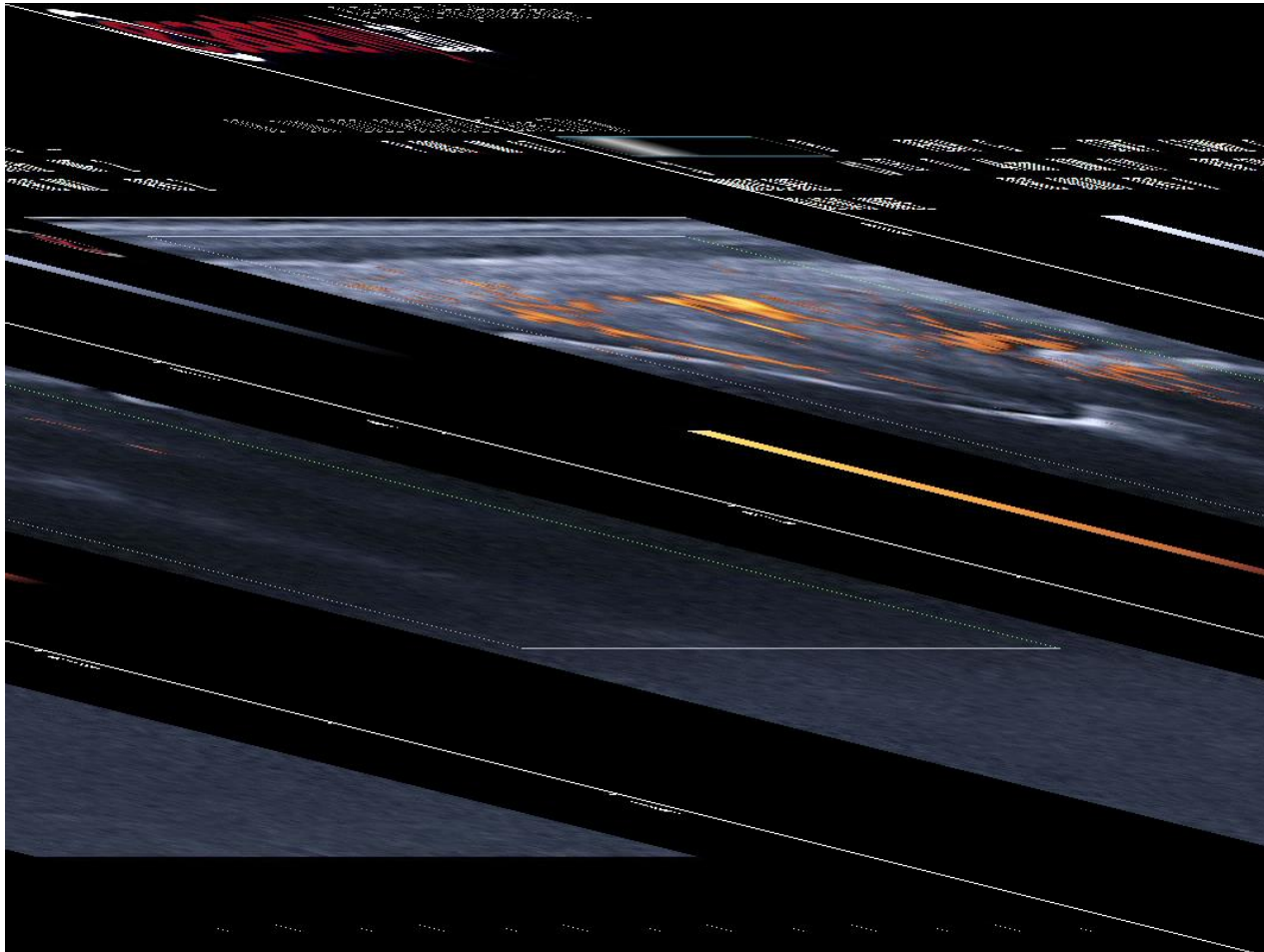
- Video stable repair ( ESSKA book ) with implant



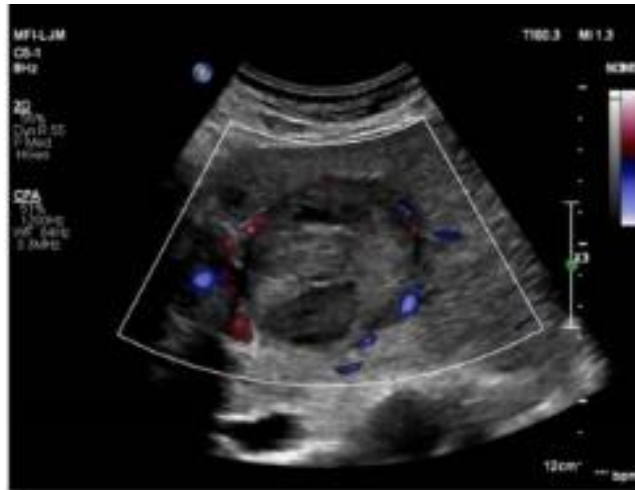
# Knee ultrasound doppler



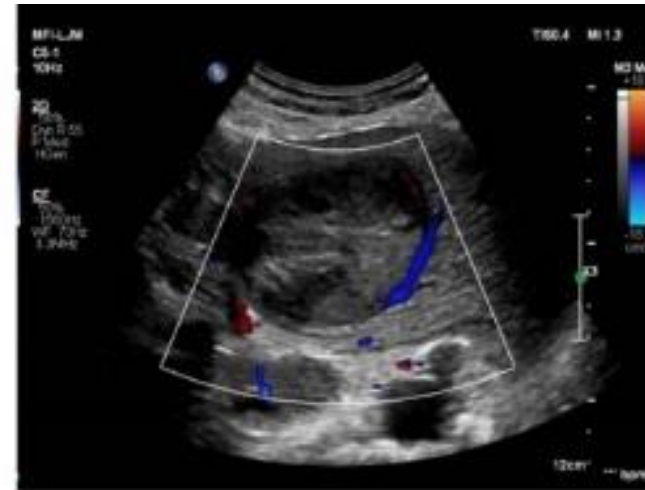
# Fresh lateral meniscus doppler



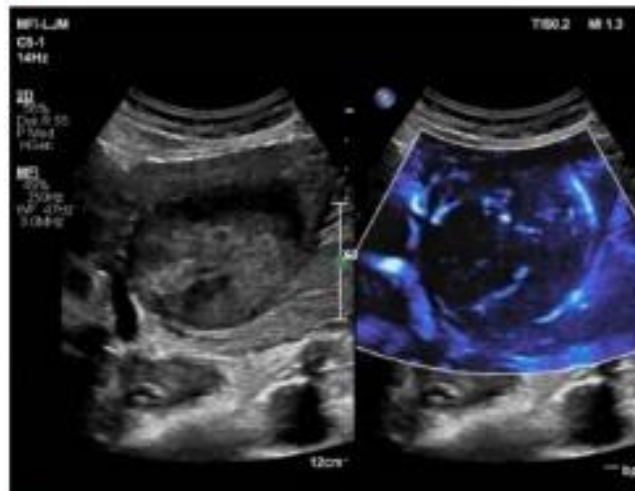
# Liver tumors doppler vs microflow



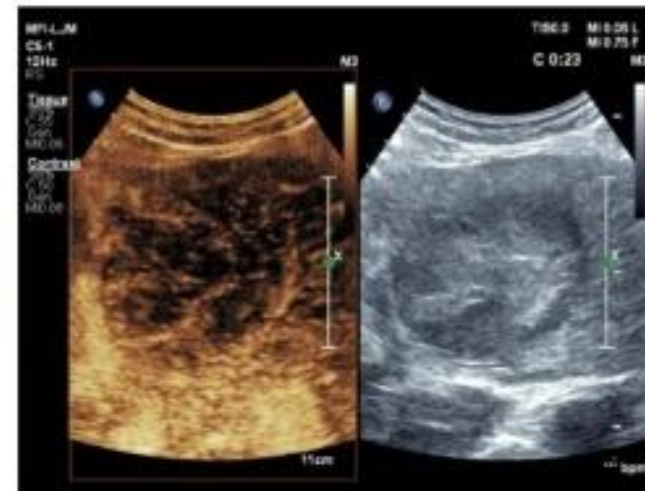
A



B

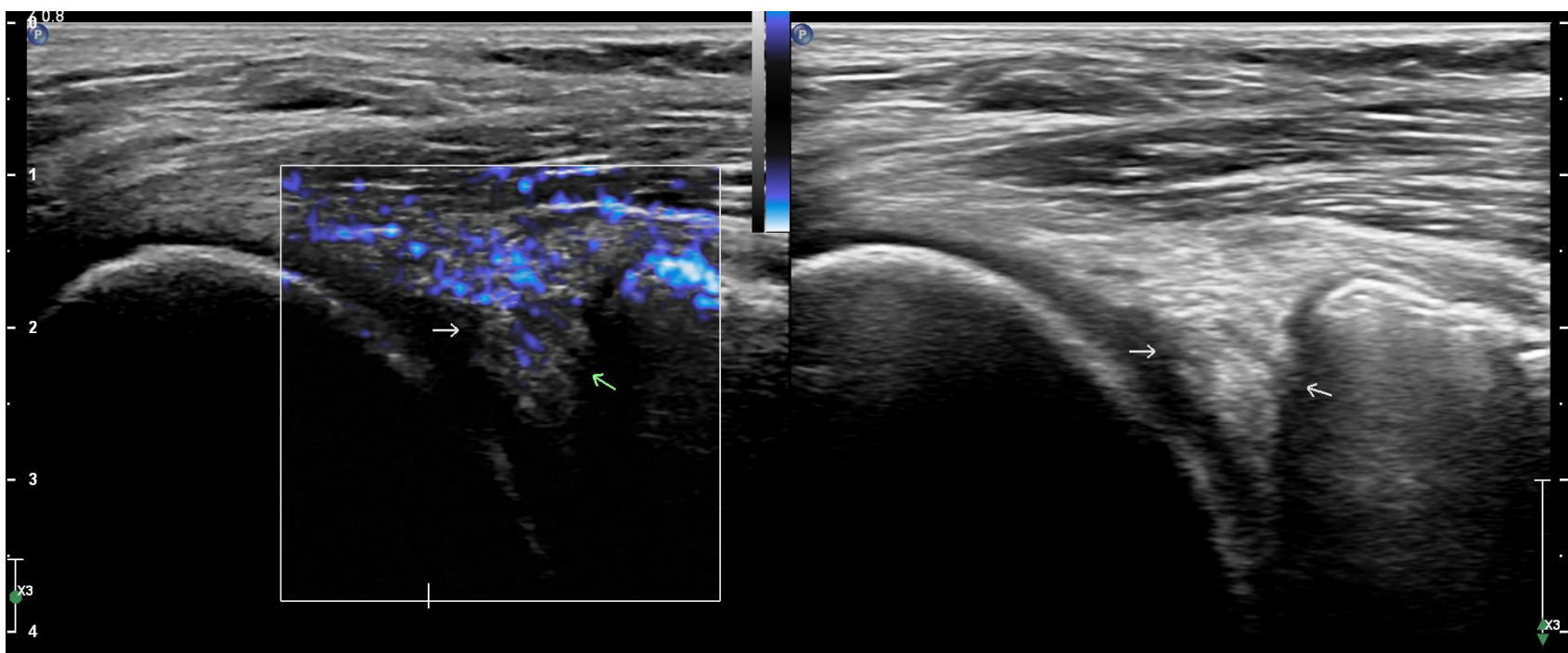


C

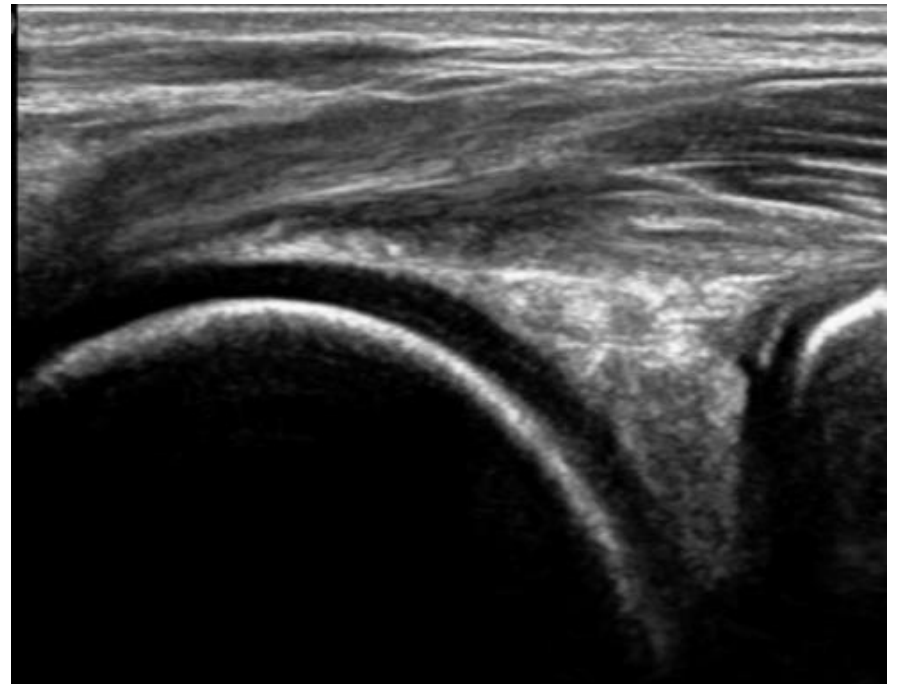
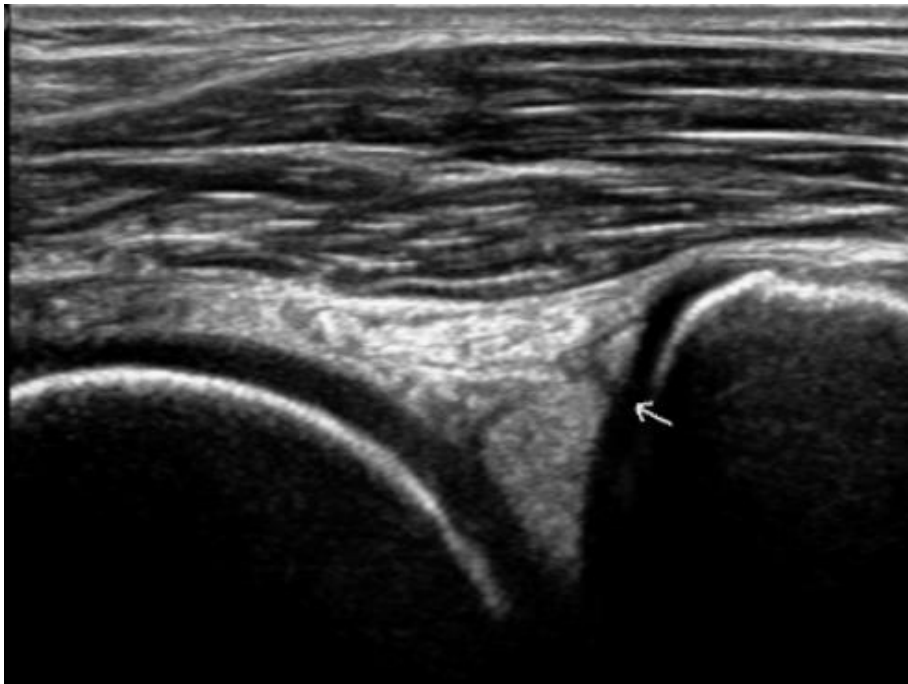


D

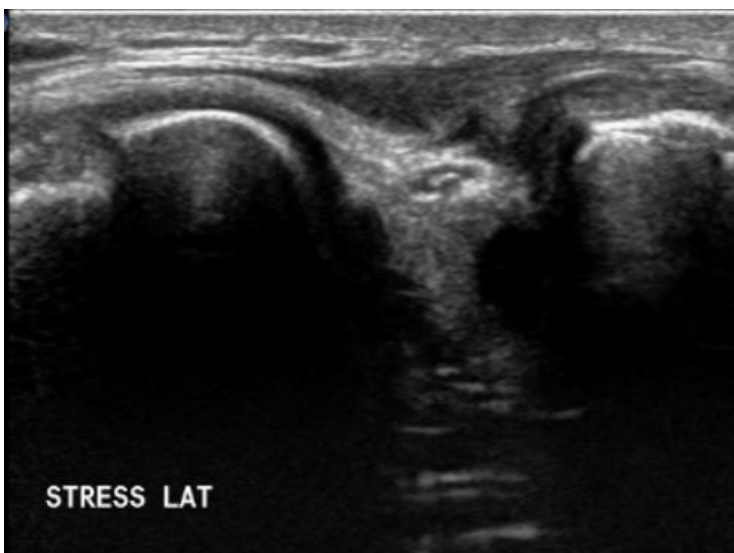
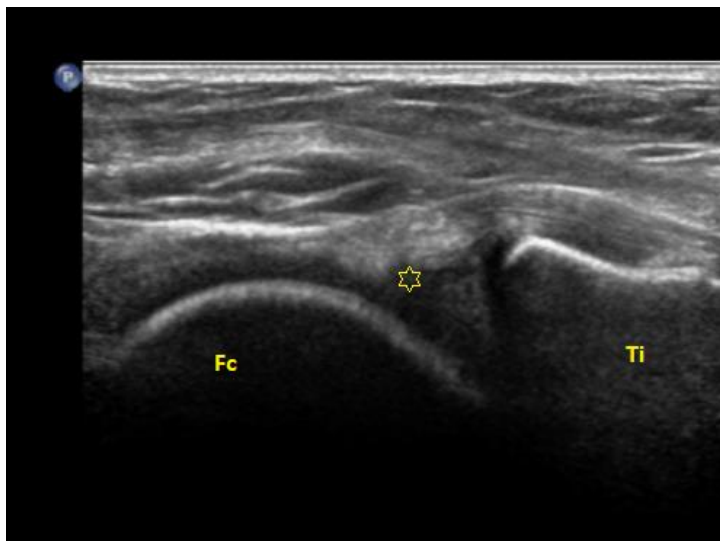
# Meniscus vascularisation



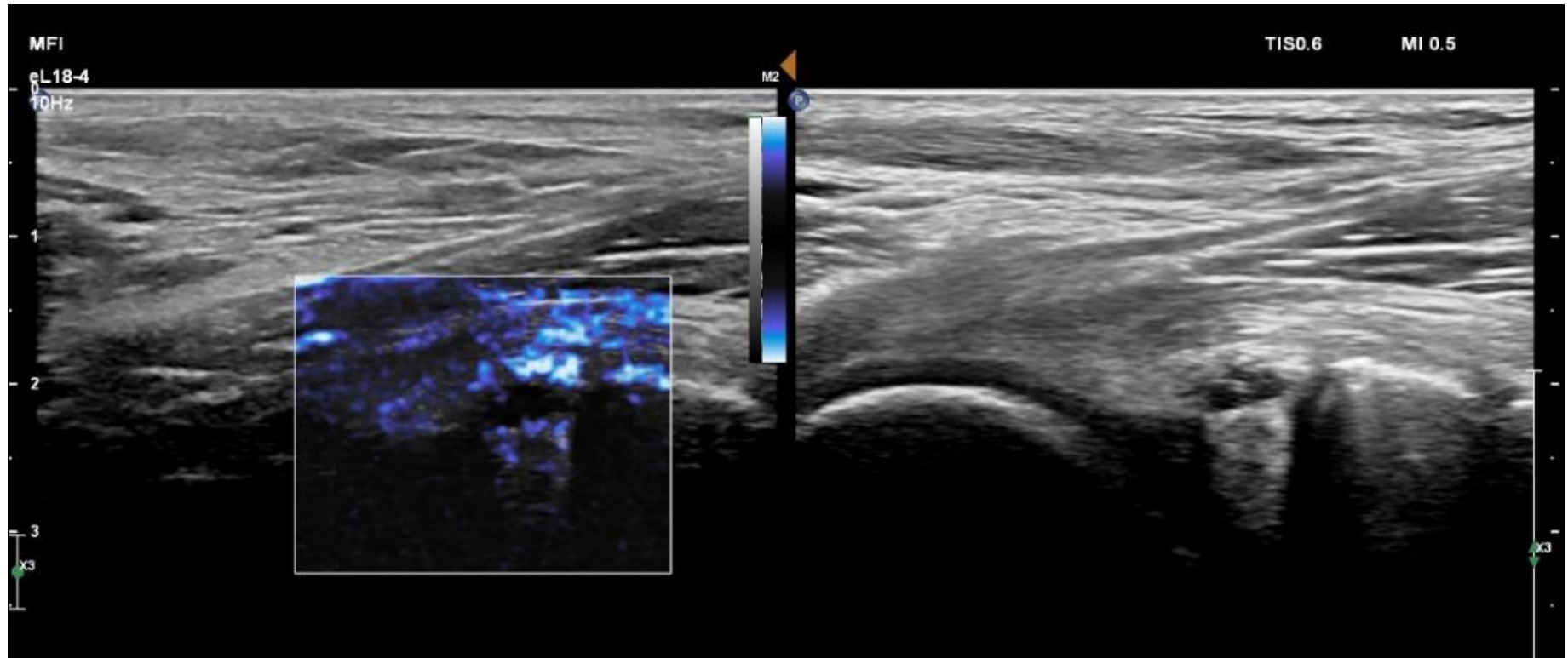
# Sequential follow up in ACL / monitoring the meniscus @ 4 weeks conservative treatment



# Meniscus repair follow up

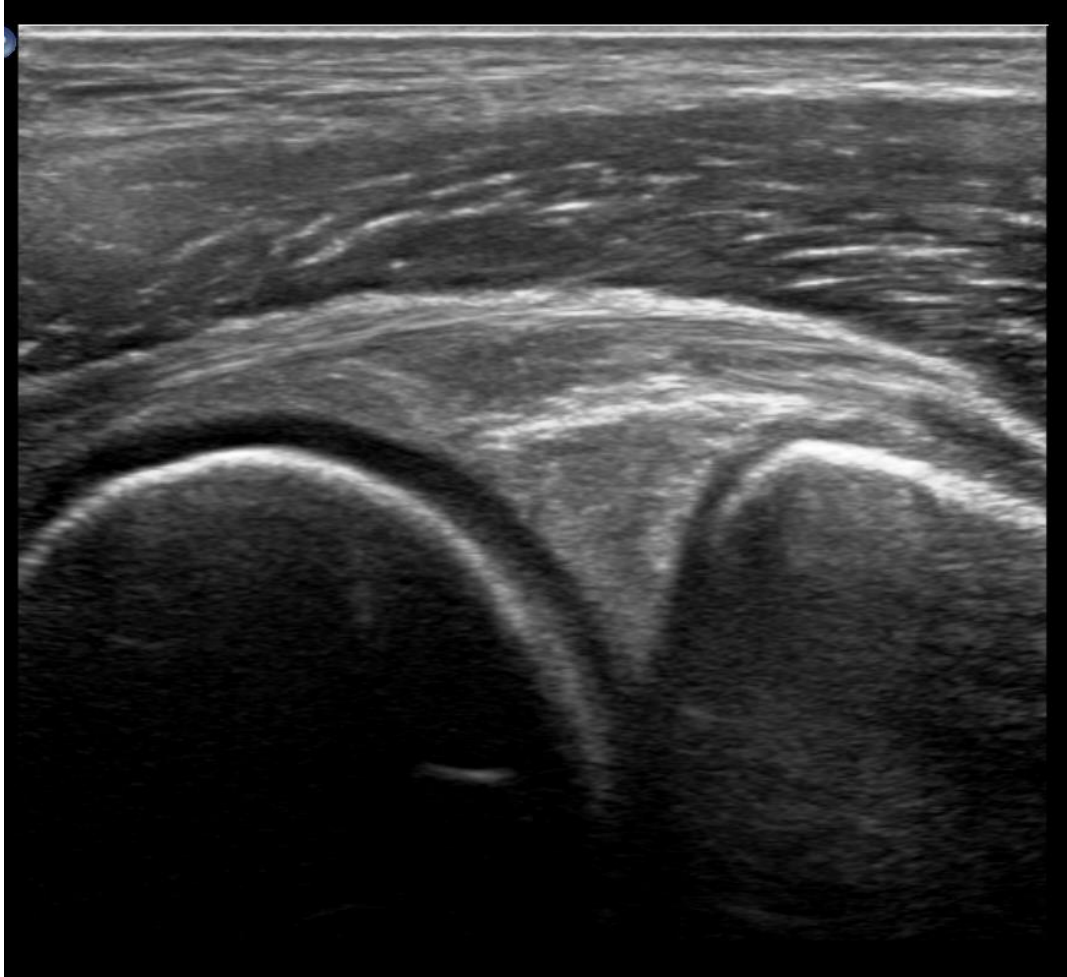


# X Flow / microvascularisation





# Healing



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## Dynamic ultrasound developments

### Improved imaging

### Doppler flow >

### Microflow

## Vascularisation meniscus is dynamic and key for monitoring healing