

# Weight-bearing osteoarthritis of the knee

Multitom Rax Real3D<sup>1</sup> clinical case  
Artemed Hospital Munich, Germany



<sup>1</sup>Option

Results from case studies are not predictive of results in other cases. Results in other cases may vary.



# Clinical background and indication for Multitom Rax Real3D<sup>1</sup> examination

## Patient

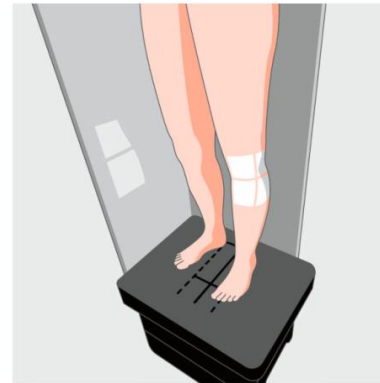
Female | Age range 70 - 80 years | BMI range 20 - 25 kg/m<sup>2</sup>

## Anamnesis

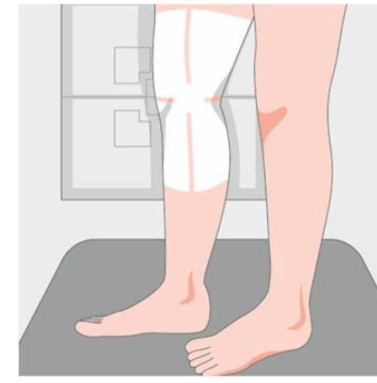
Lateral knee pain for several years. The symptoms increase significantly under weight load, especially when walking and climbing stairs.

## Indication for Real3D<sup>1</sup> examination

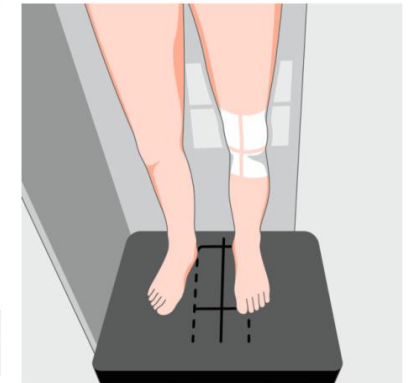
Ask about degenerative changes and position.  
Assessment of the situation under weight-bearing conditions.



*The heel should be close to the backmost horizontal line.*



*Align the horizontal line just below the patella.*



*Ensure that the light field covers the knee.*

The products/features (mentioned herein) are not commercially available in all countries. Their future availability cannot be guaranteed.

<sup>1</sup> Option

# Multitom Rax Real3D<sup>1</sup>

## Settings



### Settings for upright scan with Standard Protocol

<i>Tube voltage</i>	117 kV
<i>Current time product</i>	213 mAs
<i>Dose area product</i>	538.60 $\mu\text{Gy}\cdot\text{m}^2$
<i>Calculated value for <math>\text{CTDI}_{\text{vol},32}</math></i>	4.6 mGy
<i>Scan time</i>	16 sec
<i>Number of projections</i>	434

### Reconstruction settings for sectional views

<i>Pixel size</i>	0.4 mm
<i>Reconstruction kernel</i>	sharp (equivalent to Br69)
<i>Slice thickness</i>	0.5 mm

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# Multitom Rax Real3D<sup>1</sup>

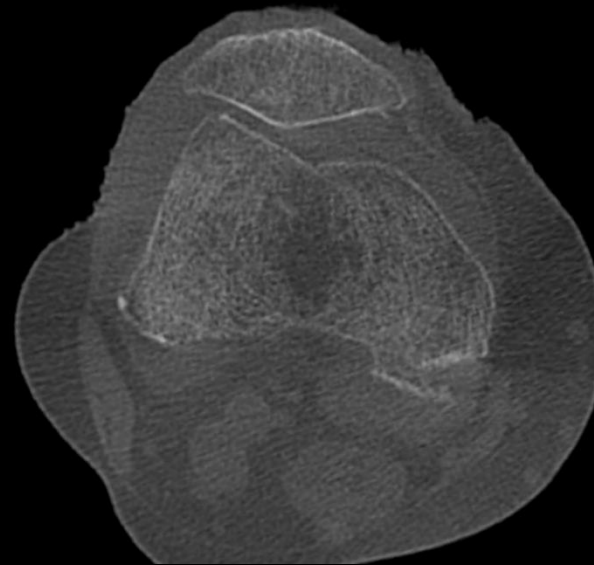
## Diagnostic findings

The 3D examination under weight load shows that the lateral joint space has been completely used up (marked with a circle).

In addition, there are signs of activated osteoarthritis of the knee:

- Spotty, periarticular osteopenia, most compatible with inactivity osteopenia
- Lateralized patella with incipient retropatellar arthrosis
- Concomitant joint effusion

The possibility of implanting a knee endoprosthesis was discussed with the patient.



*Axial view*



*Sagittal view*

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*“The Real3D examination using Multitom Rax reveals the entire extent of the osteoarthritis. Under weight load, the tibiofemoral joint space narrowing is clearly visible, compared to a previous MR scan in a supine patient position.”<sup>1</sup>*

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<sup>1</sup> The statements by Siemens Healthineers customers described herein are based on results that were achieved in the customer’s unique setting. Since there is no “typical” hospital and many variables exist (e.g. hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.



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Dr. Amir Bigdeli is employed by an institution that receives financial support from Siemens Healthineers for collaborations.