

# First Experience in man with an Ultra-High Resolution Whole-Body Photon-Counting CT for Oncologic Imaging

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# Materials and Methods

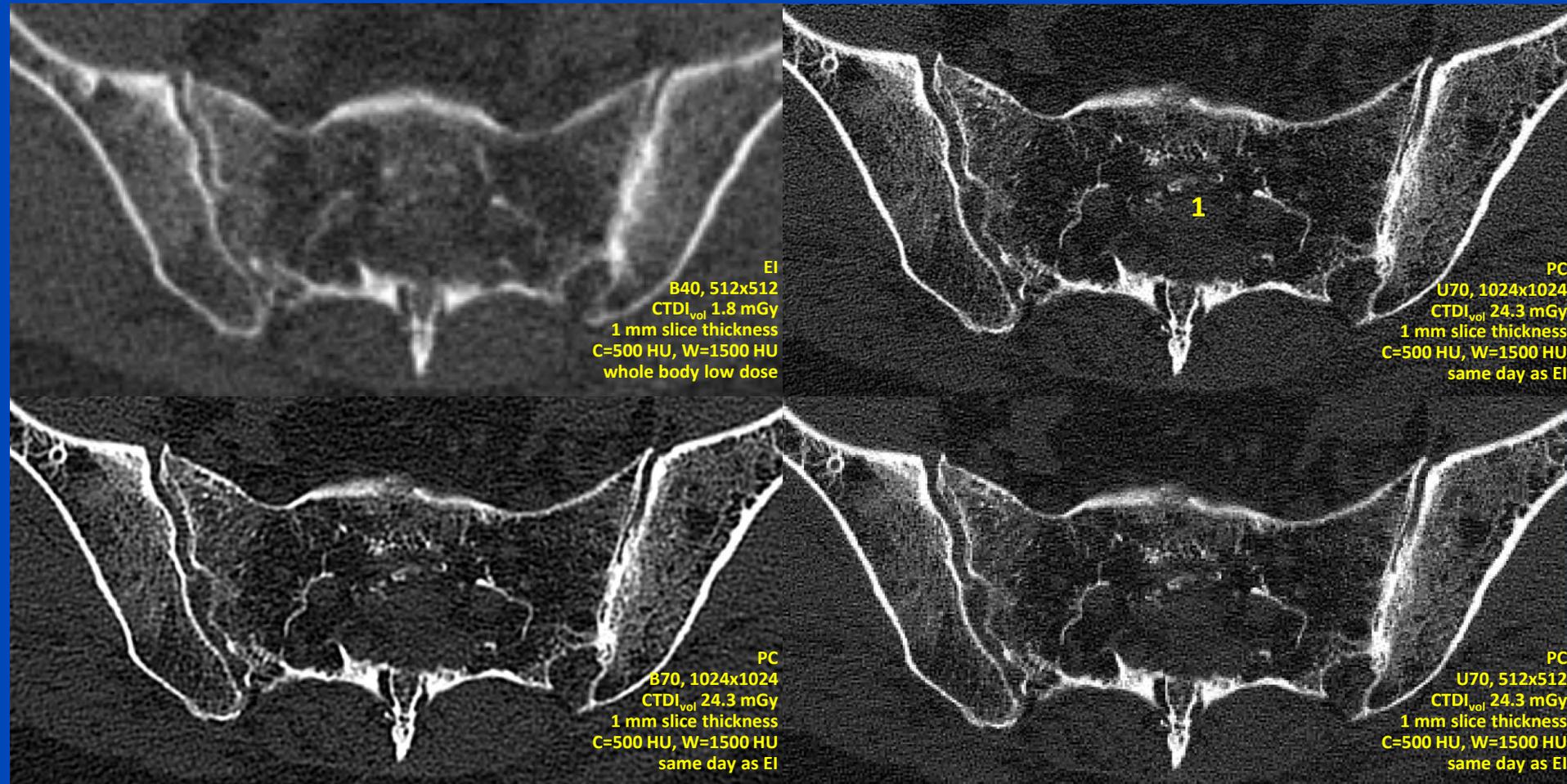
- **Heterogeneous group of nine patients with bone metastases due to**
  - Breast cancer
  - Melanoma
  - Multiple myeloma
- **Unenhanced examination with the SOMATOM Count CT (Siemens Healthineers, Germany)**



## Materials and Methods (2)

- Acquisitions were performed at 120 kV with 300 mAs
- Ultra-high resolution mode of the PC detector with a  $\text{CTDI}_{\text{vol},32\text{ cm}}$  of 24 mGy (243 mGy cm,  $D_{\text{eff}} = 3.6$  mSv).
- Image reconstruction was performed using routine (B40, B70) and additionally high-resolution (U70) kernels using 512 and 1024 matrix size

# Results



PC CT images in bone window demonstrating the osseous fine structure in a 77years old patient with multiple myeloma (tumor marked by "1")

# Conclusion

- These preliminary results justify further studies investigating the possible advantages of PC over EI in oncological imaging.
- The influence of the higher tube currents and smaller pixel size used for PC focusing on z-positions with malignant lesions remains to be examined to isolate the impact of the detector technology.

# Thank You!

**This presentation will soon be available at [www.dkfz.de/ct](http://www.dkfz.de/ct).  
Job opportunities through DKFZ's international Fellowship  
programs ([marc.kachelriess@dkfz.de](mailto:marc.kachelriess@dkfz.de)).**

**Parts of the reconstruction software were provided by  
RayConStruct<sup>®</sup> GmbH, Nürnberg, Germany.**