

# ADOQ project (2003-2005)

*For a better detection and investigation of osteoporosis...*



Beside bone density, bone architecture and quality are main factors to assess the fracture risks and the evolution of osteoporosis. ADOQ aimed to evaluate the benefits of 3D peripheral Quantitative Computed Tomography linked to finite element analysis compared to the actual methods based only on bone density.

**The objective was to demonstrate the benefit of measurements based on the 3DpQCT technique to evaluate bone quality.**

## Objectives

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To demonstrate the **contribution of bone structure and bone quality to assess the fracture risk** and the evolution of osteoporosis

- \* **To show the potential of the analysis of bone quality based on 3 Dimensional peripheral Computed Tomography (3DpQCT)** for a better prevention of the risks, for an earlier detection and for a better monitoring of bone loss.
- \* To allow this new technology to be used effectively in clinical diagnostic practice and to be compared for its potential usefulness against the currently used technology (DEXA).

The clinical study has been realised on an average of 850 subjects with the following objectives:

- \* To define normative data by collecting reference data of 3DpQCT trabecular measurements in the radius and the tibia on a population aged from 18.
- \* To demonstrate the contribution of bone structure to the fracture risk independently of the bone mineral density with the objective of providing a better fracture risk prediction especially for elderly suffering from osteoporosis.
- \* To evaluate the effects of physical exercise on bone architecture as a prevention mean or as a support to treatment, with a comparison between weight-bearing and non weight-bearing sports.
- \* To assess the effects of decreased physical activity on bone structure deterioration in case of hemi or paraplegia or after peripheral fractures or desmorrhexis.
- \* To identify thresholds based on architectural and densitometric parameters to better detect patients at higher risk of osteoporosis and osteoporotic patients at higher risk of fracture.
- \* To obtain normative data by collecting reference data on a population representative of astronauts and to demonstrate the potential of the 3DpQCT to foresee and monitor the bone loss of astronauts due to space flights.

Finally, the aim was to allow this new technology to be used effectively in clinical diagnostic practice and to be compared for its potential usefulness against the old technology.

More information on XtremCT ? [Click here.](#)