
ECHOLIGHT
ECHOS

Bone Densitometry at the Point of Care

EchoS is the first radiation free solution for the early diagnosis of Osteoporosis at the axial sites. A breakthrough echographic device for bone characterization and micro-architecture assessment through an innovative approach that enables the scanning of the reference sites: Lumbar Vertebrae and Proximal Femur.

R.E.M.S. (Radiofrequency Echographic Multi Spectrometry)

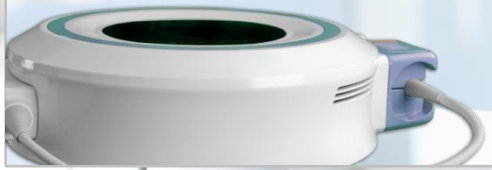
The peculiar feature of the proprietary R.E.M.S. method is the exploitation of RF signals acquired during an echographic scan of the target bone structure to determine the internal bone architecture through detailed comparisons with reference spectral models. Ultrasound scans are performed by EchoS equipped with a convex transducer operating at 3.5 MHz, allowing the simultaneous acquisition of conventional B-mode images and corresponding unprocessed RF signals.

Simply connect to your laptop

The technology is full automatic to reduce the dependence on operator experience. The implemented algorithm automatically identifies the target bone interfaces within the sequence of echographic images acquired, discards ''noisy'' acquisitions, ensuring that diagnostic evaluations are performed only on US datasets reaching a specifically determined quality threshold.

Protocol (Less than 2 minutes)

1. Axial Site Selection
2. Bone Target Visualization
3. Software-Assisted US Acquisition
4. Automatic Detection of the bone interfaces
5. ROIs Automatic Calculation
6. Automatic Signal and Spectral Analysis
7. Diagnostic Output
8. Medical Report



Instant Medical Report

EchoS medical report contains all the common parameters for Osteoporosis diagnosis: BMD (g/cm^2), T-Score, Z-Score. In addition, Fragility Score* evaluates the quality of internal bone micro-architecture and the 10-year risks of osteoporotic fractures (generic/hip) are calculated through the integrated FRAX® software. T-SCORE ● Z-SCORE ● BMD (g/cm^2) ● FRAGILITY SCORE* ● FRAX® ● BODY COMPOSITION INDEX

*(*Fragility Score: to be released soon)*

QUANTITATIVE PERFORMANCE	SPINE	HIP
SMALLEST DETECTABLE DIFFERENCE (SDD) [g/cm^2]	0.010	0.005
INTRA-OPERATOR REPEATABILITY (RMS-CV) [%]	0.35%	0.25%
INTER-OPERATOR REPEATABILITY (RMS-CV) [%]	0.54%	0.41%
DIAGNOSTIC AGREEMENT WITH DXA	93.1%	94.2%

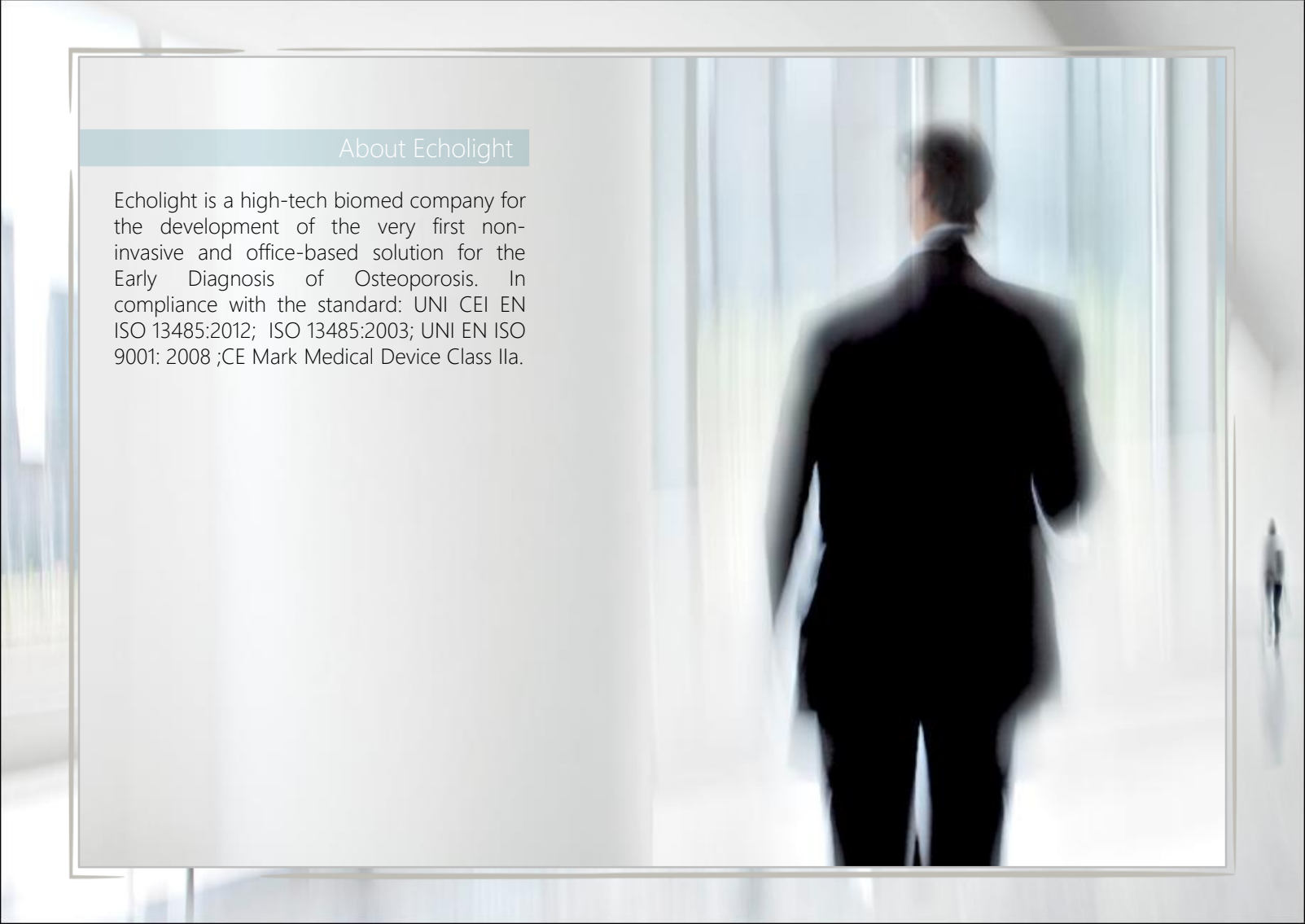
Diagnosis of Osteoporosis Everywhere

EchoS is the only solution capable of combining the advantages of the two main existing technologies (DXA and QUS), allowing our approach to bring axial bone densitometry at the point of care, with a significant beneficial impact on current diagnostic management. We will open concrete perspectives for future worldwide standardization of intervention thresholds on the basis of more objective and reliable criteria.

Key Advantages	DXA	QUS	EchoS
Radiation Exposure	YES	NO	NO
Axial Sites	YES	NO	YES
Bone Density Assessment BMD (g/cm2)	YES	NO	YES
Bone Quality Assessment	NO	??	YES
FRAX Index	YES	NO	YES
Body Composition Index	YES	NO	YES
Operator Independent	NO	NO	YES
Accuracy	HIGH	LOW	VERY HIGH
Portable	NO	YES	YES
Cost	HIGH	VERY LOW	LOW
Operator Certified Needed	YES	NO	NO
Dedicated Shield Room	YES	NO	NO
Maintenance Costs	YES	NO	NO
Diagnostic Tool	YES	NO	YES
Prevention, Monitoring and Follow-up	NO	NO	YES

About Echolight

Echolight is a high-tech biomed company for the development of the very first non-invasive and office-based solution for the Early Diagnosis of Osteoporosis. In compliance with the standard: UNI CEI EN ISO 13485:2012; ISO 13485:2003; UNI EN ISO 9001: 2008 ;CE Mark Medical Device Class IIa.



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