



Q-Spine, the next step in MRI spine analysis



Q-Spine is a support tool for **Visualization and Quantification** of relative **biomechanical changes** of the spine comparing **Weight-Bearing and Recumbent MRI** examination.

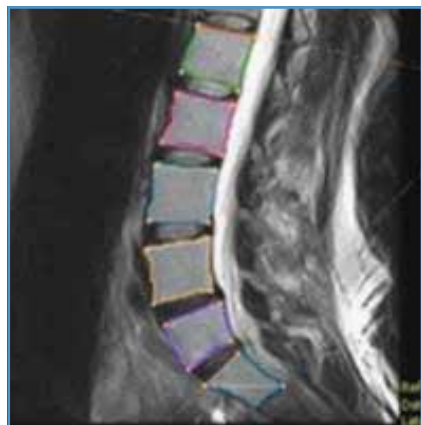
The Benefits of Q-Spine

- Simplifies the analysis of WB versus recumbent MRI by semiautomatic segmentation of the Lumbar-spine
- Numerical quantification of the relative changes
- Reliable and coherent measures by taking out the "human factor"
- The possibility to evaluate the patient follow-up with numerical evidence
- Generation of a pdf report which can be attached to the medical report

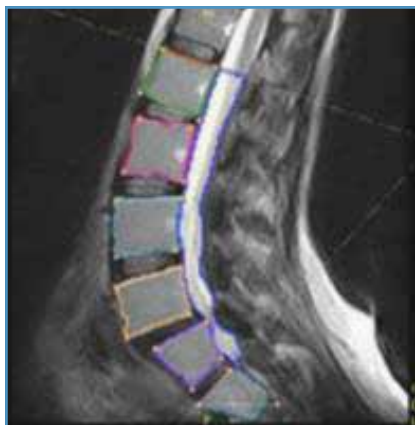
Q-Spine provides a valuable support in evaluating biomechanical modifications



Q-Spine, another first by Esaote World Leader in Dedicated MRI



Recumbent -MRI



WB-MRI



Superimposed images

NAME:	REFERENCE EXAM RESULTS:	COMPARING EXAM RESULTS:	COMPARING RESULTS:
L1-L2 Listhesis	Distance -0.4 mm Index -0.05	Distance 0.7 mm Index 0.08	Difference -1.1 mm
L2-L3 Listhesis	Distance -0.8 mm Index -0.07	Distance -1.1 mm Index -0.10	Difference 0.3 mm
L3-L4 Listhesis	Distance -1.2 mm Index -0.10	Distance -2.0 mm Index -0.17	Difference 0.8 mm
L4-L5 Listhesis	Distance -4.6 mm Index -0.46	Distance -3.2 mm Index -0.31	Difference -1.4 mm
✓ L5-S1 Listhesis	Distance 1.3 mm Index 0.13	Distance 13.8 mm Index 1.31	Difference -12.5 mm

Exam Quantification

Q-Spine, how it works

- Q-Spine functionality is based on the semiautomatic segmentation of the spine structures (vertebral bodies, spinal canal, foramina) both in Recumbent and Weight-Bearing
- The reconstructed volumes are used to perform automated measures of biomechanical modifications between Recumbent and Weight-Bearing positions
- The following parameters are calculated: Vertebral wedging, Listhesis index, Intervertebral translation, Intervertebral angle, Spine section, Spine thickness, Spine curvature and Vertebral collapse
- Additionally, Q-Spine comprises virtual navigation inside the spinal canal

Q-Spine, why it works so well

Using an extensive statistical evaluation process, a tailored segmentation algorithm for Fast Spin Echo T2 images from Esaote's G-scan Brio systems has been developed to speed up the Q-Spine segmentation algorithm and reduce operator fine tuning.

Q-Spine, visualization and reporting

Q-Spine compares the two MRI exams both as an image as also numerical. The later facilitates the comparison between Recumbent vs. Weight-Bearing for a better planning of surgical intervention.



Thank you for considering Esaote. We listen to your needs and work every day to provide the most advanced technologies and the most innovative design for you to excel in patient care.

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