

**500 m² dedicated to experiments on biological tissues,
including an area submitted to L2 confinement**

- Human tissues(*ex vivo* and *in vivo*)
- From tissues to whole body
- From static to dynamic testing

Biomechanical testing

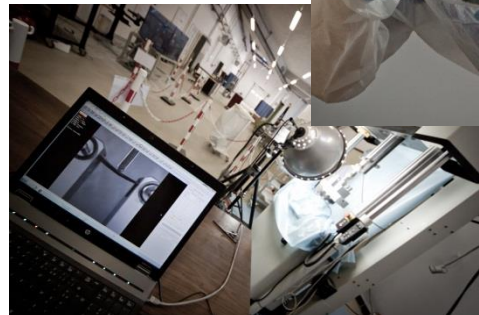
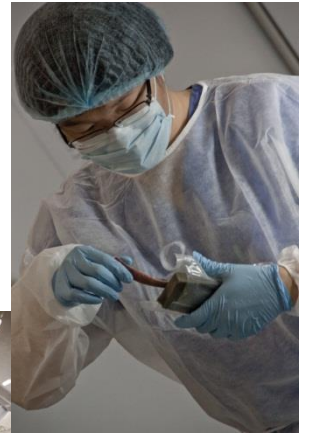
- Tensile, bending, compression tests
- Dedicated set up
- Management of ethical and health and safety rules
- Confidential working area

Expertise and advanced technics

- Know-how on advanced experimental technics (high speed video, strain field measurement, ultrasound elastography, ...)
- Bone tissues and soft tissues

Provision of resources

- Working area, testing facilities, technical staff





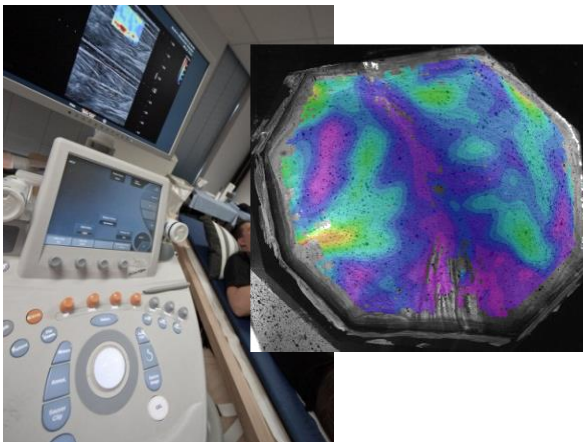
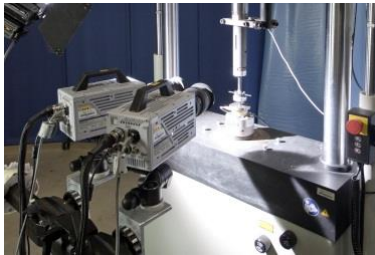
■ Environnement L2

- Dissection rooms
- Optical transmission microscope
- X-ray apparatus
- Procedures for biological material handling



■ Testing facilities

- High loading-rate machine
Max load : 20 kN – Max velocity : 15 m/s
- Quasi-static tension-compression machine
Combined axial-torsion machine
Max load : 10 kN – Max velocity : 2 m.s⁻¹
Max torque : 100 Nm
- Collaborative robot
Pure torque loading
(Simulation of kinematical coupling in spine segments)



■ Measurement and observation systems

- High-speed video
- Strain field measurement by digital image correlation
- Load cells
- Fast data acquisition system
- Ultrafast ultrasound imaging, ultrasound echography

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