SECTION 07

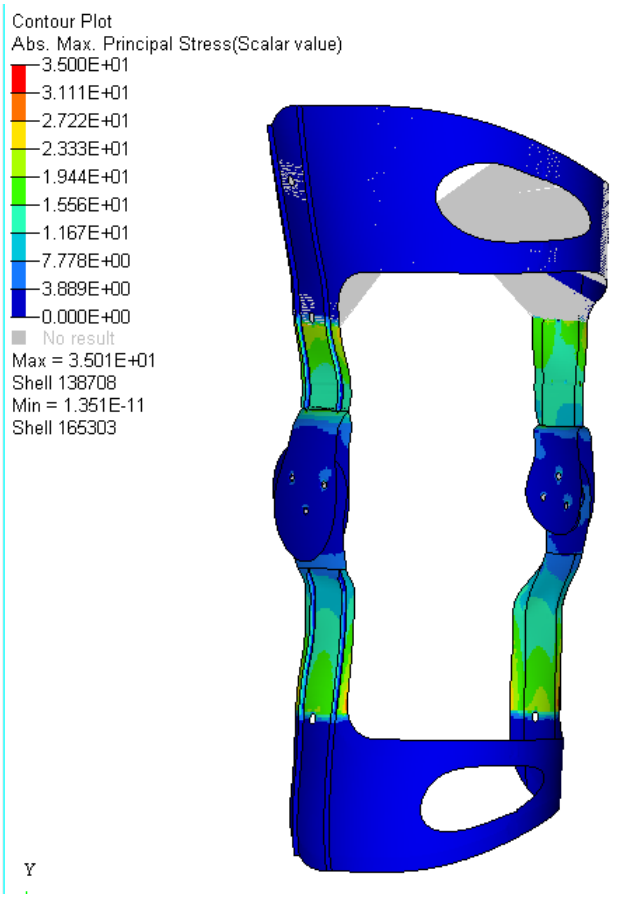
EVOKE CLINICAL STUDIES

OssKin

Finite Element Analysis

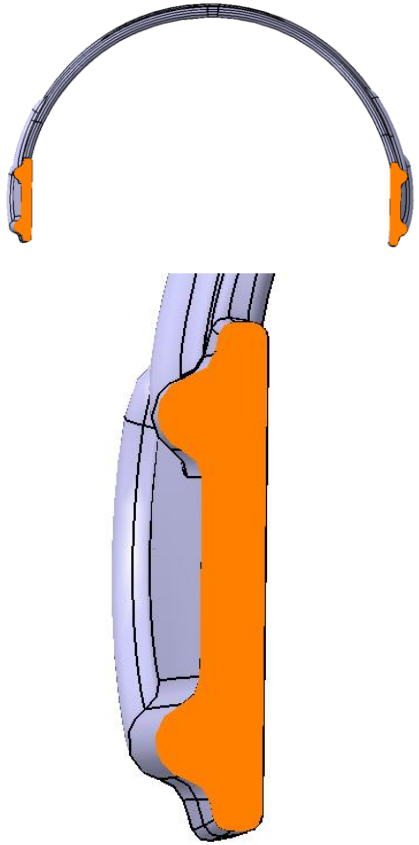
- 3D Conception and modelisation from weight, height and activities.
- Resilience test to compare different forces with different materials

Resilience Test



Cross-section cut

(Birds eye view)



Evoke - WOMAC assessment

Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)

The WOMAC is a proprietary health status questionnaire that assess pain, stiffness, and physical function in patients with hip and / or knee osteoarthritis (OA).

The WOMAC consists of 24 items divided into 3 subscales:

Pain (5 items): during walking, using stairs, in bed, sitting or lying, and standing

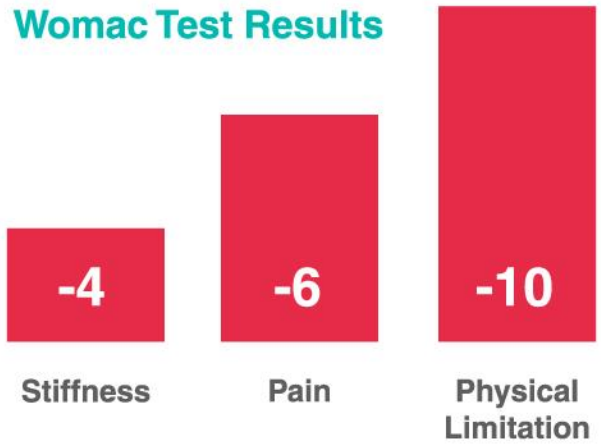
Stiffness (2 items): after first waking and later in the day

Physical Function (17 items): stair use, rising from sitting, standing, bending, walking, getting in / out of a car, shopping, putting on / taking off socks, rising from bed, lying in bed, getting in / out of bath, sitting, getting on / off toilet, heavy household duties, light household duties

20 WOMAC POINT IMPROVEMENT

CLINICAL TEST RESULT

Womac Test Results



Have been conducted on several patients wearing the Evoke™ brace between 3 and 6 weeks. Results showed a marked decrease in pain and stiffness. Patients also felt much less limitations when wearing the Evoke™ brace.

Asymotion™ hinge system and its effects on gait biomechanics of patients with OA

Type:	Independent clinical study
Participants:	University of Montreal Research Department Medicus Orthopedic Laboratory
Pupose:	Comparison of gait biomechanics of patients with knee osteoarthritis (OA) with/without the use of the Evoke knee orthosis (n=17)
Technology:	Kinematics: VICON, motion capture systems, 18 cameras Kinetics: AMTI force-plate EMG: DELSYS Wireless




RESULT

- **Walking speed (0.07 km/h) with brace**
- **Flexion/Extension:** Flexion at knee with brace (~2°) (~15-65% of gait cycle)
- **Abduction/Adduction:** Adduction at hip with brace(~60% gait cycle)
- **Rotation:** External rotation of tibia vs thigh(~50% of gait cycle)
- External rotation moment of foot vs leg with brace (~0-10% of gait cycle)

Ongoing Clinical Tests – preliminary results
EOS bi-planar Radiographic imagery

Type:	Independent clinical study
Participants:	University of Montreal Hospital Research Center ETS – most prestigious engineering school in Quebec Imaging and Orthopaedics Research Laboratory
Pupose:	Evaluate the effect of the Evoke knee orthosis on 3D kinematics, tibio-femoral contact points and forces and moments at the knee joint during a controlled squat movement
Technology:	EOS medical imaging system allowing the simultaneous acquisition of two radiographic images while limiting X-ray exposure

RESULT

- Lateralization of the distal femur (1-2mm) mostly at first degree of flexion and 30 degrees
- Better extension (7 degrees extension standing)
- Improvement in external rotation of the distal femur on tibia (6.1 degrees)
- Brace axes follows movement axes in 3D