

XO-SOLE

3D Force Measurement Insoles



BIOMECHANISTS & RESEARCH LABS

- **Full 3D Force Measurement:** Capture vertical, mediolateral (side-to-side), and anteroposterior (forward, backward) forces simultaneously for a complete movement profile, surpassing traditional systems that only measure vertical forces.
- **Advanced Metrics for Research:** Analyze gait symmetry, load distribution, braking, propulsion efficiency, and dynamic balance. These metrics are critical for understanding fundamental human movement patterns.
- **Real-World Data Collection:** Unlike stationary force plates or instrumented treadmills, the XO-SOLE allows for large-scale collection on real ground and across rugged terrain. This enables studies in environments that truly reflect how people move in real life.
- **High-Fidelity Recording:** Onboard storage at high frequencies (500 Hz) provides high-quality data necessary for rigorous gait analytics, ensuring reproducibility and reliability in research.



See movement as it happens. Even outside the lab!

BRINGING THE LAB INTO THE REAL WORLD

For years, biomechanical insights have been limited to a lab. Force plates and motion-capture systems offer precision, but only in controlled, artificial environments. What happens outside the lab has always been harder to measure, and often, impossible to quantify.

XO-SOLE changes the game.

By delivering accurate 3D GRF anywhere an athlete or patient can move, XO-SOLE frees researchers from the constraints of traditional equipment. Capture authentic movement. Expand data collection beyond rehearsed trials. Unlock insights that finally reflect the real world, not just the lab.

RESEARCH POSSIBILITIES EXPANDED

The XO-SOLE enables studies that were once impractical or impossible:

- Large cohort data collection without lab bottlenecks.
- Field-based biomechanics on real surfaces, inclines, and uneven terrain.
- Longitudinal monitoring during training cycles, rehab phases, or daily living.
- Multi-location or multi-site studies with minimal setup burden.
- Wearable validation of models and simulations (musculoskeletal models, fatigue analysis, etc.).

Researchers can finally study **natural movement at scale.**

