

A footwear concept for chorea-related instability in Huntington's disease — help turn a hypothesis into a test

A research-collaboration invitation. Not a product, not a device, not for wear.

THE PROBLEM

Falls dominate quality of life in HD and strongly predict nursing-home placement; ~60% of people with HD are recurrent fallers [PMID 30482318]. Chorea (sudden involuntary movement) demands reactive balance. Off-the-shelf stability shoes target general elderly balance; none target the chorea-specific problem. People with HD already widen their stance to compensate [PMID 28851209] — so a shoe that safely extends the base works with that strategy.

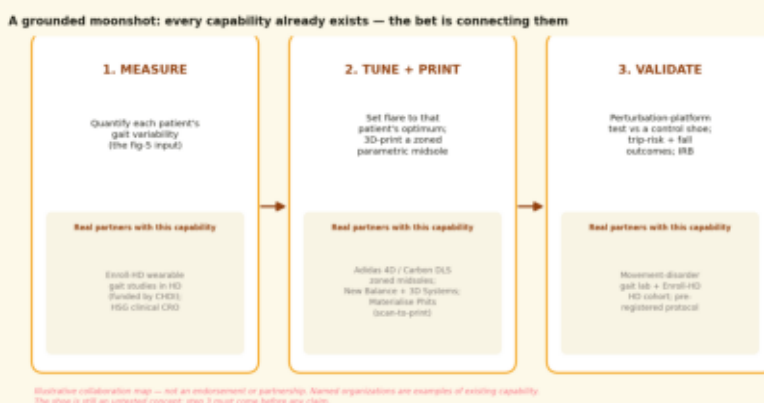
THE FALSIFIABLE CLAIM (computed, not asserted)

Hof's margin-of-stability model [PMID 15519333]: a flared outsole raises the max recoverable lateral perturbation velocity ~15 → 27 cm/s (+83%, upper bound). A trip-risk trade-off gives a PATIENT-SPECIFIC optimal flare that shrinks as gait variability rises (~31mm → ~17mm).

WHAT WE'RE ASKING

- **Biomechanics / gait labs** run the perturbation test; try to break the +83%
- **Footwear R&D / 3D-print** the zoned parametric midsole is buildable today
- **HD researchers / clinicians** worth a pilot? Enroll-HD/CHDI already measure HD gait
- **People with lived experience** tell us what helps or hinders balance day to day

HOW IT COULD BE BUILT — every capability already exists (examples, not endorsements)



REACH OUT

- GitHub Discussions: github.com/jravinder/hd-research-agent/discussions
- LinkedIn: [linkedin.com/in/jravinder](https://www.linkedin.com/in/jravinder)