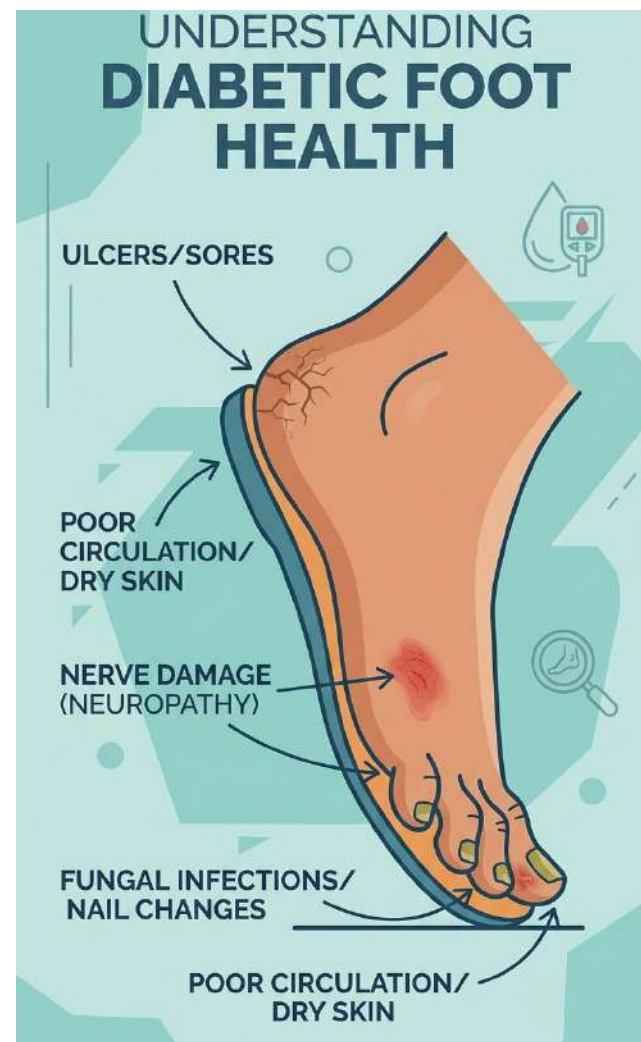


By utilizing magnetorheological fluids or tunable mechanical cells footwear can alter the physical properties while being used. The moment an unsafe accumulation of localized pressure under a patient's toe occurs, the sole itself adjust its internal firmness on its own, automatically shifting the physical load away from the forefoot area and redistributing it back towards the heel part. Also, customized insoles developed using 3D captured data of foot using digital scanners and CAD tools also help develop the footwear specifically as per patient need.



All these interventions suggest that foot protection for a diabetic patient is no longer a niche specialty rather it is an absolute necessity in modern critical disease management. Leaving diabetic foot ulcers in an unmanaged way is a ticking clock for some severe complication later on resulting into deep tissue infections or in worst case into amputation. Beyond the severe emotional and physical toll faced by patient it also results in severe drop in quality of life as well as creates a destructive health cycle that place a financial burden over the patient and their families.

**40 YEARS OF
EXCELLENCE
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So, by bridging a gap between the three different domains as discussed above i.e. engineers, designers and medical professionals, the exploration in this will definitely help culminate ever-changing novel solutions to upcoming complications faced by diabetes patients and will change the orientation as well perspective that long term healthcare is not just about medical and pharmacy rather it is equally forged in design studios and engineering intellects. Through this continuous interdisciplinary collaboration brought about by these three different domains, footwear industry will definitely step up to a situation where these footwear articles will save lives one step at a time.



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Walking towards Better Health:

Why Ergonomics is Shaping the Future of India's Footwear Industry

For decades, the footwear industry has largely been driven by three factors: style, durability, and cost. Today, however, a fourth factor is rapidly becoming equally important—ergonomics. Whether it is a factory worker standing for ten hours, a healthcare professional constantly on the move, a delivery executive covering kilometres every day, or a student walking across a campus, people are beginning to expect their footwear to do much more than simply cover their feet. They expect comfort, support, and long-term health benefits. This shift is changing the way footwear is designed, manufactured, and evaluated across the world, and India is no exception. As one of the world's largest footwear producers and consumers, India has an opportunity to position itself not only as a manufacturing powerhouse but also as a leader in ergonomic and user-centric footwear innovation.

*"A shoe should not merely protect the foot,
it should support every step we take."*

More Than Comfort

Ergonomics is often mistaken as a synonym for comfort, but the concept goes much deeper. It is the science of designing products that work in harmony with the human body. In footwear, this means understanding how the foot moves, how body weight is distributed, and how different occupations and lifestyles influence walking patterns.

A well-designed ergonomic shoe works in harmony with the natural biomechanics of the foot. It supports proper posture, distributes pressure evenly, absorbs impact during walking, and minimizes stress on the joints and muscles. Additionally, it enhances GAIT by encouraging a more natural walking pattern and helps prevent over-pronation (the excessive inward rolling of the foot), reducing the risk of foot, knee, and lower back discomfort. The result is not just greater comfort, but improved mobility, better posture, and long-term foot health.

Considering that an average individual walks 6,000–10,000 steps every day even minor improvements in footwear design can significantly influence overall physical well-being.

