



## UNNATURAL INSTABILITY:

### All Shoe Soles Have an Extremely Dangerous But Correctable Stability Defect in Design

#### THE DISCOVERY: BAREFEET ARE NATURALLY STABLE

**Absolutely stable**, even in the extreme rolled-out position typical of ankle sprains – the most common cause of hospital ER visits. **Opposing forces are naturally aligned with no destabilizing torque.** The ankle is safely supported under a wide sole base by naturally interlocking joints and bones optimally aligned to contain the compression forces for which bone structure is designed. The basic science is simple, even obvious. The stability is surprisingly easy for anyone to prove with their own bare feet.

#### THE PROBLEM: SHOES ARE ARTIFICIALLY UNSTABLE

**Terribly unstable**, particularly in the extremely tilted-out, ankle-spraining position. Compared to bare feet, the shocking difference could not be greater. **Misaligned opposing forces cause a powerful destabilizing artificial torque.** The severely tilted ankle joint perilously balances on the tiny knife-edge of the shoe sole, unnaturally held together by mere ligaments and tendons under excessively abnormal tension. The ankle's obvious instability is well-established in science and medicine, but is wrongly understood to be the flawed product of human evolution. Feet today are still shod in the same narrow cobbler design for footwear soles used for the past 2,000 years. The superb natural stability of the barefoot ankle has remained hidden in plain sight by faulty footwear.

#### THE TERRIBLE COST OF THE SHOE STABILITY DEFECT

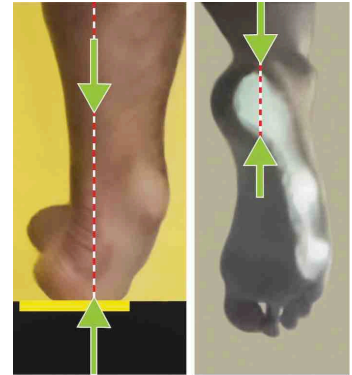
The effect of this overlooked dangerous stability defect is astonishingly catastrophic. The shoe defect likely causes many or most of the **serious falls** that resulted in **\$151 billion in medical care costs from 1,700,000 hospitalizations, 6,570,000 Emergency Room visits, and 47,000 fall deaths in 2022 in the U.S.** (based on CDC data). To put those fall deaths in context, **41,000 traffic deaths** occurred in 2023 in the U.S.

#### THE SOLUTION: STABLE FOOTWEAR SOLES THAT COPY THE BAREFOOT SOLE

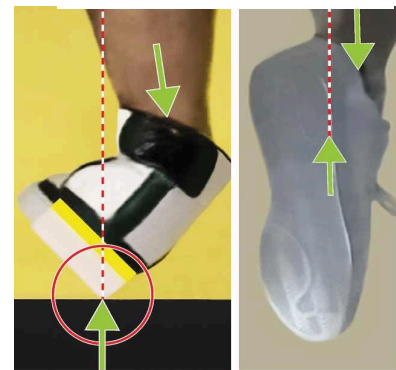
A new factory-built corrected **stable sole**, shown here in the experimental test prototype **Frampton Ellis™ slide**, was designed and developed by Frampton Ellis at Anatomic Research in collaboration with industry experts. It provides the first physical proof demonstrating clearly that footwear with a correctly redesigned basic sole structure that matches the barefoot sole can fully restore to footwear the natural stability of the ankle when barefoot. Particularly during the extreme tilting motion that otherwise causes unnatural instability, ankle sprains and falls in shoes.

The result is something completely different: a sole structure like no other: wide, flexible and rounded. It is the first cushioned footwear sole capable of true athletic performance unlimited by gross artificial instability.

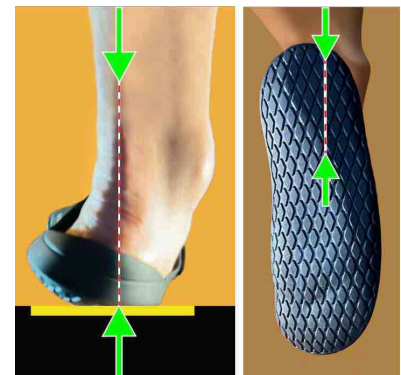
The sole was designed as a simple physical proof of concept in its most easily visible form – a slide. Nevertheless, its unadorned sole has dramatically better stability and comfort than any of today's very best athletic shoe soles for basketball, football, baseball, soccer or other professional sports. Even those worn by the most elite superstars of the **NBA, NFL, MLB** or **FIFA**.



**STABLE BAREFOOT**



**UNSTABLE SHOE**



**STABLE SOLE**



## **THE BASIC TECHNOLOGY TO MAKE SAFELY STABLE FOOTWEAR SOLES IS FREE**

Nearly all of this enormous hidden disaster can be prevented with the simple new footwear sole structure. It can be made using standard industry production techniques to correct the stability defect in all types of footwear. The new basic design of the sole structure is non-proprietary, open and free for limitless copying and improvement by all footwear companies in developing their own specific designs.

## **ANATOMIC RESEARCH WILL PROVIDE TEST PROTOTYPES AS A PUBLIC SERVICE**

I can only start the process. My role is limited to fully identifying the previously unknown shoe stability problem and to demonstrate that a practical design solution exists for footwear companies to use initially to start fixing that problem. Only footwear companies can do it. Only they have the scale and resources to actually fix the problem and end the ongoing public health disaster over the next few years. As true footwear professionals with enormous resources, they should be able to copy, extensively test, and further develop the basic initial designs of Anatomic Research to make new and improved commercial models of all categories of footwear that will finally be stable and therefore safe to wear.

Samples of the corrected **stable sole** in the factory-built test prototype **Frampton Ellis™ slides** will be made available as a public service by Anatomic Research to footwear companies only to serve as a general design model to copy and test its basic sole structure. They can use the test prototype to eliminate as quickly as possible the artificial stability defect in their footwear. Anatomic Research will provide the test prototype **Frampton Ellis™ slides** to footwear companies at its cost of developing the slides.

A **corrected athletic shoe** with a typical upper, insole, midsole and outsole combination is also being designed and developed by Frampton Ellis at Anatomic Research. It too will be available soon for footwear companies alone as a general design prototype of the basic structure of its multi-layered sole.

For the near term, Anatomic Research is also disclosing an interim design correction, a **midfoot lateral sole extension**, which is a simple add-on to sole designs of existing footwear sole designs. It provides a quick and easy fix that significantly reduces their instability, particularly for the elderly.

## **WEARERS WILL FINALLY GET FOOTWEAR SOLES THAT ARE SAFELY STABLE**

The result of this testing and redesign process by the footwear industry should be corrected shoe soles that finally restore to all footwear the true natural foot and ankle stability naturally provided by the sole of the barefoot alone. They will also be uniquely more comfortable, noticeably so. Of paramount importance, many or most of the **47,000 deaths and \$151 billion in medical care costs that occurred in 2022 in the U.S. from falls will be prevented in the future.**

## **FIXING THEIR DEFECTIVE SOLE DESIGN WILL BE PROFITABLE FOR THE INDUSTRY**

The far better stability and comfort demonstrated by the corrected test prototype slides are so noticeable to wearers that footwear industry sales of its newly corrected shoes should increase very substantially. Most customers, especially serious athletes, will quickly come to see their unsafe old shoes as obsolete and unfashionable. The resulting sales increase should easily offset for footwear companies the relatively low cost of finally making their footwear products naturally safe for all consumers, from senior citizens to superstars. It is a definite **win-win situation** for both footwear producers and wearers.