

TEAM 8: BIOMETRIC DEVICE

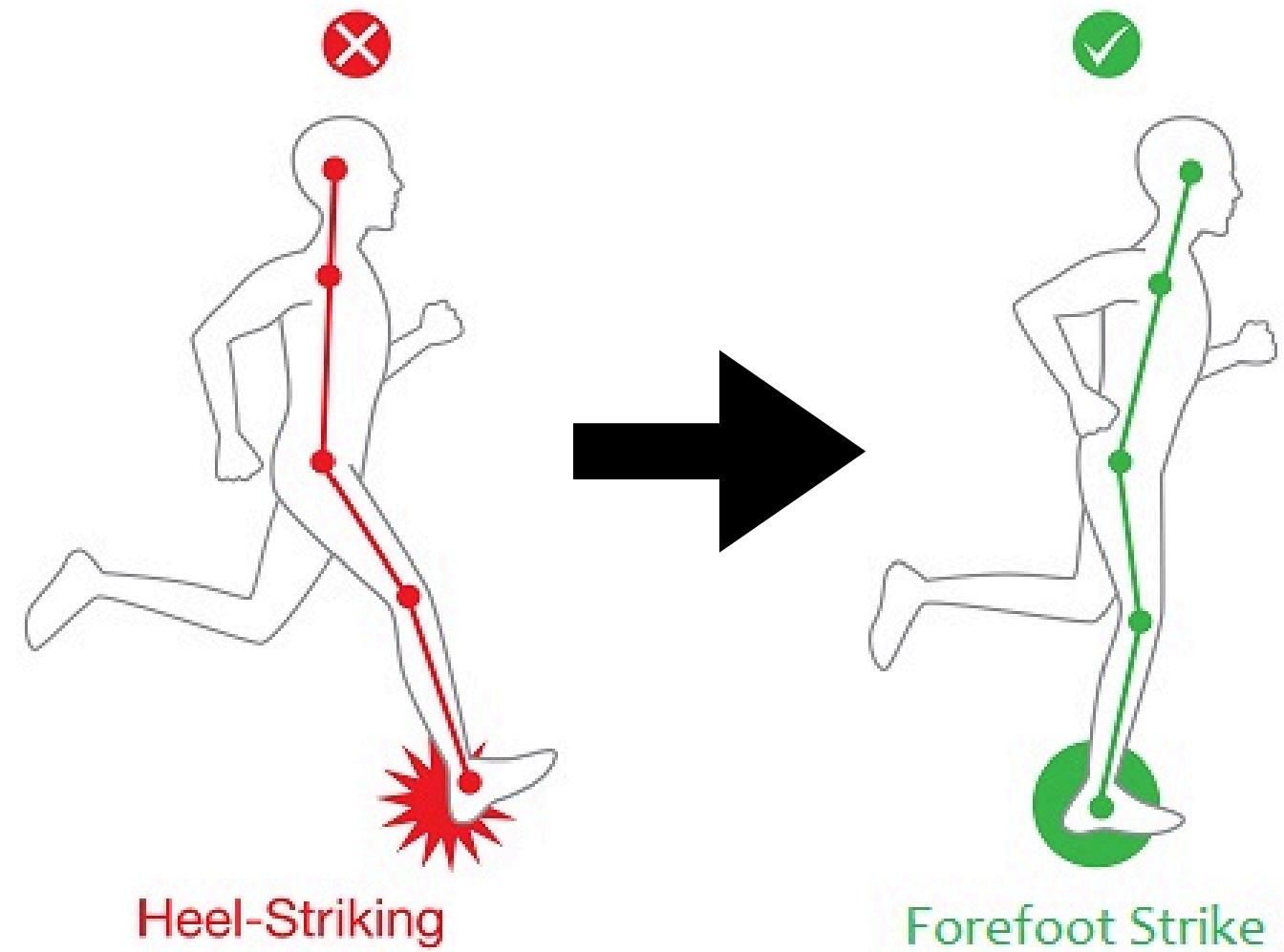
SMART RUNNER 4000

- Reka Sundem, Nishtha Ladi, Michael Lwe, Ryan Wu



Experience the Difference with Smart Runner 4000

- **80-90%** of long distance runners tend to make initial ground contact with their heel
- **Up to 50%** of all running-related injuries are attributed to excessive heel striking



We designed a biometric device for **long-distance runners** that provides alerts on **excessive heel impact**, helping **prevent knee injuries and improve running form**

How it Works: Key Features and Components

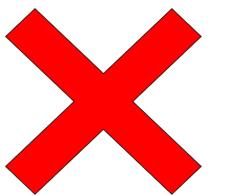
1. Collects **force inputs** over **15 seconds**
2. Provides an **output** using **average value every 15 seconds**



STANDING



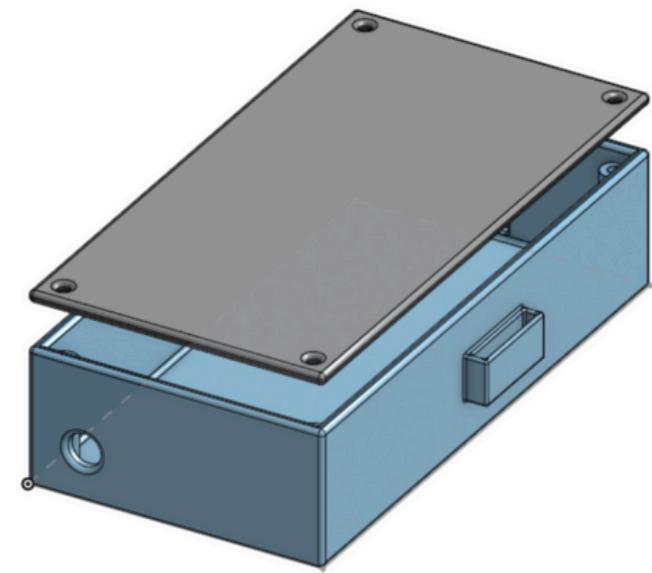
FOREFOOT-STRIKE



HEEL-STRIKE



Is there a vibration?



[12.5 x 6.5 x 3 cm]
Housing Components:



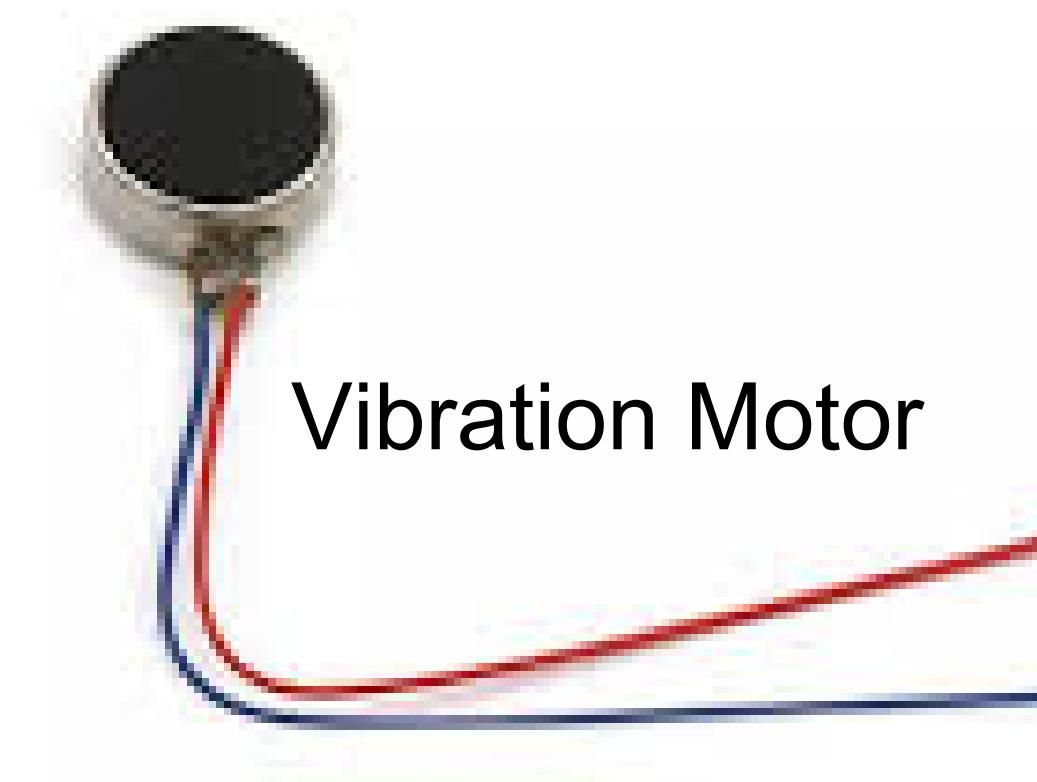
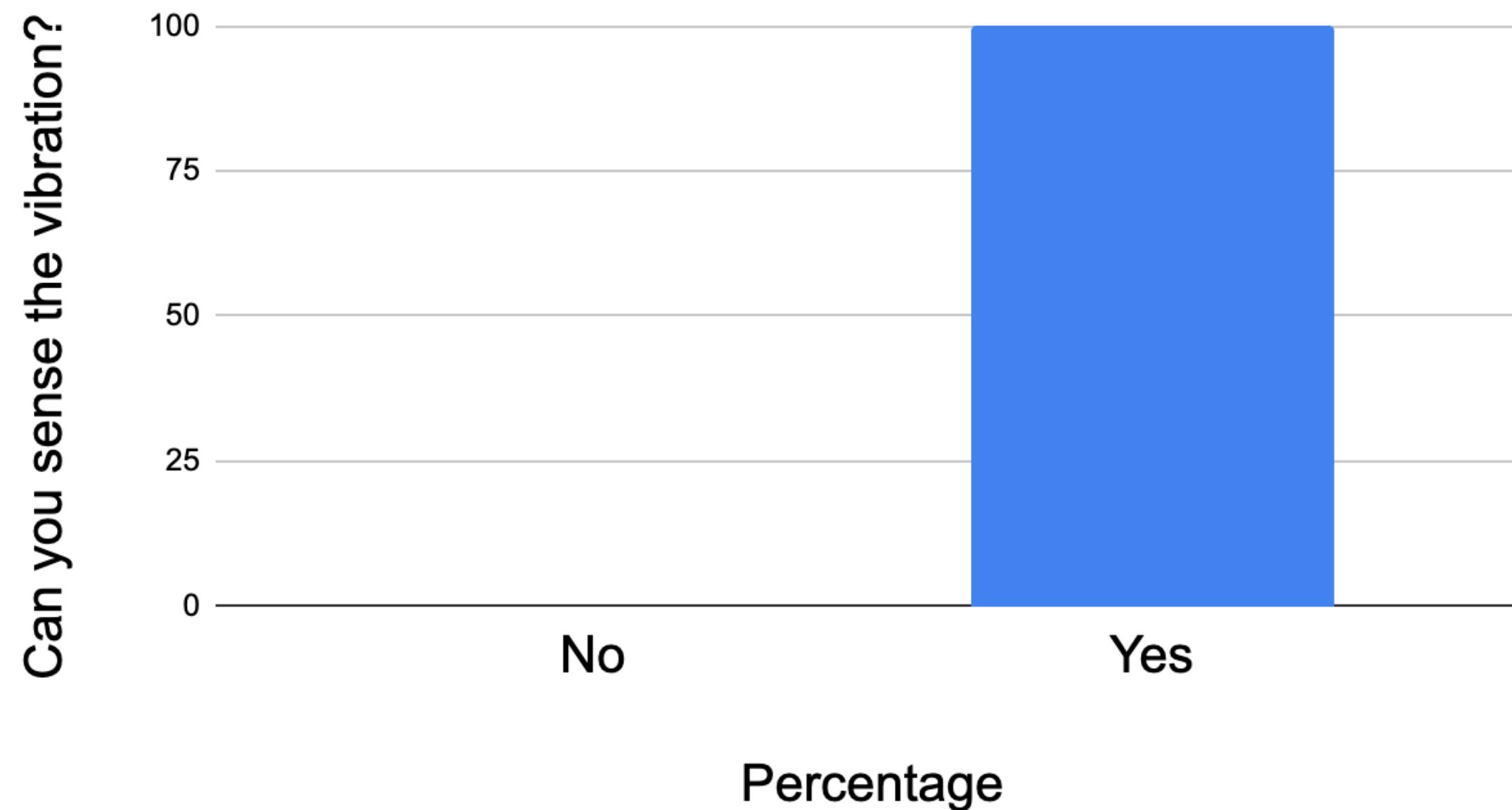


Feature 1

Readability of Results

>=90% of users sense a vibration

Percentage of users who can sense the vibration



Vibration Motor



Feature 2 Precise Measurements

Moving average of measured forces in the range of <10%

Velostat Sensor



Moving average of measured forces is in the range of **2.02%-8.85%**



Feature 3 Portable

Weight of product \leq 1 pound

5.6 Ounces



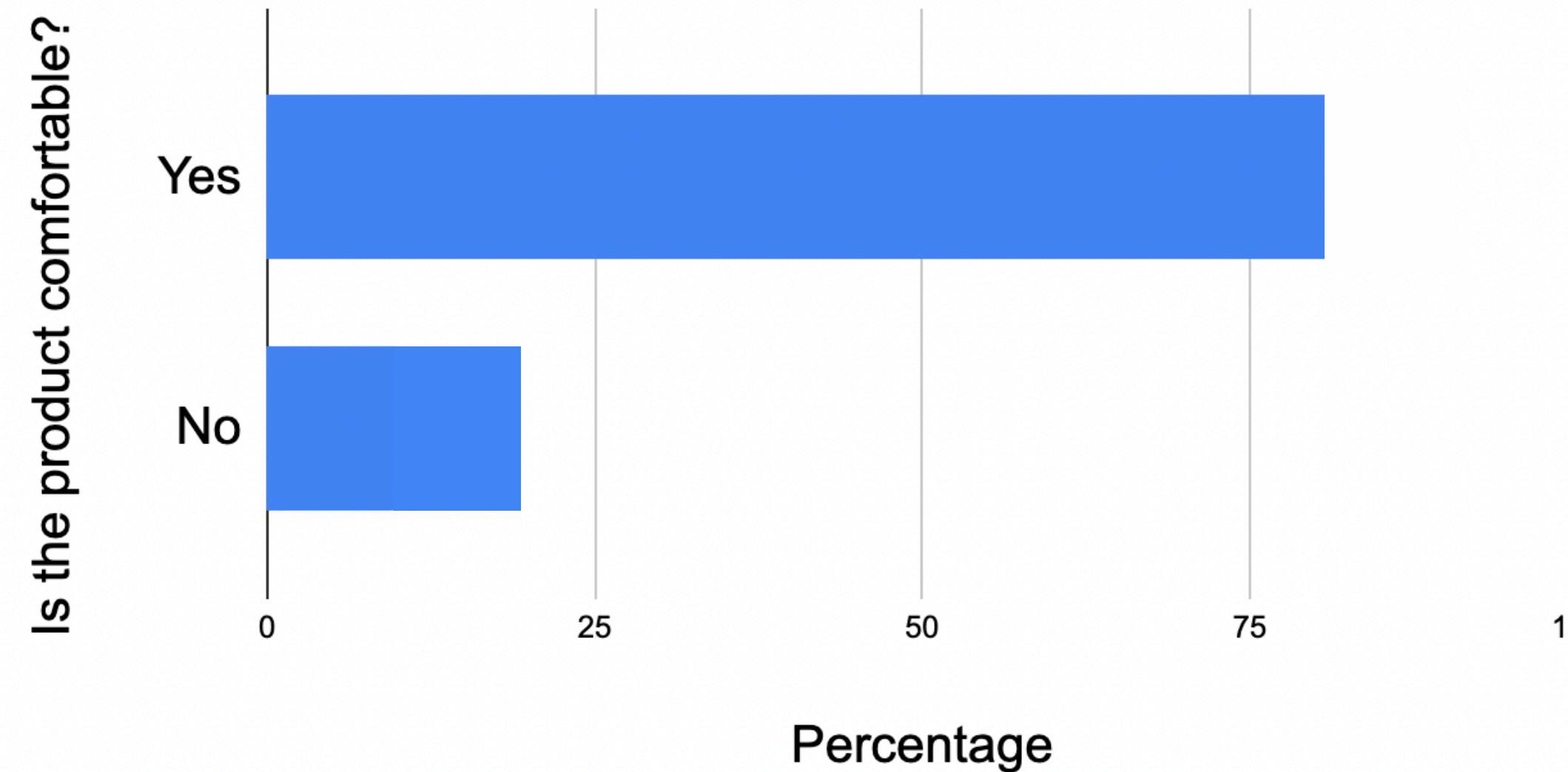


Feature 4

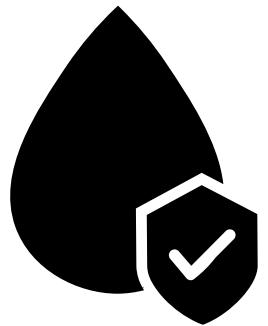
User-friendly and Comfortable

>=70% of users find the product comfortable

Percentage of users who find the product comfortable



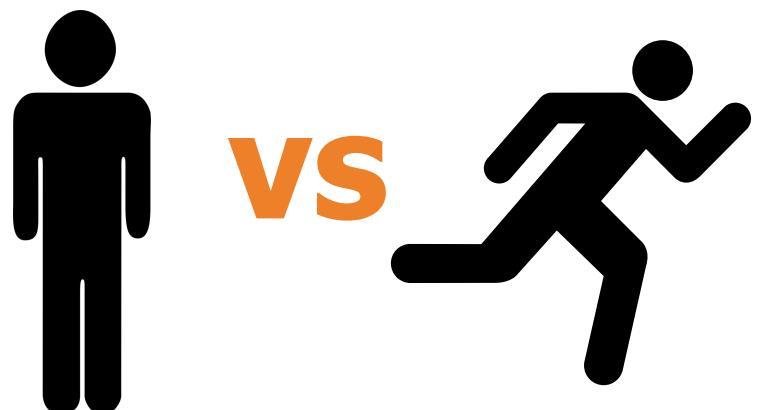
Engineering Breakpoints and Safety Measures



Waterproofing



Protection from exposed
wires and short circuiting



Standing vs Running

Product Video