Suffering From Diabetes?

Worried about ..... ~ diabetic foot ulcer ~ falling from loss of balance?

- About 422 million people worldwide have diabetes.
- Diabetes can affect blood vessels that supply toes.
- Diabetes can cause blood vessels to narrow which leads to reduced blood flow to feet, and necrotic tissues.
- Diabetes can cause nerve damage causing numbness in the legs and feet, called diabetic neuropathy.
- Type 2 diabetes can cause low/high blood sugar which makes people feel dizzy, lose balance and fall.

- Detects and prevents diabetic foot ulcer
- No more falls caused by loss of balance
- Massages and relieves diabetic leg pain
- Low maintenance cost: Replace sensors only without replacing the shoe
- Customize stylish shoe “skin” to match your outfit
- Maintains medical records in smartphone via bluetooth
How does DiaBal shoe work?

**Balance biosensor**: detect loss of balance
**Electrical pain biosensors**: sense numbness/tingling to indicate onset of diabetic foot
**Microthermometer**: detect temperature difference between foot and body.
**Blood sugar monitor**: measure the amount of sugar in the blood
**Blood pressure biosensor**: detects and signals low blood pressure
**Blood flow biosensor**: detect and measure blood flow within toes using optical device
**Microprocessor**: Controls all biosensors & motor

**DC Motor**: works the massager by converting electrical to mechanical energy
**Rechargeable battery**: provides electric energy to run motor

Made of GRAPHENE as graphene is strong, super flexible, lightweight, waterproof, and breathable.

Data collected by smartphone for doctors
How does DB shoe restore balance?

- Balance biosensors detect loss of balance
  - Motors activate
  - Mini conveyor belt with side wheels switch ON
  - Conveyor belt moves to bring the wheels from the side of the shoe to under the feet
    - Feet spread in opposite directions
    - Balance regained
    - Fall prevented
  - Balance biosensors detect regain of balance
    - Motor turns OFF
    - Press RESET button
  - Wheels come back to their original position on the sides of the shoe

**Fashionable skins**

- Fashionable skins to match dress with DiaBal shoes