

## Gait Enhancing Mobile Shoe (GEMS)

**R**esearchers at the University of South Florida have developed a Gait Enhancing Mobile Shoe (GEMS). GEMS makes it possible to correct an asymmetric walking by counteracting the asymmetric gait so that both legs take the same size steps while walking over ground. The mobile ability of the GEMS enables it to be worn in different environments such as in one's own house and also enables it to be worn for a longer period of time.

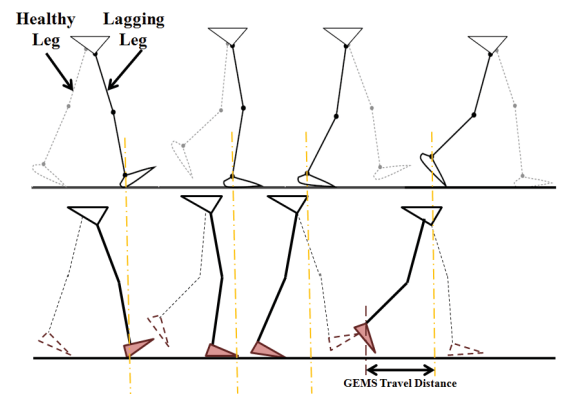
Stroke is a leading cause of long-term disability in the United States. Many survivors suffer motor deficits that limit participation in activities of daily living, which may in turn contribute to poor aerobic fitness, diabetes, and metabolic syndrome. The victims of such conditions often develop an asymmetric walking pattern. Currently, a split-belt treadmill is used and the belts are operated at different speeds, which exaggerates the asymmetry of the patient's gait.

GEMS does not require any external power source and is completely passive. Healthy subject testing has demonstrated that wearing this shoe for twenty minutes can alter the wearer's gait and will generate after-effects in a similar manner as a split-belt treadmill does.

### ADVANTAGES:

- Can provide rehabilitation in many environments
- Does not require any external power source
- Can be worn for longer periods of time
- Can also speed up healthy people's walking speeds

*Provides Gait Rehabilitation While Walking over Ground*



*Rehabilitation method for asymmetric gait based on exaggeration where GEMS is worn on lagging leg.*

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