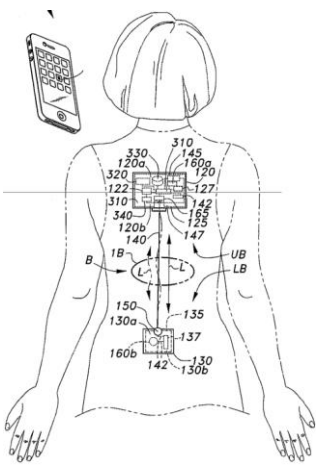
Slouching monitoring and Alerting System

A small and convenient patches to be placed on the back to tell when, how much, and how often a person slouches by accurately detecting the back stretches. Designed for those who slouch in their jobs, homes, or have sloughing spine issues.

The Invention: A slouching monitoring and alerting system includes two coupled patches having tilt sensors being configured to determine a degree of slouch, a connecting member connecting the patches being adapted to stretch when a movement of the user varies from a pre-defined posture as signal of detecting a slouch where the sensors will start measuring the posture, an adjustment member adapted to adjust the length of the connecting member to fit different sizes, an alarm coupled to the first patch configured to generate an alert in response to slouching, a processor adapted to receive and analyse information concerning the user's posture and communicate the information with a communication device.



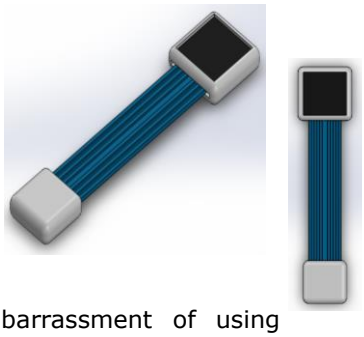
Market Need: 7.7% of adults will have some sort of back problems treatment, the majority of them have problems related to their usual posture. Further, about 1% of schools student are already affected by their usual posture and have a higher chance to suffer from postural kyphosis. These percentages become higher when considering people working in "Slouching Daily Jobs" like the medical stuff (nurses, dentists... etc.) or constructions and manufactories workers, OR the software developer and office jobs as all of them slouch for long periods to perform their jobs. Statistics showed that 8.6% industry workers are suffering from back pain and about 15% of the nursing stuff do as well.

Competitive Advantage: Various devices created to correct slouching can unnecessarily limit a person's range of motion. Moreover, other devices do NOT relay information to the person relating how often they slouch, the degree of slouches, or the duration of the slouch. Furthermore, these devices are NOT able to distinguish between slouching and correct bending, which is a significant action in our lives. Examples of such devices include Supporting Belts, Braces, Tilt Sensors (BackPal & Lumo). Thus, a slouching monitoring and alerting system addressing the aforementioned problems is presented and insuring the following advantages:

1- Strengthening back muscles and bones.

2- Reducing injuries and back diseases.

3-Protecting trucks drivers from sleeping as they slouch once they fall asleep while driving.



4- Reducing the embarrassment of using such devices as the size is small and concealed.

Readiness for Market / Looking for a Development Partner

Several prototypes have been developed to increase the accuracy and convenient of the product. A proof of concept prototype has already met the desired accuracy we planned to achieve. Currently, two main steps are being undertaken with a fund of 10,000 SAR by KFUPM:

- Improving a professional full functioning prototype, beginning by 3D designs followed by manufacturing. This step is then followed by programing the required functions. Completing this step means completing level 5 of TRL.
- Developing a business plan. This stage is going to be started within 3-4 months from current time.

Patent Protection

US Patent pending, No. US14/555363

About KFUPM

King Fahd University of Petroleum & Minerals is a leading educational organization for science and technology. KFUPM Innovation Center is the IP management and technology licensing office tasked with taking innovation from lab to market place.

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