



PULSE is a tactile response system designed to help improve posture by reducing pain, building muscle, and increasing blood flow. PULSE allows people to re-educate their mind and muscles in order to better their posture, gain more mobility, and overall live a happier life.

- Over **31 million** Americans suffer from back pain and **80%** of the population will experience back pain.
- This pain can prevent or restrict everyday motion, leading to **bad posture** and eventually a **hunched back**.



There are **no effective long term solutions** for back pain and poor posture.



Pain management has **no lasting effects**, can become **costly**, and medication can **damage organs**.

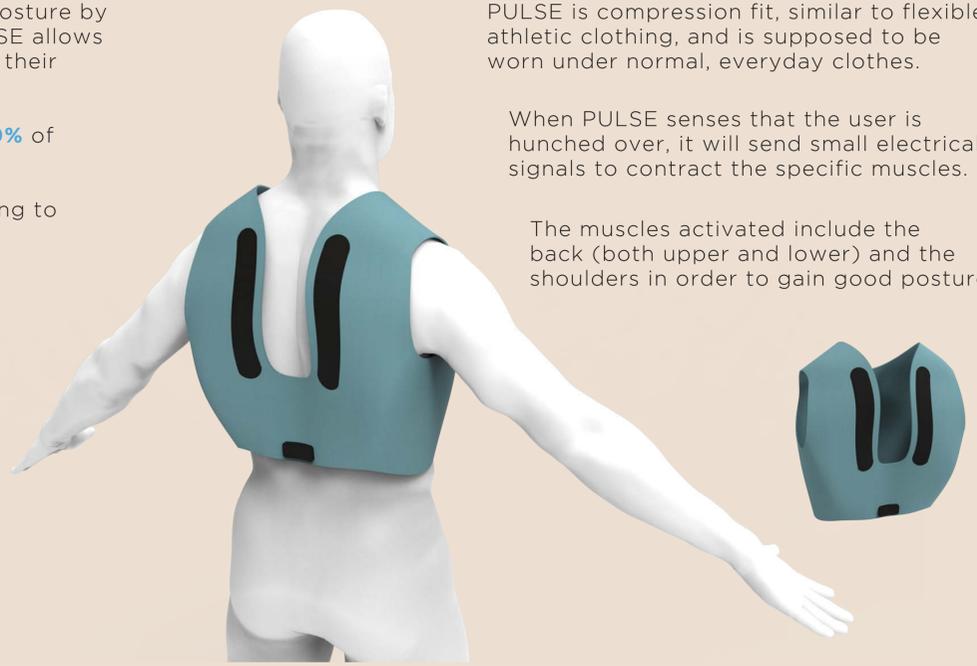


**Back braces** provide an aid, but are **degenerative** once the user starts to depend on it.

PULSE is compression fit, similar to flexible athletic clothing, and is supposed to be worn under normal, everyday clothes.

When PULSE senses that the user is hunched over, it will send small electrical signals to contract the specific muscles.

The muscles activated include the back (both upper and lower) and the shoulders in order to gain good posture.



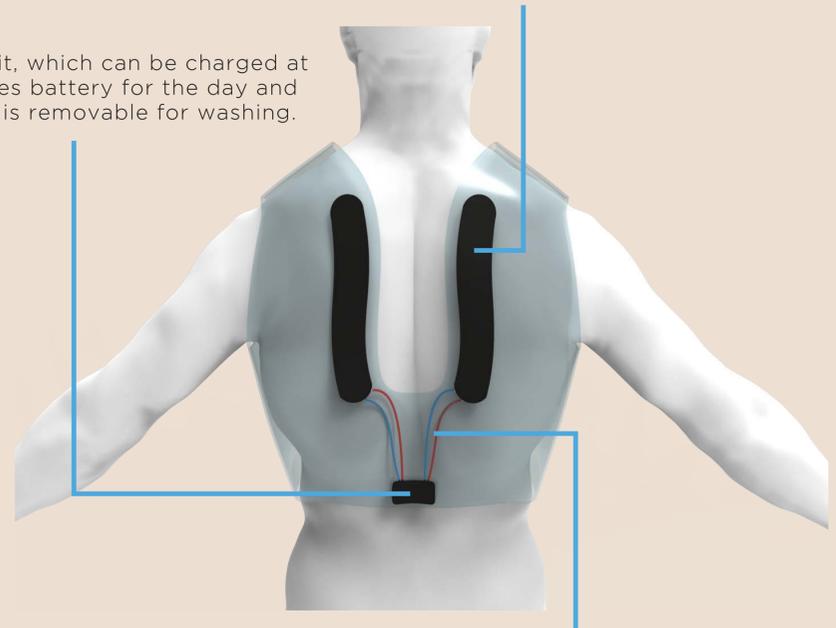
Vertical thin black pads, that run along the back muscles and not across the spine, in the shirt sense the user's posture and are removable for washing.

Our Industrial Design group had the opportunity to work with Warm Hearth Village, a retirement community. We worked with its residents, mostly seniors, to develop our product on improving mobility.

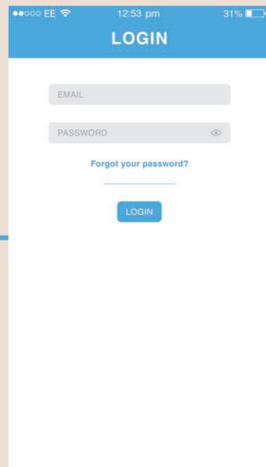
We noticed how mobility was a big issue. Many residents expressed their desire to keep up an active body, keep up with technology, and live a social life.



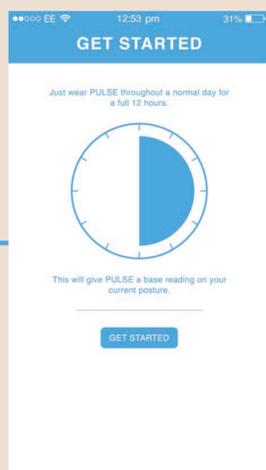
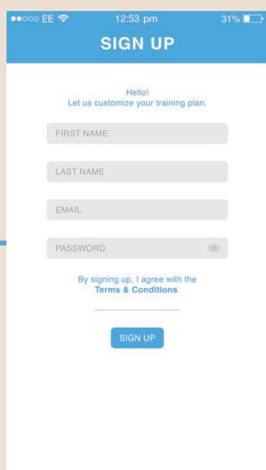
The power unit, which can be charged at night, provides battery for the day and memory and is removable for washing.



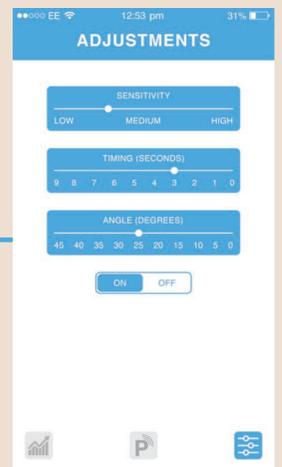
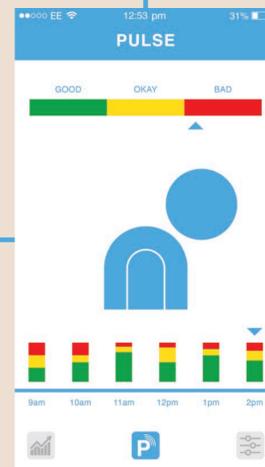
The waterproof wires connect the circuit and are woven into the thin, compression shirt.



As a returning user, enter the PULSE app and login through 2 window screens.



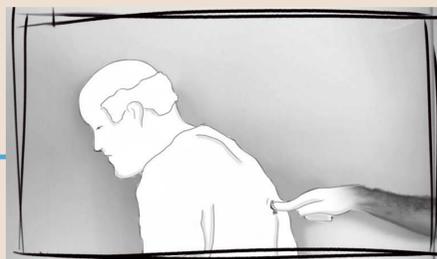
As a new user, sign up and enter personal info through 3 window screens.



Once PULSE is running, the user is able to track their progress, check statistics, and make adjustments through 3 window screens to the left and right. Interaction with doctor during physicals is recommended by not required.



Having back problems?



Annoyed with people always nagging you to stand up straight?



Try PULSE!



Pulse is controlled through an app on your smartphone.



Pulse is easy to use while reading...



...or even pouring a glass of water.



Track your progress to see how your posture has improved.



Spread the word about how PULSE changed your life.