# Poise

## Improving sitting posture in the office work place

**In collaboration with Physioscience and designer Pui-Jun Lam**

Poise was developed to train an individual to maintain a good posture whilst sitting. It is targeted at users in an office working environment where computer based tasks are common, and aims to reduce the amount of days taken off due to back pain, which arises from bad posture.

NHS physiotherapist and lecturer Dr Peter Malliaras approached Designplus with an early stage concept for a device to help manage poor posture. Final year Industrial Design student Pui-Jun Lam and Dr Malliaras, who is also the director of Physioscience, worked together to identify a solution that would enable a person to maintain a good posture position.

From an early stage concept, the project was developed to a stage where funding could be sought for further development based on the identified market potential and manufacturing considerations.

### Brief

Addressing the problem of managing poor posture presented numerous markets and routes at which the project could be targeted. By focusing on back pain in the office working environment, the problem of managing poor posture could be resolved as well as looking into the other factors that could affect a person in this particular environment. While bearing in mind the importance of wearing the device in public, the final product needed also to look at the design for manufacture, creating a design that was low cost to manufacture and assemble.

### Approach

Lam worked closely with Dr Malliaras to understand the anatomy of the spine and also the effects on the whole body of changes in the curvature of the spine. The first step was to identify the product's target market, as it became very clear early on that there could be a number of potential routes. Market and user research was conducted to recognise that the problem of back pain and muscular complaints have a major impact particularly in the office working environment.

As one of the main objectives was to deliver non-intrusive feedback to the user, initial design concepts explored a range of feedback and attachment methods to find the most appropriate for the environment in which it would be used. Recognising the importance of the produt's aesthetics for its acceptance by users, Lam integrated the aesthetic and technical development from the start. An iterative process of technical refinement involving prototyping and user testing provided valuable insights into the changes of geometry in the spine and ensured that the most suitable choices were made.

The project addresses the user needs and technical needs that were highlighted in early research, developing a system in the form of an electronic prototype that trains a user in a non-invasive way.

Working prototypes enabled the device to assist the user to maintain a good posture by identifying changes in the geometry of the back and spine.

### Result

Poise identifies the change in the geometry of the back and spine, providing the user with instant vibration feedback which leads to immediate correction. As a training device, it is intended to be used in one hour sessions providing constant feedback and also a reminder to take regular breaks.

The system implements a boundary of movement from a set posture that is dictated by the user and informs the user of any movement away from that boundary. The final design proposes a method of attachment whereby the device's use is disguised. The magnetic attachment of the product fits into its intended environment enabling the user to fit the product easily.

Detailing on the front face of the device provides user interaction, allowing the user to develop a greater understanding of their sitting posture.

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*"I have enjoyed our meetings where [Pui's] approach has been to explain in detail new developments which has made me feel involved and to have contributed at every stage of this project."*

***Dr Peter Malliaras***
*Managing Director of Physioscience*