

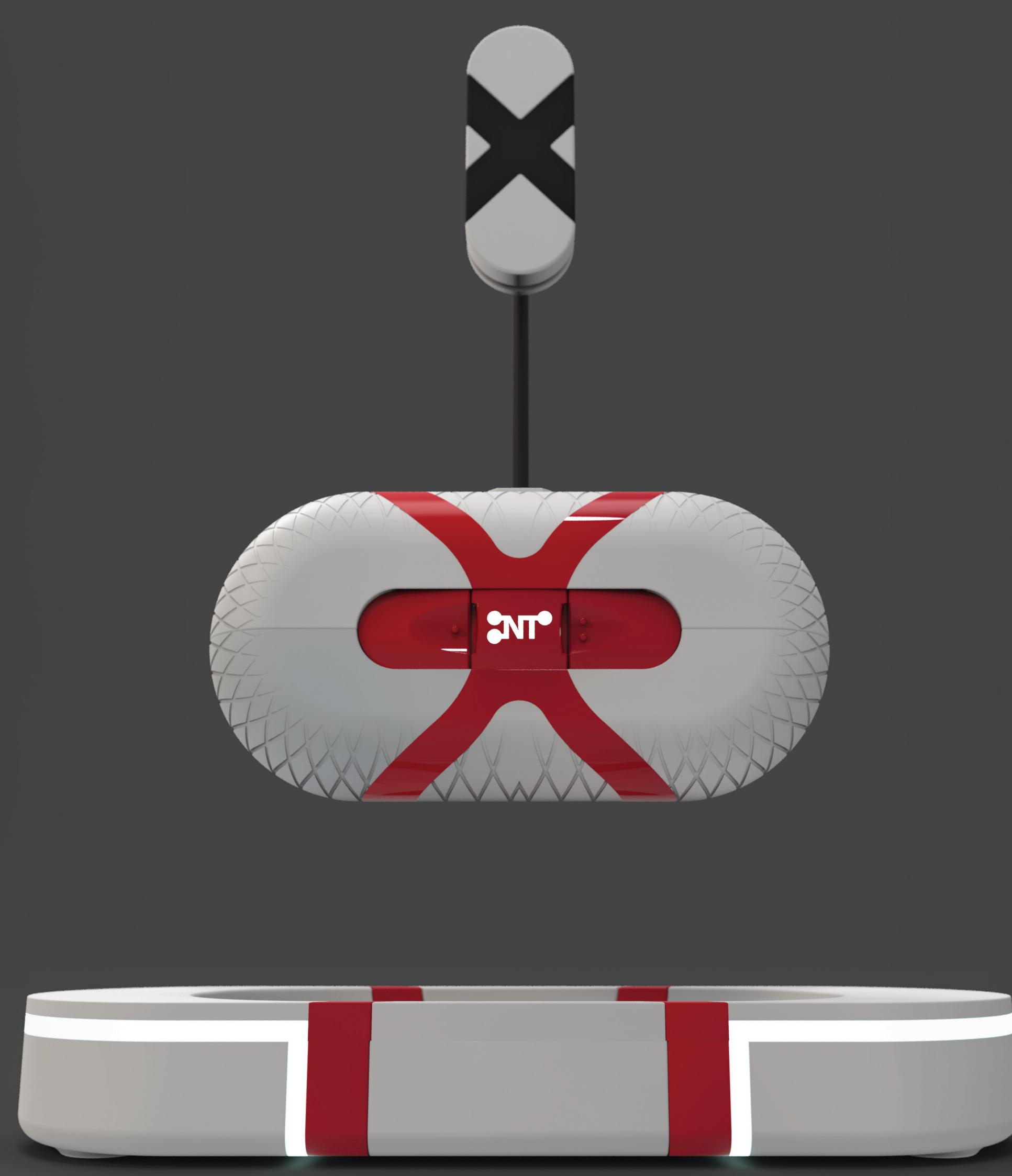
1. Personal research - Logbook 1, page 92
2. Yougov.co.uk survey, 2016
3. The Effect of Mindfulness-Based Therapy on Anxiety and Depression - NCBI Meta-Analytic Review



## BY BECOMING MORE AWARE, WE BECOME MORE HUMAN

NervTrac monitors the central nervous system of people suffering with generalised and acute anxiety conditions. By providing trackable statistics and real time alerts, users can better manage their condition, work towards recovery and start to enjoy life again.

We all suffer from stress, but we are often unaware of how much of it is unnecessary. The path to reducing this suffering is mindfulness. By taking responsibility for our emotional responses we can begin to move from a place of worry, to a place of calm. This allows us to not only be more effective at the things we do, but also happier whilst we do them.

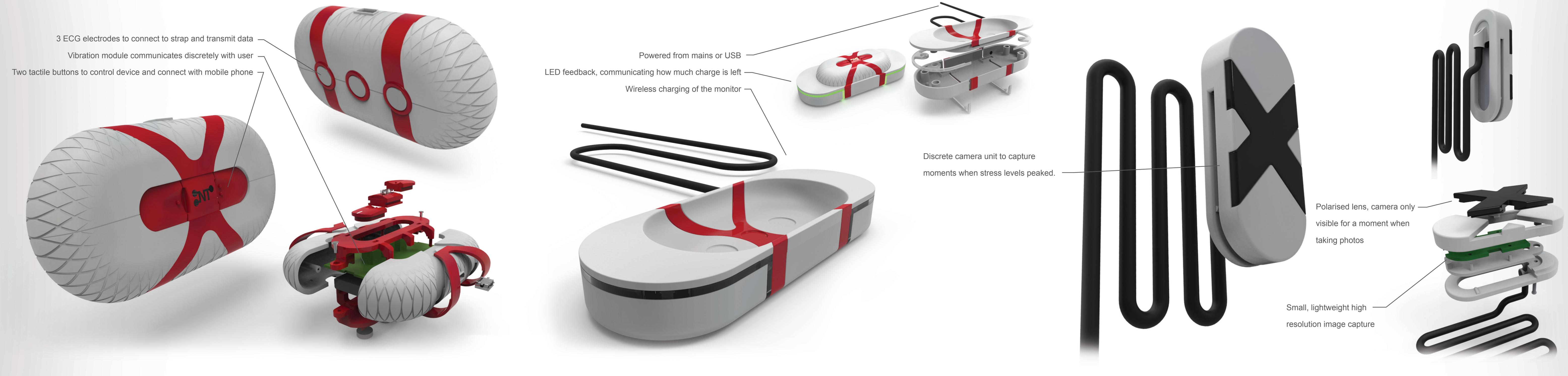


75.9% of people feel their emotional well being could be improved.<sup>1</sup>

One in four students suffer from mental health issues. 74% described their issue as Anxiety.<sup>2</sup>

Mindfulness based therapy has been shown as an effective treatment for anxiety conditions.<sup>3</sup>

The problem with mindfulness is that many of us have become so normalised to the negative feelings of worry and panic, that we've forgotten what a calm state of mind feels like. NervTrac provides an extremely simple method of monitoring your own stress levels throughout the day, highlighting the peak moments, and providing a self-therapy experience to help you reflect and learn about yourself. Helping you grow into a calmer, happier version of you.



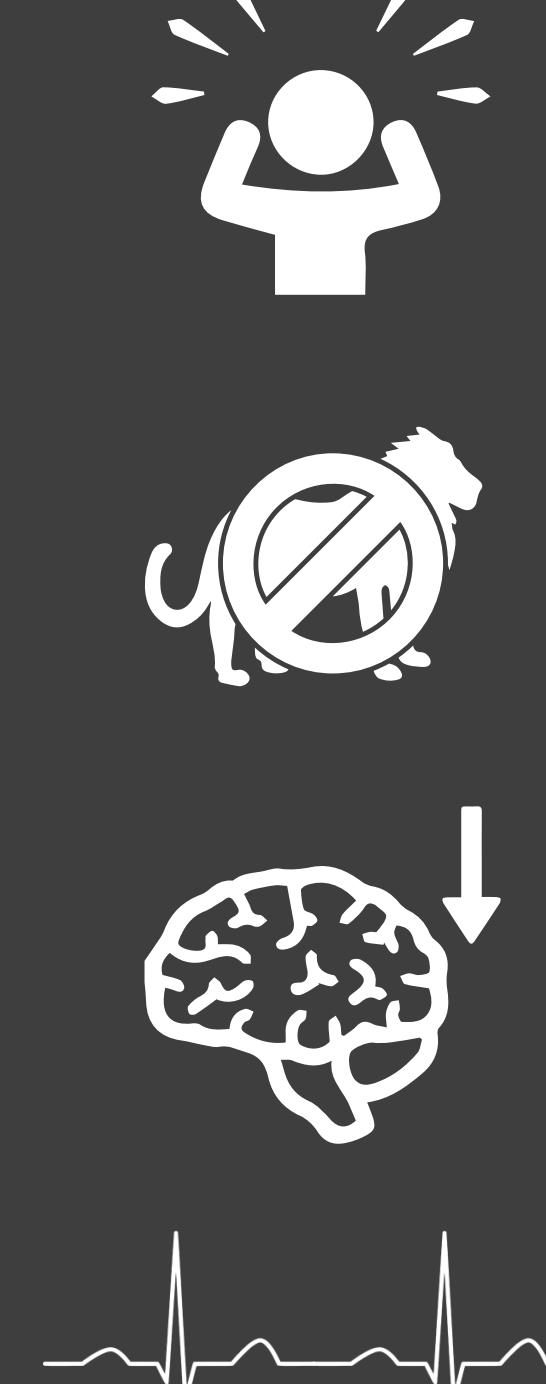
## HOW ANXIETY WORKS

Being in a constant state of stress can have a serious impact on quality of life. Talking to your boss, taking public transport, sitting exams, regardless if the threat is real or imaginary, your brain still recognises them as threats. Resources are stripped from the higher human areas of function within the body and sent to prepare your body to fight. Not useful for when trying to sit an exam. Sleep, digestion, muscle recovery and social interaction are all non-essential to your immediate survival. And so, they become less prioritised when experiencing stress.

When your brain recognises that your life might be in danger, it switches from "rest and digest" to "fight or flight". This is a natural response you certainly don't want to get rid of. It will be handy if you are being chased by a lion one day. In the UK, this is unlikely for most of us. And yet some of us find ourselves panicking daily over relatively normal stimuli.

Anxiety reduces blood flow in the prefrontal cortex, responsible for rational thinking, and increase blood flow to the amygdala, responsible for emotional control. This means you're thinking becomes cloudy, you become emotional and your body starts to panic. There are clear biological markers that can accurately gauge a person's level of mental stress. The most reliable is heart rate variability, a measure of the time between the peaks in a heartbeat.

NervTrac uses this to detect stress. There are 3 electrodes embedded in the chest strap which send precise heart beat data to the monitor. The heart beat data is analysed by the on-board microcontroller and the information is sent to the user's smart phone. From there, the data can be viewed on a historically, allowing the users to see their own stress levels across time.



## HOW WE CAN FIX IT

The main methods of treating anxiety conditions is through cognitive behavioural therapy (CBT) and mindfulness training. CBT works by getting someone to question their fears and then performing miniature tests to see if those fears are realistic. With social anxiety, this could start with introducing yourself to one person and seeing if the interaction will go as terribly as you thought it would. Most of the time, the negative consequences are exaggerated in the person's mind and the test builds confidence for them to try another test. Mindfulness is the ability to detach yourself from your thoughts by observing them rather than experiencing them. Mindfulness can be trained like any other skill and has been proven to aid in the recovery from anxiety conditions.

The NervTrac app is built on these proven psychological recovery methods. The monitoring device and app combination makes the user instantly aware of their stress levels by assigning a traceable number to how they feel, giving the user something quantifiable to aim at. This removes the learning curve to mindfulness and the user can instantly see how their thinking is affecting their stress levels. Alerts inform the user in real time when they have entered a high stress states of mind. Discrete vibrations are used to notify the user and the "panic toolbox" section gives immediate access to a range of activities designed to reduce stress.

A CBT experience is provided virtually by the NervTrac app, making therapy much more accessible to the average person. Sessions can be done when and wherever the user is comfortable. By asking questions and prompting the user to explain the high stress moments that are captured by the camera module, self-exploration is encouraged and the process directs the user towards the exact exercises they need to perform to better manage their thinking. Finally, the app provides a method of physically measuring progress encouraging user and keeping them on track with reducing their stress and improving their mental health.

