

# Stressbusters' new technique is a brainwave

Health correspondent  
**SUSAN BAILEY** looks at a new way of tackling stress

**P**SYCHOLOGISTS at Swansea University are wired up to help lower people's anxiety levels.

They are looking at ways to reduce stress in everyday life by teaching people to control their brain activity.

Amazingly the scientists are discovering ways to boost feelgood brainwaves, and have formed a new company called Peakmind to develop the technique.

Anxiety can be extremely debilitating, preventing people from living fulfilling lives, but through a process called neurofeedback, sufferers can reduce their stress and banish intrusive and ruminative thoughts.

The research, in collaboration with the University of Portsmouth, has been made possible thanks to a funding grant from the Economic and Social Research Council.

Neurofeedback is also known as EEG Biofeedback, as it is based on the brain's electrical activity, measured as the electroencephalogram (EEG).

It is a painless, non-invasive method, which helps people to modify their brainwave activity to improve attention and concentration, reduce impulsivity, and control hyperactive behaviours.

Essentially, the technique trains the brain to regulate and adjust itself to function more efficiently.

Soren Andersen, of Swansea University's School of Human Sciences, said: "Neurofeedback has been around for about 30 years, and has successfully been applied to conditions such as attention deficit disorder and epilepsy but the technique is relatively unknown here in the UK."

His colleague at Portsmouth, Roger Moore, said: "Ultimately, we are trying to develop a neurofeedback treatment for anxiety which has its roots in over 40 years of theory and research — the end result will be a non-drug based intervention, which has a sound, scientific basis."

Philip Corr, also of Swansea University's School of Human Sciences, said: "This is an exciting new application of recent advances in our understanding of how the brain controls emotional experiences; and shows how knowledge of fundamental brain systems can have very real benefits in terms of reducing distressing psychological states of worry and anxiety."

"This is likely to be only the start of a whole new technology that allows individuals to learn to regulate their own



**STRESS BUSTER** Soren Andersen records the brainwave activity of his colleague, Cris Izura, at Swansea University.

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brain states and, thereby, control the emotions controlled by these brain states."

During neurofeedback training people learn, over a number of sessions, to control a computer game or produce sounds by changing specific aspects of their brainwave activity.

Psychologists apply electrodes to the client's scalp, which pick up their brainwave activity.

The monitored brain activity is processed by a computer, which extracts information from the brain signals about certain frequencies.

Changes in the brain signals are fed back to the patient by the computer. If their brain activity changes as it should, a positive "reward" feedback is given to the patients.

Peakmind is a Swansea University spin-out enterprise which has been awarded a grant from Finance Wales and receives support from the Department of Psychology at Swansea University.

Dr Anderson, a 32-year-old Danish citizen, received his neurofeedback training from the Society of Applied Neuroscience.

Dr Rutterford is an expert on the

## Stress — The Signs

- ◆ Poor sleep quality;
- ◆ Concentration difficulty;
- ◆ Increased irritability;
- ◆ Increased consumption of caffeine, alcohol and cigarettes;
- ◆ Heart palpitations;
- ◆ Feelings of a lump in throat or stomach;
- ◆ Frequent dry mouth and tremor of the hands;
- ◆ Always feeling something needs to be done; and
- ◆ Major difficulty relaxing.

Reasons for suffering stress can include continuing excessive pressure at work and important personal life events like getting married. Prolonged experiences of stress can damage health and lead to anxiety, depression, heart disease, increased blood pressure, headaches and digestive disorders.

long-term outcome following traumatic brain injury.

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