

# Reducing Stress using Therapeutic Breathing – Effect on Migraine

## **What causes migraine?**

The brains of migraine sufferers are more sensitive to changes around them. This can be changes in the internal body environment such as fluctuating changes in blood sugar, hydration, hormone levels; or the external environment such as changes in noise, lighting or stress levels. Migraine sufferers are unable to accommodate these changes as effectively as non-migraine sufferers. This mis-match leads to stress within the brain resulting in the migraine attack.

(For those with a scientific background you can read more about the theoretical basis of this in a paper that I have published in a scientific headache journal. You can find it if you go to the website of our Headache Clinic [www.headache.exeter.nhs.uk](http://www.headache.exeter.nhs.uk) and follow >Papers& Presentations> “Migraine – new perspectives from chaos theory.”)

## **Alternatives to medication**

Preventative migraine drugs act by stabilising the over-activity of the brain networks but are there approaches that can work naturally? Evidence suggests that natural methods that focus on relaxation and biofeedback are as effective as drugs. [Holroyd *et al.*, Gobel]

How do these natural approaches work? We know that the rhythms that control different function of the body can interact with each other. Breathing is the strongest rhythm in the body and the centre where breathing is controlled in the brain lies close to the area where we suspect migraine originates. It has been suggested that the abnormal rhythms in the area of the brain that triggers migraine can be controlled using slow and rhythmic breathing techniques. This is known as entrainment and is a well-recognised phenomenon in biology.

## **Breathing and migraine**

RESPeRATE is the name of a device that helps you to control your breathing. It has been designed to reduce stress and blood pressure using a technique called “therapeutic paced breathing.” This exercise interacts with the areas of the brain that controls stress/relaxation and blood pressure and there is a considerable amount of scientific evidence to support this approach. Can reduction of stress help with migraine?

RESPeRATE is licensed only for the reduction of blood pressure and stress,. There is a lot of evidence in literature for the effect of slow deep breathing on stress reduction. There is also evidence that reduction of stress reduces the frequency and severity of migraines [Woolley *et al.*]. Although there are theoretical reasons why therapeutic breathing should work in migraine, no research studies have been undertaken in this area as yet.

## **What is a RESPeRATE breathing device?**

RESPeRATE is a portable, computerised electronic device that guides you through sessions of interactive, therapeutic breathing powerful enough to lower blood pressure. Using a breathing sensor, it automatically analyses your individual breathing pattern and creates a

personalised melody composed of two distinct inhale and exhale guiding tones. You simply listen to the melody through the headphones and synchronize your breathing to the tones. By prolonging the exhalation tone, RESPeRATE guides you to slow your breathing and reach the "therapeutic zone" of less than 10 breaths per minute. This should be undertaken for at least fifteen minutes each day. There are no known side effects of this device but if you have any chronic cardiovascular or respiratory disease you should check first with your GP.

Further details can be found on the web site [www.resperate.com](http://www.resperate.com)

### **How should I use a RESPeRATE device for stress reduction?**

To reduce stress it should be used as directed by the manufacturer. i.e. for fifteen minutes each day. This is how I suspect it will be most useful. However, some people have found that stress reduction by the device results in the termination of a migraine attack but it must be used very early in the attack onset. Once the attack has developed it is unlikely to be successful. It has been found in clinical trials that treatment with the device does not reduce blood pressure below normal value.

### **How do I obtain a RESPeRATE device?**

The Exeter Headache Clinic has negotiated a discount on this device for the use in stress reduction. The reduced cost is £169.95 and you have up to 3 months to send it back if you feel it is not successful and your money will be returned with no questions asked (excluding postage). To purchase a device either phone the help line on 0800 177 7778 or follow [www.resperate.co.uk](http://www.resperate.co.uk) In both cases quote the code PCUK0164.

The headache clinic or I have no financial interest whatsoever in this device but am interested in its potential for the reduction in stress in people who suffer from migraine. If you decide to purchase this device I would be very grateful if you could let me know how you get on with it. For example, was it easy to use, was stress reduction helpful in preventing migraine, how long did it take to have an effect? Please either write or telephone Debbie Reinhold at St Thomas Health Centre, Cowick Street, Exeter EX4 1HJ. Telephone 01392 676679.

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### **References:**

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