

# REST-Assisted Relaxation and Chronic Pain

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By Thomas H. Fine & John W. Turner, Jr., Medical College of Ohio, Toledo, Ohio, USA

In the past decade relaxation training has been one of a number of behavioral approaches to the treatment of chronic pain. Recently, flotation REST (Restricted Environmental Stimulation Therapy), which consists of floating in buoyant liquid kept at skin surface temperature in a sound-proof, light-free enclosure, has been used to induce deep states of relaxation and assist in the relaxation training process. This report presents data on patients receiving multimodal treatment for chronic pain, including REST-assisted relaxation training. The patients received individual stress-oriented psychotherapy, biofeedback-assisted relaxation training and REST-assisted relaxation training. The use of flotation REST will be discussed through a comparison of the subjective effects of REST relaxation of biofeedback assisted relaxation specifically regarding the perception of pain.

## Introduction

Treatment of pain disorders has undergone a refocusing of efforts in recent years. The movement has generally been away from the external management of pain perception through medication or surgery; towards the internal regulation of pain experience through behavioral management, (Fordyce & Steger, 1979) relaxation training (Turk, Meichenbaum and Genest, 1983) and cognitive-behavioral approaches (Turk, et.al., 1983). These approaches have been used extensively with various pain disorders including chronic, recurrent pain and chronic intractable, benign pain (Turk, et.al., 1983).

As mentioned, one component of this treatment approach has been relaxation training. Often the relaxation training is assisted through the use of EMG or thermal biofeedback. The rationale for this is simply that biofeedback provides specific training for physiological processes enhancing the generalized relaxation instructions. In addition biofeedback may provide motivational factors not available in relaxation training alone.

The goal of relaxation training is for an individual to be able, through the use of an internalized set of cues, commands, images, phrases or kinesthetic sensations, to alter his or her physiology to a state of reduced output. Any process that assists an individual in experiencing that state may prove useful in a behaviorally oriented chronic pain therapy.

Flotation Restricted Environmental Stimulation Therapy (Flotation REST) has been shown to create powerful physiological and subjective relaxation states (Turner & Fine, 1983, Suedfeld, 1983, Jacobs, Heilbronner & Stanley, 1984). This technique involves flotation in a lightproof,

sound attenuated chamber containing a thermally constant (94.5 degrees) buoyant (1.28 s.g.) solution of epsom salts and water.

Flotation REST in combination with relaxation training, stress management and biofeedback has been used experimentally and clinically for stress related disorders (Jacobs, Kemp, Belden, 1983, Fine & Turner, 1983). This report describes the use of flotation REST as part of a multimodal program for chronic pain.

## **Methods**

Fifteen patients (ten males and five females) were referred to the Behavioral Medicine Clinic of the Medical College of Ohio for a chronic pain disorder by their current attending physician. Eight patients were treated in an outpatient program, seven patients were treated on an inpatient unit. Ten patients had daily, chronic low back pain, three patients had daily chronic shoulder pain, and two patients had chronic headaches at least once per week. The number of years with pain ranged from .25 to 16 with a mean of 7.3. Patients were treated on the inpatient unit if a) a psychiatric condition (i.e. depression) was considered significant to warrant admission or b) environmental conditions made outpatient treatment unfeasible (length of drive for treatment). Each patient's treatment began with a thorough interview. This interview covers the patient's pain disorder and psychosocial information about the patient. Throughout the treatment process the therapist worked with the patient on significant psychosocial factors as well as relaxation oriented interventions. Treatment consisted of relaxation training (autogenic phrases and/or progressive relaxation) EMG and/or thermal biofeedback, stress oriented psychotherapy and flotation REST. In addition inpatients participated in a milieu therapy program including occupational therapy, group therapy and exercise therapy. After the initial interview session, each patient's psychophysiological baseline was recorded using frontal and/or neck EMG and peripheral temperature measurements. The therapist then instructed the patients how to use a modified autogenic training relaxation exercise for regular home use. Patients then use EMG frontal and/or neck biofeedback during one hour sessions in the clinic. The number of feedback sessions ranged from 6 to 36 with a mean of 13. Actual feedback training is for 25 minutes and the other time is used for psychotherapy. REST was introduced to the patient after the patient maximized the effects of the biofeedback training. REST was introduced to a) increase the depth of the subjective experience of relaxation and b) increase the subjective sense of reduction of pain during relaxation.

Procedures for flotation REST involved flotation in the REST chamber either nude or in a bathing suit. During flotation, and after an initial period of silence ranging from 10-25 minutes, a tape recording of the autogenic phrases was played. As treatment sessions progressed some patients were asked to use the phrases without the tape, and some were also given imagery suggestions specific to their situation. REST sessions were between 40 and 60 minutes long, the length chosen by the patient. The number of REST sessions varied from 2 to 18 with a mean of 7. Patients rated their pain experience using a scale of 0-6 on pain log sheets. Patients rated the depth of relaxation achieved on a scale of 0-10 in a follow-up interview.

## Results

The results presented here are taken from the patients' clinical records at the end of treatment and a follow-up conducted at least three months post treatment except for two patients still in long term treatment. For the 13 patients with chronic intractable benign pain there was a difference in intensity but no differences in frequency or duration of pain after treatment. For the two patients with chronic recurrent pain, all three subjective pain rating measures changes. (See Table 1). Twelve patients stated that they regularly used relaxation to affect their pain, and were able to reduce it. Patients subjectively rated the REST relaxation as more relaxing and more pain relieving than the Biofeedback Assisted Relaxation (Fig. 1). Patients were asked to rate whether or not they became pain free during biofeedback or REST. Eight patients rated themselves as pain free after REST, one patient rated himself as pain free after biofeedback and 2 patients did not become pain free (Table 2). Twelve patients were not able to work because of their pain. Three of these patients are now working and one is being retrained for a less physically stressful career.

Table 1: Subjective Reports of Pain Pre/Post Treatment  
Intensity Pre 1 Post 1  
CIBP + CRP\* N = 15 4.3 3.57 P<.10 SIG  
(F=4.15,dF1,14)

Frequency  
CIBP N = 13 Daily Daily  
CRP N = 2 3/Week 2/Month

Duration  
CIBP N = 13 Constant Constant  
CRP N = 2 18 Hours 6 Hours  
\*Chronic Intractable Benign Pain & Chronic Recurrent Pain

Table 2: Patients Experiencing Total Remission of Pain During Relaxation  
REST Biofeedback Both  
8 1 2

## Discussion

This clinical, preliminary report examined the efficacy of REST in a multimodal program for chronic pain. Numerous reports have already established the use of relaxation training as an appropriate component of this treatment (reviewed Turk, et. al., 1983). Previous reports have show REST to be more physiologically and subjectively relaxing than relaxation training alone (Turner and Fine, 1983, Jacobs, et.al., 1984).

In this report relaxation was assisted by both EMG biofeedback and flotation REST. Both were reported as effective in assisting the patients in relaxation, with patients reporting that REST was significantly more relaxing than Biofeedback. In addition, more patients were able to experience periods of complete remission of pain with REST than with biofeedback.

Patients in this treatment program reported a small but significant decrease in average subjective pain experience during follow-up. Although the chronic intractable benign pain patients did not report a decrease in the frequency or duration of pain, they did regularly use relaxation as an intervention of the pain. The patients stated that they felt that their relaxation skill was important in their ability to live with their pain.

The mechanism through which flotation REST reduces pain experience is unknown. The buoyancy of the solution may provide a more supportive environment than the typical relaxation chair, allowing deeper muscle relaxation. The reduction of environmental stimulation may allow the person to better attend to previously ignored tension in the muscles, further enhancing relaxation. The lack of environmental stimulation may disrupt a cognitive component of pain by eliminating environmental cues normally associated with pain. A recent preliminary report (Turner & Fine, 1984) has indicated that the subjective effects of flotation REST can be affected by the narcotic antagonist Naloxone. This suggests that REST either increases endogenous opioid production or heightens sensitivity to existing opioid levels. This may be biochemical aspect of the subjective pain reduction.

Many of the pain patients treated expressed a desire to have a flotation REST chamber at home. For patients with chronic intractable benign pain secondary to injury, this may be a cost effective alternative that would increase their overall level of functioning, and help reduce or eliminate pain medication. In summary, this report demonstrates that relaxation training was an effective tool for reducing the subjective intensity of pain for all of the patients studied. Both Biofeedback and REST were perceived as helpful in the relaxation process, although REST was seen as significantly more powerful in affecting relaxation than Biofeedback. More pain free periods followed REST relaxation than Biofeedback assisted relaxation. Despite some methodological weakness, this report is strongly suggestive of an important role for REST in the treatment of chronic pain.

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