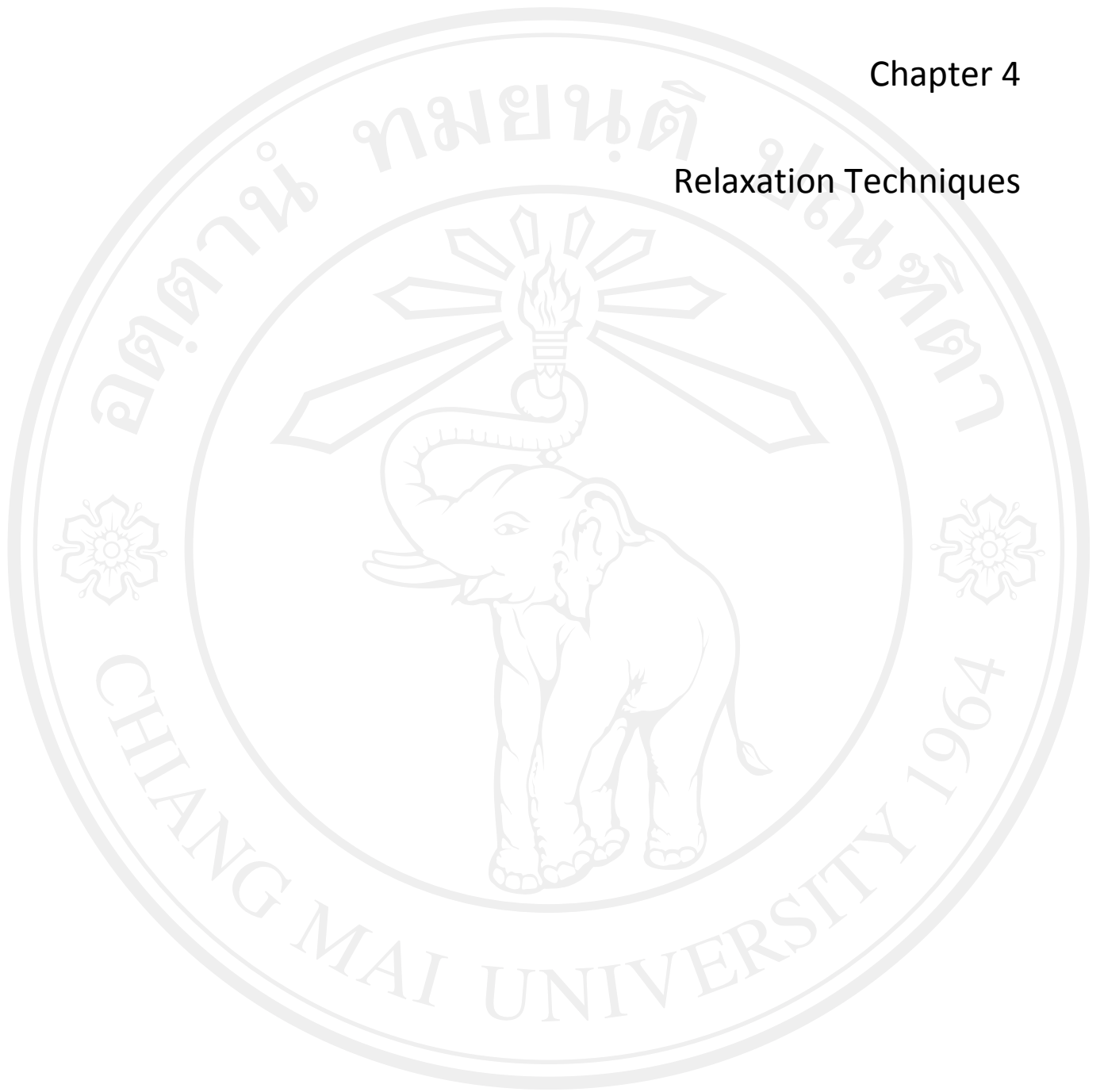


Chapter 4

Relaxation Techniques



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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Relaxation, which has a mental as well as a physical dimension, is often used with regard to muscles, wherever it signifies tension and continuation of muscle fibers, as hostile the shortening that accompanies muscular tension or contraction.<sup>(1)</sup> According to a comprehensive view, relaxation is defined as a state of consciousness characterised by a sense of peace and unlash from tension, anxiety and fear. This emphasizes psychological aspects of the relief expertise, disagreeable the pleasant sensation and absence of nerve-racking or uncomfortable thoughts.<sup>(2)</sup> Therefore, the word “relaxed” is used to refer either to lax muscles or to peaceful thoughts. It is assumed that a general state of relaxation can be induced by using either physical or psychological methods.<sup>(1)</sup>

A model that explains tension and relaxation is the well-known “fight or flight” mechanism. When a person faces a threat or danger, the sympathetic nervous system takes control and result in some physiological changes, such as<sup>(3)</sup>

- (1) The release of adrenalin, noradrenalin and cortisol into the bloodstream (stimulates reflexes and raises blood sugar for more energy)
- (2) Heart rate will increases, dilatation of blood vessels and increase blood pressure (more blood is pumped to the lungs and muscles for action)
- (3) Breathing is faster and more shallow, air passages into the lungs increase to enable more absorption of oxygen
- (4) Energy is diverted from areas such as the digestive and eliminatory organs to systems that need it

When the person has dealt with the problem, the parasympathetic nervous system goes into action, reversing the above changes and allowing the body to return to a state of rest.<sup>(3)</sup>

## 4.1 Body systems associated with the states of relaxation

### 4.1.1 Physiological theories

Body systems, associated with the states of stress and relaxation, include ANS (autonomic nervous system), endocrine system, and skeletal musculature.<sup>(1)</sup>

#### (1) Autonomic nervous system

Physiological arousal is governed by the autonomic nervous system. This has 2 branches: the sympathetic, that will increase arousal once the organism is underneath threat, and also the parasympathetic, that restores the body back to a resting state. Their actions are involuntary and designed to enable the organism to survive.

In situations of challenge, excitement or danger, the sympathetic nervous system increases the activity of the heart and redistributes blood from the viscera to the voluntary muscles. Blood pressure and respiratory rates are increased; sensory awareness is heightened, and excess heat is lost. These factors enable the individual to make an appropriate physical response. The changes are conjointly referred to as the “flight-fight response”, that is characterised by a rise in pulse rate, blood pressure, blood clotting rate, blood flow to striated muscle, glucose content within the blood, rate of respiration, acuity of the senses, sweat gland activity, and a decrease of activity within the gastrointestinal tract. Within the absence of challenge or excitement, these actions are reversed; the sympathetic nervous system loses its dominance and also the parasympathetic assumes management.

## (2) Endocrine system

Closely associated with the involuntary system are the endocrine system and therefore the adrenal gland. The adrenal glands are situated above kidneys and consist of medulla and cortex. Their function is to provide hormones that modify the action of the inner organs in response to environmental stimuli.

Once a scenario is given the impression to be disagreeable, the brain directly responds by stimulating the adrenal medulla to unleash catecholamine and noradrenaline. These neurotransmitters prepare the organs for action by increasing alertness and redistributing the blood flow. In the long term, the pituitary gland releases adrenocorticotrophic hormone (ACTH), which helps maintain the fuel provided to the muscles. During this approach it supports the action of the catecholamine to reinforce the immune system. Under challenge, all the above hormones are released. When the situation of challenge passes and the stress response is no longer needed, the neurotransmitter acetylcholine is released to restore a state of balance in the ANS. The organs that were previously stimulated no longer dominate.

### 4.1.2 Skeleton musculature

When relaxation occurs, the release of tension in the skeleton musculature has a calming effect on the mind. The neuromuscular system is thus seen as a mediator in the relief of stress and anxiety. Progressive relaxation consists of tense-release techniques designed to cultivate awareness of muscular sensations. This awareness allows the individual to develop the skill of consciously releasing tension.

### 4.1.3 Psychological theories

There are two types of psychological theory concerning relaxation:

(1) Cognitive: The cognitive approach views feeling as a function of thought. Interpretations, perceptions, assumptions and conclusions will all give rise to particular feelings, which in their turn govern the body's behavior including muscle tension or relaxation. This means that the experience of stress and anxiety is associated with the ways that events in one's life are interpreted.

(2) Behavioral: Classical behaviorists believe that conditioning is controlled by the environmental events, not thoughts. Such events are seen as leading the individual to act in predictable ways. In the case of classical conditioning, association governs behavior. Cognitive theorists believed that behaviorism as a general theory was incomplete and this led to the formal integration of cognitive and behaviorist principle. Behavioral change is promoted through the restructuring of conscious thoughts.

## 4.2 Types of relaxation technique

There are two common groups of relaxation techniques:<sup>(1)</sup>

**4.2.1 Somatic techniques** include Jacobson progressive relaxation, Bernstein & Borkovec's modified version, Early & Rosenfeld's passive relaxation, Madders' release-only, Ost's applied relaxation, Poppen's behavioural relaxation coaching, the Mitchell technique,

the Alexander technique, differential relaxation, stretching, exercise, and respiratory strategies.

4.2.2 Cognitive techniques include awareness, imagery, purposive visual image, treatment, meditation, Benson's relaxation response, and psychological feature activity approaches.

### 4.3 Relaxation mechanism on body systems

The basis of relaxation techniques is to encourage the activation of the "Relaxation Response" that promotes a state of relaxation, simulating an individual at rest. This is an autonomic reaction, not under the individual's conscious control. Apart from adepts at yoga, few people are able to consciously decrease their heartbeat. Therefore, relaxation techniques use several different systems to achieve their goals. For instance, progressive relaxation relaxes a muscle, which then has an effect on the subtler systems of the body. Guided visualizations, which present the mind with situations that are completely peaceful, encourage total deactivation. Deep relaxation conjointly goes additional than simply resting the body. It has been found that a specific brain wave pattern, alpha waves, will be present throughout relaxation and meditation. Alpha waves are related to subjective feelings of well-being and happiness.

#### 4.3.1 The Use of Relaxation as a Therapy

Relaxation techniques are generally used in one of the following three ways:<sup>(3)</sup>

- (1) **To help people learn general, overall relaxation:** This can be done for individuals or groups.
- (2) **For use with specific problem areas:** For instance, someone may have digestive problems due to physical tension in the epigastric area or perhaps feel anxiety when shopping. Relaxation can also be used as a part of an overall program of therapeutic intervention for people who have specific anxiety problems or phobias.
- (3) **As an adjunct to other therapeutic approaches:** Relaxation can be incorporated into other therapies at appropriate stages, particularly if there is a need to help the person achieve a relaxed and receptive state. An example of this would be in counseling for sexual abuse. If the person wishes to look at accepting the past, it may be helpful to get them to relax in order to open themselves to new ideas. Alternatively, in cognitive therapy, a person might be encouraged to relax so they are receptive to positive statements to help them change their attitudes to life.

#### 4.3.2 Benefit from Relaxation<sup>(3)</sup>

Relaxation is beneficial to people with a wide range of needs. Most obviously it is use for people suffering from stress and tension, ranging from someone who is seeking employment to those whose lives are devastated by extreme anxiety and panic. Relaxation can improve coping skill and quality of life for some people.

Relaxation has health benefits other than those initially sought. Some forms of relaxation will reduce respiratory rate, heart rate and oxygen consumption, and reduce high blood pressure. Therefore relaxation is used for a range of physical illnesses, such as heart conditions or as a means to control pain as in cancer and migraine.

### 4.3.3 General principles for relaxation techniques

While relaxation techniques vary in style and emphasis, there are many commonalities. The following factors should be taken into account in preparation for the session:<sup>(3)</sup>

1. People should go to the lavatory before relaxation.
2. Shoes should be taken off, and any tight clothing loosened, especially at the waist and neck.
3. Relaxation should not be done immediately after a meal—the digestive system will slow down and not able to function properly—or before bedtime, as it may induce sleep. If the session is performed to combat insomnia, choose the technique that is specific to this purpose.
4. Relaxation is never forcing, straining or willing; relaxation is always releasing, and letting go.

It is very important that relaxation should be practiced regularly. It is only by persistent training that the skills involved are learned. Once the principles of relaxation are truly assimilated, then the practice can be less regular. The length of sessions may range from 20 minutes to an hour; 30 minutes is probably the optimal length of time.

The aim of relaxation is to remain conscious, not to go to sleep. The alpha brainwave pattern is not usually found in relaxation experiences. It is said that 20 minutes' true relaxation is so refreshing that it reduces the need for sleep. If people habitually fall asleep in the session they need to look at the timing of the session, and whether there is any reason they are so tired. It may be helpful to relax in a chair for a while to break the pattern. There is a beginning, middle and end to relaxation sessions. The beginning involves introducing the idea of relaxation. The middle session deepens the experience. The end of relaxation is particularly important. People need to be 'brought back' into the room where they are. Relaxation can be disorienting and it is useful to give them time to focus before going out of the class, especially before driving. Examples of focusing include general chat or physical activity, such as putting the mats away. Warning should be given that the light is about to be turned on; people need a chance to cover their eyes until they adjust. People lying on the floor need to be able to stretch and roll over onto their side before getting up.

### 4.3.4 Postures for Relaxation

Physical posture has a significant effect on people's ability to relax. There are 6 postures effective for relaxation technique.<sup>(3)</sup>

#### (1) Lying Postures

The most effective lying posture for all relaxation techniques is 'Savasana', which remains the classic relaxation position. This position allows maximum possible relaxation and total alignment of the body.

#### (2) Preliminary Exercises

In order to relieve any tension in the lower back, and to get as much contact between the back and the floor as possible, participants should bend their knees with their feet on the floor, and then slowly release the legs. This can be taken further by bringing the knees



#### 4.4 Pitfalls of muscular relaxation

There are some points worth consideration during practice of the relaxation techniques:

1. Training in relaxation should never be viewed as a substitute for medical treatment. Whenever a disorder is present or suspected, medical help should be sought.

2. Relaxation training is not generally recommended for people suffering from hallucinations, delusion or other psychotic symptoms, as the exercises can lead to out-of-body sensations. It is traditionally held that imagery is never appropriate for these individuals; however benefit has been derived from a tense-release and physical exercise approach during a non-active period of psychotic illness. Thus, emphasizes the value of this finding for individuals who experience stress in addition to their psychosis. Discussion with the attending psychiatrist or psychologist would first be necessary.

3. Variations in the blood pressure may occur in the course of relaxation training. It can increase when limbs are being tensed and fall during deep relaxation. Allowing a rest between the training can counteract the rise in blood pressure. When the session is over, the trainees should bend and stretch their limbs a few times before resuming active life. It is important to allow time for the individual to adjust to active life following a session of relaxation because a sudden rise from a relaxed lying position can induce faintness. For hypertensive individuals, a release-only method is preferable to that consisting of muscle tensing. Tension-based exercises can induce heart arrhythmias in patients with cardiac diseases, and are considered unsuitable for those after myocardial infarction. An alternative relaxation method is preferable for such cases.

4. Antenatal and laboring mothers are no longer given tense-release exercises because of possible uterine contractions. Release-only forms (i.e. passive relaxation) would be more appropriate.

5. Tense-release procedures performed with excessive tightening may lead to cramping. To avoid this, trainees should be advised to stop short of the discomfort. Recurrent cramping would indicate the unsuitability of the technique for that individual. Over tensing the spine and neck should also be avoided as it can lead to spinal damage.

6. Relaxation occasionally induces anxiety. It is reasonable for the trainer to be concerned about excessive perspiration, trembling, rapid breathing or general restlessness of a trainee. The training should be stopped immediately. These symptoms might, however, be the result of a fear that letting-go lead to a loss of control. For individuals, who have such fears, the wording can be changed to 'as relaxed as you want to be'. Disturbing feelings may surface during any kind of relaxation, as psychological defenses can be weakened in the process of releasing tension.

7. Progressive relaxation training has been found effective for many people with an organic pain as it provides a physical approach to a physical disorder. Some individuals, however, find that focusing on the body intensifies their perception of pain. In this case, muscular approaches may be less useful than cognitive ones, such as imagery or meditation.

8. Trainees with disability or disorder, who are in doubt of the suitability of any exercise, should begin by performing it very gently. This applies, for example, to individuals with back or neck problems.

9. As attention to breathing is a feature of most muscular approaches, the hazards of hyperventilation should be borne in mind.

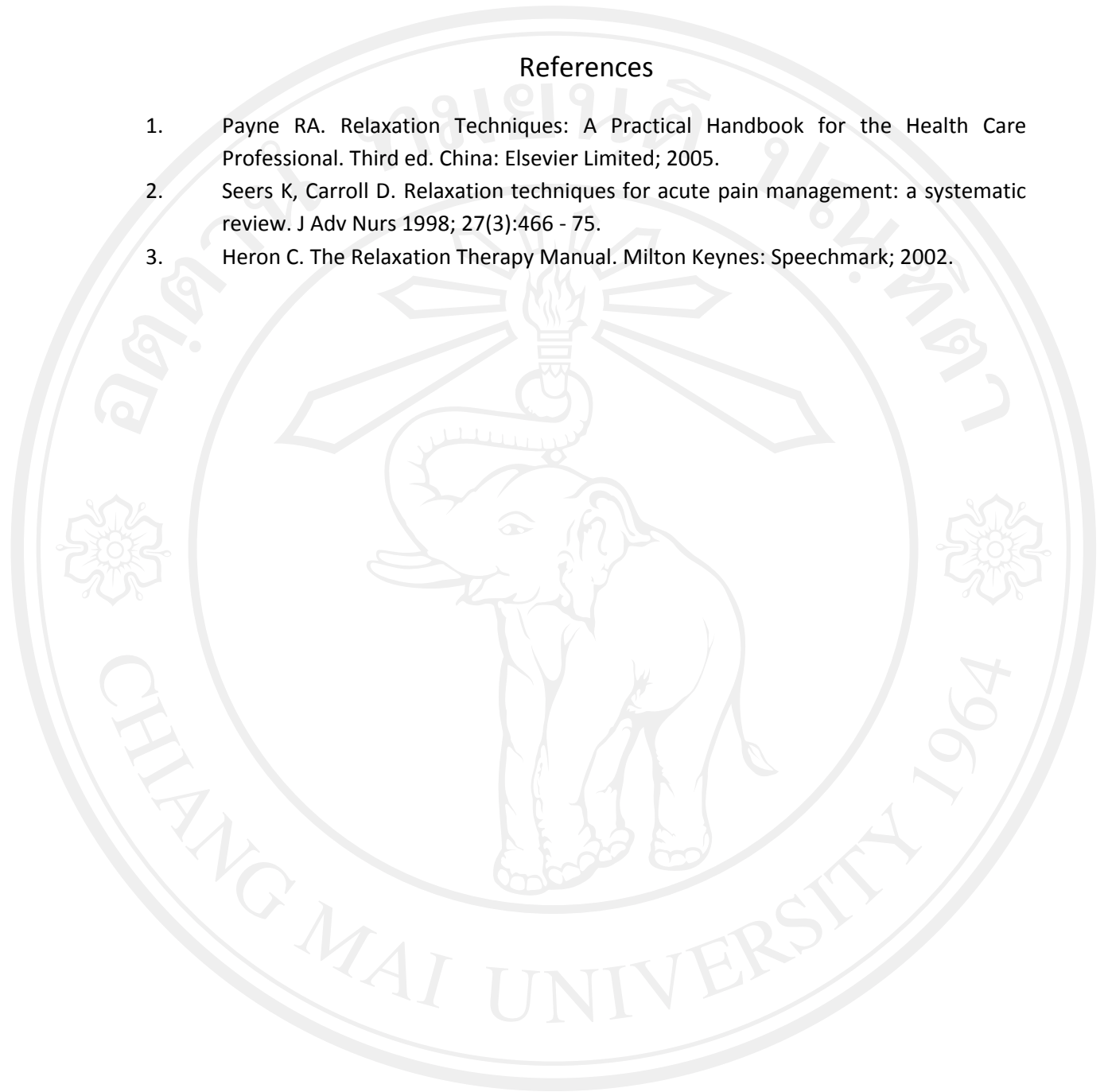
In conclusion, when subjects practice relaxation techniques, it can affect bodily systems, including the autonomic nervous system, endocrine system, and skeletal musculature. Relaxation affects the rate of heart, pressure of blood flow, blood coagulation, blood flow to skeletal muscle, blood glucose, respiratory rate, acuity of the senses, sweat gland activity, and muscular tension, and it decreases activity in the digestive tract.

In this thesis, relaxation techniques used are Applied Relaxation (AR) and its modified version (MR) that is described in Appendix E.



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