EUROPEAN ORGANISATION FOR THE SAFETY OF AIR NAVIGATION



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Human Factors Module Stress

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This document is, within the Human Resources Domain, one of the Human Factors Modules. These modules deal with Human Performance. This module explains human stress. It describes the sources for stress, human reactions to stress and human perception of stress. The module further defines prevention & coping techniques, prevention in terms of selection, training, jobdesign, medical checks, attitudes and behaviour and coping in terms of recognition, food, exercise and relaxation techniques.							
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EXECUTIVE SUMMARY

The EATCHIP Human Resources Domain develops several human factors modules that deal with the management of human performance. This module is about stress. The aim of this module is to present an overview, which will enable the reader to recognise stress, to understand stress and to cope with stress.

Chapter 1 explains that a certain amount of stress is essential to life and that too much or too little can lead to stress reactions. People have no absolute level of strain that produces stress. Stress occurs because of natural bodily mechanisms, a series of physiological and biochemical changes.

Chapter 2 describes the three basic sources for stress, the environment, the body and the mind. Environmental sources can be divided in conditions and events in work and private life. People learn to cope with conditions, events can cause stress reactions. A list of measurable stress factors is added. The sources body and mind are explained by two theories. The first describes different personality types and their typical stress reactions. The second theory differentiates two systems of activation, anxiety and energy, and explains the relationship between these systems.

Chapter 3 covers the perception of stress. Four categories of symptoms are listed, physiological, behavioural, mental and emotional symptoms. Recognition of these symptoms is important because it helps in managing stress.

Chapter 4 shows how to react on emotional and rational level to a person who shows stress symptoms.

Chapter 5 gives ways of prevention and coping, on individual and on organisational level. The importance of sleep and relaxation is emphasised and dealt with in more detail in the paragraphs 3, 4 and 5 of this chapter.

References can be found at the end of the document.

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1. INTRODUCTION

Stress is an everyday fact of life. You can't avoid it. It is caused by change that you must adjust to. While you usually think of negative events which can evoke stress, such as injury, illness, or death of a loved one, they can also be positive. For instance, getting a new home or a promotion brings with it the stress of change of status and new responsibilities. Falling in love can be as stressful for some people as falling out of love.

All stress is not bad. A certain amount of stress is not only desirable but essential to life. Not enough pressure can cause inactivity and you feel bored. Too much pressure can cause that you can't cope, your work suffers, you suffer. The right pressure can make you active and interested, you produce good work, you feel good.

What is experienced as stress varies between individuals and varies for the same individual from time to time. In engineering, stress is defined as: "too much pressure". Unlike in engineering, people have no absolute level of pressure that produces stress, stress comes in a variety of shades and shapes.

1.1 Scope

Within the EATCHIP Human Resources Domain the Human Factors Modules seek to provide a better understanding of the factors that influence human performance. Stress is such a factor. A better understanding of what stress is and an improved insight in the positive and negative functions of stress lead to better application of prevention and coping techniques.

Stress management contributes in that respect directly to safety in air traffic management.

1.2 Purpose

The aim of this module is to present an overview, which will better enable the reader to recognise stress, to understand stress and to cope with stress. This document is intentionally written in a style which is easy to read and understand. It should address operational staff in the execution of their job, trainers in the preparation of course content and documentation, and supervisors in the management of hectic and stressful situations.

The reference material at the end of the document provides the interested reader with further detailed documentation.

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2. STRESS REACTIONS

2.1 Fight-flight response

Whether your stress experience is a result of major life changes or the cumulative effects of minor daily hassles, it is how you react to stressful events that determines degree and kind of your stress-response.

Stress reactions occur because of natural bodily mechanisms. The fight-flight response is described as a series of physiological and biochemical changes that prepare us to deal with threats. This has already proofed valuable in precivilisation when primitive man needed, for example, quick bursts of energy to fight or flee wild animals. But in civilised society, when we get the same alertness-response, social custom prevents us from direct fighting or running away. So we have learned to apply indirect fight and flight behaviour.

What exactly happens in our brains and body when we show a fight-flight response?

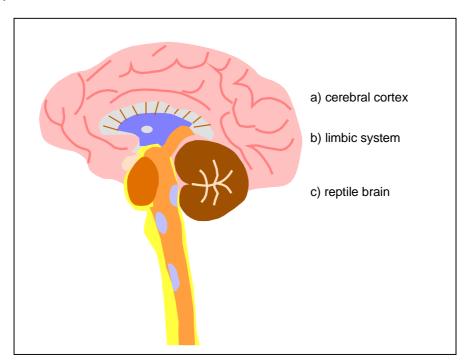


Figure 1: The human brain

This simplified figure shows the main parts of the brain of a Homo Sapiens. The oldest part is the hypothalamus which some also call the reptile brain because we share it with crocodiles and other reptiles. If we are in a threatening situation this part of our brain quickly decides whether we should prepare our body to fight or to leave the situation as quickly as possible.

2.2 Stress hormones

Another part of the brain, the limbic system, which is above the reptile brain, manages the emotions we perceive as likes or dislikes. These two parts of the brain co-ordinate and send signals to our hormone system which increases or decreases the amount of stress hormones in our blood circulation. We always have a certain amount of these stress hormones in our body dictating activity and energy. But if the amount of stress hormones is over a certain threshold we tend to react through our reptile brain and sometimes the Homo Sapiens becomes a Hormo Sapiens (one of the most dangerous animals). Typical symptoms are the increase of heart rate and blood pressure, diaphragm and anus locks, hands and feet get cold because the blood is needed by the larger muscles to prepare for fight or flight. The cerebral cortex, the youngest part of the brain, where all the logical thinking processes are located is covered in "psychological fog" - we are no longer able to think clearly and show reasonable behaviour. The perception of time changes, you will know from your own experience that pleasant events seem to pass quicker than unpleasant ones. In fact, a person who is in a stressful unpleasant status has more time to "enjoy" it!

The same mechanism that turned the stress response on can turn it off again. After you decide that the situation is no longer threatening, your brain stops triggering stress hormones. The hormones and chemicals are metabolised and within three minutes the body stops sending emergency signals to your reptile brain. The stress hormones of the fight and flight response burn out and you return to normal. Unfortunately, if the message to turn off the fight or flight response does not occur, a second response mechanism often is turned on simultaneously, and if the biochemical and hormonal changes that happen during the fight or flight response continue, chronic stress can result. People who suffer from chronic stress often develop typical psychosomatic symptoms and diseases like headache, migraine, back pain, digestive problems and hypertension (see also chapter 3: stress perception).

3. STRESS SOURCES

3.1 Introduction

You experience stress from three basic sources :

- Your environment
- Your body
- Your thoughts

Your environment

Your environment bombards you with demands to adjust. You must endure weather, noise, crowding, interpersonal demands, time pressures, performance standards, unpredictable traffic load and various threats to your security and self-esteem.

Your body

The second source of stress is physiological. The rapid growth of adolescence, menopause in women, ageing, illness, accidents, lack of exercise, poor nutrition, shiftwork and sleep disturbances all tax the body. Your reaction to environmental threats and changes also produce body changes which are themselves stressful.

Your thoughts

The third source of stress is your thoughts. Your brain interprets and translates complex events in your environment and body and determines when to push the panic button. How you interpret, perceive, and label your present experience and what you predict for the future can serve either to relax or stress you. Interpreting a sour look from your boss to mean that you are doing an indadequate job is likely to make you anxious. Interpreting the same look as tiredness or preoccupation with personal problems will not be as frightening.

The influences from your environment will be dealt with in the first part of the following chapter. In the second part we will look at two theories. One of Friedman & Rosenmann (1970) about the influences of the differences in personality and one theory of Thayer (1989) which explains the dependency between anxiety and energy.

3.2 Environment

One useful way of looking at the sources of stress is to distinguish between conditions (relatively fixed, permanent circumstances that people have to cope with) such as unusual working hours or hot, noisy working conditions, and events which occur suddenly, such as an organisational change or the death of a colleague. And although we are concerned with the work setting, these conditions or events can occur outside work too and can stress people (illness, disability or financial worries, for example). We can develop a simple framework for these potential sources of stress like this:

Table 1: Stress sources

	WORK	NON-WORK
CONDITIONS	People learn to cope with these	People learn to cope with these
EVENTS	These suddenly cause a stress reaction	These suddenly cause a stress reaction

3.2.1 Conditions

Table 1.1: Stress sources, conditions at work situations

	WORK	NON-WORK
CONDITIONS	People learn to cope with these	People learn to cope with these
EVENTS	These suddenly cause a stress reaction	These suddenly cause a stress reaction

The conditions at work with which we learn to cope, are relatively fixed circumstances like job overload, either quantitative (too much work) or qualitative (too difficult), lack of control over work, lack of physical activity, extensive requirements to communicate, poor relations, responsibility for people, working hours and working conditions. Even unclear objectives or expectations and role conflicts (like responsinility for high output and perfect quality) are conditions with which people learn to cope.

Table 1.2: Stress sources: Conditions at non work situations

	WORK	NON-WORK
CONDITIONS	People learn to cope with these	People learn to cope with these
EVENTS	These suddenly cause a stress reaction	These suddenly cause a stress reaction

Conditions in the private life can be things like family problems, living conditions, financial difficulties and disability. And in relation to work there can be conflicts between one's own and the company's values or between family and company demands, and who doesn't get irritated by the daily traffic problems to and from work?

Conditions are often unpleasant experiences but they are part of life, people learn to cope with them.

3.2.2 **Events**

Table 1.3: Stress sources, events at work situations

	WORK	NON-WORK
CONDITIONS	People learn to cope with these	People learn to cope with these
EVENTS	These suddenly cause a stress reaction	These suddenly cause a stress reaction

Events can suddenly cause a stress reaction, their impact varies however per person per situation. A rating scale of events is shown in the next paragraph. At work we experience events like promotion (positive) or demotion (negative). Other examples are reorganisation, disciplinary action, new tasks, a new boss or an accident.

WORK NON-WORK

CONDITIONS People learn to cope with these People learn to cope with these

EVENTS These suddenly cause a stress reaction

These suddenly cause a stress reaction

Table 1.4: Stress sources: Events at non work situations

At home, or privately, we experience events like births, marriages and deaths. But also marital disputes, illness or accidents are experienced as stressful and can cause stress reactions.

3.2.3 The readjustment rating scale

Events vary in their potential impact. Holmes and Rahe (1967) have developed a scale that is meant as a guide of measurable stress factors. See the rating scale at the next page, 100 = massive impact, 0 = no impact.

There are many other sources of stress, but it is true to say that a high score (300 or more) on this chart over a time span of six months or so, is a strong indicator of the likelihood of major stress syndromes and/or possible psychosomatic diseases becoming apparent. A relatively high score (150 - 299) (over a period of 6 months) leads to stress afterwards for about 50 % of people. Under 150 points (over a period of 6 months) fewer than 30 % of people become ill.

It is known that these scores and the position on the scale of some of the events, vary in different cultures. Different belief systems place the stress of marriage higher in Europe, for example than in Japan. It is also clear from the list that stress factors are not necessarily unpleasant episodes. A marriage or holiday, for example, is seen as a cause of stress.

Change itself, pleasant or unpleasant, is therefore one potential factor for stress, but it is the response of the individual, his/her attitudes, beliefs and underlying health status, that is the real determining factor in the effects of stress.

Table 2: The social readjustment rating scale

Changes in lifestyle	Scale
Death of husband or wife	100
Divorce	73
Marital separation	65
Jail sentence or being institutionalised	63
Death of close member of family	63
Illness or injury	53
Marriage	50
Loss of job	47
Reconciliation with marriage partner	45
Retirement	45
Health problem of close member of family	44
Pregnancy	40
Sex problems	39
Addition to family	39
Major change at work	39
Change of financial status	39
Death of friend	37
Change in line of work	36
Change in number of marital arguments	35
Large mortgage taken out	31
Mortgage or loan foreclosed	30
Responsibility change	29
Child leaves home	29
In-law problems	29
Personal achievement realised	28
Wife starts or stops work	26
Starting at new school	26
Leaving school	26
Change in living conditions	25
Change in personal habits	24
Trouble with employer	23
Change in working hours	20
Change in residence	20
Change in recreation	19
Change in church activities	19
Change in social activities	18
Small mortgage taken out	17
Change in sleeping habits	16
Change in number of family get-togethers	15
Major change in eating pattern	15
Holiday	13
Christmas	12
Minor violation of law	11

3.3 Body and thoughts

Research strongly indicates that personality is an important factor in the stress response of an individual.

It is found that so-called type A personalities are more prone to stressed reaction than type B personalities.

It is possible for type A personalities to modify their behaviour, and by doing so to reduce their tendency to stressed reactions. Modification is achieved by selecting a particular characteristic and deliberately copy to opposite (type B) characteristic. For example, the quick eater should allow more time to eat and chew more slowly, until this has become a habit.

Around 40 % of the population are type A.

Age is also factor. Increasing age can lessen ability to cope with stress, although coping skills can be developed.

Table 3: Personality behaviour patterns

3.4 Two dimensional theory of activation

Thayer(1989) developed the two-dimensional theory of activation. He differentiates two systems of activation. One is called energetic arousal and can be described in terms of energy, activity and readiness; it prepares the body for movement and action. The other is called tense arousal and is associated with feelings of fear and anxiety; it prepares the organism for actions and/or resistance and inhibition when dangerous situations are perceived.

The two dimensions are the basis for various emotional conditions.

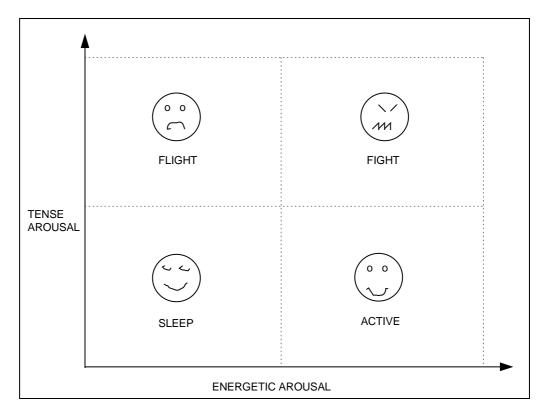


Figure 2: Two dimensional theory of activation

The combination of higher energetic and lower tense arousal describes the status of well-being when we are awake and active to do something. Low energetic and low tense arousal is the level when we are relaxed or asleep. The two other combinations can be described with the fight-flight reaction. In unpleasant, threatening situations, where we tend to fight, we need a higher energetic and higher tense arousal. The flight response however requires a lower energetic and higher tense arousal.

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4. STRESS PERCEPTION

4.1 Introduction

Possible stress symptoms can be defined in four categories. Look for relatively sudden, but recognisable changes in several of these symptoms. There may be other causes than stress, especially for the physiological symptoms.

4.2 Physiological symptoms

- · raised pulse rate
- · raised blood pressure
- raised blood cholesterol
- ulcers
- back pain
- headaches
- stomach upsets
- cold fingers
- wet hands

4.3 Behavioural symptoms

- lateness
- absence
- fatigue
- loss of sleep
- impotence
- substance abuse
- reduced interest in completing tasks

- uncompleted tasks
- untidy work area
- avoidance
- reduced interest in helping others
- · reduced interpersonal contact

4.4 Symptoms in mental functioning

- lack concentration
- indecision
- poor priorities
- procrastination
- worrying
- lack creativity
- inflexible

4.5 Emotional symptoms

- irritability
- low self-esteem
- cynicism
- dissatisfaction with work and/or life
- depressive mood
- enhanced emotional reactivity

5. HELPING OTHERS

How to react to a person whose behaviour indicates stress?

Helping is done through three levels:

- Recognition
- Emotional support
- Logical support

5.1 Phase 1 : Recognition

The four categories of symptoms help in recognising the symptoms (see chapter 4). Focus on recent, sudden changes in behaviour.

5.2 Phase 2 : Emotional support

Communication is so much more than the words we say. They form only a small part of our expressiveness as human beings. Research shows that words only determine 7 - 12 % of the impact and meaning of our message. Our body language - posture, gestures, eye-contact - and our tone of voice determine the context in which the message is embedded, and represent more than 80% (!) of our message. The exact figures may differ in different situations, but clearly body language and tonality make an enormous difference to the impact and meaning of what we say. In other words, we hear best through our eyes!

We learned that a stressed person mainly reacts on his/her reptile brain, the psychological fog causes that the logical thinking and acting is hindered to a great extent. Responding on the emotional level is therefore the best response. We can do so by showing open body language. Open arms, open legs, a friendly smile, nodding the head, a touch on the shoulder, that's the way to show understanding..

Limit your verbal reactions in this phase to 'hums', 'yes' and short repetitions or summaries of the words the other person uses. Mirror the person's emotions. You will notice that the person calms down, the psychological fog disappears. Only then is it time to communicate on the logical level.

5.3 Phase 3 : Logical support

Your support in this phase is aimed at helping the other to find logical solutions. People very often find their own solutions. Help in formulating the coping action is often appreciated. Ask: "What are you going to do about it?"

and summarise the planned action(s), that is the best help you can give.

It does occur that during the definition of solutions in phase 3 people fall back to phase 2, the emotional phase. Repeat your emotional support until the fog disappears again, and only then return to the logical level for definition of solutions.

6. PREVENTION AND COPING

You can do a lot about stress. Decide what's really important to you, you are capable of doing far more than you ever think! Here are two basic approaches to do something about stress. First there is prevention, designing the stress out. Then there is coping, finding ways to deal with stress.

6.1 Prevention

- Job training, the better a person is prepared for the job, the better he or she performs.
- Job (re)design, state your objectives clearly, define your autonomy, be active in giving and receiving feedback and participate actively in the things happening.
- Selection procedure including tests for stress resistance.
- · Annual medical checks.
- Open, supportive attitude and behaviour.

6.2 Coping

- Recognise stress symptoms in self and others.
- Time management and prioritising, at the beginning of each day.
- One thing at a time, and deal with everything only once.
- Food: less calories, less fat, less sugar.
- Exercise: swim, walk, cycle, jog.
- Relaxation: breathing, time off and relaxation techniques (see paragraphs 6.3, 6.4 and 6.5).
- Develop support systems: family, friends and/or workgroups.

6.3 Relaxation techniques

We all need to learn our own ways of dealing with stress and anxiety, and the tensions they cause. Firstly, these are things that all of us suffer from - they are a natural, inevitable part of our lives. The differences lie in how we cope with them, what is tolerable for one person is quite unbearable for another. The ways in which they affect us in no way indicate our worth and quality as

human beings, so there is great need for us all to become used to relaxing, slowing down and calmly becoming aware of how we are and what our priorities are. To avoid getting caught up in the confusion of events around us and of our own over-active minds.

Relaxation is not difficult - all we need to do is focus on the act of relaxing and ignore all those distractions. All those important matters that occupy our minds can still be attended to, after we have given ourselves these precious 'time out' sessions.

In order for relaxation to work, we need to create the right setting. Somewhere quiet without disturbance, where ideally, we can lie down full-length, if the room can be darkened so much the better. Having established ourselves in a comfortable position - if lying down is a problem, sitting with the back supported will do at a pinch.

Mental and bodily awareness are crucial in relaxation, we can only change if we know how we feel. So check out how your body feels. Are you quite comfortable? Snuggle down and settle your body so that it feels limp. Notice your mental state, are you tense or nervous, is your head full of thoughts. All of this is quite normal, but whilst practising relaxation, you will learn to turn your attention away from all this and just focus on relaxing.

The main ingredient of relaxation is breathing slowly and deeply from the abdomen, so as you commence breathing, place one hand on the upper chest and the other on the stomach, just below the ribcage. Concentrate on the breath filling your lungs from the abdomen upwards. There should be as much movement there as from the chest. Getting into the habit of this style of breathing is quite important as when we breath slowly, using only the upper chest, this can actually add to our feelings of anxiety.

As you settle into this vital aspect of the relaxing process, it is useful when breathing out to imagine that you are letting go all of your worries and tensions. Continue with this style of breathing for about 3/4 minutes and whenever you find your attention wondering, gently bring it back. You will notice that the distractions of thoughts and 'noises off' will gradually lessen.

6.4 Autogenic-type exercise

True autogenic exercises need to be taught by a special teacher or practitioner, well versed in this excellent system. The modified method outlined below is based on the work of Schultz (1932), the pioneer in this field. The distinction between a relaxation exercise and a meditation technique is blurred at all times, but never more so than in autogenic methods which are a blend of the two. At least fifteen and ideally twenty minutes should be given to the performance of this method. At another time of the day, this or another relaxation method should also be performed. This routine should become a welcome, eagerly anticipated oasis of calm and peace in the daily programme. Stress-proofing, without such periods of 'switching off', is not likely to be successfully achieved.

A reclining position should be adopted, with the eyes closed. External, distracting sounds should be minimised. The exercises involve the use of specific, verbalised messages to focus awareness on a particular area. No effort is involved, but simply a passive concentration on any sensations or emotions which may result from each message. Imagination or autosuggestion has been found to have definite physiological effects. By combining a sequence of autogenic (i.e. self-generated) instructions with the passive, focused aspect of meditation techniques, a powerful method of self-help has been created.

The exercise starts with a general thought, such as 'I am relaxed and at peace with myself'. Begin to breathe deeply in and out. Feel the light movement of the diaphragm and feel calm.

Stage I: The mind should focus on the area of the body to which the thought is directed. Start by silently verbalising 'my right arm is heavy'. Think of the image of the right arm. Visualise it completely relaxed, and resting on its support (floor, arm of the chair, etc.). Dissociate it form the body, and from will-power. See the limp, detached arm as being heavy, having weight. After a few seconds the phrase should be repeated. This should be done a number of times, before proceeding to the right leg, left leg, left arm, neck, shoulders and back. At each area, try to sense heaviness and maintain a passive feeling in the process.

Stage II: Again, begin with the right arm, concentrating on it as you silently verbalise 'My right arm is warm'. Repeat this and pause to sense warmth in the arm or hand. Repeat this several times. The pause should be unhurried. To encourage this feeling of warmth, it may be useful to imagine that the sun's rays are shining onto the back of the hand, warming it. The sensation of warmth spreads from there to the whole arm. Proceed through all areas of the body, pausing for some seconds at each to assess sensations which may become apparent. Such changes as occur cannot be controlled, but will happen when the mind is in a passive, receptive state. This exercise

increases the peripheral flow of blood, and relaxes the muscles controlling the blood vessels. It is possible to measurably increase the temperature of an area of the body, using these simple methods.

Stage III: This focuses on the breathing cycle with the phrase 'My breathing is calm and regular'. No conscious effort should be made to control the breathing. Unlike the form of breathing used in the exercise, this involves a passive approach. You should direct your concentration to the slight, even motion of the diaphragm. Nothing should be consciously done about the breathing, which should be completely automatic. Sometimes the verbalised statement can be altered to 'The breathing is calm', or 'I am being breathed', to good effect. Sometimes, quite unconsciously, a deep breath is taken during the otherwise shallow breathing. This is quite normal. Nothing should be done to control the pattern. Simply repeat the chosen phrase, and passively observe and experience the sensations that accompany it. Slow repetition of the phrase promotes deep, slow, regular breathing without effort. Continue for several minutes, repeating the phrase periodically.

Stage IV: The phrase 'My forehead is cool' is repeated for several minutes. This appears to produce a combination of alertness and relaxation. When repeating this phrase, with suitable pauses, try to sense the coolness as a pleasant sensation.

Stage V: The phrase 'I am alert and refreshed' ends the exercise. Breathe deeply, stretch, and continue the day's activities.

During stages I and II, the time in each area should not be less than about half a minute; it is, however, quite permissible to spend two or three minutes focusing on any one part, especially if the desired sensation of heaviness or warmth is achieved.

It will probably be found that the desired sensation is more easily sensed in one stage than another, and that some areas seem more 'responsive' than others. This is normal. It is also quite normal for there to be no subjective appreciation of any of the verbalised sensations. Do not worry about this. Even if nothing at all is sensed for some considerable time, even some months, there is a great deal actually taking place within the body as a result of the whole exercise. Persistence, patience and a total lack of urgency is all that is necessary for this method to lead to a decrease in muscular tension and a sense of calm and well-being. A 'side-effect' of this particular method is frequently experienced in terms of much improved peripheral circulation, i.e. an end to cold hands and feet!

6.5 Understanding sleep

Sleep is a great healer. It regenerates your body, clears emotional conflicts and helps you think and work at top efficiency. It is another form of relaxation, essential to health and well-being. It must be admitted however, that in many ways, sleep remains a mystery despite much research and investigation.

Many of our ideas and notions about it are not accurate. For instance, it is not a kind of 'small death' from which we are rescued, upon wakening, each morning. Nor after going to sleep do we fall into a deeper and deeper slumber until we reach some 'deep sleep bottom'. Deep sleep is no more beneficial than a light slumber. A fact of particular interest is that we do not always need 8 hours a night to remain well, energetic and fresh looking. The amount of sleep we do need will vary enormously from person to person and depend on circumstance.

Sleep provides us with a balanced system of well adjusted hormones. Many hormones are secreted into the body at night. When considering your sleep needs, think about how energetic you are during the day, is your sleep disturbed by discomfort, noise or being worried about anything. Your diet and eating habits will also have some influence on how well you sleep. For instance, a rich or heavy meal late in the evening could well cause indigestion. Stimulants like tea, coffee or alcohol are best avoided by poor sleepers. Alcohol may initially put you to sleep, but can cause you to wake in the early hours.

Obviously the practice of relaxation during the time before going to bed, will always be beneficial. Above all, it is important not to worry about sleeplessness - so you can't get to sleep - maybe you are not yet ready to go to sleep, but just need to lie quietly or even do some low stress activity - like reading or listening to music.

Other aids to sleeping that you might like to try are: a milky drink (but avoid tea, coffee or cacao), a lukewarm bath, submerging as much of yourself as possible for about 10 minutes. Avoid hot water as this can be too stimulating to the heart.



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REFERENCES

Friedman M., Byers S.O., Rosenman R.M., Newman R. (1970): Coronary Prone Individuals (Type A behaviour pattern), in: *Journal of the American Medical Association* 217.

Holmes T.H., Rahe R.H. (1967): The Social Readjustment Rating Scale, in: *Psychosomatic Medicine* 11.

Hopkin V.D. (1995): Human Factors in Air Traffic Control.

Glass D.C. (1977): Behaviour Patterns, Stress and Coronary Disease.

Jacobson E. (1938): *Progressive Relaxation*. University of Chicago.

Kanner A.D. et al. (1981): Comparison of two modes of stress measurement: Daily hassles and uplifts versus major life-events, in: *Journal of behavioural Medicine* 4.

Rahe R.H. (1978): Editorial): Life Change Measurement Clarification, in: *Psychosomatic Medicine* 40.

Schultz T.H. (1932): Autogenic training, concentration and self relaxation, Stuttgart, Thieme.

Stokes A. and Kite K. (1994): Flight Stress: Stress, Fatigue and Performance in Aviation.

Thayer R.E. (1989): The Biopsychology Mood and Arousal.

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