Brooks-Carter Clinic Ltd

Stress

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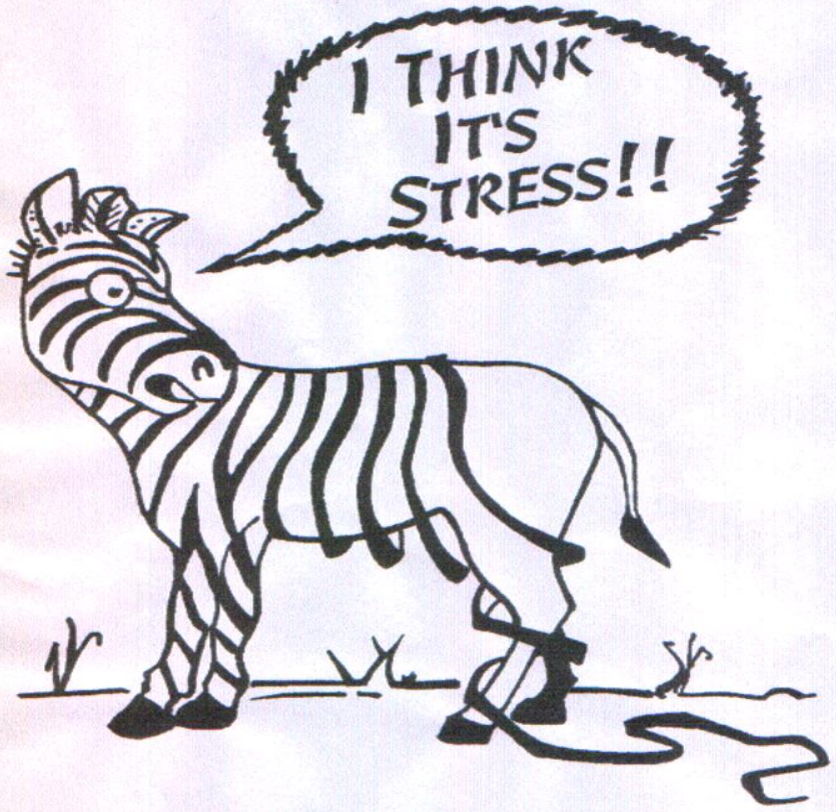
Aims of the Session

- To understand the concepts of stress
- To understand the physiology of the stress response
- To understand the psychological influences on stress


I THINK
IT'S
STRESS!!

Stress

- involves effects on an individuals physical and psychological well being
- Modern society is full of stress – computers, email and mobile phones mean we are expected to be available at all times
- Culturally - work ethic - not to waste time

Links to illness

- interaction between social, psychological, biological and behavioural factors in the causation of disease and illness
- And in the maintenance of disease
- And in the exacerbation of illnesses

Science

- Molecular biologists, immunologists, neurologists, clinicians and behavioural scientists have begun to explore the mind, the neglected half of the mind – body dualist model
- A more holistic and complex model is emerging

Relationships

- Biochemical relationships of central and peripheral nervous systems, the endocrine system, immune and respiratory system
- Relationships to coping behaviours and how they can influence the competence of all the systems

Stress

- associated with a deterioration of immune status, decreased resistance, onset or worsening of autoimmune conditions
- implications for progression of cancer, HIV, cardiovascular disease and other illnesses
- discovery of these links are creating new fields of study

Stress

- is viewed as the state of affairs arising from how a person relates to a situation
- It is not the situation itself but the way an individual appraises and reacts to the situation
- With stress, the demand exceeds the person's ability to cope leading to disturbances in cognition, emotion, behaviour and potentially well being

Concepts and Models of Stress

- Stress is the response of an organism to any demand made upon it (Selye, 1984)
- Stress is usually considered to have a negative effect on health
- Hebb, in 1954 (reproduced in Hebb, 1971), introduced the idea that a certain amount of stress was important for survival

Concepts and Models of Stress

- It was argued that the consequence of this is that people with extremely stressful lives are more likely to experience stress related illnesses – sometimes referred to as the engineering model
- This was challenged by Sutherland & Cooper (1990)

Concepts and Models of Stress

- Sutherland and Cooper found that people in monotonous jobs experienced similar stress related diseases to those in high pressure jobs
- Conclusion – under stimulation is just as damaging as over stimulation
- Stress does not follow a linear accumulative path
- Other factors must contribute to the effect it has on an individual

Concepts and Models of Stress

- The ideas to this point emphasise the negative perspectives of stress.
- However many people seek out stressful activities for pleasure
- Therefore Selye (1984) identified both negative and positive types of stress
- Positive stress was defined as eustress – excitement and euphoria
- Negative stress or distress
- Similar physiological changes occur but the damaging effects are greater in the latter in the long term

Concepts and Models of Stress

- severity of the effects of stress vary with the level of control an individual felt they had over the stressor
- Where little control is felt there were damaging effects
- When an individual retains control the negative effects are markedly reduced

Loss of control

- This is further supported by research suggesting distress where there is an external focus of control is associated with poor self esteem and suppressed immune system (Brosschot et al, 1998) and burnout (Janssen et al, 1999)

Need some stress

- People need a certain amount of stimulation to perform at their best
- The stressors in this case remain largely within the individuals control
- Leads to eustress stimulation – the individual feels positive, even exhilarated
- This is due in part to endorphins and improved self esteem but mainly the retention of control of the stressor

Excess Stress

- Should stressors become too great they go beyond the individuals immediate control and eustress is quickly replaced by distress
- So the damaging effects occur when there is little control of stressors

The General Adaptation Syndrome (Selye)

- When exposed to a stressor the limbic system is stimulated
- which stimulates the hypothalamus
- which triggers the autonomic system to bring about the physiological responses to stress
- The alarm reaction
- The resistance reaction

The General Adaptation Syndrome

Stressor

Stimulation of limbic system

Stimulation of hypothalamus

Alarm Reaction

Stimulate sympathetic nervous system

Stimulates adrenal medulla

Secretion of adrenaline and noradrenaline

Fight or flight response

Resistance Reaction

Secretes cortico-trophin relasing hormone

CRH stimulate anterior pituitary to relase adrenocorticotrophic hormone

Adrenal cortex secretes cortisol

Glycogenesis and catabolism of tissue proteins; Maintain blood pressure; Reduce inflammation; Suppressed immune system

Liver

Catabolism of fats; Glycogenesis

Thyroid gland

Catabolism of carbohydrates

Exhaustion stage

Death

The Alarm Reaction

- immediate physical response to the stressor
- prepares the body for defensive action to counter the stressor
- If you anticipate a stressful event you may experience paradoxical fear
- This activates the parasympathetic system (ANS)
- One of the main effects of the parasympathetic is elimination – urgency and frequency of urination and defaecation is experienced

The alarm reaction

- In an emergency we activate the fight or flight response
- sympathetic section of ANS is triggered
- which stimulates the adrenal medulla to increase the production of catecholamines (adrenaline and noradrenaline)
- This is in preparation for intense physical activity – to fight or to run

The Alarm Reaction S and S

- Heart contractions increase – volume and rate
- Peripheral blood vessels constrict
- Increased rate of respiration
- Bronchiole dilation,
- Liver conversion of glycogen to glucose
- Pupils dilate
- Skeletal muscle tone increases – degree of contraction in both flexors and extensors
- Increased heat production – increased sweating

The Resistance Reaction

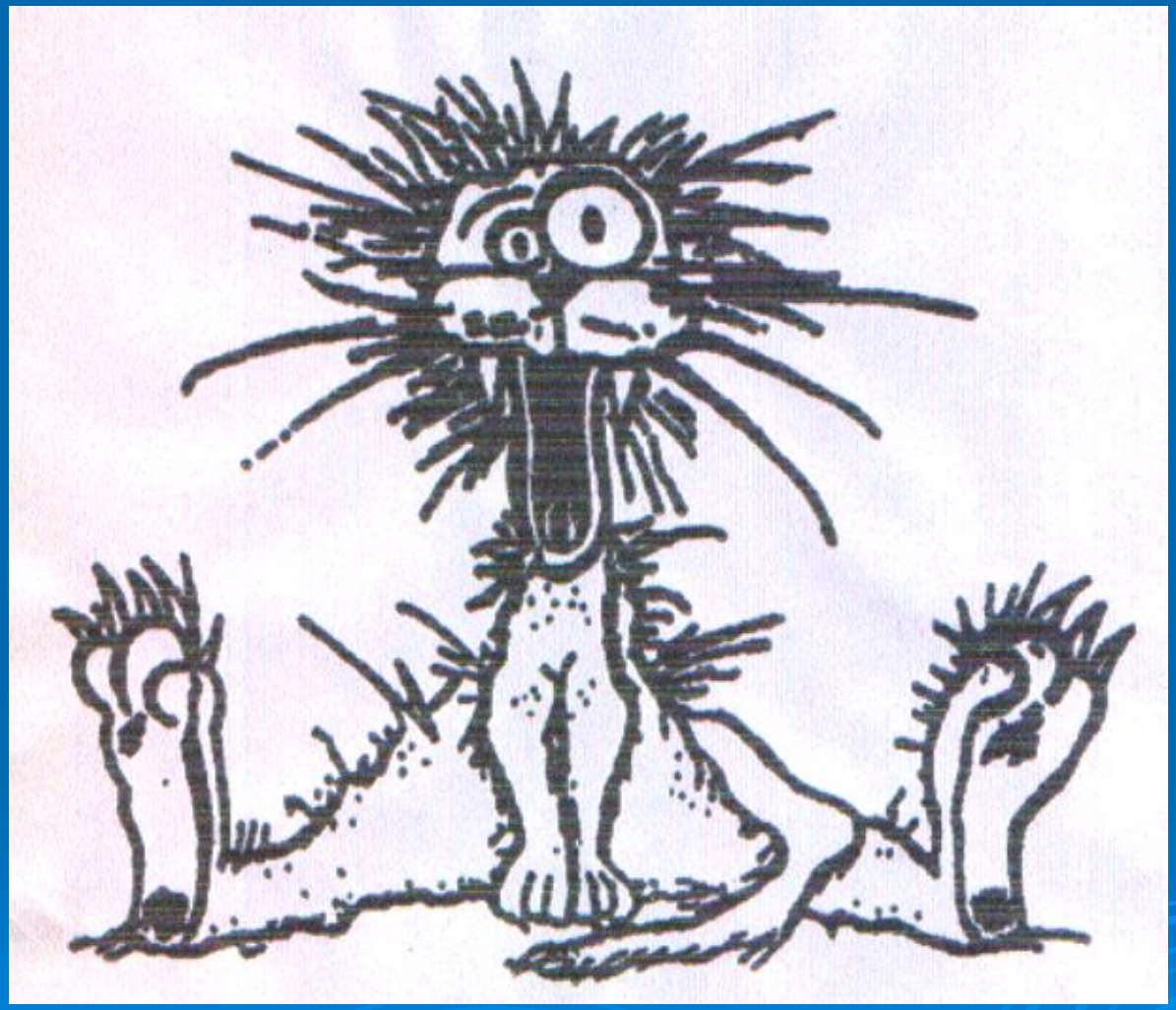
- follows the alarm reaction
  - Stimulated by hormones from the hypothalamus for as long as the stressor threatens
  - Provides energy to maintain the stress response
  - Corticotrophin releasing hormone stimulates the anterior pituitary to release adrenocorticotrophic hormone (ACTH)
  - ACTH stimulates the adrenal cortex to increase cortisol production

Cortisol

- Increases glycogenesis
- Increases metabolism of proteins to produce glucose
- Maintains high blood glucose levels
- Suppresses inflammatory response
- Delays wound healing
- Stimulates peripheral vasoconstriction to maintain blood pressure

Exhaustion

- Selye identifies exhaustion as the final reaction to stress
- Occurs after continued exposure to distress
- Long term can lead to ill health and death



The General Adaptation Syndrome

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Psychological Responses

- The psychological response will vary according to the level of threat provided by the stressor
- Our model of stress assumes a route from eustress to distress
- Respiratory system results in asthma hay fever, hyperventilation , panic
- Cardiovascular – hypertension and heart attack, stroke
- Respiratory – Asthma, hyperventilation, panic response
- GI - irritable bowel, ulcerative colitis
- CNS- overeating, insomnia, depression 10% of society
- Skin – eczema
- Muscles – migraine, backache
- The person may become locked into a stress cycle

Mental Defence Mechanisms

- to cope with psychological distress
- Initially identified by Freud they have been further developed by many researchers
- In the short term they are healthy as they help a person cope with the immediate episode of stress
- They do not change the stressor, creating an illusion
- Such continued use of self deception leaves the person vulnerable to the stressor and is therefore unhealthy

Type A personalities responses

- Competitive, unable to place stress in perspective
- Unable to delegate and difficulty refusing to do additional work
- Insufficient time to complete tasks
- Instead of problem solving and prioritising they juggle them and don’t complete any
- can appear aggressive, reacting to minor irritations with temper

Type B responses (opposite to A)

- Remain relaxed and unconcerned when faced with stressors

- These are two extremes of a scale
- We all exhibit some traits from each and sit somewhere in between
- However there is a correlation between the number of type B traits and health
- People less susceptible to heart disease had more type B traits

ANTI-STRESS KIT

1. PLACE ON A FIRM SURFACE
2. FOLLOW DIRECTIONS IN CIRCLE
3. REPEAT UNTIL YOU ARE UNSTRESSED OR BECOME UNCONSCIOUS

BANG
HEAD
HERE