

Mechanisms of stress and our responses



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Our bodies are an amazing community of cells that function and communicate through the brain via the nervous system in a mechanistic system that is integrated with the mind. For centuries science has directed health towards a mechanistic model of health due to Descartes' separation of mind and body. Today more and more research with the help of the discipline of Psychology now accepts an integrated system of the mind and body where our thoughts, feelings, behaviour and memory affects in turn our bodies and also our minds.

TASK ONE

Our perceptions, interpretations and appraisals of our environment communicate with the body via the brain to enhance and ensure our survival, growth and development. To further explain the process through the woman in the scenario, when she perceives or appraises her environment she is using conscious appraisal and using her cerebral cortex which is involved with perception and interpretation through all of her senses and thinking (Schafer 2000). The forebrain processes incoming sensory information and connects to higher brain centres that are involved with learning pain and pleasure, automates actions and judgements without conscious thought; it also experiences emotions and sends information to memory which all entails the limbic system. This information is sent by a forward, backward connecting path of neurons between the spinal cord and lower brain centres, the midbrain and cerebral cortex and are all called the reticular activating system (RAS) as described in (Schafer 2000). The RAS sends impulses before the process of appraisal of known stimuli and integrates information from many neural pathways that have activated simultaneously due to memory, past experience and knowledge (as in neuro-
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net images seen in the movie “ What the Bleep”). The limbic system as described in (Westen, Burton, Kowalski 2009) produces emotions; the hypothalamus regulates behaviours, maintains homeostasis, activates the pituitary gland and is an important link to the nervous system and endocrine system. The hypothalamus activates the sympathetic nervous system (SNS) which gets the woman’s body ready for threat as in the fight or flight response, the SNS is one of two main parts of the autonomic nervous system (ANS) which aids basic life functions and is automatic. The other part of the ANS is the parasympathetic nervous system (PNS) which calms the body and enhances growth and development. In a threat situation the SNS sends messages to the woman’s body via neurons to prepare for action. The SNS stimulates the adrenal glands which secrete hormones into her bloodstream to aid in her body’s fight or flight response.

The Endocrine system is a collection of glands that secrete hormones into the body that the hypothalamus activates through the pituitary, the pituitary gland secretes hormones into the bloodstream to activate the organs to prepare for the fight or flight response and maintains homeostasis directed from the hypothalamus. Both the SNS and the endocrine system prepare the body for the flight or fight response in two different ways, the SNS through neurons and electrical charges and the endocrine system through the release of hormones into the bloodstream that is fast and simultaneous. The SNS and endocrine systems are core participants in the stress response.

When these two systems are activated three other systems are involved with the stress response; the cardiovascular system which restricts blood flow through artery walls and increases blood flow into the kidneys. The woman’s

blood pressure increases to allow for more blood flow around the body and the heart rate increases to sustain this; the immune system which guards and protects her body from invasions is compromised from the activation of the SNS which redistributes energy and focus away from the PNS that normally produce antibodies to flow around her body in the bloodstream and a slower immune response results that can increase the chance of her getting an illness or disease; her muscular skeletal system which consists of her bone and muscle network is activated through the stress response with tenseness in her muscles in preparation for the fight or flight response and prolonged tenseness may lead to headaches and/or back pain.

How the woman copes and adapts to stress is called the General Adaptation Syndrome (GAS) by Hans Selye (Schafer, 2000) due to the three stages people go through when handling stress. Stage one is the alarm reaction stage where the woman's body responds immediately to the stimulus evoking the stress response through the SNS and the body adjusts to the extra demands from the stress response by the endocrine systems release of hormones that give her body the necessary energy and resources to deal with the stress inducing stimulus and maintains homeostasis which is the second stage of resistance. When the stressor is too much or around for too long or chronic in nature the woman's reserves in maintaining energy and resources for homeostasis become compromised and the third stage of exhaustion sets in where disease, ill health and general wear and tear on her body becomes evident.

The woman's body is programmed to respond to change and stress by adapting, adjusting and maintaining homeostasis which is controlled through <https://assignbuster.com/mechanisms-of-stress-and-our-responses/>

a negative feedback system to maintain optimum health and function. If a function decreases or increases above or below a set point, the negative feedback system causes the function to increase or decrease back to its set point. Some set points become reset under certain conditions, sometimes a prolonged variable causes the body to reset its set point to adjust for optimum performance and sustainability, sometimes a variable is short term as in blood pressure increasing during exercise(<http://science.jrank.org/pages/3365/Homeostasis.html>)> Homestasis-Negativefeedback).

Adjusting to a new environment and adaptation takes time and is the conditioning of a repetitive stimulus but is not always beneficial to the body and health, the resetting of a set point in any bodily function or process is the body trying to maintain optimal functioning and performance for survival. This process is called allostasis where maintaining constancy through change is an important part of homeostasis (http://en.wikipedia.org/wiki/Allostatic_load). When the change of a set point or chronic continued stress is disadvantageous to our health, it is the compromise or cost to the benefit of maintaining homeostasis which is called the allostatic load. Many elements contribute to allostatic load including; genetics, programming, culture, lifestyle choices, diet, exercise, beliefs, perception and appraisal of environment (McEwen and Krahn 2008). The allostatic load is connected to non-adaptive responses of the body especially when stress is chronic or continual. With continual over activity of the stress response the woman's body may not shut off the stress response and may also not activate the stress response when needed (www.macses.ucsf.edu/research/Allostatic/notebook/allostatic.html). With the over activity of the ANS and increased cortisol levels produced by the adrenal glands the <https://assignbuster.com/mechanisms-of-stress-and-our-responses/>

woman in the scenario may get high blood sugar which can lead to diabetes type II and gradual demineralization of her bones (McEwen and Krahn 2008). Her cardiovascular system can react to over activity with high blood pressure, development of coronary heart disease, high blood cholesterol, hardening of her arteries and hypertension. The woman's immune system can be so compromised that cancer cells may grow unimpeded and bacteria and viruses may go undetected without immune cells doing their job properly. The allostatic load can result in wear and tear on her body and its cells and organs; the particular area it may affect depends on her genetic predisposition to illness and weaknesses.

TASK TWO

Common Psychosocial sources of stress can be macroscopic and microscopic, macroscopic sources can include the world around us, government policies and the economic environment (. Culture and the changing roles of women have increased stress for the female population especially in western culture as well as technological advances that are hard to keep up with both intellectually and economically (Reading three 2009). Microscopic sources of stress include the individual responses of a person and their personality types. Type A personalities are more exposed to stress in their lives than type B personalities by being more driven and insecure. A new personality type, Type E as shown in (Schafer 2000) finds many women trying to be a success both in career and family. By trying to be everything to everybody where the stress is from spreading oneself too thin and trying to be perfect in all roles and having too much to do. Many other personality traits affect the responses of stress like hyper aggressiveness, where an

individual strives for high goals and has the desire to dominate and exploit others to meet their own gains and free floating hostility that shows itself by outbursts even at small things and by being constantly agitated and having a constant mistrust and suspicion of others (Schafer 2000).

Life changes, interpersonal stressors and daily hassles also impact a person's source of stress, even those changes that are regarded as favourable like weddings, house moves and pregnancy. Daily hassles become sources of stress due to frustrations, conflicts and pressures. How an individual deals with conflict also has an effect on how daily hassles become a source of stress. Environmental sources of stress include noise, pollution and crowding (Reading three 2009). A person who can not tolerate loud noises or a particular type of noise like a rooster crowing early in the morning would have continual daily stress upon waking that depending on the individual's personality and appraisal could elevate stresses for the whole day, every day. As Schafer (2009) shows that optimistic or pessimistic affects how a person appraises their environment and determines whether a stress stimulus becomes chronic or the person adapts to it. How a person handles conflict also determines whether a source of stress becomes benign or not. Conflict can be approached or avoided or both at the same time with any scenario creating stress until the conflict is resolved.

The women in the scenario's sources of stress are coming from many areas but the main causes are: The economic environment, with ongoing interpersonal stressors at home from arguing with her husband as she has the tendency to fly off over even little things. She has mentioned that divorce may be in the near future and is also concerned that she will lose

money on their recently built new home with real estate prices so low. She is always agitated going to work and returning home showing free floating hostility and this could be because of the many conflicts with her role as mother, wife, sister and daughter and their family expectations. The culture of her family, especially her mother and sisters are successful with a career and home life. Whereas she deeply wants to be a stay at home mother and wife but feels she has to please everybody and be everything that all people want her to be which is typical of Type E Personality. The woman does not enjoy their recent move to the country as the constant noises of the dairy farm and animals neighbouring her property keeps her awake at night and early in the morning. Her gradual depression would be arising from her self defeating thoughts of not being able to change her situation and conflict avoidance and also expecting her luck to change so that her life will be as she wants.

TASK THREE

Faulty adaptive stress responses or defence mechanisms seem in the short term beneficial but in the long term are detrimental to health, wellness and longevity.

Physical and verbal abuse and acting out is transferred to others. With the release of tension by acting out verbally or physically the person can feel relaxed and calm again. A person who has had a stressful day at work may come home and act out on those at home as it is safer than acting out on the boss and losing their job which is also a form of displacement.

Denial is encouraged in western society due to ego defence mechanisms that Freud described as primitive defence mechanisms (Westen, Burton and Kowalski 2009). Denial is maladaptive when it becomes disillusion; someone could be in denial of having a drug problem whilst emphasizing how beneficial marijuana is on their well being and ability to function better as a person.

Regression occurs when a person is unable to deal with stressors and reverts to an earlier stage of development like a toddler who was once toilet trained starts to soil themselves at the time of an arrival of a baby sibling.

Dissociation occurs when a person disconnects from either the stressor or reality to cope and in its extreme form leads to multiple personality disorder.

When a person finds being in the company of a certain person too stressful they can disconnect from that person and any further associations with them as if they never existed. Projection is when a person projects thoughts, attributes and personalities onto someone that does not have them, like a son who is angry and hostile to his mother but cannot express this to her but projects all that he feels for his mother onto his spouse whilst his mother remains with her halo. Reaction formation is where a person displays the complete opposite of feelings and behaviour towards someone or something as they can't display their true feelings towards them. If a person loathed their mother in law but instead went out of their way with kindness and politeness. Repression is the blocking of thoughts and memory that is often unconsciously done. With severe abuse or rape it is often erased from memory. Intellectualization is where an individual excludes the emotions and distances the humanness of themselves from the reality or situation. A

person who has continuously had bad relationships and been hurt too much may intellectualize romance, relationships and love as a process of chemical reactions in the brain and nothing more.

The woman in the scenario may resort to blaming others as escapism and denial of responsibility which may work for her as she has an external locus of control by expecting luck to change her life. Alcohol abuse may allow the woman to dull the effects of her stressors and their accompanied emotional responses like anxiety, fear and insecurity until her luck changes using a form of denial whilst developing an alcohol problem in the interim. Acting out and verbal abuse seems to already be happening with the arguments the woman and her husband seem to be having regularly which is probably releasing tension temporarily but adding to her stressors at the same time.

In conclusion, changing our biological response to stress would seem counterproductive, but changing our perception to stress is the only way we can productively maintain health. With changing our perception we also have to change the way we cope with stress and perhaps readjust our lifestyles and programming. As quoted in Schafer (2000) by Lipton. Maybe it's the mind – but we haven't utilised this to our benefit as yet. In a fast paced technologically driven materialistic, machinated health system of the western world, the human race will have to reassess priorities and beliefs for its own survival and the earths.

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