The Science Behind the Tactics

Composure

The mind and body are *constantly reacting to perceived demands* with the end result being that tension levels tend to rise through the day rather than fall. So, we aim for refocus & reductions in Subjective Tension Levels (composure).

Mechanisms of the Mind-Body

- What we focus on expands, and the body follows where the mind's attention goes. It's about attention regulation.
- Increased self-awareness and early detection of tension
- Refocusing attention, centering and relaxation effects
- Activating the brain's control and thinking centres
- Savouring & experiencing more positive emotions
- Switching off the stress response (parasympathethic nervous system activation, vagus nerve, noradrenaline, cortisol, HPA axis and GABA) and releasing the happy hormones (oxytocin, dopamine, serotonin)

PLUS

- Neuroplasticity & Structural Brain Changes (habit formation).

Theories behind the Tactic Layers

Each tactic draws from established theory and research, sometimes applied in a cut-down format.

Level 1: Surface level tactics, easy to grasp, quick to learn and apply in the moment

Recognising Tactics	Regulating Tactics	Refocusing Tactics
Self-Awareness Training	Relaxation Training Skills	Behavioural Instructions
Executive Function Activation and Psychological Flexibility		Solution Focused Approach
Cognitive Behaviour Therapy (RET, ACT +)		
Mindfulness Based Cognitive Therapy		

Level 2: Deeper level tactics, requiring more time to learn or foster, sometimes requiring others

Reframing Tactics	Rehearsing Tactics	Reconnecting Tactics
Cognitive Behaviour Therapy	Visualisation / Self-Efficacy	Positive Psychology Principles
Positive Self-Talk	Imaginal coping preparation	Social Support Principles
Self-Awareness Training	Behavioural Instructions	Healthy Life & Resilience Factors

Reducing Stress

Stress is….our body getting into the right Zone for the right action!

Our brain and our body work together to give us the right amount of energy and 'tension' to get our lives in order and meet our goals. The brain is always analysing the world around us and looking out for danger or threats. If the brain 'perceives' threat or challenge then our energy rises, and if it doesn't we stay in the relaxed zone.

While we all react differently to life's pressures, we all have the capacity to feel tense or even overwhelmed with challenges on our plate. When this happens, the body will pump out adrenaline to increase energy and get us into action. This is often called the 'stress response'.

So, the 'stress response' (also called the flight-fight response) in humans allows the body to undergo physical changes necessary to create increased energy for escaping or fighting a threat or danger (eg increased heart rate and muscle tension).

This stress response assists us to remain safe from physical dangers. Let's imagine we can separate the stress response into three (3) main levels or 'Zones' so we can better discuss and monitor stress:

RED Zone: Really stressed, angry or depressed, ready to snap
ORANGE Zone: Feeling tense, challenged, maybe stretched, but still capable
GREEN Zone: Feeling relaxed, energised, active, feeling in shape

All people will experience these Zones from time to time. Some situations can put us into the RED or ORANGE Zone pretty quickly – things that push our buttons. We could say that 'getting' in the GREEN Zone every day is necessary for good health. It's a state of mind and energy we can get into with healthy living skills.

The stress response is also activated when we perceive that we cannot manage/cope with modern day stressors also (eg change, workloads, conflict, unexpected bad news, big bills etc). These would usually get us into the high ORANGE Zone.

The 'stress response' tries to help by keeping an 'eye' on perceived problems in order to avoid them by replaying them in our mind and via 'triggers' as a warning system. This is called 'worry'. As we wonder and we worry about life we can also produce an ORANGE Zone state that keeps us up at night and wears down our batteries during the day.

So, stress is the word we give to the normal series of feelings and reactions that we experience when we perceive that an event threatens to overwhelm our resources (eg time, energy, skills, self esteem etc).

Stress is not all bad - it is a natural part of human functioning and pressure is a normal aspect of human interaction.

Stress in moderation provides us with energy and motivation.

- We need the RED Zone to help us manage danger.
- We need the ORANGE Zone to help us meet our goals and focus on important events.
- We need the GREEN Zone to help us recharge and energise to stay resilient and healthy.

Understanding the stress response

Chronic activation of this survival mechanism impairs health

Source: https://www.health.harvard.edu/staying-healthy/understanding-the-stress-response

A stressful situation — whether something environmental, such as a looming work deadline, or psychological, such as persistent worry about losing a job — can trigger a cascade of stress hormones that produce well-orchestrated physiological changes. A stressful incident can make the heart pound and breathing quicken. Muscles tense and beads of sweat appear.

This combination of reactions to stress is also known as the "fight-or-flight" response because it evolved as a survival mechanism, enabling people and other mammals to react quickly to life-threatening situations. The carefully orchestrated yet near-instantaneous sequence of hormonal changes and physiological responses helps someone to fight the threat off or flee to safety. Unfortunately, the body can also overreact to stressors that are not life-threatening, such as traffic jams, work pressure, and family difficulties.

Over the years, researchers have learned not only how and why these reactions occur, but have also gained insight into the long-term effects chronic stress has on physical and psychological health. Over time, repeated activation of the stress response takes a toll on the body. Research suggests that chronic stress contributes to high blood pressure, promotes the formation of artery-clogging deposits, and causes brain changes that may contribute to anxiety, depression, and addiction. More preliminary research suggests that chronic stress may also contribute to obesity, both through direct mechanisms (causing people to eat more) or indirectly (decreasing sleep and exercise).

Sounding the alarm

The stress response begins in the brain (see illustration). When someone confronts an oncoming car or other danger, the eyes or ears (or both) send the information to the amygdala, an area of the brain that contributes to emotional processing. The amygdala interprets the images and sounds. When it perceives danger, it instantly sends a distress signal to the hypothalamus.

When someone experiences a stressful event, the amygdala, an area of the brain that contributes to emotional processing, sends a distress signal to the hypothalamus. This area of the brain

functions like a command center, communicating with the rest of the body through the nervous system so that the person has the energy to fight or flee.

The hypothalamus is a bit like a command center. This area of the brain communicates with the rest of the body through the autonomic nervous system, which controls such involuntary body functions as breathing, blood pressure, heartbeat, and the dilation or constriction of key blood vessels and small airways in the lungs called bronchioles. The autonomic nervous system has two components, the sympathetic nervous system and the parasympathetic nervous system. The sympathetic nervous system functions like a gas pedal in a car. It triggers the fight-or-flight response, providing the body with a burst of energy so that it can respond to perceived dangers. The parasympathetic nervous system acts like a brake. It promotes the "rest and digest" response that calms the body down after the danger has passed.

After the amygdala sends a distress signal, the hypothalamus activates the sympathetic nervous system by sending signals through the autonomic nerves to the adrenal glands. These glands respond by pumping the hormone epinephrine (also known as adrenaline) into the bloodstream.

As epinephrine circulates through the body, it brings on a number of physiological changes. The heart beats faster than normal, pushing blood to the muscles, heart, and other vital organs. Pulse rate and blood pressure go up. The person undergoing these changes also starts to breathe more rapidly. Small airways in the lungs open wide. This way, the lungs can take in as much oxygen as possible with each breath. Extra oxygen is sent to the brain, increasing alertness. Sight, hearing, and other senses become sharper. Meanwhile, epinephrine triggers the release of blood sugar (glucose) and fats from temporary storage sites in the body. These nutrients flood into the bloodstream, supplying energy to all parts of the body.

All of these changes happen so quickly that people aren't aware of them. In fact, the wiring is so efficient that the amygdala and hypothalamus start this cascade even before the brain's visual centers have had a chance to fully process what is happening. That's why people are able to jump out of the path of an oncoming car even before they think about what they are doing.

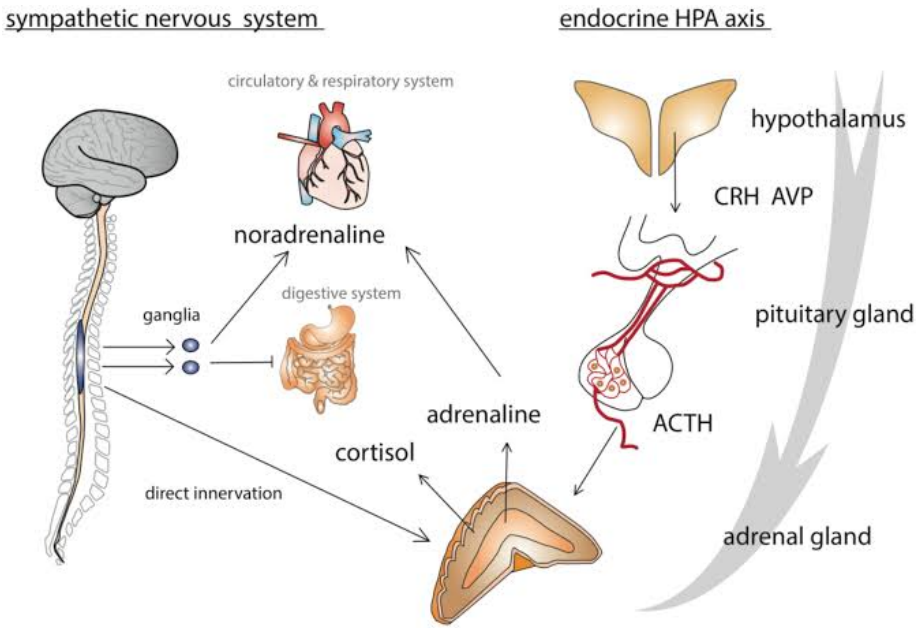
As the initial surge of epinephrine subsides, the hypothalamus activates the second component of the stress response system — known as the HPA axis. This network consists of the hypothalamus, the pituitary gland, and the adrenal glands.

The HPA axis relies on a series of hormonal signals to keep the sympathetic nervous system — the "gas pedal" — pressed down. If the brain continues to perceive something as dangerous, the hypothalamus releases corticotropin-releasing hormone (CRH), which travels to the pituitary gland, triggering the release of adrenocorticotropic hormone (ACTH). This hormone travels to the adrenal glands, prompting them to release cortisol.

The body thus stays revved up and on high alert. When the threat passes, cortisol levels fall. The parasympathetic nervous system — the "brake" — then dampens the stress response.

The Stress Response HPA Axis

Diagram 1



Symptoms of Fight-Flight Mechanism

When the fight/flight mechanism is activated, the following physical changes and symptoms occur.

ORGAN	PHYSICAL CHANGES	SYMPTOMS
HEART	Rate increased	Palpitations
DIGESTIVE SYSTEM	Blood redirected to the muscles	Upset stomach, indigestion, nausea, vomiting, peptic ulcer.
BOWELS	Urgency to empty	Loose bowels, diarrhoea
BLADDER	Urgency to empty	Urine frequency
MUSCLES	Increased blood supply. Tense, ready for action.	Jerky movements, tremor, clumsiness, headache, stiff jaw, backache, neck ache.
BREATHING	Faster, deeper	Hyperventilation, light-headedness, dizziness, feelings of unreality, pins and needles in hands and feet.
AIRWAYS	Dilate (open)	Can precipitate an asthma attack.
MOUTH & THROAT	Decreases secretion of saliva	Dry, difficulty swallowing, difficulty talking.
SKIN	1. Blood redirected to muscles (prevents loss of blood due to lacerations) 2. Sweating	Pale, clammy, cold, profuse sweating. Hypertension due to prolonged blood vessel constriction.
EYES	Pupils dilate	Blurred vision
EARS	Hearing becomes much more acute	Ringing, sensitive to noise and easily startled.
LIVER	Releases stores of energy	1. Immediate effect - restlessness and agitation 2. Long-term effect - depleted stores of energy, drained feeling
BRAIN	Shuts down the modern problem-solving, thinking part.	Poor memory, poor concentration, confusion, blank mind, inability to think.

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