

## 1. The Stress Response

If we had been walking along a path a thousand years ago and had seen a bear approaching, most of us would have responded with the well known Flight Response. Before we realised it, we might have found that we were running away from the bear – and running away very fast thanks to a very effective adrenaline response.

This is part of the well known Stress Response that has evolved over eons. In fact, most of us are only alive today because our ancestors had a very effective Stress-Adrenaline Response, and so could get away from such dangers. Those that did not have such an effective response may well have perished – with no off-spring.

In modern day society, such a Stress Response is often dysfunctional, in that a surge of adrenaline – when, say, we are upset by our boss at work – may not be very helpful. As well as the adrenaline system of the Stress Response, there is also a less well known Cortisol Response. This Cortisol Response can be more prolonged, and can in the long run be more damaging, than the Adrenaline Response. In particular, uncertain or ambiguous situations can give rise to this Cortisol Response, and these are often accompanied by feelings of helplessness, anxiety, uncertainty, and loss of control (Patel 1989 p 11-12).

The Figure below summarises some of the effects and complications of the Adrenaline and the Cortisol Response.

Adrenaline type response	Cortisol type response
anxiety / panic palpitations tremor sweating headache flushing chest pain weight loss	weight gain insomnia depression infrequent periods reduced libido muscular weakness back pain reduced immune response – with increased risk of infection.

**Figure 1**  
**Some effects of the Adrenaline and Cortisol Stress Responses**

Sources include: Drury, P.L 1998; Patel 1989; McEwen & Lasley, 2003  
 (Figure imported from Ross 2010 p 52)

## 2. The Relaxation Response

Less well known than the Stress Response is the Relaxation Response, which is crucial for our Well-Being. It is this system that is associated with rest, repair and recuperation. It thus helps us to heal. It has been well described by Herbert Benson in his classic “The Relaxation Response” (Benson & Klipper 1975).

Benson’s research showed that various mental training disciplines, such as Zen & Yoga, Transcendental Meditation and Autogenic Training, facilitated this Relaxation Response. For example, they all reduced the respiratory rate, the heart rate, and blood pressure; and increased alpha rhythms<sup>1</sup> in the brain.

## 3. An additional /

<sup>1</sup> Alpha Rhythms are associated with mental relaxation.

### **3. An additional type of Response to Stress: Tend-and-Befriend**

(This section is extracted from Ross 2010 p 56 with minor modifications)

While it is certainly the case that the above Stress Response has played a major part in our evolution, it is also true to say that research on stress during the last one hundred years has been carried out mainly by men. This has tended to produce a lopsided understanding of the various ways that humans respond to stress. For example:

The fight-or-flight response to homeostatic challenge tends to be an attribute of males, and [that] the disproportionate reliance on male subjects in stress research has erroneously produced the impression that this is “the” standard stress response.

Sapolsky 2007 p 608, referring to the work of Taylor et al (2000)

The work of Taylor et al challenges this concept with a new perspective of a “Tend-and-Befriend” Response, rather than the classic “Fight-or-Flight” Response. In summarising their work, Sapolsky goes on to say:

.....females of many social species respond to challenges to homeostasis with affiliate and nurturing behaviours..... and [that] this profile depends on stress-responsiveness hormones generally ignored by the Cannon school, namely, vasopressin and oxytocin.

Sapolsky 2007 p 608, referring to the work of Taylor et al (2000)

This appears to be a valid and important perspective. In the context of females with vulnerable offspring, Taylor argues that the Flight Response, for example, would be inappropriate, as a mother fleeing from danger would be leaving her children vulnerable to the threat: and there is considerable research evidence to back up this perspective. In particular, oxytocin is thought to counteract some of the SNS [Sympathetic Nervous System] dominated (e.g. adrenaline) responses (Taylor et al 2000).

This Tend-and-Befriend Response does not undermine the importance of the Fight-and-Flight Response, but it adds an important and previously neglected dimension. It is also important that we do not assume that the fight-flight response is purely the domain of men and the “tend-and-befriend” response purely the domain of women. Women are not exempt from the health dangers of chronic stressors, and many men take on very nurturing roles in adult life in both their work and as parents. It may well be that this “Tend-and-Befriend” Response is actually a pre-requisite for Mental Health, and it is suggested that it is actually a part of the dynamics of Mindsight and the Middle Prefrontal Cortex (Siegel 2007).

### **4. The Off-Loading Exercises of Autogenic Training in the context of the Tend-&-Befriend Response**

It can be argued that the Intentional Off-Loading Exercises (Anxiety and Anger) developed by Professor Wolfgang Luthe are necessary in the context of the traditional Stress Response and the FEAR and RAGE circuits of Panksepp (Panksepp 1998). Whether these approaches always get to the root of the problem is a moot point. They can certainly be of the greatest of value in helping us to cope with disturbing emotions while we are learning our basic Autogenic Training. However, their long term use for particular problems seems to me to be neuro-physiologically questionable.

On the other hand, if we follow the Tend-and-Befriend Response to stressors (whether internal or external) we may instead be able to nurture the distress within us, just as a mother would take good care of her distressed infant / child. In this way we can CARE (Panksepp 1998) for our internal disturbances. In time, this may also help us to take good care of ourselves and those close to us<sup>2</sup>. Also note that the informational substances released by the CARE circuits (e.g. oxytocin) have been shown to act as antidotes to destructive emotions such as rage and fear. In this context the use of the Partial Autogenic Exercise can be of the greatest value.

<sup>2</sup> For example, we have the choice to water either negative or positive seeds within ourselves and others (Hanh 1998 pp 206-209).

#### **4. Pre-frontal Functions for health and healthy relationships**

Mental Training, such as Insight Meditation, has been shown to activate crucial circuits in the Middle Prefrontal Cortex of the Brain that facilitate our overall psychological and social well being. These include, for example: emotional balance (e.g. reductions in fears / anxieties), reduced tendency to react mindlessly to events, increased empathy, insight and intuition, in addition to greater attunement with oneself and others (Siegel 2007; 2010).

For further information regarding these Middle Prefrontal Cortex functions, please refer to: C1 Mindsight – *our seventh sense*, on this website.

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#### Linked themes in this Autogenic Dynamics section

B5	Emotions, Frontal Lobe Dynamics, and Meditation
C1	Mindsight – <i>our seventh sense</i>
C3	The Hub of Mindsight
D3	Store Consciousness and Watering our Positive Seeds.