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# Depression and the Stress Response System: Part I of III

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Dear Readers:

Last time, we talked about adhesive capsulitis, and some of you shared wonderful information about this disorder. Conventional wisdom suggests that this disorder is lengthy, painful and debilitating, but that doesn’t mean every person will suffer.
Many massage therapists are having great success with their clients’ "intractable" shoulder pain and restrictions!

My next three columns will focus on depression. This first piece will focus on the definition and etiology of this disorder, with emphasis on the Stress Response System and its influence on mood. The second section will address five common types of depression, including major depressive disorder; dysthymia; bipolar disease; seasonal affective disorder; and post-partum depression. I will conclude the series with a discussion of treatment options, and a look at the interaction between massage, the disease process and the medications commonly prescribed for it.

**What is Depression?**

Depression is a term used to classify a group of disorders that causes debilitating changes to one’s emotional state. I found a wonderful description of depression in one of my favorite books about stress and disease, *Why Zebras Don’t Get Ulcers*, by Robert Sapolsky. He classifies depression as "a genetic-neurochemical disorder requiring a strong environmental trigger whose characteristic manifestation is an inability to appreciate sunsets." [1]

Depression is a central nervous system (CNS) disorder that involves a genetic predisposition, chemical changes, and often a triggering event, that results in a person losing the ability to enjoy life. It is more than a

temporary spell of "the blues"; it can be a long-lasting, self-propagating and debilitating disease. Statistics on the incidence of depression are hard to gather. Most estimates suggest that between 10 percent and 20 percent of the U.S. population experiences an episode of depression every year, amounting to 11 to 19 million people. Women seem to be more susceptible to depression, as well as more likely to seek help. Incidences of diagnosed depression among women are twice as frequent as they are among men.

**Etiology of Depression: What Happens?**

No one really knows how depression starts. Several distinctive features have been noted in the brains and endocrine systems of depressed individuals, but whether these features cause the problem or are caused by the problem, is still a mystery. Nonetheless, as we learn more about the chemical changes associated with depression, we also learn new ways to treat it:

- **Neurotransmitter imbalance.** Three main neurotransmitters have been associated with depression: serotonin, norepinephrine and dopamine. It is not clear whether these neurotransmitters are deficient, or whether CNS neurons develop resistance to receiving them. The drugs most often prescribed for depression change brain chemistry by increasing the accessibility of these neurotransmitters.
- **Hormonal imbalance.** Neurotransmitter disruption leads to disruption in hormonal secretions, especially progesterone; estrogen; endorphins (which increase the sensation of pleasure); and cortisol, the hormone most closely related to long-term stress.
- **Pituitary-adrenal axis.** This is the connection between the central nervous and endocrine systems. The pituitary gland, under the control of the hypothalamus, controls the adrenal glands (which secrete adrenaline and cortisol, among other things) by way of a specific chemical: corticotrophin-releasing factor (CRF). Depressed people tend to secrete loads of CRF, meaning that they create stress responses to minimal stimuli; those responses tend to have a longer-lasting effect on the body.

**Causes**

Many contributing factors collide to initiate a depressive episode. Some of them are controllable; many are not. Whether or not someone will end up feeling depressed depends on his or her own personal chemistry, genetics, and something much harder to quantify: personality.

- **Genetics.** The rates of depression show higher-than-normal incidences among family members, pointing to a distinct genetic predisposition to the disorder; many different sites of genetic abnormality

may be responsible.

- **Environmental triggers.** Most episodes of depression can be related to specific life events that initiate a slide into a depressed state. Sometimes, the triggers are not clear. Triggers can range in severity from losing a loved one to losing a phone number. The more depressive episodes a person has, the smaller the trigger may be.
- **Chronic illness.** People who live with long-term illness show a higher rate of depression than the general population, which is understandable since ongoing pain and/or disability can deprive one of hope. Often, the symptoms of depression can outweigh the symptoms of the chronic illness; however, if the depression can be treated, coping skills for the illness may also improve. This is especially true with chronic degenerative diseases.
- **Personality traits.** Some people, because of childhood experiences and family history, are simply more prone to depression than others. Psychological testing can identify people with a "things always happen to me" attitude. These types carry an increased risk for developing depression.
- **Other issues.** Other issues that can contribute to depression (but can be more easily controlled) are: hypothyroidism; smoking; alcohol; drug use; or certain medications. Nutritional deficiencies, notably vitamin B12 and folate, can contribute to depressive symptoms.

**Depression and the Stress Response System**

The Stress Response System (SRS) is the link between the CNS and the endocrine system that allows humans to respond to short-term and long-term stressors. It is controlled by the hypothalamus-pituitary-adrenal axis (HPA): the communication between the hypothalamus, the pituitary gland and the adrenal glands. A healthy SRS allows reactions that are appropriately gauged to the circumstances: big reactions to big threats; small reactions to small threats.

When the SRS works well, the chemical changes it brings about are transitory and quickly neutralized, once the threat has passed. A person with a healthy SRS will have a rapidly beating heart; dilated pupils; dry-mouth; heightened blood sugar; and increased blood pressure when he or she narrowly dodges a drifting car on the highway, but won’t blow a gasket when his or her 10-year-old leaves the bike in the driveway again.

Sometimes the SRS doesn’t work well. The chemical messages issued first from the hypothalamus, then by the pituitary gland, are slow to leave the brain and reach the adrenals. This takes longer to have an effect on

the body, which slows reactions and decreases the ability to respond quickly to threat. The stress reaction is tenacious, and its after effects can linger longer than for someone with a healthy SRS.

Furthermore, people who have a sluggish SRS also tend to have more stress responses, more often, to less threatening stimuli; those responses have longer lasting effects on the body. This type of person fumes in a long checkout line, frets in heavy traffic and explodes when the dog gets into the garbage. This person may have a sluggish, but overreactive stress response and a tendency to develop depression.

**What Determines the Health of the SRS?**

Studies on animals reveal one reason for a sluggish stress response: lack of tactile stimulation, or touch. Under stimulated animals have consistently slower, longer lasting and more frequent stress responses than animals that have been regularly handled. Consider what this means for the average under-touched person in our society. Touch deprivation and depression might especially affect those who live in isolation, away from the tactile and emotional stimulation of a partner or extended community. Ironically, depression tends to cause people to isolate themselves even further from their communities, which can exacerbate and elongate their problems.

There is some good news: The health of the SRS can be improved with an abundance of healthy, nurturing touch. Next time, we'll look at different types of depression, along with their distinctive signs and symptoms.

If you work with depressive clients, I'd like to hear from you about: the type of depression your clients have; if they take medication; the type of bodywork you do with them; the length of time you have worked together; and the results you are seeing. I will take your input and incorporate it into the next two articles, so get busy!

Many thanks and many blessings.

*References*

1. *Why Zebras Don't Get Ulcers*, by Robert Sapolsky. 1994 /1998. W.H. Freeman and Company, New York.

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