Loss and Sadness
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Sadness is the core emotion that signals you have experienced a loss—it provides energy to grieve the loss, heal the pain, and recover (learn to feel better)

Without sadness you may fail to grieve successfully and recover; unmanaged, it can suppress the immune system, lower serotonin, and lead to immobility, apathy, and depression
Grief is the appropriate response to a loss—every brain is unique and so is its loss-grief recovery experiences.

- Article
  - Grief Recovery Pyramid
- Mini-monograph
  - Loss, Grief, and Recovery
Two weeks or longer during which there is either a depressed mood or loss of interest or pleasure—plus at least four other symptoms that reflect a change in functioning, such as problems with:

- Sleep
- Eating
- Energy
- Concentration
- Self-image

—www.nimh.nih.gov/health/topics/depression/index.shtml
Depression Description

A mood disorder causing a persistent feeling of sadness and loss of interest that affects how you think, feel, and behave, which can lead to a variety of emotional and physical problems—may involve neuropeptides, substances that impact mood

*Anhedonia*, a core clinical feature, is an inability to experience pleasure in normally pleasant acts; may lead to the perception that life isn't worth living, including a sense of helplessness and hopelessness (may or may not involve tears)
Depression Estimates
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Worldwide: affects at least 121 million people

Major depression carries the heaviest burden of disability among mental and behavioral disorders

World Health Organization (WHO 2010)

United States: Major depression is one of the most common mental disorders

2014: an estimated 15.7 million adults aged 18 or older had at least one Major Depressive Episode (MDE) in the past 12 months
A leading cause of disability and of divorce

Impacts all genders, races, ages, economic groups, and backgrounds,

More females are diagnosed than males

Males may be equally impacted but fewer seek help; because their symptoms differ from those of females, a diagnosis may be missed even when they do seek medical help
Different Forms of Depression

Premenstrual dysphoric disorder (PMDD) – episodes of depression that tend to occur with monotonous regularity

Perinatal depression – full blown depression during pregnancy or
During the postpartum period

Disruptive mood dysregulation disorder – depression that is diagnosed in children and adolescents
Seasonal affective disorder – annual depression during winter time when there is less sunlight (more in the North)

Bipolar depression – episodes of very low moods

Persistent depressive disorder (dysthymia) - a depressed mood that lasts for at least two years

Psychotic depression – severe depression plus some psychosis (delusions, hallucinations)
Two General Categories

Temporary situational depression – typically relates to a stressful life event; you are sad / depressed for a while but recover in a timely manner

Major Depressive Disorder (MDD) or clinical depression – may or may not involve a stressful life event; you are sad / depressed for a relatively long period of time and seem unable to recover in a timely manner without help

‘You rain on your own parade’
Gender Differences
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Symptoms of depression are more likely to show up during teens and 20s, and around menopause.

Symptoms of depression tend to show up at andropause in 40s and 50s (a root cause for divorce, 3 times higher suicide rate).

Statistically it requires 10 years and 3 different health professionals to properly diagnose depression in males.
Common Symptoms
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- Feel ‘blue’
- Turn inward
- Blame self
- Feel sad
- Afraid, anxious
- Avoid conflict
- Procrastinate
- Sleep too much

- Are ‘irritable’
- Act out
- Blame others
- Experience anger
- Suspicious, guarded
- Create conflict
- Compulsive
- Sleep too little
Symptoms, Cont’d

- Difficulty with boundaries
- Feel guilty (real or imagined)
- Self-medicate (food, alcohol)
- Isolate or withdraw

- May become controlling and breach boundaries
- Experience shame (libido and sex performance)
- Self-medicate (sex, alcohol, food)
- Overuse TV or Internet sites
Studies: Up to 50% of depressed persons reported at least one parent, if not both, were depressive.

Identify any familial tendency for depression—forewarned is forearmed!

- Genetic – chromosomes and genes (genetic effect may become more pronounced with age in females)
- Epigenetic – cellular memory (need to get help as depression can seriously impact children)
Overall, stress (e.g., parenting stress, depression, poor mental health) influences parents’ feelings, perceptions, and responses to their children and disrupts parent-child interactions, ultimately affecting their children’s developing skills.

Parents’ mental health/parenting stress can jeopardize the cognitive, social, and verbal processes necessary for language and cognitive development in their children.

—Harewood et al., 2016; Vollotton et al., 2016

Journals *Infant and Child Development* and *Early Childhood Research Quarterly*
Maternal parenting stress scores were positively associated with intrusiveness, punitiveness, and insensitivity, and negatively associated with responsiveness and cognitive stimulation.

Mothers’ higher levels of parenting stress predicted significantly lower language scores and poorer social functioning in their children—who tended to have ‘difficult’ temperaments.

Chronically depressed mothers had boys with lower cognitive scores (girls were not affected).
Fathers with poor mental health (e.g. depression and anxiety) passed that stress on to their children that damaged children’s social skills later on (had more of an effect than depressed mothers)

Stressed fathers at 2 years negatively affected boys’ language development at 3 years (not girls’)

Stressed fathers at 2 years negatively affected cognitive development of both boys’ and girls’ over the following year in the same way.
Hormones (and hormone imbalances) can have an enormous impact on depression—especially during Perimenopause and Andropause.

- Low estrogen levels may lower serotonin levels.
- Very high or very low cortisol levels may increase risk for depression.
- Low thyroid hormone T3 may decrease serotonin levels.
- Low testosterone may increase the likelihood of a diagnosis of depression by 400%.
Depression-Obesity Link
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Obese people were more likely to have depression than people with healthy weights—15 long-term studies followed 58,000 participants for up to 28 years and found that people who:

- Were **obese** at the start of the study had a 55% higher risk of developing depression by the end of the follow-up period

- Had **depression** at the start of the study had a 58% higher risk of becoming obese

—http://www.hsph.harvard.edu/obesity-prevention-source/obesity-consequences/health-effects/
Role of Serotonin
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Serotonin is a neurotransmitter that is believed to contribute to feelings of well-being and happiness.

90% of the body’s supply is in GI Tract where it regulates intestinal movements—no wonder GI upsets are depressing.

The remaining 10% is in the brain and central nervous system where it regulates appetite, sleep, muscle contractions, and mood, etc.
Seroetonin and Gender

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Lower serotonin levels overall

A higher fat to muscle ratio

Often have more serotonin receptors but fewer reuptake transporters

Higher serotonin levels overall - 40% of body mass is muscle

Muscle tissue doesn’t use tryptophan per se, the precursor to serotonin, so males have more tryptophan and serotonin available
Altered serotonin levels or dysregulation of the serotonin system may be linked with:

- Clinical depression
- Migraine headaches
- Addictive behaviors
- Suicide attempts
- Obsessive-compulsive disorder (OCD)

Note: Defective serotonin signaling in the brain (low brain-stem levels) may be an underlying cause of sudden infant death syndrome or SIDS

—Ben Mills
Every period of exhaustion is followed by a corresponding period of depression

Females are more vulnerable to:

- Diet-induced low serotonin (especially crash or very low calorie diets)

- Inadequate micronutrition (especially a B-Vitamin deficiency)
Researchers studied the direction in which depressed people chose to regulate their emotions—toward sadness or toward happiness.

In three studies, clinically depressed participants were more likely than non-depressed participants to use emotion-regulation strategies in a direction that in all probability would maintain or increase their level of sadness.

—Yale University, The Hebrew University
Depressed people sometimes choose to behave in a manner that increases rather than decreases their sadness—even when they acknowledged that the choice would make them more sad.

- Chose to look at sad pictures again instead of happy pictures
- Chose to listen to sad music instead of happier upbeat music

The reason depressed people chose to reinforce their depressed mood is not yet known.
Suicide—A Unique Entity

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Studies by Cornelius van Heeringen MD PhD of The Netherlands have pointed out that suicide may be a unique entity, reflecting the culmination of several complex processes including:

- Depression
- Impulsivity
- Disinhibition
- Anxiety
- Executive function dysregulation
A woman was distraught because her son had died by suicide and church officials had refused to permit internment in the family plot.

Candace B. Pert PhD was very clear that when in the grip of a strong emotion, the brain is in an altered state, especially when the protective emotions of anger, fear, and sadness are involved.

Suicide likely occurs only in a brain that is in an altered state—six examples of altered brain function follow.
Corticotropin Releasing Factor (CRF), which is both a hormone and neurotransmitter

In response to a stressor, the hypothalamus (in the mammalian layer) releases CRF that binds to receptors on cells in the locus ceruleus (an alarm center deep in the reptilian layer)—which impacts emotional impulses arising in the mammalian layer and thinking in the neocortex
CRF is Immensely Powerful!

- Can suppress appetite
- Can increase subjective anxiety
- Is linked with euphoric feelings that accompany alcoholism
- Triggers inflammation (a process being investigated in Multiple Sclerosis research)
- Is linked with suicide (high levels have been found in the cerebrospinal fluid of individuals who committed suicide)
Cortisol is a powerful stress chemical that has many important functions including working with the thyroid gland and assisting with the fight-flight reaction to stress.

Dysregulation of cortisol impacts the brain—elevated 24-hour urinary cortisol production was found in patients who recently attempted suicide compared with patients who did not have a history of suicidal behavior.
The serotonin system regulates that regulates mood, sleep, etc.

Neurons in the reptilian layer produce serotonin that is carried to the prefrontal neocortex by long projections—abnormal levels (up or down) are associated with depression, anxiety, OCD, alcoholism, and suicidal tendency.

In suicide, neurons appear to send less than normal amounts of serotonin to the prefrontal cortex (90% is found in the gut . . .)
Cholesterol is a precursor for the synthesis of cortisol, progesterone, testosterone, estrogen, and vitamin D; and it impacts memory functions.

This waxy, fat-like substance found in all cells of the body is made by the liver and also can be ingested in foods from animals.

Lowered levels of cholesterol have been linked with increased suicide risk—whether the decrease occurred spontaneously or was due to drugs or dietary changes.
Norepinephrine is both a neurotransmitter and a hormone that mobilizes the body for action (e.g., fight-flight); it also can increase restlessness and anxiety.

Excessive activity of the norepinephrine system inhibit activity in the prefrontal cortex—the part of the brain that helps regulate conscience, willpower, decision-making, and behavior.

Elevated levels of norepinephrine and have been linked with increased risks for suicidal behavior.
Sadness is the emotion that arises in response to a loss . . . those who are grieving a loss are often sad, which can lead to depression. Prolonged grief, sadness, or depression can lead to alterations in immune system functions.

- Cytokines are proteins released by IS cells that regulate immune responses.
- PICs or proinflammatory cytokines coordinate inflammation processes in the body.
People with depression have increased levels of PICs, which may help to explain the reason that inflammatory diseases and autoimmune diseases are often associated with depression.

Increased PIC levels have been linked with depressive symptoms, such as dysphoria (opposite of euphoria), anhedonia, fatigue, apathy, and a sense of helplessness.

PICs may also be associated with suicide attempts.
You can develop a positive mindset and habits of positive self-talk and choose the thoughts you hang onto—by identifying something you appreciate you can banish fear, avoid burning up serotonin, and increase your energy levels.

‘Your habitual attitudes form neural circuits in the brain—if you choose to maintain a specific attitude, the brain can literally rewire itself to facilitate that attitude’

—Doc Childre and Howard Martin

The HeartMath Solution
Dealing effectively with depression requires a multifaceted approach; if you have symptoms of depression for two weeks consult with qualified healthcare professionals as needed and search until you find a good match with your brain

Take responsibility for your life and for the brain and body that have been leased to you for use on this planet

You may need medication to ‘put a floor under you’ as you develop positive mindset and self-talk habits