Mindfulness and Compassion for Mental Health Providers: From Burnout to Resilience

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The daily challenges of being a lay or professional caregiver put chronic stress on our minds, brains, bodies and relationships, contributing to caregiver burnout, social contagion, vicarious trauma, and compassion fatigue.
Key Concepts: Defining “Stress”

• Stress is not an outer challenge but an internal response
• Four phases: perceptual, emotional, visceral, cumulative
• Perceived stress is an appraisal of immanent risk or threat
• Two vector appraisal: outer threat vs. inner self-efficacy
• Emotional stress stirs reactive affects: fear, anger, shame
• Visceral stress: combines neural and chemical activation
• Sympathetic fight-flight, vagal faint-freeze, HPAA activation

Key Concepts: Defining “Caregiver Burnout”

• Impact of chronic exposure to social/emotional/visceral stress
• Perceived uncontrollable stresses plus lack of self-efficacy
• Buildup of repeated aversive emotional states, chronic negativity
• Physical state of depletion, deep exhaustion, chronic fatigue

Bride & Lee, 2012
Bruce McEwan: Stress, Allostasis, and the Neural Basis of Mental Illness and Health

- Allostasis is adaptation between organism and environment
- Failures of adaptation result in acute or chronic stress
- Acute stress activation can help restore allostasis
- Chronic steroid exposure yields allostatic load/overload
- Wear and tear from allostatic load yields neural atrophy
- Similar atrophy in Cushing's, anxiety, depression, PTSD

McEwan et al, 1998
Effects of Acute Versus Chronic HPA Axis Activation

Many targets for cortisol

Acute - Enhances immune, memory, energy replenishment, cardiovascular function

Chronic - Brain atrophy, anxiety, depression, dementia, PTSD, lower immunity, heart disease, body wasting

Courtesy Bruce McEwen
Prior Adversity—SES, Abuse, Trauma, Insecure Attachment—Raises Impact of Allostatic Load

McEwan, 2015
Types of Stressors and Phases of Stress-Reactivity

<table>
<thead>
<tr>
<th>Type of Stressor</th>
<th>Phase of Stress-Response</th>
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<tbody>
<tr>
<td>Cultural Role</td>
<td>Threat Perception</td>
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<tr>
<td>Social-Emotional</td>
<td>Traumatic Emotion</td>
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<tr>
<td>Lifestyle-Habit</td>
<td>Reflex Reactivity</td>
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<tr>
<td>Environmental</td>
<td>Allostatic Load</td>
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Cycle of Chronic Stress Reactivity
Causing Burnout or Allostatic Overload

Role-Emotional Stressors → THREAT PERCEPTION → ALLOSTATIC (OVER)LOAD → TRAUMATIC EMOTION → HPA/ANS REACTIVITY → High/Low Self-Regulation → Pos/Neg Self-Efficacy → Lifestyle Stressors

Emotional Stressors
Lifestyle Stressors
High/Low Self-Regulation
Key Concepts: Defining “Social Contagion,” “Vicarious Trauma,” and “Compassion Fatigue”

- Contagion: a reflex sympathetic reaction to others’ distress
- Vicarious trauma: also known as “secondary trauma”
- PTSD-like reaction triggered by exposure to others’ trauma
- Vicarious trauma is the usual cause of compassion fatigue
- Loss of ability to feel or show compassion to others’ distress
- Caused by chronic reactivity to others’ distress or trauma

Franca et al, 2015, Bride & Lee, 2012
Burnout

Vicarious Trauma

Compassion Fatigue
Signs of Vicarious Trauma/Compassion Fatigue

- Exposure: contagious response to others’ distress or trauma
- Intrusion: triggering of traumatic memories, emotions, body states
- Avoidance: distancing, turning away, or avoiding exposure
- Hyperarousal: excess vigilance, activation, troubled rest and sleep
- Distress/Impairment: long term mental and behavioral disability

Franca et al, 2015, Bride & Lee, 2012
Job Burnout and Compassion Fatigue Among Mental Health Caregivers

- 39% of psychiatric nurses suffer from job burnout
- 29% of psych nurses suffer compassion fatigue
- 36% of psychologists report compassion fatigue
- 29% of psychiatrists report vicarious trauma
- 48% of social workers report vicarious trauma
- 50% of physicians report symptoms of burnout
- 54% of addiction counselors have vicarious trauma
- 66% of domestic violence workers have vicarious trauma

Franca et al, 2015, Bride & Lee, 2012
At the same time, researchers, clinicians, and the public at large are becoming increasingly aware of the insidious, adverse effects chronic stress has on human development, health and well-being.
Decades of research have mapped every step of the many pathways by which stress inflicts wear and tear on our bodies and minds, fueling the disorders of civilization we face as individuals and communities, from job burnout and compassion fatigue to anxiety disorders, depression, addictions, dementia, and PTSD.
The Human Brain Under Chronic Stress

**Prefrontal cortex**
Decision making, working memory, self-regulatory behaviors; attention, mood, impulses, impaired by stress

**Hippocampus**
Contextual, episodic, spatial memory, atrophies under chronic stress

**Amygdala**
Emotion, fear, anxiety, aggression, grows with chronic stress

Courtesy Bruce McEwen
Kandel’s Model of Mental Illness and Health: Stress-Related Wear and Tear vs. Use-Dependent Plasticity

[Diagrams and graphs showing neural processes and data points]

Kandel, 2000
The Human Body Under Chronic Stress: The Corrosive Effects of Inflammatory Cytokines
Fortunately for us all, converging breakthroughs in neuroscience, psychology, stress-reduction, and positive health have shown that the organ that mediates stress and wellness—the brain—is plastic, and can be reshaped by repeated practice to protect us from stress-related wear and tear, and to sustain resilience, optimal health and well-being.
Breakthroughs in Neuroscience

- Mental functions don’t localize to fixed cells, but spread across neural networks.
- Mind is not a hardwired neural function, but has effects that shape the brain.
- Functional scanning helps map higher network functions of cognition, emotion, and motivation.
Breakthroughs in Psychology

• Neuropsychology explains the complexity of mind and brain

• Parent-child studies shed light on early brain development

• Neural plasticity helps explain the basis of learning and psychotherapy

• Integrative regions like the prefrontal and limbic cortex help us understand personality
Stress, Brain, and Mind: The Science of Caregiver Burnout and Compassion Fatigue
The Human Brain in Evolution

Neurobiology maps the brain as an aggregate of three neural systems—neocortex, limbic system, brainstem—of primate, mammalian, and reptilian origin.
The Heterarchy of the Triune Brain

Its three operating systems are linked in a structural/functional heterarchy—networks in each system come online in response to perceived tasks and conditions.
Three Default Adaptive Modes

Each system runs the central processor—the medullary life support network—in one of three default modes:

<table>
<thead>
<tr>
<th>System</th>
<th>Mode</th>
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<td>social interaction</td>
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<tr>
<td>brainstem</td>
<td>embodied balance</td>
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The Perceived Safety Hierarchy

Newer, higher systems set the default mode in safety, but under threat, the brain defaults to older systems

- In role stress, the neocortex shifts from role engagement to distraction mode
- In social stress, the limbic system shifts from prosocial to reactive trauma mode
- In physical stress, the brainstem shifts from balance to reflex survival mode
Neural Blocks to Well-Being and Performance Across All Levels of the Triune Brain

Each brain system under stress runs the central processor—the medullary life support network—in one of three stress modes:

<table>
<thead>
<tr>
<th>Neocortex</th>
<th>Default mode</th>
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<tbody>
<tr>
<td>Limbic System</td>
<td>Amygdala hijack</td>
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<tr>
<td>Brainstem</td>
<td>Autonomic reflexes</td>
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Our Social Brain Goes Wild with Stress

Facing overload, the expressive, cultivated dolphin brain defaults to our chattering monkey brain, under social stress both get hijacked by the traumatized old mammal brain—under perceived bodily threat, our inner reptile freezes and shuts down the more evolved cultural, sociable and securely embodied human brain.
Neocortical Blocks to Presenteeism: Default Mode Mind-Wandering

- Links middle prefrontal cortex (PFC), posterior cingulate (PCC), TP junction, and precuneus
- Activated when mind off-task or wandering, defaults cortex to self-referential processing
- Locates us in a self-enclosed loop of personal memory, inner monologue, and future fantasy
- Biased towards traumatic memories, the inner critic, negative emotions, worst-case fantasies
The Default Mode Network:
The Cognitive Brain’s Default Self-Loop
Limbic System Blocks to Compassion: Amygdala Hijack and Social Reactivity

• The alarm bell of the emotional brain—the amygdala—gets bottom-up sensory input direct from the thalamus

• Most of AMYG (65%) is dedicated to scan for the least hint of danger, by matching input with negative imprints

• While it cross-checks negative stimuli with hippocampus for context, HC is also traumatic emotion biased

• Once the AMYG is triggered, it launches stress-reactive fight-or-flight mode, shutting down the higher brain

• With chronic emotional stress reactivity, the PFC fails to grow/looses the capacities needed for mental health
Limbic System Blocks to Compassion: Amygdala Hijack

The brain in safety in full social engagement mode, under the direction of the prefrontal cortex.

The brain under stress, hijacked by the amygdala’s limbic alarm and the hypothalamic driven stress-response.
Amygdala Hijack
Brainstem Blocks to Resilience:
The Mind/Body Costs of Primal Stress Reflexes

- Limbic social emotional stress-reactivity triggers older, deeper brain-body stress reflexes

- Hypothalamus is the link to primal fight-flight and freeze-faint reflexes, in two ways:
  - Neurologically, by direct pathways to brainstem sympathetic and vagal complexes
  - Neurochemically, by pituitary release of ACTH, stimulating adrenal steroids and epinephrine

- Chronic stress fuels brain atrophy, anxiety, PTSD, depression, dementia, addiction, mind/body disease
Effects of Acute Versus Chronic HPA Axis Activation

Many targets for cortisol

Acute - Enhances immune, memory, energy replenishment, cardiovascular function

Chronic - Brain atrophy, anxiety, depression, dementia, PTSD, lower immunity, heart disease, body wasting

Courtesy Bruce McEwen
Brainstem Stress Shrinks Resilience Circuits, Grows Reactive Trauma Circuits

Medial prefrontal cortex and hippocampus

Amygdala, orbitofrontal cortex

Control

Chronic stress

Courtesy Bruce McEwen
Brainstem Stress Blocks Body Resilience: Primal Fight-Flight/Freeze-Faint Reflexes

Sympathetic Nervous System: Fight-or-flight

Parasympathetic Nervous System: Rest-and-digest

- Cranial nerves (12 pairs)
- Cervical nerves (8 pairs)
- Thoracic nerves (12 pairs)
- Lumbar nerves (5 pairs)
- Sacral nerves (5 pairs)
Cost of Cognitive, Emotional, and Visceral Stress on Mental Health and Well-Being

- Impaired focus, creative thinking and executive capacity
- Heightened emotional reactivity and lower people skills
- Reduced motivation, resilience, and task performance
- Key brain regions shrink from chronic steroid exposure
- Increased anxiety, impulsivity, depression, and PTSD
- Increased addiction, metabolic syndrome, dementia
- Epigenetic shift to pro-inflammatory gene transcription
Plasticity, Integration, and Caregiver Health: The Power of Mindfulness Practices
Plasticity, Integration, and Mindfulness: The New Science of Mental Health and Well-Being

- Dan Siegel, Norm Doidge, Richie Davidson cite neuroplasticity as the basis for stress-reduction, brain integration, and optimal mental health—

- Integrative structures wired by brain-training practices use plasticity to prune stress circuits and grow well-being circuits—

- Brain training practices like mindfulness are best practices for stress-reduction, neural integration, and building health and well-being
Integrative Brain Structures: Keys to Well-Being and Peak Performance

- Prefrontal cortex: "the conductor" of neural integration
- Insular cortex: mind-body sensory integration
- Corpus collosum: left brain/right brain integration
- Cingulate cortex: action, empathy, self-awareness
- Hippocampus: emotional and narrative integration
- Hypothalamus: autonomic and endocrine integration
- Myelinated cranial nerves: social mind/body integration
Diagram of Integrative Structures
Dan Siegel, making his “Brain-Fist” at Nalanda Institute Benefit, with board member Robert Thurman
Mindfulness Practices: Training Integrative Structures for Well-Being and Resilience

- Plasticity and integration linked with mindfulness (Davidson, 2003)

- Meditators self-generate hi-frequency gamma wave synchrony (Lutz et al, 2004)

- Gamma synchrony linked with plasticity, learning, and cortical coherence

- 2004 Lutz et al article in *Proceedings of National Academy of Science* puts meditation at crossroads of neuroscience
Biologist-Monk Matthieu Ricard with Neuroscientist Richard Davidson
Gamma wave activity near zero in controls (left–blue) but exceptionally high and synchronous over the cortices of meditators (right–orange/red)
What Are Mindfulness Practices and How Do They Work?

• Train attention, self-regulation and integration

• Focus on chosen object, or whatever arises

• Counter distraction with mindfulness, dullness with awareness—

• Build sustained attention, selective control and flexibility

• While wiring a self-regulating network for the chosen task
Mindfulness Practices Help Remove Stress Blocks, Build Well-Being Circuits Across the Triune Brain

Each main practice type helps shift one level of the brain from stress to well-being:

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<td>embodied practices</td>
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What Is Basic Mindfulness and How Does It Work?

- Paying clear, calm attention to your experience in the here and now
- Observing what is—without bias, attachment, or aversion
- Centering awareness by calming distraction, clarifying dullness
- Focus on breathing body, sensitivity, basic mindset, whatever comes up
- Makes space and time for wiser assessments and decisions
Neocortical Integration and Caregiver Health: Mindfulness Shifts Default Wandering to Presence

• Decreased default mode self-reference (Brewer et al, 2011)
• Increased gray matter in DMN regions (Holzel et al, 2011)
• Increased cortex, body-sense, mood-control (Lazar et al, 2005)
• Decreased stress and amygdala volume (Holzel et al, 2009)
• Increased pontine gray matter, higher well-being (Singleton et al, 2014)
Brain Regions Involved in Mindfulness Enhance Neocortical Structure and Function

Brewer et al, 2011; Lazar et al, 2005
Mindfulness, Intention and Self-Awareness

- Mindfulness builds reflective awareness of body, sensitivity, perception, emotion, and thinking
- It helps discern positive from negative, skillful from unskillful intentions, and bounce back from stress
- It empowers us to sustain positive, skillful intentions and actions that align with our context, aims and values
- Aligning/re-aligning intentions towards positive actions is a basic competence of healthy role engagement
“Between stimulus and response, there is a space. In that space lies our freedom and power to choose our response. In our response lies our growth and freedom.”

—Viktor Frankl

www.facebook.com/yoga9v
What Is Compassion Training and How Does It Work?

- Start with mindfulness of what's ailing you, here and now—
- Accept your suffering as human, without shame or blame
- Investigate your suffering to reveal root causes and conditions
- Meet your own needs when you can and ask for help when you can't
- Gradually widen your circle of care to mentors, friends, patients and critics
Limbic Integration and Caregiver Health: Compassion Shifts Reactivity to Responsiveness

- Stops mirror neuron social contagion (Desbordes, 2012)
- Executive response to emotional stress (Weng et al, 2013)
- Positive sense of well-being (Klemecki et al, 2012)
- Enhanced prosocial behavior (Leiberg et al, 2011)
- More proactive empathy system (Lutz et al, 2009)
Compassion Training Shifts Reactive Social Contagion to Proactive Compassion

Basic Empathy

Reactive Contagion
- Self-related emotion
- Negative feelings: e.g., stress
- Poor health, burnout
- Withdrawal & non-social behavior

Proactive Compassion
- Other-related emotion
- Positive feelings: e.g., love
- Good health & well-being
- Approach & prosocial motivation

Singer & Klimecki, 2014

Current Biology
Compassion Training Links Neocortical Executive with Limbic Social Well-Being System

Weng et al, 2013
Wise Compassion, Responsible Self-Care and Social Self-Management

• Self-compassion is the basis for responsible self-care and social emotional self-management

• It helps us accept full responsibility for managing our inner negativity and aligning with our inner caregiver

• It empowers us to shift stress emotions like fear, shame and blame into proactive compassion for self and others

• Responsibly shifting stress emotions to social ones is a basic competence for provider self-care and caregiving
“A human being is part of a whole, called by us the Universe, a part limited in time and space. He experiences himself, his thoughts and feelings, as something separated from the rest, a kind of optical delusion of his consciousness.

This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest us.

Our task must be to free ourselves from this prison by widening our circles of compassion to embrace all living creatures and the whole of nature in its beauty.”

Albert Einstein

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What are Embodied Practices and How Do They Work?

- Role-modeling imagery helps us envision our ideal self and life
- Starts with admiring role-models' and mentors' way of being
- Next we revise our self-image and story to an ideal vision and narrative
- Then we energize our vision with heroic posture and breathing
- Lastly we fire and wire our vision with breath-induced flow states
Brainstem Integration and Caregiver Health: Embodied Practices Shift Stress to Balance

- Imagery and recitation promote flow states of balanced arousal (Amihai & Koshevnikov, 2014)
- Breath-control cuts energy cost by up to 64% while promoting peak cortical synchrony (Benson, 1990)
- Flow awareness practice grows brainstem social engagement system (Vestergard-Poulsen, 2009)
- Awareness experts induce rapid epigenetic changes in gene regulation (Kaliman et al, 2013)
Embodied Non-Dual Awareness Grows Gray Matter in Brainstem Well-Being System

Vestergard-Poulsen et al, 2009
Embodied Practices, Social Engagement, and Behavioral Self-Mastery

- Embodied practices—imagery, narrative, movement, breath—build security through mastery of autonomic tone
- Role-modeling imagery and positive narrative enhance performance by calming fight-flight-freeze-fail activation
- Heroic movement and breath-control promote flow states and traits by balancing autonomic energy and chemistry
- Channeling stress arousal into embodied balance through imagery and breathing build resilience and satisfaction
Do not speak badly of yourself. For the Warrior within hears your words and is lessened by them.

David Gemmell
Mindfulness and Compassion Training: Best Practices for Caregiver Resilience and Health
Mindfulness and Compassion Based Methods: A Revolution in Caregiver Health and Well-Being

• Stress is a potent, preventable driver of mind/brain dysfunction and mental illness

• Self-regulation and brain integration are natural mammalian stress-protective strategies

• They require cultivation by social learning and teachable mind/brain-training practices

• Mindfulness practices are best practices for wiring brain integration, optimal health and well-being
Evidence-Based Mindfulness and Compassion Trainings for Caregiver Self-Care and Resilience

- MBSR 39 studies show reduced provider burnout, increased empathy, resilience & well-being (Lamothe et al, 2016)
- MSC increases self-compassion and compassionate care (Brienes et al, 2013, Rabb, 2014)
- CFR 6 week program lowers caregiver burnout and compassion fatigue (Pfaff et al, 2017)
- CBCT boosts compassion and self-care, lowers loneliness and depression in med students (Mascaro et al, 2016)
- CLT: increases role emotional health, reduces traumatic avoidance (Loizzo et al, 2010, Charlson et al, 2014)
10 Week Mindfulness and Compassion Training
Lowers Cortisol, Boosts Resilience and Self-Care

Orellana-Rios et al, 2017
Mindfulness and Compassion Based Care: The Next Generation in Caregiver Training

- Default self-enclosure, social reactivity, and embodied stress cause caregiver burnout and compassion fatigue

- Plasticity, self-regulation and brain integration are natural protective, resilience, and well-being strategies

- Mindfulness skills are best practices for regulating stress, wiring integration & sustaining well-being

- Mindfulness and compassion trainings like MBSR, MSC, CBCT, CFR should be a part of all caregiver education
The basis, practice, and benefits of mindfulness and compassion training

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Mindfulness and Compassion Based Therapies: The Latest Advances in Mental Health
Mindfulness and Compassion Based Methods: A Revolution in Mental Health and Well-Being

• Stress is a potent, preventable driver of mind/brain dysfunction and mental illness

• Self-regulation and brain integration are natural mammalian stress-protective strategies

• They require cultivation by social learning and teachable mind/brain-training practices

• Psychotherapy and mindfulness practices are best practices for wiring brain integration and well-being

• Mindfulness and compassion based psychotherapies promise to be more effective together than either alone
Mindfulness-Based Cognitive Therapy: MBCT Helps Prevent Depression Relapse

- John Teasdale, Zindel Segal, and Mark Williams in early 1990’s enhance CBT with Mindfulness (MBSR)

- Increased metacognition due to mindfulness mediates improved relapse prevention (Teasdale, Segal & Williams, 1995)

- Treatment-resistant depression cohort responds well to MBCT (Kenny & Williams, 2006)

- Meta-analysis of 6 RC trials shows MBCT effective in preventing MDD relapse (Piet & Hougard, 2011).

- MBCT more effective than antidepressants for relapse prevention (Kukyen et al, 2015)
MBCT Effective in Treatment Resistant Depression and Compared with Antidepressants

Piet & Hougard, 2011; Kukyen et al, 2015
Dialectical Behavior Therapy: DBT Reduces Self-Injury in Borderline Patients

- DBT significantly reduces SIB in borderline patients compared with standard treatment (Linehan et al, 1991)

- DBT more effective in treating addictions than standard treatment in borderline patients (Linehan et al, 1999, 2006)

- DBT effective adjunct to medication for reducing depression in older adults (Lynch et al, 2003)

- Benefits of DBT on SIB and addiction sustained after end of treatment (Van Den Bosch et al, 2005)

- DBT plus trauma education decreased PTSD severity in patients with childhood sexual abuse (Bohaus et al, 2012)
DBT More Effective than Standard Treatment for SIB, Addiction, Geriatric Depression, and PTSD

Linehan et al, 1998; Bohaus et al, 2012
Self-Compassion Reduces Negative Affect, PTSD Symptoms, Improves Resilience and Well-Being

• SC predicts reduced negative affect and neuroticism, as well as increased positive psychological traits (Neff et al, 2006)

• SC predicts decreased flashbacks and hypervigilance in PTSD (Thompson & Walz, 2008)

• SC improves resilience and well-being in college students. (Smeets et al, 2014)

• SC decreases stress, depression, and emotional dysregulation in psychology trainees (Finlay-Jones et al, 2016)

• MSC reduces depression, distress, and HBa1c in diabetics (Friis et al, 2016)
Self-Compassion Increases Prosocial Behavior and Positive Health Behavior

Sirois, 2015; Lindsay & Creswell, 2014
Compassion Focused Therapy (CFT): Lowers Self-Attack and Increases Security

- CMT reduces anxiety, self-attack, shame, and submissiveness in highly self-critical patients (Gilbert & Proctor, 2006)
- CMT reduces anxiety, paranoia, psychotisim and reactivity in patients who hear malevolent voices (Mathew & Gilbert, 2008)
- CFT shows sustained effectiveness in treating personality disorder (Lucre & Corten, 2013)
- CFT speeds recovery, enhances compassion, decreases depression and isolation after psychosis (Braehler et al, 2013)
- CFT effective in treating both anorectic and bulimic eating disorder (Gale et al 2014)
Compassion Focused Therapy (CFT): Lowers Self-Attack and Increases Security

**Drive System**
- **Purpose:** To motivate us towards resources
- **Feelings:** Wanting, pursuing, achieving, progressing, focused

**Soothing System**
- **Purpose:** To manage distress & promote bonding
- **Feelings:** Contented, safe, protected, cared-for, trust

**Threat System**
- **Purpose:** Threat detection & protection
  - “Better safe than sorry”
- **Feelings:** Anxiety, anger, disgust

**Skills of compassion**
- Warmth
- Sensitivity
- Sympathy
- Reasoning
- Imagery
- Care for well-being
- Distress tolerance
- Non-judgement
- Empathy

**Attributes of compassion**
- Warmth
- Sensation
- Behaviour

Gilbert, 2009
Mindfulness and Compassion Based Therapies: The Next Generation in Mental Health Treatment

- Default self-enclosure, social reactivity, and embodied stress promote mind-brain dysfunction and illness
- Plasticity, self-regulation and brain integration are natural protective, healing, and well-being strategies
- Mindfulness skills are best practices for regulating stress, wiring integration & sustaining well-being
- Mindfulness and compassion therapies MBCT, DBT, MSC, CFT show promise in a wide range of conditions
The basis, practice, and benefits of mindfulness based therapies

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