6 keys to resilience for PTSD and everyday stress

Teach patients protective attitudes and behaviors

Ms. M, age 24, works as a magazine editor in New York City. On a December evening, she walks out of the subway and heads to her boyfriend’s apartment, looking forward to unloading her heavy bag and checking her e-mail. Out of nowhere, a man runs up behind her and smashes a huge rock into her head.

She feels momentarily disconnected from her body and surroundings but manages to scream. As the assailant runs away, 2 girls rush to her aid.

Ms. M hurts everywhere. Her glasses have been knocked off, and her orbit is fractured; her eye will require multiple surgeries. She reaches for her cell phone, but it’s slippery with blood. A bystander dials 911, and paramedics arrive within minutes.

Most persons experience trauma during their lives, but not usually an attack as severe as Ms. M’s. Post-traumatic stress disorder (PTSD) and other psychopathologies are not inevitable or even common, however, developing in 8% to 12% of trauma survivors. Why are some individuals more resilient to trauma than others?

Resilience to stress is associated consistently with at least 6 psychosocial factors: active coping styles, regular physical exercise, a positive outlook, a moral compass, social support, and cognitive flexibility (Table 1, page 24). This article describes how motivated persons can enhance these “resilience factors” to become more resistant to everyday stressors and unexpected traumas.

continued
Resilience

Clinical Point
Undertaking and mastering difficult tasks appears to be effective in increasing resilience.

Active coping style
Resilience is the process of adapting well to stress or trauma (Box 1, page 27). Learning to manage stressful situations requires active coping, which can be conceptualized as 2 types:

- "problem-focused" (working to solve the problem)
- "emotion-focused" (accepting and dealing with emotions caused by the stressor).

Many studies have correlated active coping with emotional well-being. A 2003 study of first-year medical students found that using problem-focused or emotion-focused coping techniques helped preserve physical and mental health during 1 year of medical school. In contrast, depressed persons tend to use passive coping styles, including denial and avoiding problems, substance abuse, and resignation.

Undertaking and mastering difficult tasks appears to be effective in increasing resilience to stress. The "stress inoculation" hypothesis (Box 2, page 28) provides a plausible explanation for the observation that children who learn to cope with stress tend to become hardy adults. Successfully overcoming challenges improves self-confidence and also may alter the neurobiology of the stress response.

Prolonged-exposure therapy. PTSD development and maintenance depend in part on fear conditioning. By avoiding exposure to reminders of their trauma, survivors unwittingly solidify associations between traumatic triggers (people, places, or things that are reminders) and fear. Actively facing fears is necessary to break these associations.

Prolonged-exposure therapy was designed to help patients face their fears. As part of therapy, participants retell their trauma stories and engage in avoided activities in a safe environment. This treatment has been found to be highly effective in reducing PTSD symptoms, and its benefits often last longer than those conferred by pharmacologic interventions.

Case Continued
Feeling ‘out of sync’
Ms. M remains frightened and angry after 2 months and is referred for psychological evaluation. She is diagnosed with PTSD based on her debilitating symptoms, including flashbacks, frightening nightmares, avoiding the subway, and feeling emotionally numb (which she describes as "being out of sync" with loved ones). Ms. M also complains of difficulty sleeping and irritability.

The therapist initiates prolonged-exposure treatment, including imaginal and in vivo exposure. In imaginal exposure, Ms. M tells and retells her trauma story in the safety of the therapist’s office. To desensitize herself to the memory, she listens to her recorded voice recounting her trauma. In vivo exposure involves homework, such as visiting the

Table 1
6 psychosocial factors that protect against and aid recovery from posttraumatic stress

<table>
<thead>
<tr>
<th>Factor</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Active coping style</td>
<td>Problem-solving and managing emotions that accompany stress; learning to face fears</td>
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<tr>
<td>Physical exercise</td>
<td>Engaging in physical activity to improve mood and health</td>
</tr>
<tr>
<td>Positive outlook</td>
<td>Using cognitive-behavioral strategies to enhance optimism and decrease pessimism; embracing humor</td>
</tr>
<tr>
<td>Moral compass</td>
<td>Developing and living by meaningful principles; putting them into action through altruism</td>
</tr>
<tr>
<td>Social support</td>
<td>Developing and nurturing friendships; seeking resilient role models and learning from them</td>
</tr>
<tr>
<td>Cognitive flexibility</td>
<td>Finding good in adverse situations; remaining flexible in one’s approach to solving problems</td>
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attack site during the day with a companion and talking with loved ones about the event. These assignments allow Ms. M to reclaim the life she lost because of severe anxiety and fear associated with anything related to the attack.

Within 3 months, Ms. M’s symptoms have improved and no longer meet DSM-IV-TR criteria for PTSD. She continues to struggle with insomnia, affective constriction, and a sense of social isolation—symptoms that often remit slowly, if at all, in trauma victims despite good treatment. She stays in therapy to work on confronting her fears and finding meaning in her experience.

2. **Physical exercise**

Exercise is a type of active coping that diminishes negative emotions caused by stress. Regular exercisers report less-frequent depression, and exercise has been shown to improve clinical depression in adults. Exercise builds physical and emotional hardiness, lifts mood, and improves memory. It produces these health benefits by:

- releasing endorphins and serotonin precursors
- attenuating basal hypothalamic-pituitary-adrenal axis activity
- promoting expression of neurotrophic and neuroprotective factors

Exercise-induced neurotrophic factors include nerve growth factor, galanin (a neuropeptide released under stress that has anxiolytic effects), and brain-derived neurotrophic factor (BDNF). BDNF is important because it stimulates neurogenesis in the hippocampus and appears to improve learning and memorization.

Thus, exercise appears to increase brain plasticity and enhance ability to learn from and adapt to stressful situations.

3. **Positive outlook**

Depressed individuals tend to view their problems as permanent and pervasive, whereas those who are resilient see adversity as temporary and limited in scope.

Positive emotions decrease autonomic activity and symptoms of stress, broaden one’s focus, and allow negative events to be put into perspective. Like exercise, humor decreases tension and makes it possible to see the lighter side of difficult situations. Humor can also draw social support.

**Role of dopamine.** Humor and positive emotions have been linked to the dopaminergic reward mechanism in the mesolimbic circuitry. Dopaminergic neurons in the ventral tegmental area fire when a reward is received (Table 2, page 29); firing increases when a reward is unexpected or greater than expected. These same neurons release less dopamine when rewards are smaller than expected or not received at all.

Optimists are thought to have a robust dopaminergic response to reward, which
**Resilience**

**Clinical Point**

**Altruism**—putting one’s moral compass into action—benefits the person who practices it and the person who receives it.

Is either hypersensitive to rewards and/or resistant to dysregulation under stressful (unrewarding) conditions.\(^1\)

**CASE CONTINUED**

**‘I’m not bitter’**

Ms. M can make an occasional joke about her attack and the massive stacks of paperwork she must sort through to pay medical bills and get reimbursed by insurance. She says, “I’m not bitter. I don’t want to carry that anger around for the rest of my life, so I won’t.”

**4 A moral compass**

Religious faith is associated with lower rates of depression in many populations, including college students, bereaved adults, and elderly hospitalized patients.\(^2\)

Religious faith is not essential to a strong moral compass, however.

Morality appears to have a neural basis—a hypothesis supported by the observation that brain injury can damage one’s moral sense. “Acquired sociopathy” can result from trauma to certain brain areas, including the anterior prefrontal cortex and anterior temporal lobes.

‘**Required helpfulness.**’ Altruism—putting one’s moral compass into action—benefits the person who practices it and the person who receives it. Persons who help others perceive themselves as necessary and derive fulfillment. This phenomenon known as “required helpfulness” was first described during World War II, when those who cared for others after bombardments suffered less posttraumatic psychopathology than those who did not.\(^3\)

Some individuals find healing in a “survivor mission” after personal tragedy, helping others cope with the same problem they faced. Mothers Against Drunk Driving—founded by mothers who lost children in car accidents—is one example.\(^4\)

**CASE CONTINUED**

**Altruism in action**

Ms. M hopes to prevent attacks on other women. She participates in an organization.
that teaches women self-defense. She also speaks publicly for women’s safety and works with a local board to help defray crime survivors’ medical costs.

**Social support**

Individuals with strong social support tend to be more resilient than those without. Social support can reduce risk-taking behavior, encourage active coping, decrease loneliness, increase feelings of self-worth, and help a person put problems into perspective. A lack of social support correlates with depression, stress, and increased morbidity and mortality during medical illness.

**Role models.** People can learn to manage stress by mimicking the behavior of someone they respect. Many resilient adults credit a parent, grandparent, or other role model for teaching them to act honestly and inspiring them to be strong. In a study of 770 teenagers, those who had a strong nonparental mentor (such as a neighbor, teacher, or coach) reported less drug use and delinquency and a greater belief in the importance of school than those without such a mentor.

Clinical Point

Individuals who successfully overcome adverse events usually manage to find meaning in their tragedy.

**Dad’s her role model**

When she has bad days, Ms. M draws strength by thinking about her father, who has suffered much and whom she respects.

**Cognitive flexibility**

Being able to positively reframe negative events (“cognitive reappraisal”) is crucial to resilience. Individuals who successfully overcome adverse events usually manage to find some meaning in their tragedy.

Psychiatrist and Holocaust survivor Viktor Frankl wrote of the importance of “meaning making.” Despite suffering for years in Nazi concentration camps, Frankl...
wrote that he gained the opportunity to exercise inner strength and be “brave, dignified and unselfish.” He struggled to survive because he came to believe that his suffering had a purpose: to live to teach others about his experiences.

Neuroimaging studies indicate that individuals who use cognitive reappraisal to deal with adversity have strong “top-down control” of emotions. They can modify their reaction to stress or trauma by activating the prefrontal cortex, which then modulates amygdalar response to the situation.27

**CASE CONTINUED**

**Reappraisal**

Although Ms. M wishes she had never been attacked and can find no rational explanation for it, she is weaving the event into the fabric of her life. She insists she has become stronger, wiser, and safer and wants to share her story with others.

References


**Related Resources**


**Disclosure**

The authors report no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.


