

# CHILDREN UNDER STRESS

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*Abstract: Clinicians have suspected that both major and minor stressful events can have health implications. Observations and case reports link severely stressful life events with a sudden onset or worsening of a variety of illnesses. Child's health includes physical, mental and social well-being. Most parents know the basics of keeping children healthy, like offering them healthy foods, making sure they get enough sleep and exercise and insuring their safety. It is also important for children to get regular checkups with their health care provider. These visits are a chance to check your child's development. They are also a good time to catch or prevent problems. Other than checkups, school-age children should be seen for significant weight gain or loss, sleep problems or change in behavior, fever higher than 102, rashes or skin infections, frequent sore throats, breathing problems.*

## 1. Introduction

Stress just the word may be enough to set your nerves on edge. Everyone feels stressed from time to time. Some people may cope with stress more effectively or recover from stressful events quicker than others. It's important to know your limits when it comes to stress to avoid more serious health effects.

Stress can be defined as the brain's response to any demand. Many things can trigger this response, including change. Changes can be positive or negative, as well as real or perceived. They may be recurring, short-term, or long-term and may include things like commuting to and from school or work every day, traveling for a yearly vacation, or moving to another home. Changes can be mild and relatively harmless, such as winning a race, watching a scary movie, or riding a rollercoaster. Some changes are major, such as marriage or divorce, serious illness, or a car accident. Other changes are extreme, such as exposure to violence, and can lead to traumatic stress reactions.

### 1.1 Stress affect the body

Not all stress is bad. All animals have a stress response, which can be life-saving in some situations. The nerve chemicals and hormones released during such stressful times, prepares the animal to face a threat or flee to safety. When you face a dangerous situation, your pulse quickens, you breathe faster, your muscles tense, your brain uses more oxygen and increases activity—all functions aimed at survival. In the short term, it can even boost the immune system.

However, with chronic stress, those same nerve chemicals that are life-saving in short bursts can suppress functions that aren't needed for immediate survival. Your immunity is lowered and your digestive, excretory, and reproductive systems stop working normally. Once the threat has passed, other body systems act to restore normal functioning. Problems occur if the stress response goes on too long, such as when the source of stress is constant, or if the response continues after the danger has subsided.

### 1.2 Stress affect overall health

There are at least three different types of stress, all of which carry physical and mental health risks:

Routine stress related to the pressures of work, family and other daily responsibilities.

Stress brought about by a sudden negative change, such as losing a job, divorce, or illness.

Traumatic stress, experienced in an event like a major accident, war, assault, or a natural disaster where one may be seriously hurt or in danger of being killed.

The body responds to each type of stress in similar ways. Different people may feel it in different ways. For example, some people experience mainly digestive symptoms, while others may have headaches, sleeplessness, depressed mood, anger and irritability. People under chronic stress are prone to more frequent and severe viral infections, such as the flu or common cold, and vaccines, such as the flu shot, are less effective for them.

Of all the types of stress, changes in health from routine stress may be hardest to notice at first. Because the source of stress tends to be more constant than in cases of acute or traumatic stress, the body gets no clear signal to return to normal functioning. Over time, continued strain on your body from routine stress may lead to serious health problems, such as heart disease, high blood pressure, diabetes, depression, anxiety disorder, and other illnesses.

In a medical or biological context stress is a physical, mental, or emotional factor that causes bodily or mental tension. Stresses can be external (from the environment, psychological, or social situations) or internal (illness, or from a medical procedure). Stress can initiate the "fight or flight" response, a complex reaction of neurologic and endocrinology systems.

Catecholamine hormones, such as adrenaline or nor-adrenaline, facilitate immediate physical reactions associated with a preparation for violent muscular action. These include the following: Acceleration of heart and lung action, paling or flushing, or alternating between both, inhibition of stomach and upper-intestinal action to the point where digestion slows down or stops, the general effect on the sphincters of the body, constriction of blood vessels in many parts of the body, liberation of nutrients (particularly fat and glucose) for muscular action, dilation of blood vessels for muscles, inhibition of the lachrymal gland (responsible for tear production) and salivation, dilation of pupil (mydriasis), relaxation of bladder, auditory exclusion (loss of hearing), tunnel vision (loss of peripheral vision), disinherits ion of spinal reflexes, and Shaking Stress can cause or influence the course of many medical conditions including psychological conditions such as depression and anxiety. Medical problems can include poor healing, irritable bowel syndrome, and high blood pressure. Stress management is recognized as an effective treatment modality to include pharmacologic and non-pharmacologic components.

Children's health, or pediatrics, focuses on the well-being of children from conception through adolescence. It is vitally concerned with all aspects of children's growth and development and with the unique opportunity that each child has to achieve their full potential as a healthy adult. Children's health was once a part of adult medicine. It emerged in the 19th and early 20th century as a medical specialty because of the gradual awareness that the health problems of children are different from those of grown-ups. It was also recognized that a child's response to illness, medications, and the environment depends upon the age of the child.

There are many aspects to children's health. Any organization of these aspects of child health is necessarily arbitrary. For example, the topics could be presented in alphabetical order. However, it seems most logical to start at the beginning -- with the factors that determine a child's healthy growth and development.

### 1.3 Types of Stress

Following are descriptions of the three types of stress that The National Scientific Council on the Developing Child has identified based on available research:

**1.4 Positive stress** results from adverse experiences that are short-lived. Children may encounter positive stress when they attend a new daycare, get a shot, meet new people, or have a toy taken away from them. This type of stress causes minor physiological changes including an increase in heart rate and changes in hormone levels. With the support of caring adults, children can learn how to manage and overcome positive stress. This type of stress is considered normal and coping with it is an important part of the development process.

**1.5 Tolerable stress** refers to adverse experiences that are more intense but still relatively short-lived. Examples include the death of a loved one, a natural disaster, a frightening accident, and family disruptions such as separation or divorce. If a child has the support of a caring adult, tolerable stress can usually be overcome. In many cases, tolerable stress can become positive stress and benefit the child developmentally. However, if the child lacks adequate support, tolerable stress can become toxic and lead to long-term negative health effects. Stress is internal or external influences that disrupt an individual's normal state of well-being. These influences are capable of affecting health by causing emotional distress and leading to a variety of physiological changes. These changes include increased heart rate, elevated blood pressure, and a dramatic rise in hormone levels. The Effects of Childhood Stress on Health Across the positive stress and benefit the child developmentally. However, if the child lacks adequate support, tolerable stress can become toxic and lead to long-term negative health effects.

**1.6 Toxic stress** results from intense adverse experiences that may be sustained over a long period of time—weeks, months or even years. An example of toxic stress is child maltreatment, which includes abuse and neglect. Children are unable to effectively manage this type of stress by themselves. As a result, the stress response system gets activated for a prolonged amount of time. This can lead to permanent changes in the development of the brain. The negative effects of toxic stress can be lessened with the support of caring adults. Appropriate support and intervention can help in returning the stress response system back to its normal baseline.

The Effects of Toxic Stress on Adult Health and Well-Being Research findings demonstrate that childhood stress can impact adult health. The Adverse Childhood Experiences (ACE) Study is particularly noteworthy because it demonstrates a link between specific 1) violence-related stressors, including child abuse, neglect, and repeated exposure to intimate partner violence, and 2) risky behaviors and health problems in adulthood.

## 2. Impact of stress on health

Your traffic light just turned green, and you're about to pull out into an intersection when you notice another car is barreling through and will hit you. Quick, hit the brakes! The car passes in front of you; the crash is averted. Your heart is racing. You're holding your breath. Exhale. Your hands are gripping the steering wheel tightly, and your entire body has tensed in anticipation of the collision. Relax, you're safe.

In that split-second, near-miss accident, several systems in your body kicked into gear. One of those is a part of your brain called the hypothalamic-pituitary-adrenal (HPA) system, which released a cascade of chemicals—such as adrenaline, steroid hormones, and cortisol—that kicked up your heart rate, helped your brain with that split-second decision, and increased glucose in the bloodstream to give you a burst of energy to react. You didn't even have to tell it what to do. This is your body's natural reaction to stress.

But what is not natural is continuously facing stressful situations and challenges day after day. This is known as chronic stress and can be detrimental to your health. Forty-three percent of adults say they suffer adverse health effects from stress, and three-quarters of all doctor's visits are the result of stress-related ailments and complaints. Stress is also linked to several serious diseases and unhealthy situations, such as heart disease, cancer, lung disease, accidents, cirrhosis of the liver, and suicide.

It's important to understand how stress can impact your day-to-day life as well as your long-term health. Here are some ways that chronic stress may affect your physical and mental health.

### 2.1 Brain

Stress can impede your thought processes and hamper your thinking. You may find making simple decisions like what to have for dinner or remembering directions to a restaurant are more difficult than in a non-stressed state.

### 2.2 Emotions

People dealing with chronic stress may be easily frustrated and quick to lose their temper. They may cry more often and spend considerably more time worrying about things than they would without being stressed.

### 2.3 Teeth and Gums

Strange as it may seem, stress can take a toll on your oral health. Stress may cause you to clench or grind your teeth. It's often done unconsciously or during your sleep, but if it's not treated, it may lead to problems with your temporomandibular joints. Stress may also lead to gum disease, perhaps because of teeth grinding, less attention to oral hygiene, salivary changes, and impaired immunity.

### 2.4 Heart

In terms of its effect on the body, stress is dangerous to your heart. Stress hormones speed up your heart rate, constrict blood vessels, and make the heart and blood vessels more likely to overreact in the event of a future stressful event. Stress is also linked to high blood pressure, blood clots, and in some cases, even stroke.

**Lungs**

People with asthma and chronic obstructive pulmonary disease (COPD) often have worsening symptoms during times of chronic stress.

**2.5 Stomach**

Stress may make your stomach uneasy, and you may have increased incidence of nausea, vomiting, and diarrhea. In people with gastrointestinal disorders and diseases like gastro-esophageal reflux disease (GERD), irritable bowel syndrome (IBS), ulcerative colitis, and peptic ulcer disease, symptoms may be worsened by stress.

**2.6 Skin**

Stress may make skin problems such as psoriasis, eczema, acne, and rosacea worse. It is also known to bring on cold sores and fever blisters.

**2.7 Hair**

Your hair may fall victim to your stress. When a person is under a great deal of stress, his or her hair may enter the falling-out stage of the hair life cycle. It can occur up to three months after the stressful event, but hair usually grows back within a year.

**2.8 Muscles**

Stress-related tension in your back, neck, and shoulders can lead to muscle pain throughout your body.

**2.9 Immune System**

If it seems you always get sick when you can least afford it, it may be because your stress is suppressing your immune system, making you more susceptible to infection. Stress can worsen symptoms of chronic illness such as rheumatoid arthritis and diabetes.

**3. Implication****Individual Level Strategies**

**3.1 Parent Education** Educational programs that occur in group settings are used to reduce the risk factors and enhance the protective factors that are associated with the perpetration of child maltreatment. Often, these programs contain multiple components that include training on parenting topics (e.g., discipline), moderated discussions with the children, and facilitated parent-child interactions. This model provides parents with new skills and gives them an opportunity to apply the skills in a safe environment. There is some scientific research showing that programs of this type are effective. The evidence base continues to grow.<sup>18</sup> Some of these parent education programs occur in clinical settings. For example, a hospital-based program has been developed to teach new parents about the dangers of violently shaking an infant. This program was found to reduce the rates of abusive head trauma to infants.

**3.2 Child Education** Most schools in the United States provide curricula to help children avoid or report abuse. Research has shown that this method is effective in teaching children about safety and providing them with skills that may reduce their risk of abuse. However, the research has also shown that children are less likely to believe they are at risk from parents or caregivers, the same people who are most likely to abuse them.<sup>18</sup> Additional information is needed about how these skills transfer in abusive situations where the perpetrator is someone the child knows well and trusts.

**3.3 Screening and Treatment** The early identification and treatment of toxic stress, including child maltreatment, can lessen the associated long-term negative health and behavioral outcomes. Daycare providers, teachers, and other adults who interact frequently with children should have sufficient knowledge and skills to identify and care for children who have been exposed to traumatic childhood experiences. They should be familiar with support services to meet the needs of children whose problems cannot be adequately addressed by front-line staff.<sup>20</sup> Social service agencies that are responsible for investigating suspected cases of abuse and neglect should include a thorough assessment of a child's developmental status. This assessment should include the measurement of cognitive, linguistic, emotional, and social competence.<sup>1</sup> Individuals who have experienced ACE should receive help. This may involve psychotherapy, theater workshops, movement therapy, hypnotherapy, expressive writing, diary programs or some combination.

**3.4 Parent-Child Centers** Parent training and education is often delivered within comprehensive parent-child centers. These centers provide a stable learning environment in which parents and their children can interact. Studies have found that families participating in these centers have lower levels of child maltreatment.

**3.5 Home Visitation** This type of program involves trained personnel visiting families in their homes to deliver training, education, and support. The trained personnel can be nurses, social workers, paraprofessionals, or peers. Home visits often begin before birth and continue past a child's second birthday. These programs include training on prenatal and infant care as well as child development. They also enhance problem solving skills, assist with educational and work opportunities, and provide referrals to community services. A systematic review conducted by the non-federal Task Force on Community Preventive Services found that early childhood home visitation results in a 40% reduction in episodes of abuse and neglect.<sup>23</sup> Not all home visitation programs were found to be equally effective. Those deemed to be successful in preventing child maltreatment were specifically aimed at high-risk families, lasted two years or longer, and were conducted by professionals (as opposed to trained paraprofessionals).

**Safe, Stable, and Nurturing Relationships: A Framework for Prevention** Children's experiences are defined through their relationships with parents, teachers, and other caregivers. Healthy relationships act as a buffer against traumatic childhood experiences. They are necessary to ensure the long-term physical and emotional well-being of children. CDC's platform for child maltreatment prevention includes the promotion of Safe, Stable, and Nurturing Relationships (SSNRs). The agency is in the process of defining SSNRs and undertaking a variety of related research and program activities.

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