

MARCH OF DIMES

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Stress and pregnancy

Pregnancy is a time of many changes for a woman: in her body, in her emotions and in the life of her family. As welcome as these changes may be, they often add new stresses to the lives of busy pregnant women who already face many demands at home and at work.

Too much stress can be uncomfortable for anyone. In the short term, a high level of stress can cause fatigue, sleeplessness, anxiety, poor appetite or overeating, headaches and backaches. When a high level of stress continues for a long period, it may contribute to potentially serious health problems, such as lowered resistance to infections, high blood pressure and heart disease. High levels of stress also may pose some special risks for pregnant women.

Most women cope well with the emotional and physical changes of pregnancy and other stresses in their lives. A pregnant woman who feels she is coping well with stress (taking good care of herself, feeling energized rather than drained, and functioning well at home and work) probably does not face health risks from stress.

Pregnant women who are concerned about the level of stress in their lives should discuss their feelings with their partner, family or friends. These individuals can often provide support, which can help reduce stress. A pregnant woman who is having trouble coping with stress also can ask her health care provider to refer her to resources in her community that can help her take steps to reduce and cope with stress.

What types of stress may affect pregnancy outcome?

Routine stresses, such as work deadlines and traffic delays, probably don't contribute much to pregnancy complications. Stress is not all bad. When managed properly, a little stress can provide us with the drive to meet new challenges.

But certain types of severe or long-lasting stress may pose a risk in pregnancy. Some studies suggest that women who experience negative life events, such as divorce, death in the family, serious illness or loss of a job, may be at increased risk of having a **premature** (born before 37 completed weeks of pregnancy) and/or **low birthweight** (less than 5½ pounds) baby (1, 2). However, most women who experience negative life events do not have adverse pregnancy outcomes. A recent study found that maternal characteristics including depression, panic disorder, drug use, domestic violence and having two or more medical conditions were associated with high levels of stress during pregnancy (3).

Women who experience a catastrophic event during pregnancy also may be at increased risk of having a premature and/or low-birthweight baby. One study found that pregnant women who worked within 2 miles of the World Trade Center in New York on September 11, 2001, had significantly shorter gestations and significantly smaller babies than women who worked farther from the site (1, 4). Another study found that pregnant women who experienced a major earthquake had shorter gestations than women who did not experience the event (5). The timing of the event may influence pregnancy outcome. Studies suggest that women who experienced the World Trade Center attack or an earthquake in the first trimester of pregnancy tended to deliver earlier than women who experienced these catastrophic events later in pregnancy (1, 4, 5).

Chronic stress may play a role in adverse pregnancy outcomes. A recent study found that low-income women with chronic stress (resulting from difficulty obtaining food, caring for a child with a chronic illness or being unemployed) were at increased risk of having a low-birthweight baby (6).

Racism is another form of chronic stress that may contribute to pregnancy problems. African-American women may experience stress from racism throughout their lifetime. This may help explain why African-American women are more likely to deliver premature and low-birthweight babies than women from other racial/ethnic groups (1).

Some women may experience serious chronic stress over the pregnancy itself, possibly increasing their risk of adverse pregnancy outcomes (1, 2). These women may be especially worried about the health of their baby or about how they will cope with labor and delivery. They should discuss their concerns with their health care provider, who can refer them to a mental health professional, if needed.

Most women who experience severe stress in pregnancy have healthy, full-term babies. Some women may be more vulnerable than others to the effects of stress in pregnancy due to physical or other risk factors (2).

What are the risks of high stress levels in pregnancy?

A number of studies suggest that high levels of stress in pregnancy may contribute to premature birth and low birthweight (1, 2). Babies born too small and too soon are at increased risk for health problems during the newborn period, lasting disabilities (such as mental retardation and **cerebral palsy**) and even death.

How may stress contribute to adverse pregnancy outcomes?

Researchers do not completely understand how stress may contribute to adverse pregnancy outcomes. However, certain stress-related hormones may play a role. For example, stress may contribute to preterm labor by triggering the release of a hormone called corticotropin-releasing hormone (CRH). CRH, which is produced by the brain and the placenta, is closely tied to labor. It prompts the body to release chemicals called prostaglandins, which help trigger uterine contractions.

Severe or prolonged stress may interfere with the functioning of the immune system. This could cause a pregnant woman to be more susceptible to infections involving the uterus. Uterine infections are an important cause of premature birth, especially those occurring at less than 28 weeks of pregnancy (1).

Stress may affect a woman's behavior. Some women react to stress by **smoking cigarettes, drinking alcohol** or **taking illicit drugs**, all of which have been linked to premature birth, low birthweight and other pregnancy complications (1). Use of alcohol and certain illicit drugs increases the risk of birth defects.

Does a high level of stress in pregnancy have long-term effects on the baby (besides any caused by prematurity and low birthweight)?

Some studies suggest that high levels of stress in pregnancy may affect a child's mental and emotional development (7, 8). Maternal stress may contribute to learning problems, such as difficulty paying attention, and to increased anxiety and fearfulness (7, 8). It is not known how maternal stress may cause these problems. However, some studies suggest that stress-related hormones in the mother's blood may cross the placenta and affect the fetus's developing brain (8).

How can a pregnant woman reduce stress?

Each pregnant woman needs to identify the personal and work-related sources of stress in her life and develop effective ways to deal with them. If she feels overwhelmed by stress, she should consult her health care provider.

Pregnancy-related discomforts (such as **nausea, fatigue, frequent urination, swelling** and **backache**) can be stressful, especially if a pregnant woman tries to do all the activities she did before pregnancy. She can help reduce her stress by recognizing that these symptoms are temporary and by asking her health care provider how to cope with them. A woman also can consider cutting back on unnecessary activities when she is uncomfortable.

Many pregnant women experience mood swings during pregnancy. These are caused by hormonal changes and are normal. However, mood swings may make it difficult for a pregnant woman to cope with stress.

A pregnant woman can cope better with the stresses in her life if she is healthy and fit. She should eat **healthy foods**; get plenty of sleep; avoid alcohol, cigarettes and drugs; and **exercise** regularly (with her health care

provider's OK). Exercise helps keep pregnant women fit, helps prevent some common discomforts of pregnancy (such as backache, fatigue and constipation) and relieves stress.

Having a good support network, including the pregnant woman's partner, extended family and friends can help a pregnant woman relieve stress. A pregnant woman should ask for and accept help from people who are close to her. For example, they can help her with routine chores and childcare, talk with her about her feelings and concerns, or go with her to [prenatal visits](#). Some studies suggest that having a good support network reduces a woman's risk of having a low-birthweight baby (1).

A number of stress-reduction techniques can be helpful for pregnant women. These include yoga classes for pregnant women, biofeedback, meditation and guided mental imagery. A health care provider may be able to refer a pregnant woman to local classes or experts. [Childbirth education classes](#) teach relaxation techniques and help reduce anxiety by educating parents-to-be about what to expect during labor and delivery.

Does post-traumatic stress disorder affect pregnancy?

Some individuals who experience or witness a traumatic event, such as rape, combat, a natural disaster, terrorist attacks (such as the September 11 attack on the World Trade Center) or death of a loved one, develop post-traumatic stress disorder (PTSD). Affected individuals may experience severe anxiety, flashbacks of the event, nightmares, intense physical reactions to reminders of the event (such as palpitations and sweating) and other problems, such as startling easily.

Post-traumatic stress disorder is common during pregnancy. One study found that almost 8 percent of pregnant women are affected (9). Women with PTSD may be at increased risk for a number of pregnancy complications, including miscarriage, hyperemesis gravidarum (a severe form of pregnancy-related vomiting) and [preterm labor](#) (9). Affected women also are more likely to have risky health behaviors, such as smoking, drinking alcohol or drug use, that can contribute to pregnancy complications (10). Women who suspect that they have PTSD should discuss their symptoms with their health care provider or a mental health professional. There are a number of effective treatments, including talk therapies, that can ease symptoms.

Does the March of Dimes support research on stress in pregnancy?

March of Dimes grantees are studying the connection between stress reactions and adverse pregnancy outcomes.

- A number of recent grantees have been seeking to determine how stress-related factors in a pregnant woman's environment (including home and neighborhood conditions, racism, occupation, income and major life events) may contribute to her risk for preterm labor. These studies may improve understanding of the causes of preterm labor, and lead to new ways to prevent and treat it.
- Another grantee is evaluating the cognitive and behavioral functioning of 11-year-old children who were in utero at the time of a natural disaster (Quebec ice storm of 1998). This study could lead to better recommendations for how to prevent or limit potential harm of intense stress to pregnant women and their developing babies.

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