

Baby on Board Boost Your Chances for a Healthy Pregnancy

When a baby's on the way, moms-to-be are often overwhelmed by advice and warnings from family, friends and even strangers. But perhaps the most important advice is to stay as healthy as possible before and during your pregnancy.

Each year about 4 million babies are born in the U.S., the vast majority of them healthy. Thanks to advances in medical research and improved health care, most births in the U.S. result from low-risk "uncomplicated" pregnancies. But by some estimates, each year nearly 1 million expectant moms in America experience some sort of pregnancy-related complication. Problems can range from easily treated vitamin deficiencies to more complex conditions like **preeclampsia**, which can be life-threatening to both mother and baby. Fortunately, you can take steps to learn more about potential risks and prevent or reduce their impact.

"One of the most important things you can do is be healthy before you even become pregnant," says Dr. Catherine Spong, chief of the pregnancy and perinatology branch at NIH's National Institute of Child Health and Human Development. "Whatever medical conditions you have, try to optimize their therapies before you become pregnant. If you have diabetes, get it under control. If you can avoid being overweight

before pregnancy, that's quite beneficial. And be sure to start your vitamins early, have an active lifestyle and eat healthy foods."

Proper nutrition is always important, but some nutrients are especially critical for a healthy pregnancy. One of the most essential is the B vitamin folate, or folic acid. Taking folic acid supplements at least 1 month before and throughout the first 3 months of pregnancy can lower a baby's risk for certain serious birth defects by as much as 70%.

These common birth defects—known as neural tube defects—often arise before a woman even knows she's pregnant. That's why the U.S. Public Health Service now recommends that all women of childbearing age receive 400 micrograms of folic acid every day.

Several other nutrients play a key role during pregnancy. You need iron to make healthy red blood cells. Calcium aids bone growth in the unborn child and helps to prevent bone loss in the mother. Both of these nutrients, as well as folic acid, are found in **prenatal** multivitamins.

Nutritional deficiencies are often simple to address, but other prenatal



Definitions

Gestational Diabetes

Diabetes that develops during pregnancy. Diabetes can lead to serious problems including heart disease, blindness, kidney failure and nerve damage.

Preeclampsia

A condition that causes high blood pressure during pregnancy. If not treated, it can progress to severe preeclampsia and then to eclampsia—dangerously high blood pressure and convulsions.

Prenatal

Before birth, or during pregnancy.

complications pose greater challenges. Obesity is a common risk factor for several pregnancy-related complications, including preeclampsia, preterm birth and **gestational diabetes**. Problems in a previous pregnancy can also be a good indicator of how later pregnancies might progress. "However, about 40% of the pregnant population at any given time has never had a child, so it's very difficult to know what their risk is," Spong says. A woman's age and pre-existing medical conditions also affect her risk.

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When thinking about risk factors and complications, though, it's important to keep things in perspective. Dr. James M. Roberts, professor and vice chair of research in the department of obstetrics, gynecology and reproductive sciences at the University of Pittsburgh School of Medicine,



Wise Choices For a Healthy Pregnancy

- Get early and regular prenatal care. See your doctor if you're starting to plan a pregnancy.
- Get at least 400 micrograms of folic acid every day. Health care providers recommend taking folic acid both before and during pregnancy.
- Before becoming pregnant, be sure you've been properly vaccinated for certain diseases—such as chicken pox and rubella—that could harm an unborn baby.
- Maintain a healthy weight and diet.
- Get regular physical activity before, during and after pregnancy.
- Avoid smoking, alcohol and drug use before, during and after pregnancy.
- Avoid hot tubs and saunas.

says, "When we talk about a high-risk situation—as with preeclampsia—we're really only talking about 3-5% of pregnant women getting the disease. The vast majority of women do not."

While only a small percentage of expectant mothers develop preeclampsia, its consequences can be dire. It is the leading cause of maternal death worldwide. Thanks to widespread prenatal care, women in the U.S. have only a small risk of dying from the condition. "Still, it's a substantial cause of deaths for babies, with death rates about 5 times higher for preeclampsia than for non-preeclampsia babies," says Roberts. He and other researchers have also found that preeclampsia greatly increases a woman's risk for developing heart-related problems later in life.

Preeclampsia is marked by high blood pressure and protein in the urine. Currently, the only certain cure is delivery of the baby. Roberts and scientists at 14 sites across the country are now in the midst of an NIH-funded clinical study to see if the risk of preeclampsia might be reduced by taking vitamins C and E early in pregnancy. The study is expected to involve 10,000 women by the end of 2007. "We don't have the answers yet," says Spong, the study director at NIH.

Other NIH-funded clinical trials have focused on preterm birth, which occurs in over 12% of U.S. births. It arises when a baby is born at least



Web Sites

- www.nichd.nih.gov/health/topics/pregnancy.cfm
 - womenshealth.gov/pregnancy
 - health.nih.gov/result.asp/533
- www.nhlbi.nih.gov/hbp/issues/preg/preg.htm
- diabetes.niddk.nih.gov/dm/pubs/gestational

3 weeks shy of a full 40-week pregnancy. Premature infants face several health challenges, including breathing difficulties and the potential for lifelong medical problems. "Up until a couple of years ago, we could identify women who were at highest risk for delivering preterm, but we didn't have anything to really prevent it," Spong says. "It was frustrating."

In 2003, an NIH-funded clinical study identified a promising treatment for women who have already had a preterm birth. Weekly injections of the hormone progesterone significantly reduced the likelihood of later preterm birth for these at-risk women. An ongoing clinical trial is now testing whether progesterone might also reduce preterm births in first-time pregnancies.

To Spong, a healthy pregnancy isn't necessarily one that's free of complications. "To me, a healthy pregnancy is one where any medical conditions are well-controlled, so they cause no lasting harm to mother or baby," she says. "I've had patients with severe diabetes, but if it remains very well-controlled during pregnancy, the outcome can be positive."

It's important to see your doctor regularly throughout pregnancy, so that complications can be caught early, and their impact minimized. "A healthy pregnancy is one where, in the end, both the mom and baby do well," Spong says. ■

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Deep Vein Trouble

Recognize and Prevent Deep Vein Thrombosis

Most people have heard of “economy-class syndrome.” People who sit through long airplane flights without moving around can develop blood clots in veins deep within their lower leg or thigh. The condition is called deep vein thrombosis (DVT), and it’s not just airplane flights that can raise your risk. Anyone sitting in a car, at a desk or elsewhere for long periods of time without moving is at higher risk. And other factors you might not expect, like pregnancy, can also increase your risk for DVT.

DVT can cause serious complications if not treated. However, only about half of people with DVT have symptoms. The symptoms usually appear in only one leg. They may include a swollen area of the leg, pain or tenderness in the leg, increased warmth in the swollen or painful areas and red or discolored skin. You might only feel the leg pain when you’re standing or walking. It’s important to see a doctor right away if you have these symptoms.

Some people find out that they have DVT only after the clot has moved from the leg and traveled to the lung—a pulmonary embolism. Shortness of breath and chest pain when you take a deep breath are signs that you may have a pulmonary embolism.

Many factors may increase your risk for DVT:

- Having an inherited blood clotting disorder.
- Having a recent injury, surgery or immobilization, which may

slow blood flow in a deep vein.

- Undergoing treatment for cancer.
- Having other medical conditions, such as varicose veins.
- Sitting for a long period of time, for example, on a long trip in a car or airplane.
- Pregnancy, especially the first 6 weeks after giving birth.
- Being over age 60, although deep vein thrombosis can occur in any age group.
- Being overweight.
- Taking birth control pills or hormone therapy.
- Having a medical device called a central venous catheter.

Doctors most often use a test called duplex ultrasound to diagnose deep vein clots. It uses sound waves to evaluate the flow of blood in your veins. A computer turns the sound waves into a picture. The picture is displayed on a TV screen, where your doctor can see the blood flow in your leg.

Several types of medicine may be



used to treat or prevent DVT. The most common are anticoagulants, also known as blood thinners, which decrease your blood’s ability to clot. Anticoagulant treatment for DVT usually lasts from 3 to 6 months.

If you’re at risk for DVT or suspect you may have it, discuss it with your doctor. ■



Web Sites

- www.nhlbi.nih.gov/health/dci/Diseases/Dvt/DVT_WhatIs.html



Wise Choices

Preventing Deep Vein Thrombosis

If you’re at risk for developing a deep vein clot, you may be able to prevent one by:

- Exercising your lower leg muscles if you will be sitting still for long periods of time.
- Getting out of bed and moving around as soon as you are able to after a long period of being bedridden. The sooner you get active, the lower your chance of developing a clot.
- Taking the medicines prescribed by your doctor to prevent or treat blood clots.
- Following up with your doctor for medicine changes and blood tests.

Health Capsules

Bladder Control Surgeries for Women

Loss of bladder control, or **urinary incontinence**, is a common condition that affects up to half of American women. Incontinence can sometimes be remedied by taking medicines or doing special exercises. But over the past 2 decades, a growing number of women have been choosing surgery to improve bladder control. Several types of surgery are available, but only a few studies have looked at the pros and cons of the different options.

Now, NIH-funded researchers have completed a large and rigorous study that compares 2 common surgeries for urinary incontinence. The study involved 520 women. Half of them

had a type of surgery called fascial sling. The other half underwent a procedure called the Burch colposuspension. After 2 years, overall cure rates were significantly higher for the sling procedure (47%) than for the Burch technique (38%).

Unfortunately, the women in the sling group also had more complications. Their side effects included problems with urination and infections in the urinary tract. However, more women in the sling group said they were satisfied with the results of the surgery.

These findings should help doctors and patients as they think about different surgery options for bladder control. ■



Web Sites

- kidney.niddk.nih.gov/kudiseases/pubs/bladdercontrol/index.htm
- www.niapublications.org/agepages/urinary.asp



Definition

Urinary Incontinence

Uncontrolled loss of urine. Incontinence can occur at any age, but it is more common in older people and in women.



Featured Web Site Tuberculosis

www3.niaid.nih.gov/healthscience/healthtopics/tuberculosis

Tuberculosis (TB) is an old disease, but one that still ranks among the foremost killers of the 21st century. About one-third of the world's population is infected with the bacterium that causes TB. Learn what TB is, what symptoms it causes, about prevention, treatment and much more. *From NIH's National Institute of Allergy and Infectious Diseases.*

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NIAID > Health & Science > Health & Science Topics > Tuberculosis

Tuberculosis (TB)

What are TB, MDR TB, and XDR TB?
Definitions of Tuberculosis, Multidrug-Resistant TB (MDR TB) and Extensively Drug-Resistant TB (XDR TB)

The New Challenge for TB Research
Multidrug-resistant and Extensively Drug-resistant Tuberculosis Research Agenda (PDF)
NIAID's Role in Addressing Tuberculosis (TB), Drug-Resistant TB, and TB in People with HIV/AIDS

TB Research at NIAID

- ▶ Research Overview
- ▶ Research Goals
- ▶ Diagnostic Research
- ▶ Advances in Treatment
- ▶ Prevention: Vaccine Development
- ▶ Clinical Trials
- ▶ Networks, Consortia and Partners
- ▶ Resources
- ▶ Training
- ▶ Meeting Summaries
- ▶ Scientific Publications of Drug-Resistant TB

News and Events
NIAID Media Availability: NIAID Releases MDR/MDR Tuberculosis Research Agenda - June 6, 2007

Protect Against Skin Cancer

With summer here, it's important to remember that skin cancer is the most commonly diagnosed cancer in the U.S. It affects more than 1 million people each year, many of whom are older men and women.

One of the biggest known risk factors for getting skin cancer is excess exposure to **ultraviolet (UV) light**.



Definition

Ultraviolet (UV) light

A type of light from the sun that can damage DNA and cause skin cancer.

UV light increases the risk of all three kinds of skin cancer: melanoma (the least common but most severe), basal cell carcinoma and squamous cell carcinoma.

The older you are, the more likely you are to be diagnosed with skin cancer, particularly after age 50. However, increased sun exposure and sun damage at an early age is a major contributor to skin cancer later in life.

One of the best ways to protect against skin cancer is to simply limit exposure to harmful UV light. Avoid the sun during midday, when its rays are the strongest, wear appropriate clothing—such as hats or long-

sleeved shirts—and wear plenty of sunscreen with a sun protection factor (SPF) of 30 or higher.

UV light can be just as damaging on a cloudy, overcast day as on a bright and sunny day, so use sunscreen and other protective measures daily, however the sky looks. ■



Web Sites

- nihseniorhealth.gov/skincancer/toc.html
- www.cancer.gov/cancertopics/types/skin

