

Expecting Parents Guide to Birth Defects

Awareness

Types of Birth Defects

- Heart Defects
- Abdominal Defects
- Head/Spine Defects

Prescription Drugs

- Anti-Depressants
- Anti-Convulsants
- Painkillers

Evidence

- Anti-Depressants
- Anti-Convulsants
- Painkillers
- Accutane
- Clomid
- Diflucan
- Pitocin and Valproate

Other Preventable Causes

- Alcohol
- Tobacco
- Illegal Drugs
- Diabetes
- Age

Prevention

- Make a Plan
- Regular Medical Care
- Nutrition
- Reach a Healthy Weight
- Folic Acid

Statistics

Resources



Awareness

All health begins with awareness. You don't know you are sick unless you know the symptoms of being sick. That's why you talk to your doctor when you think something is wrong.

But it's not as simple with our children. They can't tell a parent or a pediatrician when something is wrong. This worries every parent – and we begin worrying even before the child is born.

A slew of health problems can begin to take shape as a child is developing in the womb. These may be minor ailments, or they may be ones that prevent your child from living a normal life. We've all heard of babies born with Down's syndrome, cerebral palsy or a horrible birth defect, and it's normal to worry about this if you are expecting a child.

So you need to be aware. You are the only voice your child has in the earliest stages of life. Mounting evidence indicates there are many steps you can take to minimize the risk of having a child with a birth defect. Knowing the facts is your responsibility.

And yet, some defects have no known cause. Even if you take every precaution, it is still possible to have a child with a birth defect, unfortunately.

If this happens to your family, you need all the information you can get.

Birth Defects

Heart

As the heart is the body's central organ, there is quite simply no defect of the heart that can be taken lightly. A child may be able to live a healthy life with a heart defect, but surgery – sometimes several surgeries -- is often required very early in life to ensure the heart functions as it should.

Heart defects include vessels that develop in the wrong place, defective heart valves and holes in flesh that allow oxygen-rich and oxygen-deficient blood to mix. Heart defects are the most common form of congenital birth defect. Here are some of heart defects that are somewhat common:

- Septal defects
- Ebstein's anomaly, or Ebstein's malformation
- Tetralogy of Fallot
- Hypoplastic left heart syndrome
- Pulmonary stenosis
- Coarctation of the aorta

Abdomen

Many of these conditions occur when all or part of an internal organ develop incorrectly or in the wrong place. These defects are present in the early months of pregnancy as the organs begin to develop. Many women are not even aware they are pregnant at this stage.

- Anal atresia
- Omphalocele
- Bladder extrophy
- Pyloric stenosis
- Cryptorchidism
- Gastroschisis
- Hypospadias

Head/Spine

Research has found many of these defects to have a strong link to the use of certain prescription medications during pregnancy. The defects range from the horrific and fatal – such as anencephaly, which results in portions of the brain or skull being missing – to the treatable, like a cleft lip or palate.

- Anencephaly
- Craniosynostosis
- Spina bifida
- Cleft lip/palate
- Dandy-Walker syndrome

Prescription Drugs

Nine in 10 pregnant women take at least one medication during pregnancy, and 70% of pregnant women take at least one prescription drug, [according to the Centers for Disease Control and Prevention](#).

If you are pregnant or are planning to become pregnant, it is important to speak with your doctor about every medication you take – even over-the-counter drugs and supplements. **A study of 172 drugs approved in the U.S. between 2000 and 2010 found that nearly 98% of them had an “undetermined” impact on a developing child.** Think about that. When it comes to new drugs, almost 10 times out of 10, experts simply don't know what effect a drug has when taken during pregnancy. That's all the reason in the world to be skeptical of any medicines during and immediately before pregnancy.

In fact, some drugs can harm a baby even when taken shortly **before** pregnancy.

The following drugs have been found to increase the risk of certain birth vvvvvvdefects:

Anti-Depressants

- Paxil (paroxetine)
- Zoloft (sertraline)
- Prozac (fluoxetine)
- Lexapro (escitalopram)
- Celexa (citalopram)
- Wellbutrin (bupropion)

According to a [CDC study](#) conducted from 1998 to 2005, 4.5% of pregnant women took an anti-depressant either immediately before or during pregnancy.

Anti-Convulsants

- Depakote (divalproex sodium)
- Tegretol (carbamazepine)
- Topamax (topiramate)

Anti-convulsants are heavily associated with a defect known as spina bifida, in which a portion of the spinal cord is not protected by the vertebrae of the spine.

Painkillers (Analgesics)

- Codeine
- Hydrocodone
- Oxycodone

Other Drugs

- Accutane (isotretinoin) -- acne drug
- Clomid (clomiphene citrate) -- fertility drug
- Diflucan (fluconazole) -- anti-fungal drug
- Pitocin (synthetic oxytocin) – labor-inducing drug

Evidence

Anti-Depressants

1. *New England Journal of Medicine study, 2007*

This study examined the link between selective serotonin reuptake inhibitor anti-depressants and birth defects. This class of drugs includes **Zoloft, Paxil, Prozac, Lexapro and Celexa**.

It documented the following increased risks:

- Omphalocele: **2.8x increased risk**
- Craniosynostosis: **2.5x increased risk**
- Anencephaly: **2.4x increased risk**
- Transposition of the great arteries: **40% increased risk**
- Gastroschisis: **30% increased risk**
- Pulmonary stenosis: **30% increased risk**
- Tetralogy of Fallot: **20% increased risk**

These risks are averages for all of the medications. When examined individually, some of the results are far more frightening. Paxil, for instance, was linked to a **nearly sixfold increased risk** of a club foot defect.

2. *American Journal of Obstetrics & Gynecology study, 2010*

This study examined **Wellbutrin** (bupropion), which is prescribed as an anti-depressant and a smoking cessation aid. When researchers examined the records of more than 12,000 children, they found those exposed to bupropion between one month before and three months after conception were **2.6x more likely to have left outflow tract heart defects** than the control sample.

3. *Obstetrics & Gynecology study, 2011*

This study found a heightened risk of many birth defects associated with SSRI anti-depressants, including:

- Ventricular heart defects
- Brain and spinal cord defects
- “Major cardiovascular anomalies”

Researchers concluded, however, that most of these risks were insignificant when additional study factors were considered. But they still felt some danger remained.

“These findings should guide clinicians to not consider fluoxetine [Prozac] or paroxetine [Paxil] as the first options when prescribing these drugs to women planning pregnancy,” researchers wrote.

Anti-Convulsants

1. *New England Journal of Medicine, 2010*

A Dutch study published in the journal linked Depakote to shockingly high birth defect risk factors:

- Spina bifida: **12x increased risk**
- Craniosynostosis: **7x increased risk**
- Hypospadias: **5x increased risk**

Additionally, exposure to Depakote has also been **connected** to lower IQs in children.

2. *FDA Warning, 2011*

The Food and Drug Administration **warned** in 2011 that **Topamax** (topiramate), a drug used to treat epilepsy and migraines, raises the risk of certain birth defects when taken during pregnancy. **The risk of a cleft lip or cleft palate increases by 16x** when a baby is exposed to Topamax, according to the FDA.

3. *New England Journal of Medicine study, 1989*

A study published in 1989 linked **Tegretol**, a drug used to control epilepsy, with higher rates of birth defects and cognitive disabilities in exposed children.

Painkillers

1. *CDC Study, 2009*

This study examined the use of opioid painkillers -- which include **codeine, hydrocodone and oxycodone** -- and found the drugs were tied to increased instances of several birth defects, including:

- Spina bifida
- Gastroschisis
- Tetralogy of Fallot
- Septal defects
- Hypoplastic left heart syndrome
- Pulmonary stenosis

Accutane

1. *FDA Warning, 2005*

Since 2005, the FDA has made a strong push to keep women who might become pregnant from using the acne medication Accutane (isotretinoin) due to the risk of birth defects. It is stated unequivocally in the FDA's **November 2005 warning**: "Isotretinoin causes birth defects."

Clomid

1. *New England Journal of Medicine study, 2012*

This study examined assisted contraception methods and found the use of Clomid at home by women without the aid other drugs appeared to increase the risk of birth defects, though the sample size was too small to draw strong conclusions.

2. *CDC study, 2010*

An examination of data from across the U.S. from 1997 to 2005 found that the use of Clomid was linked to a heightened occurrence of birth defects, including:

- Dandy-Walker syndrome
- Anencephaly
- Craniosynostosis
- Coarctation of the aorta
- Omphalocele
- Septal heart defects

Diflucan

1. *FDA Warning, 2011*

The FDA **warned** that chronic high doses of Diflucan in the first trimester of pregnancy "may be associated" with a unique set of defects in children. One-time, low doses of the drug did not appear to cause danger.

According to the FDA, high doses of the drug resulted in changes seen in utero that included misshapen development of the head and face, heart disease and bone and muscle abnormalities, among others.

Pitocin & Valproate

Pitocin, a drug sometimes given to women in labor to induce or speed up delivery, has recently been shown to be associated with adverse outcomes in children – but they aren't congenital birth defects. Use of the drug appears to be linked to **higher rates of autism** in children born to mothers given Pitocin during delivery. Nearly 1 in 4 deliveries in the U.S. is induced.

Pitocin is a synthetic form of oxytocin, a hormone released by the body naturally to trigger contractions during childbirth. Pitocin is typically delivered intravenously.

The anti-convulsant valproic acid, sold under the brand name **Valproate**, also increases the risk of autism when a child is born shortly before or during pregnancy, according to the Centers for Disease Control and Prevention.

Other drugs once linked to autism, such as the motion sickness drug **thalidomide**, were taken off the market long ago after devastating many families.

About Autism Spectrum Disorders

"Autism" is a catch-all phrase for a condition that varies heavily from individual to individual. It affects roughly 1 in 88 children. There are three autism spectrum disorders, or ASDs – **autistic disorder, Asperger syndrome and atypical autism**.

Autism is typically noticeable by age 3, and it lasts for the entire life of an affected person. It is characterized by social problems, unusual behaviors and irrational and unpredictable mood swings, all of which may vary greatly in intensity for person to person. According to the CDC, a person with autism may:

- Not respond to his or her name by the age other children do
- Have trouble understanding other people's feelings
- Have delayed speech skills
- Repeat words or phrases over and over
- Become upset by minor changes
- Have unusual reactions to the way things sound, smell, taste, look or feel
- Move his or her hands or body in strange ways

These behaviors may improve over time. The extent to which they impede the ability to live a normal life varies to both extremes. That is why it's a spectrum.

There are other things besides medication that are shown to increase the likelihood of having a child born with autism, including obesity during pregnancy.

1. Journal of the American Medical Association study, August 2013

A **study** published in August 2013 examined more than 625,000 live births and checked them with subsequent school records for the children. They found that babies – particularly baby boys – born to mothers who underwent induced or "augmented" labor with medicines like Pitocin were more likely to suffer from autism than those born via non-induced labor.

“Our work suggests that induction/augmentation during childbirth is associated with increased odds of autism diagnosis in childhood,” researchers wrote.

2. American College of Obstetricians and Gynecologists, May 2013

In May 2013, researchers **presented findings** reached by studying more than 3,000 births from 2009 to 2011 at the annual meeting of the American College of Obstetricians and Gynecologists. They found:

- The use of Pitocin during delivery correlated with unexpected admissions to the neonatal intensive care unit for more than 24 hours.
- Pitocin was also linked to lower Apgar scores in newborns. Apgar scores are assessed by examining a baby’s breathing, reflexes, appearance and other factors at one minute and 5 minutes after birth.

“The analysis suggests that oxytocin use may not be as safe as once thought ...” the organization wrote in a press release explaining the findings.

3. FDA Warning, May 2013

The FDA issued a **warning** in May 2013 informing pregnant women that they should not take **Valproate** for migraines due to potential cognitive harm to the unborn child. Children exposed to the drug, according to the FDA, had IQ scores on average 8 to 11 points lower than children exposed to similar medications with different ingredients.

Other Preventable Causes

Smoking

It's never a bad time to quit smoking, but pregnancy is doubtlessly the best time to do so. According to the CDC, smoking during pregnancy can cause:

- Birth defects
- Premature birth
- Infant death

Here's a [graphic](#) from the CDC illustrating the problems that can result from smoking during pregnancy.

The dangers posed by smoking actually begin about a month **before** conception -- and they don't end at childbirth. Secondhand smoke is a risk factor for sudden infant death syndrome, or SIDS, and exposure to smoke weakens a child's lungs and increases the likelihood of asthma, infections and other health problems.

Drinking

Pregnant women should not drink alcohol -- at all. Drinking during pregnancy can cause [fetal alcohol spectrum disorder](#) – a tragic and completely preventable condition that severely damages, or ends, the life of a newborn baby. According to the CDC, a baby born to a mother who drank alcohol during pregnancy might exhibit:

- Abnormal facial features (including a ridge between the nose and lip known as the philtrum)
- A small head
- Learning disabilities
- Speech problems
- Poor coordination
- Vision or hearing problems

In addition to this condition, drinking may also cause birth defects of the:

- Heart
- Kidneys
- Bones

There is no safe time during pregnancy to drink, nor is there a safe alcoholic beverage for a pregnant woman. To be certain, you should stop drinking and smoking as soon as you work towards becoming pregnant.

Illegal Drugs

This one ought to be a no-brainer. A baby is exposed to everything a pregnant mother puts into her body. If it can harm an adult like yourself -- which drugs doubtlessly can do -- is it any surprise that it can harm an unborn baby whose body is not prepared to defend itself?

Diabetes

The risk of having a child with a birth defect increases if diabetes is not properly maintained during pregnancy, [according to the CDC](#). It can also pose serious health problems for the mother.

A baby's organs develop in approximately the first two months of pregnancy, which is before many women realize they are carrying a child. This is why you should always keep your blood sugar in control, especially if you intend to become pregnant. Unstable blood sugar can affect organ development, leading to congenital defects of the:

- Brain
- Spine
- Heart

In addition to birth defects, other problems that can occur due to uncontrolled diabetes during pregnancy include:

- High birth weight
- Premature birth
- High blood pressure in the mother, which can endanger the baby
- Miscarriage or stillbirth

Age

In addition to certain medications and the causes above, age can also play a role in birth defects. Mothers over 35 are more likely to have a baby with a birth defect or other complications. It is unfortunate, but true.

Prevention

Make a Plan

You need to know that many of the factors that may cause problems in your baby actually occur before pregnancy and in the earliest months of gestation, when you may not know you are pregnant. That is why you should address all of these issues head-on **before** becoming pregnant if you are looking to have a child. This means stopping smoking and drinking, making sure you are at a healthy weight and taking folic acid.

Start by talking to your doctor about your plans and what you can do as early as possible for the best odds of having a healthy baby.

Get Regular Medical Care

When you become pregnant, be sure you have a doctor you can trust and stick with throughout your pregnancy. Doctors are trained to look for signs that something may be wrong with your baby. You might not know otherwise.

Bring someone with you to doctor's visits if you wish. Don't be shy: ask questions. Listen closely, ask questions and be sure to be seen regularly throughout your pregnancy.

Prevent Infections

Infection can put your baby at risk. You need to be extra vigilant about washing your hands with soap and water frequently, especially after:

- Using the bathroom
- Preparing raw food
- Handling pets
- Being around someone who is sick
- Gardening or touching dirt

Don't share cups or utensils with young children, who are more likely to carry a contagious ailment. Avoid unpasteurized milk. Talk to your doctor to ensure you are up-to-date on your shots and vaccinations.

Here's a [tip sheet](#) from the CDC about preventing infections.

Keep Diabetes in Control

Uncontrolled or poorly maintained diabetes, even before pregnancy, can lead to birth defects of the heart, spine or other organs, as well as other complications like premature birth or, worse, a miscarriage.

Many pregnant, diabetic women were diagnosed with type 1 or type 2 diabetes earlier in life. However, there is also what is known as [gestational diabetes](#) – diabetes that does not set in until pregnancy. Your doctor will check your blood sugar during pregnancy to make sure you and your baby are healthy.

The CDC has seven tips for women with diabetes to help boost the odds of having a healthy baby. Check them out [here](#).

Nutrition

Maintaining a healthy diet is also a vital part to help promote a healthy birth and a healthy baby, and it may **decrease the risk** of birth defects in your child. Your baby is exposed to everything you put in your body. It doesn't mean you can't indulge occasionally, but keep this in mind when deciding on what you're going to eat.

Reach a Healthy Weight

Women who are obese -- that is, having a body-mass index of 30 or higher -- are more likely to have a baby with birth defects and other unwanted complications. Ideally, you should reach a healthy weight before becoming pregnant.

For this reason, you should also try to stay active. Ideally, the time to lose weight is before pregnancy. Getting to a healthy weight before becoming pregnant may decrease your odds of having a baby who suffers from a birth defect.

Folic Acid

Folic acid, a B vitamin, can help prevent brain and spinal birth defects like anencephaly and spina bifida. There's a catch, however: folic acid works best if a woman **already** has an ample amount in her system when she becomes pregnant. The CDC recommends taking 400 micrograms of folic acid every day for a least a month before becoming pregnant and continuing this regimen throughout your pregnancy.

Statistics

The following statistics about birth defects are compiled from the [CDC](#):

- About one in every 33 babies in the U.S. is born with a birth defect. That means one such baby every 4.5 minutes.
- Heart defects are the most common type of defect, representing about 1 in 100 births. A ventricular septal defect is the most common type of heart defect.
- Medical care for congenital heart defects cost about \$1.4 billion in 2004.
- Roughly a million adults in the U.S. are currently living with a congenital heart defect.
- Over the last 30 years, the use of prescription medications during the first trimester of pregnancy has increased by more than 60%.
- Specific birth defects are more common in certain ethnic groups than others, with other defects are less common.

Resources

National Center on Birth Defects and Developmental Disabilities: Operated by the CDC, this is home to a wealth of information on birth defects – what they are, what causes them, how to care for them and the steps you can take to prevent them.

National Association for Rare Disorders: This extensive website offers information on hundreds of rare diseases, including birth defects. Parents will appreciate it for the list of support organizations specific to each ailment.

Birth Defect Research for Children: This non-profit serves as a resource for parent information, and it also operates the National Birth Defect Registry. This unique registry aims to learn more about birth defects by identifying the patterns in their occurrence. Founders Mike and Betty Mekdeci have a history with birth defects that dates back to the birth of their son in 1975.

The Arc: This site advocates for those with physical and intellectual disabilities and provides support to families dealing with autism, Down syndrome, fetal alcohol disorder and other ailments. The organization's mission statement aims to defend human rights and make sure all people are represented in society, no matter their illness.

March of Dimes: A globally known organization that promotes healthy babies and children.

The Compassionate Friends: The Compassionate Friends was founded to offer support to parents and other family members who have suffered through the loss of a child. Chapters exist across the country where parents meet to support one another and talk about their grief as a means of healing.

American Heart Association: Heart defects are the most common type of congenital defect. The venerable American Heart Association has compiled extensive online resources for those looking for information on anything to do with heart defects.

Spina Bifida Association: The neural tube defect spina bifida affects about 1,500 babies each year, and this association was formed as a resource for affected family members.

Cleft Palate Foundation: Plenty of information here on the most common congenital defect, which affects about 1 in every 600 babies.