MotherToBaby
Medications & More During Pregnancy & Breastfeeding
Ask The Experts

Fact Sheet
by the Organization of Teratology Information Specialists (OTIS)
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Eating Raw, Undercooked, or Cold Meats and Seafood

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to raw meats or seafood or undercooked meats or seafood may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your healthcare provider.

What are raw, undercooked, or cold meats and seafood?

Raw meat or seafood is any meat or seafood product that has not been cooked at all. Undercooked meat or seafood has been partially cooked but has not been heated to the safe minimum internal temperature. Cold meats (also known as deli meats or cold cuts) and cold seafood are precooked meats or seafood that have been frozen or chilled for later use.

Raw, undercooked, or cold meats and seafood can contain bacteria and/or parasites that can cause foodborne illnesses. For this reason, it is recommended to cook meat and seafood up to at least the minimum internal temperature, and to reheat pre-cooked cold meats or seafood. See the table below for safe minimum internal temperatures in various meats and seafood.

Meat/Seafood	**Safe Minimum Internal Temperature**
Fish and Shellfish	145 °F (63°C)
Pork	145 °F (63°C)
Beef (steaks, chops, and roasts)	145 °F (63°C)
Beef and Pork (ground)	160 °F (71°C)
Wild game	165 °F (74°C)
Poultry	165 °F (74°C)
Cold lunchmeat and deli meat	Cook until steaming

For more information on specific bacteria and parasites that can be found in foods, please read the individual MotherToBaby fact sheets:

- E.coli (https://mothertobaby.org/fact-sheets/e-coli-pregnancy/pdf/),
- Listeria (https://mothertobaby.org/fact-sheets/listeriosis-pregnancy/pdf/),
- Salmonella (https://mothertobaby.org/fact-sheets/salmonella-pregnancy/pdf/),
- Toxoplasmosis (https://mothertobaby.org/fact-sheets/toxoplasmosis-pregnancy/pdf/),
- Vibrio (https://mothertobaby.org/fact-sheets/vibrio-pregnancy/pdf/).

Methylmercury content is another concern with seafood. Please see the Methylmercury in Fish fact sheet at https://mothertobaby.org/fact-sheets/methylmercury-pregnancy/pdf/ for more information.

I heard on the news that a product I may have eaten has been recalled. Is there a place I can check?

Yes, the FDA has a website where you can check for food recalls. If you heard about it on the news, write down all of the information from the news article and call the phone numbers that they have provided or check the websites that they have provided. If you do not have this information, the FDA website for food recalls is: https://www.foodsafety.gov/

Because there can be a risk of infection from food cooked at home and not handled safely, you can learn about prevention and safe handling of meats and poultry on the USDA site. Click on the consumer section on their website https://www.fsis.usda.gov/wps/portal/fsis/home

How do I know if I have eaten raw, undercooked, or cold meat and seafood that is infected with bacteria or a parasite?

Some pregnant women hear about it on the news if it's part of a recall. However, people could get sick from a restaurant with unsafe food handling practices, on a cruise, on a trip, a home-cooked meal or other food-related occasion and this is unlikely to get reported. Some people who become infected with bacteria or parasites show no symptoms. Others may have fever, diarrhea, stomach cramps, stomach ache, headache, muscle pain, swelling of lymph nodes, joint pain, and/ or vomiting, depending on the infection. The symptoms can start hours to weeks after eating the contaminated food.

If you are concerned that you have been infected with bacteria and/or parasites from meat or seafood,

ask your healthcare provider if there are tests to diagnosis the infection. In some cases there may be medications that can treat the infection and reduce the chance of harm for your baby.

Does eating raw, undercooked, and/or cold meat and seafood increase the chance for miscarriage?

Depends on whether the woman becomes infected. If the meat/seafood is infected with certain bacteria or parasites and a woman becomes ill from eating it, there may be an increased risk of pregnancy loss. High fever from the woman's infection can also increase the risk to the baby.

Does eating raw, undercooked, or cold meat and seafood increase the risk for birth defects?

Depends on whether the woman becomes infected and by which parasite or bacteria. For example, infants born to women who have toxoplasmosis infection during pregnancy have about a 20% (1 in 5) chance of being born with the infection themselves (called congenital toxoplasmosis). Some infants with congenital toxoplasmosis will have problems with the brain, eyes, heart, kidneys, blood, liver, or spleen. Other foodborne infections such as E.coli, Listeria, and Salmonella have not been associated with a higher chance of birth defects.

Can eating raw, undercooked, or cold meat and seafood in the second or third trimester cause other pregnancy complications?

Yes, if the food is contaminated with bacteria or parasites and a pregnant woman becomes infected, there can be additional risks in the second and third trimester. These might include premature delivery or pregnancy loss.

Parasite/Bacteria	**Risks**
Toxoplasma	Pregnancy loss
E coli	Preterm delivery and pregnancy loss
Salmonella	Pregnancy loss and infection of amniotic fluid
Listeria	Preterm delivery and pregnancy loss

Does eating raw, undercooked, or cold meat and seafood in pregnancy cause long-term problems for the baby?

Yes, it is possible, if the product is infected with bacteria and/or parasites and the woman becomes infected. Toxoplasmosis infections can cause long-term problems for the baby. Long-term effects may include vision loss, hearing loss, or developmental delays. Many infected infants will have no problems at birth but symptoms of congenital toxoplasmosis can occur months or even years after birth. For this reason, infants with congenital toxoplasmosis should be treated for the infection during the first year of life and then should be periodically checked for problems.

Can I breastfeed while eating raw, undercooked, or cold meat and seafood?

Yes. Breast milk contains important immune factors that can help protect your baby from infections, as well as providing nutritional and health benefits. Although there have been case reports suggesting Salmonella might have been

passed from a nursing mother to her baby, most women with these types of infections do not need to stop breastfeeding. Diarrhea and other symptoms of E.coli infection may decrease your milk supply. In the case of both E. coli and Salmonella infections, be sure to practice good hand washing. If you suspect that the baby has symptoms, such as diarrhea, contact your pediatrician. Be sure to talk to your healthcare providers about all of your breastfeeding questions.

If a man eats raw, undercooked, or cold meat and seafood, does it increase the risk of infertility or birth defects?

No. There is no evidence linking paternal exposure with a higher incidence of infection during pregnancy. Although Salmonella and E. coli are most often contacted through contaminated foods or animals, it can be passed from person to person. Wash hands often to help reduce the chance of passing the disease among people living in the house.

In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures and Pregnancy at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/.

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