

Discomforts of Pregnancy

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Changes in gastrointestinal motility in pregnancy may result in nausea and vomiting, heartburn and constipation. The presence of these discomforts should be assessed at the initial prenatal visit and periodically throughout pregnancy.

In most cases, symptoms are mild, and dietary and other behavioral changes are helpful in alleviating these discomforts. If needed, medications, including non-prescription drugs, should be taken with the consultation and supervision of the adolescent's health care provider.

NAUSEA AND VOMITING

- Nausea and vomiting during pregnancy may range from mild to moderate symptoms occurring early in pregnancy to severe hyperemesis gravidarum. Nausea and vomiting may be associated with a lowered risk of miscarriage, stillbirth, perinatal mortality, preterm delivery, low birthweight and fetal growth retardation.^{1, 2}
- Symptoms of nausea and vomiting usually begin around the 8th week of pregnancy, peak at 10-16 weeks and resolve by the 20th week.¹
- Onset is often in the morning with improvement during the day, although symptoms may occur at any time.¹

- Hyperemesis is associated with dehydration, metabolic and electrolyte disturbances and weight loss.^{1, 3}
- Onset of hyperemesis is between the 4th to 10th week, usually resolving by the 20th week of gestation.¹
- Vomiting beyond 20 weeks is not common and may be related to other causes such as gastroenteritis or cholelithiasis.¹

Prevalence

- Nausea and vomiting may occur in 50-90% of pregnancies.¹
- Nausea and vomiting may be more common in first pregnancies, younger women and those who experienced nausea with oral contraceptives.¹
- Hyperemesis occurs in up to 2% of pregnancies.⁴
- Hyperemesis may be more common in those with first pregnancies, high prepregnant weight or multiple gestations.¹

Contributing Factors

- The pathogenesis of nausea and vomiting associated with pregnancy is unclear. Proposed theories include hormonal, biological and psychological factors.¹

- Increased levels of progesterone (possibly in combination with estrogen) decrease smooth muscle motility of the gastrointestinal tract which delays gastric emptying.¹
- In later pregnancy, compression of the stomach by the enlarging uterus may also contribute to nausea and vomiting.¹
- Psychological factors including emotional stress or rejection of the pregnancy may intensify symptoms in some cases.¹

Consequences

- Chronic nausea and vomiting continued into the second and third trimester have been associated with inadequate weight gain and a significant decrease in infant birthweight in an adolescent population.⁵
- Hyperemesis may involve dehydration and fluid volume deficits, starvation ketoacidosis, metabolic alkalosis, hypokalemia, nutritional deficiencies, protein and energy malnutrition and significant weight loss.^{1, 4}
- Hyperemesis has been shown to result in dietary intakes of less than 50% of the Recommended Dietary Allowances and lowered blood levels of thiamin, riboflavin, and vitamins B₆ and A.⁶
- Hyperemesis with loss of more than 5% of body weight and electrolyte disturbances has been associated with lowered birthweight, fetal growth retardation and anomalies.⁴

Management

- Treatment strategies for nausea and vomiting in pregnancy range from dietary and behavioral changes for mild symptoms to drug therapy and enteral or parenteral nutrition for severe cases.^{1, 4}
- Since the pathogenesis of pregnancy-related nausea and vomiting remains unclear, and symptoms may be transient and varied among individuals, there is no known single effective treatment to alleviate these common discomforts.⁶⁻⁸ Frequently made recommendations (Table 1) are somewhat subjective

and must be individualized. Foods that may alleviate symptoms in some individuals may aggravate them in others.

TABLE 1
**Recommendations for the Management
 of Nausea and Vomiting in Pregnancy**

Eat a dry, carbohydrate-rich food (e.g., breakfast cereal, popcorn, pretzels, crackers) before getting out of bed.

Avoid brushing teeth (which may initiate the gag reflex) early in the morning.

Eat small meals high in carbohydrate (e.g., pasta, rice, toast) every 2-3 hours throughout the day.

Avoid long periods without eating since an empty stomach may increase nausea.

Separate the intake of liquids and solids by about one hour.

Avoid offensive odors such as cooking smells, cigarette smoke and perfume. A scented candle may mask bothersome odors that can't be avoided.

Avoid cigarette smoking, alcohol and caffeine.

Eat fruit ices, popsicles, sherbet, lemon drops.

Drink caffeine-free carbonated beverages or lemonade.

Chew peppermint gum.

Choose alternative protein sources if meat is bothersome (e.g., peanut butter, cottage cheese, cheese).

Get adequate sleep and rest. Lie down during bouts of nausea.

Limit intake of highly seasoned and spiced foods and foods high in fat.

Get fresh air and moderate exercise (e.g., walking).

Delay the use of vitamin and iron supplements until symptoms improve. Children's chewable vitamins or highly-fortified breakfast cereals can be used as a vitamin source until supplements are tolerable.

Eat according to appetite and preferences.

Herbal Remedies, Alternative Therapies, or Medications

The following may be useful in more severe or prolonged cases of nausea and vomiting.

Ginger

- May be effective in decreasing nausea and vomiting. It is available in capsule formula (e.g., 250 mg four times per day),⁹ syrup, tea and hard candy. A ginger tea can also be prepared by simmering a small piece of fresh ginger in water for ten minutes, and sweetening it to taste with honey or sugar.
- It is theoretically possible that a component in ginger could effect fetal testosterone receptor binding and sex steroid differentiation. There are, however, no reports in the literature to support this concern.⁹

Vitamin B₆

- There is some evidence that vitamin B₆ (e.g., 25 mg three times per day) may be effective for severe nausea and vomiting.¹⁰
- Neurological problems in nonpregnant adults have been reported at high intakes (e.g., 100 mg per day),¹¹ suggesting that therapeutic dosages should not exceed 75 mg/day.

Sea Bands/Acupressure

- Sea Bands, (used for motion sickness) or acupressure on the anterior surface of the forearm, 3 finger-breadths above the wrist (PC-6 point) may decrease nausea associated with pregnancy.^{12, 13}

Medications

- Emetrol®, a phosphorated carbohydrate solution marketed as a remedy for nausea in the nonpregnant state, may be helpful for some adolescents.¹⁴
- Antiemetics or antihistamines (prescribed by the health care professional) may be necessary to control severe nausea and vomiting associated with pregnancy.¹

Nutrition Support

- Liquid meal replacements such as Boost® (Mead

Johnson) or an instant breakfast product may help increase energy and nutrient intake in adolescents who are unable to consume an adequate diet.

- Enteral nutrition (e.g., nasogastric tube) or parenteral nutrition therapy may be necessary in severely depleted adolescents with hyperemesis gravidarum.^{1, 4} Intravenous rehydration is more routinely done to restore electrolyte balance and correct dehydration.
- Thiamin supplementation is necessary when glucose solutions are administered since this vitamin is involved in carbohydrate metabolism. Failure to administer thiamin could result in Wernicke's Encephalopathy and possible irreversible neurological damage.¹⁵

Education and Counseling

- Inform the adolescent of the temporary nature of pregnancy-related nausea and vomiting, its association with positive pregnancy outcome and its common occurrence in normal pregnancies.
- Encourage the adolescent to try the recommendations provided in Table 1 for managing nausea and vomiting.
- Caution her to avoid self-prescribed remedies or medications without discussing them with her health care provider.

HEARTBURN

Heartburn, or gastroesophageal reflux, involves postprandial substernal burning and pain following regurgitation of gastric contents into the esophagus.¹⁶

Prevalence

- Heartburn is a common discomfort, occurring in 30-70% of all pregnancies. It can be present at any time, but occurs more frequently and is most severe during the third trimester.¹⁷ Heartburn prior to pregnancy, higher parity, and young maternal age may increase the risk for heartburn. Prepregnancy weight, gestational weight gain or race have not been associated with heartburn frequency or severity.¹⁷

Contributing Factors

- Estrogen, in combination with progesterone, decreases the lower esophageal sphincter (LES) pressure progressively throughout pregnancy, peaking at 36 weeks.¹ This can result in mild to severe gastroesophageal reflux.
- Decreased gastric emptying and increased intra-abdominal pressure from the enlarging uterus also contribute to heartburn.¹⁶
- Symptoms are worse after a large meal since gastric distention increases LES relaxation. Dietary fat increases reflux in the immediate postprandial period. Other factors that increase reflux include esophageal irritants or those that lower the LES pressure, such as acidic foods and beverages, spicy foods, alcohol, coffee, chocolate, spearmint, peppermint and lying down or bending over after eating.¹

Consequences

- Significant heartburn can interfere with eating and result in inadequate nutrient intake and insufficient weight gain.

Management

- Recommendations for managing heartburn symptoms are listed in Table 2.^{11, 16}

Severe heartburn may require medications:

- Antacids¹⁶
 - Those containing calcium carbonate are recommended (and are also a source of calcium), but can interfere with iron absorption.
 - Those containing sodium bicarbonate should be avoided since they can cause metabolic alkalosis.
 - Those containing magnesium should be avoided in late pregnancy since they may slow or arrest labor or cause convulsions.

- H₂ Receptor Antagonists¹⁶

- These have not been well-studied in pregnancy.
- Cimetidine[®], Ranitidine[®] and Famotidine[®] are FDA category B drugs (i.e., human trials demonstrate no risk to fetus but animal trials show some risk; or no adequate human trials but animal trials demonstrate no risk to fetus).

TABLE 2
Recommendations for the Management
of Heartburn in Pregnancy

Avoid lying down or bending over after eating.

Avoid eating 2-3 hours before bedtime.

Eat small meals frequently throughout the day.

Limit foods high in fat and avoid or limit esophageal irritants.

Limit the intake of fluids with meals.

Avoid tobacco and alcohol.

Elevate the head of the bed 6 inches with wooden blocks or raise the head 6-10 inches with a foam rubber wedge under the mattress.

Wear loose-fitting, comfortable clothing.

Education and Counseling

- Advise the adolescent to follow the recommendations in Table 2.
- Caution her to avoid self-medication without consulting her health care provider.

CONSTIPATION

Constipation involves infrequent (two or less per week) bowel movements or hard, difficult to pass stools.^{17, 18}

Prevalence

Constipation has been reported in approximately one third of all pregnancies, primarily during the first or third trimesters.¹⁸

Contributing Factors

- Increased levels of estrogen and progesterone and lower levels of motilin may decrease smooth muscle tone, slowing motility and transit time in the small bowel and/or colon.¹⁸
- Delayed transit time may result in more absorption of fluid and electrolytes, resulting in stool dehydration.¹⁸
- Additional factors such as decreased fluid or fiber intake, iron supplementation, decreased physical activity and psychosocial stress may also contribute to constipation.¹⁸

Consequences

- Mechanical obstruction and slower intestinal transit can occur from pressure on the rectosigmoid by the enlarging uterus or pressure in the anal canal by large hemorrhoids.¹⁸
- Potential complications of constipation in pregnancy include backache, fecal impaction or hemorrhoids.¹⁸

Management

- Recommendations for the management of constipation are listed in Table 3.^{11, 18}

Education and Counseling

- Advise the adolescent to follow the recommendations in Table 3.
- Caution her against self-prescribed medications, particularly castor oil.

TABLE 3
Recommendations for Managing Constipation in Pregnancy

Increase fluid intake to two to three quarts per day. Hot or iced beverages in the morning are especially helpful.

Eat regular meals, especially breakfast.

Attempt defecation after meals when the gastrocolic reflex is strongest.

Increase dietary fiber to 25-35 grams per day. High fiber sources include bran, bran cereals, prunes and other dried fruit, nuts and seeds, popcorn, dried beans and peas, fruits and vegetables (eat raw and include skins when possible), whole grains (e.g., whole wheat bread, oatmeal, grits, whole wheat pasta, brown rice).

Increase physical activity (e.g., walk, swim).

Practice Kegel exercises to increase voluntary pelvic floor muscle contractions.

Severe constipation may require medications:

Stool bulking agents such as Metamucil® are not systemically absorbed and are considered safe in pregnancy. Stool softeners have also been widely used without reported side effects.

Stimulant laxatives are not recommended for regular use.

Mineral oil is not recommended since it can decrease the absorption of fat-soluble vitamins which may result in neonatal hypothermia and hemorrhage.

Castor oil is contraindicated in pregnancy since it may stimulate uterine contractions.

Sources: Bonapace ES, Jr., Fisher RS. Constipation and diarrhea in pregnancy. *Gastroenterol Clin North Am* 1998;27(1):197-211; 10: Institute of Medicine. *Nutrition during pregnancy and lactation: an implementation guide*. Washington, DC: National Academy Press, 1992.

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