Eating disorders in pregnancy

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INTRODUCTION

Anorexia nervosa (table 1), bulimia nervosa (table 2), and binge eating disorder are characterized by persistent disturbances in eating patterns that impair general health and psychosocial functioning [1]. Eating disorders are most often found in adolescent and young adult women; thus, they often come to medical attention during pregnancy when weight and eating habits are closely monitored. For some women with eating disorders, pregnancy is an opportunity for recovery (comparable to stopping tobacco or alcohol use); for other patients, pregnancy is a period of vulnerability for onset, persistence, or relapse of eating disorder symptoms.

This topic reviews pregnancy, birth, and postpartum outcomes in the context of eating disorders; the course of eating disorders during and after pregnancy; and management of eating disorders that is specific to pregnant women. Diagnosis and treatment of eating disorders in the general population are discussed separately. (See "Eating disorders: Overview of epidemiology, clinical features, and diagnosis" and "Eating disorders: Overview of prevention and treatment".)

INITIAL ASSESSMENT

The initial clinical evaluation of patients with a possible diagnosis of anorexia nervosa, bulimia nervosa, or binge eating disorder includes a psychiatric and general medical history, mental

status and physical examination, and focused laboratory tests [2,3]. The assessment can be difficult because women with eating disorders tend to conceal their abnormal eating patterns and compensatory behaviors (fasting, laxative abuse, diuretic abuse, purging, or excessive exercise) due to denial, shame, and/or guilt [4,5]. Screening may help detect eating disorders. (See "Eating disorders: Overview of epidemiology, clinical features, and diagnosis", section on 'Screening'.)

Warning signs that pregnant women may have an eating disorder include [4,6,7]:

- History of an eating disorder
- Hyperemesis gravidarum
- Lack of weight gain over two consecutive prenatal visits in the second trimester
- Abnormally low body mass index (calculator 1)
- Unexplained hyperkalemia or other electrolyte abnormalities from use of laxatives
- Dental problems indicative of poor dental enamel from frequent emesis
- Presence of a mood or anxiety disorder

Some examples of useful questions include [4,6]:

- Are you concerned about your shape or weight?
- How do you feel about being weighed at every visit?
- How do you feel about your weight gain during pregnancy?
- Do you feel guilty about your eating habits?
- Do you eat in secret?
- Do you go on eating binges or feel you have lost control over how much you eat?
- Do you consciously try to restrict what you eat, or have you made yourself vomit to control your weight?
- Have you ever abused laxatives or diuretics?
- What are your exercise habits?

Laboratory tests are of limited utility in diagnosing eating disorders, but may help exclude general medical illnesses associated with weight loss [4]. (See "Anorexia nervosa in adults: Evaluation for medical complications and criteria for hospitalization to manage these complications", section on 'Laboratory assessment'.)

Anorexia nervosa should be included in the differential diagnosis when pregnant patients present with below normal body weight. Bulimia nervosa and binge eating disorder can be harder to identify than anorexia nervosa, because patients with bulimia nervosa and binge eating disorder may have a normal or above normal weight [6].

More detailed information about assessing patients for eating disorders is discussed elsewhere, as is the standard prenatal assessment for the general population. (See "Anorexia nervosa in adults: Clinical features, course of illness, assessment, and diagnosis", section on 'Assessment' and "Bulimia nervosa in adults: Clinical features, course of illness, assessment, and diagnosis", section on 'Assessment' and "Prenatal care: Initial assessment".)

DIAGNOSIS

Diagnosis of anorexia nervosa (table 1), bulimia nervosa (table 2), and other eating disorders is based upon the criteria in the American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5) [1]. (See "Anorexia nervosa in adults: Clinical features, course of illness, assessment, and diagnosis", section on 'Diagnosis' and "Bulimia nervosa in adults: Clinical features, course of illness, assessment, and diagnosis", section on 'Diagnosis' and "Eating disorders: Overview of epidemiology, clinical features, and diagnosis".)

METHODOLOGIC ISSUES

Evidence about the effects of eating disorders on pregnancy outcomes is based upon observational studies that vary in quality. As an example, diagnoses may be imprecise because they are derived from registry data or questionnaire self-report, rather than clinical evaluations. In addition, results are often presented for women with histories of eating disorders that may not have been active during the pregnancies that were studied. Furthermore, analyses in many studies were not adjusted for potential confounders such as maternal age, smoking, and prepregnancy body mass index. Specific eating disorders differ in their clinical features and treatment; thus, studies that examine eating disorders collectively are less informative than studies of specific disorders.

ANOREXIA NERVOSA

Estimating the prevalence of anorexia nervosa in pregnant women is complicated by the difficulty in determining low body weight in women who are gaining weight due to pregnancy [8]. The best estimate comes from a community studies of pregnant women in Norway and the Netherlands, which found that in the 6 to 12 months prior to becoming pregnant, the prevalence of anorexia nervosa was 0.1 to 0.3 percent [9,10]. The true prevalence is probably higher because patients often conceal their illness.

Although anorexia nervosa manifests with amenorrhea in approximately 70 to 90 percent of patients, fertility rates in women with a history of anorexia nervosa and women in the general population appear to be comparable [11]. However, many patients receive treatment for infertility [12,13].

Unplanned pregnancy is common in anorexia nervosa [13]. A prospective study of women with a lifetime history of anorexia nervosa (n = 171) and women with no eating disorders (n >10,000) found that unplanned pregnancy occurred in more patients with anorexia nervosa than controls (42 versus 28 percent) [12]. Induced abortion may also be more common in patients than controls [13].

Changes in body shape and the prospect of weight gain are more distressing to pregnant patients with anorexia nervosa than pregnant women without an eating disorder [14].

Pregnant women with anorexia nervosa are three times more likely to eat a vegetarian diet, compared to pregnant women with no history of eating disorders [15]. However, differences in nutrient intake are generally not observed [15,16].

Smoking appears to be common in pregnant patients with anorexia nervosa [17]. An observational study found that during pregnancy, women with a history of anorexia nervosa (n = 35) were more likely to smoke than women with no eating disorders (n >33,000) (37 versus 9 percent) [18].

Pregnant and postpartum patients with anorexia nervosa are often depressed. As an example, a community study found that the prevalence of depression in pregnant women with a history of anorexia nervosa (n = 23) and pregnant women with a history of unipolar major depression (n = 302) was comparable (39 and 37 percent) [19]. These prevalence rates appear to be higher than rates in the general population of women. (See "Unipolar depression in adults: Epidemiology", section on 'Prevalence'.)

Gestational weight gain — Weight gain in pregnant patients with anorexia nervosa varies. Using weight gain recommendations from the Institute of Medicine, a prospective study of pregnant women with anorexia nervosa (n = 32) found that at delivery, weight gain was as follows [20]:

- Inadequate – 22 percent (n = 7)
- Adequate – 28 percent (n = 9)
- Excessive – 50 percent (n = 16)

However, prepregnancy weight in patients was low (mean body mass index 18.1 kg/m^2); thus, "excessive" weight gain was probably appropriate.

Gestational weight gain at delivery appears to be greater in patients with anorexia nervosa than women without the disorder:

- A prospective community study of pregnant women with a history of anorexia nervosa (n = 129) and pregnant women with no history of eating disorders (n = 3816) found that the average weight gain was greater in the women with anorexia nervosa than the controls (9 versus 8 kilograms) [9].

- In a second prospective study of pregnant women with a history of anorexia nervosa (n = 30) and pregnant women with no eating disorders (n >30,000), it appeared that mean gestational weight gain was greater in women with anorexia nervosa (17 versus 15 kilograms; a test for statistical significance was not conducted due to the small sample size for anorexia nervosa) [20].

- A third prospective study of women with anorexia nervosa (n = 56) found that body mass index immediately prior to pregnancy was low (mean 18.2 kg/m^2), and during pregnancy increased only to the normal range at the time of birth (mean 24.4 kg/m^2) [10].

Gestational weight gain in the general population is discussed separately. (See "Gestational weight gain".)

Pregnancy and delivery outcomes — Adverse pregnancy outcomes that are observed more often in patients with anorexia nervosa than women without anorexia nervosa include:

- Antepartum hemorrhage – The risk of antepartum hemorrhage is 60 to 70 percent greater in women with anorexia nervosa than women without of anorexia nervosa:

  - A national registry study identified women with active or past anorexia nervosa (n >2700) and women without a history of eating disorders (n >1.2 million); after adjusting for potential confounding factors (eg, age, parity, and smoking), the analyses found that antepartum hemorrhage occurred in more women with anorexia nervosa (relative risk 1.6, 95% CI 1.2-2.1) [21].

  - A retrospective study found that antepartum hemorrhage occurred in more mothers with a history of anorexia nervosa (n = 230 births) than mothers free of anorexia nervosa (n = 1144 births; relative risk 1.7, 95% CI 1.1-2.7) [22].

- Lower birth weight – A meta-analysis of nine observational studies examined birth weight in babies of mothers with anorexia nervosa (active illness or past history; n >4000) and babies of mothers without the disorder (n >2,000,000) [23]. Birth weight was lower in children of mothers with anorexia nervosa than controls; however, the clinical difference was small (190 grams) and heterogeneity across studies was moderate.

- Microcephaly – In a national registry study of women with active or past anorexia nervosa (n >2700) and women without a history of eating disorders (n >1.2 million), microcephaly occurred in more women with anorexia nervosa (relative risk 1.7, 95% CI 1.3-2.1) [21].

Several studies have found that anorexia nervosa is not associated with preterm birth [9,17,18,22,24,25]. However, in a more recent and relatively large study of women with active or past anorexia nervosa (n >2700) and women without a history of eating disorders (n >1.2 million), preterm birth occurred more often with anorexia nervosa (relative risk 1.5, 95% CI 1.3-1.8) [21].

It is not clear if anorexia nervosa is associated with small for gestational age births, due to conflicting results across studies. In a national registry study of births (n = 244) in women with a lifetime history of anorexia nervosa and births (n >43,000) in women without a history of eating disorders, the probability of small for gestational age was nearly three times greater in women with anorexia nervosa (odds ratio 2.7, 95% CI 1.4-5.1) [26]. A second registry study with over 2 million participants showed that the risk of small for gestational age was greater in those with anorexia nervosa than those without (relative risk 1.5, 95% CI 1.4-1.7) [27]. However, other studies have failed to show an association between anorexia nervosa and small for gestational age [9,18,24,28].

It is also unclear whether anorexia nervosa in pregnant women is associated with stillbirth and neonatal death, due to conflicting results across different studies [24,25,27].

Pregnant women with a history of anorexia nervosa do not appear to be at increased risk for:

- Miscarriage [17,22,29]
- Preeclampsia [9,21,22,24,28]
- Caesarean delivery [9,18,22,24]
- Large for gestational age [18,21,24]

Postpartum outcomes — Cessation of breastfeeding within six months of delivery occurs more often in women with a history of anorexia nervosa than women with no history of eating disorders [30]. However, it is not clear whether maternal anorexia nervosa is associated with

lower infant growth rates, due to conflicting results across different prospective studies of population based cohorts [31,32].

A prospective study of mothers with a history of anorexia nervosa (n = 44) and mothers with no eating disorders (n >45,000) found that difficult infant temperament or fussiness (eg, infant demands a lot of attention, cries a lot, or cries loudly and angrily) at age six months was reported more often by mothers with anorexia nervosa [33].

Course of illness — The course of anorexia nervosa during and after pregnancy varies across patients. Although active symptoms of anorexia nervosa may diminish during pregnancy [34], remitted patients can relapse [7]. A prospective study (n = 72 patients with prepregnancy anorexia nervosa) found the following outcomes at 36 months postpartum [35]:

- Persistence or recurrence of anorexia nervosa – 29 percent
- Crossover to a different eating disorder (eg, bulimia nervosa) – 12 percent
- Remission – 59 percent

Mortality may be lower among patients with anorexia nervosa who give birth to at least one child, compared with patients who remain nulliparous. In a national registry study of patients with anorexia nervosa (n = 5251) that adjusted the analyses for several potential confounds (including general medical and psychiatric history), all-cause mortality was reduced in parous patients compared with nulliparous patients by approximately 60 percent [36]. Nevertheless, mortality was higher for both groups of patients compared with the general population.

BULIMIA NERVOSA

The estimated prevalence of bulimia nervosa during pregnancy in a community study in Norway (n >77,000 pregnant women) was 0.2 percent [8]. Initial onset of the illness during pregnancy was rare.

Fertility rates and unplanned pregnancies in women with a history of bulimia nervosa and women in the general population are comparable [12,37]. However, fertility treatment appears to be greater in women with bulimia nervosa than women with no psychiatric history [37], and induced abortion occurs more often in women with bulimia nervosa than controls [29].

Changes in body shape and the prospect of weight gain are more distressing to pregnant patients with bulimia nervosa than pregnant women without an eating disorder [14].

Women with bulimia nervosa are twice as likely to eat a vegetarian diet, compared to women with no history of eating disorders [15]. However, differences in nutrient intake are generally

not observed [15,16].

Smoking during pregnancy occurs in more mothers with bulimia nervosa (n >300) than mothers with no eating disorders (n >33,000) (15 versus 9 percent) [18].

Pregnant and postpartum patients with bulimia nervosa are often depressed [38]. As an example, a retrospective community study found that the prevalence of depression was two times greater in pregnant women with a history of bulimia nervosa (n = 22) than pregnant women with no history of eating disorders (n = 950) (59 versus 27 percent) [19].

Gestational weight gain — Gestational weight gain in patients with bulimia nervosa is frequently excessive. Using weight gain recommendations from the Institute of Medicine, a prospective study of pregnant women with bulimia nervosa (n = 275) found that at delivery, weight gain was as follows [20]:

- Inadequate – 20 percent
- Adequate – 20 percent
- Excessive – 60 percent

The study also found that the average total weight gain at delivery was greater in women with bulimia nervosa than women with no history of eating disorders (n >30,000) (17 versus 15 kilograms). Gestational weight gain in the general population is discussed separately. (See "Gestational weight gain".)

Pregnancy and delivery outcomes — Bulimia nervosa is associated with an increased rate of miscarriages:

- In a community study of pregnant women in England that included women with a history of bulimia nervosa (n = 199) and women with no psychiatric history (n >10,000), a past history of miscarriage was reported more frequently by women with a history of bulimia nervosa (odds ratio 1.4) [17].

- In a second study, women who were treated for bulimia nervosa and subsequently conceived were retrospectively assessed as to whether they had active symptoms of the illness during the pregnancy. Miscarriage occurred in more patients with active bulimia nervosa (n = 122) than quiescent illness (n = 82) (26 versus 12 percent) [38].

In addition, maternal bulimia nervosa appears to be associated with neonatal microcephaly. In a national registry study of women with active or past bulimia nervosa (n >1300) and women without a history of eating disorders (n >1.2 million), microcephaly occurred in more offspring of women with bulimia nervosa (relative risk 1.5, 95% CI 1.1-2.2) [21].

Pregnant women with a history of bulimia nervosa do not appear to be at increased risk for:

- Preeclampsia [9,18,21,38]
- Preterm delivery [9,17,18,25]
- Caesarean delivery [9,18,21]
- Small for gestational age [9,18,21,25,26]
- Large for gestational age [18,21,25]

In addition, multiple studies indicate that birth weight in babies of mothers with a history of bulimia nervosa and mothers with no psychiatric history are comparable [9,17,18].

A prospective study examined pregnancy related nausea and vomiting (distinguished from self-induced vomiting) in pregnant women with bulimia nervosa whose illness included purging (eg, self-induced vomiting or misuse of laxatives) (n >100), and pregnant women with no eating disorders (n >37,000) [39]. Pregnancy related nausea and vomiting in the first gestational month occurred in more women with bulimia nervosa who purged, compared to women with no eating disorders (29 versus 21 percent). In a national registry study which included women with active or past bulimia nervosa (n >1300) and women without a history of eating disorders (n >1.2 million), the risk of hyperemesis gravidarum was greater in those with bulimia nervosa (relative risk 2.0, 95% CI 1.5-2.5) [21].

Postpartum outcomes — It is not clear whether maternal bulimia nervosa is associated with lower or higher growth rates among infants, due to conflicting results across different prospective studies of population based cohorts [31,32]. The frequency and duration of breastfeeding among women with bulimia nervosa and women without eating disorders appears to be comparable [30].

A prospective study of mothers with bulimia nervosa (n >400) and mothers with no eating disorders (n >45,000) found that difficult infant temperament or fussiness (eg, infant demands a lot of attention, cries a lot, or cries loudly and angrily) at age six months was reported more often by mothers with bulimia nervosa [33].

Course of illness — Bulimia nervosa typically remits during pregnancy [34,40]. As an example, a prospective community study found that among women who were diagnosed with bulimia nervosa six months prior to becoming pregnant (n = 672), remission or partial remission during pregnancy occurred in 74 percent [8]. Nevertheless, patients with remitted illness may relapse during pregnancy [7,41].

In addition, prepregnancy bulimia nervosa persists or recurs in many patients following parturition. A prospective study (n = 672 patients with prepregnancy bulimia nervosa) found the

following outcomes at 36 months postpartum [35]:

- Full syndrome of bulimia nervosa – 18.7 percent
- Subthreshold symptoms of bulimia nervosa – 32.5 percent
- Crossover to a different eating disorder (eg, binge eating disorder) – 19.3 percent
- Remission of bulimia nervosa – 29.5 percent

BINGE EATING DISORDER

The estimated prevalence of binge eating disorder during pregnancy in a prospective, community study in Norway (n >77,000 pregnant women) was 5 percent [8]. Many of these cases represented new onset of binge eating disorder during pregnancy.

Changes in body shape and the prospect of weight gain during pregnancy are more distressing for pregnant patients with binge eating disorder than women without an eating disorder (n >33,000) [14].

Pregnant and postpartum patients with binge eating disorder are often depressed. As an example, a community study found that the prevalence of depression was two and half times greater in pregnant women with a history of binge eating disorder (n = 27) than pregnant women with no history of eating disorders (n = 950) (67 versus 27 percent) [19].

Gestational weight gain — Gestational weight gain in patients with binge eating disorder is usually excessive. Using weight gain recommendations from the Institute of Medicine, a prospective study of pregnant women with binge eating disorder (n >1700) found that at delivery, weight gain was as follows [20]:

- Inadequate – 18 percent
- Adequate – 17 percent
- Excessive – 65 percent

Total energy (kilocalories) intake per day is greater in pregnant patients with binge eating disorder than pregnant women with no eating disorders [16], and the average total weight gain at delivery is greater in women with binge eating disorder (n >1600) than controls (n >30,000) (17 versus 15 kilograms) [20]. Gestational weight gain in the general population is discussed separately. (See "Gestational weight gain".)

Pregnancy and delivery outcomes — Binge eating disorder may be associated with an increased risk of miscarriages. A registry study found that miscarriages occurred three times more often in women with binge eating disorder (n = 149) than matched controls (n = 596) [29].

In addition, smoking during pregnancy has been observed in more mothers with binge eating disorder (n >1800) than mothers with no eating disorders (n >33,000) (14 versus 9 percent) [18].

Pregnant women with a history of binge eating disorder do not appear to be at increased risk for [18,25,42]:

- Preeclampsia
- Preterm delivery
- Caesarean delivery
- Small for gestational age

It is not clear if binge eating disorder increases the risk of giving birth to infants who are large for gestational age, due to conflicting results across studies [18,25]. One study found that birth weight in babies of mothers with a history of binge eating disorder and in babies of mothers with no psychiatric history appears to be comparable [18].

Postpartum outcomes — Maternal binge eating disorder is associated with initial lower growth rates among infants. A prospective study followed children of mothers with binge eating disorder (n = 2809) and children of mothers without eating disorders (n >53,000) for up to one year following birth [31]. Weight for length growth was lower in the offspring of affected mothers, compared with children of mothers with no disorder.

A prospective study of mothers with binge eating disorder (n >2400) and mothers with no eating disorders (n >45,000) found that difficult infant temperament or fussiness (eg, infant demands a lot of attention, cries a lot, or cries loudly and angrily) at age six months was reported more often by mothers with binge eating disorder [33].

Course of illness — Binge eating disorder typically persists during pregnancy [40]. As an example, a prospective community study found that among women who were diagnosed with binge eating disorder six months prior to becoming pregnant (n = 2698), the disorder persisted during pregnancy in 61 percent [8].

In addition, prepregnancy binge eating disorder often persists or recurs following parturition. A prospective study (n >2600 patients with prepregnancy binge eating disorder) found the following outcomes at 36 months postpartum [35]:

- Full syndrome of binge eating disorder – 21 percent
- Subthreshold symptoms of binge eating disorder – 23 percent
- Crossover to a different eating disorder (eg, bulimia nervosa) – 14 percent
- Remission of binge eating disorder – 42 percent

MANAGEMENT

This section discusses general principles for managing women with eating disorders who consider becoming pregnant or are pregnant. Specific treatments for eating disorders, as well as management of medical complications, are discussed in separately. (See "Eating disorders: Overview of prevention and treatment" and "Anorexia nervosa in adults and adolescents: Medical complications and their management" and "Bulimia nervosa and binge eating disorder in adults: Medical complications and their management".)

Prepregnancy — Patients with eating disorders who want to avoid pregnancy should receive information about contraceptive methods. Eating disorders can cause menstrual irregularities, including secondary amenorrhea; patients may thus assume that they are infertile, not use contraception, and present with unplanned pregnancies. Contraceptive techniques are discussed separately. (See "Contraception: Counseling and selection".)

Women with eating disorders who consider becoming pregnant should receive preconception counseling about the risks to the patient and her child, as well as education about body changes (eg, expected weight gain and increase in size of abdomen) during pregnancy. These risks are described elsewhere in this topic. (See 'Anorexia nervosa' above and 'Bulimia nervosa' above and 'Binge eating disorder' above.)

In addition to the risks described above, women with eating disorders who become pregnant are also at risk for comorbid psychopathology. A prospective study found that antenatal and postnatal symptoms of anxiety and depression were greater in women with either a current eating disorder (n = 31) or past history of an eating disorder (n = 29), compared with healthy controls (n = 57) [43].

Patients should postpone pregnancy until the disorder and medical complications are stable. Similarly, for patients who initially present requesting fertility evaluation and treatment, eating disorders should ideally be in full remission before any assisted reproductive technology is initiated to minimize the effects of the disorder on fertility and pregnancy [44,45].

Pregnancy — We suggest that pregnant patients with eating disorders be managed by a team that includes a psychiatrist, dietician, and obstetrician [4]. The clinicians must agree with each other and the patient that there are no secrets between the clinicians, and that the clinicians will regularly communicate about any concerns that arise, as well as important issues such as the rate of weight gain. Severely ill patients will also need referral to an eating disorders program.

The dietary habits of pregnant patients with eating disorders must be monitored to ensure proper weight gain and fetal growth, and nutritional guidance should be provided. In addition, the patient should be asked about use of drugs potentially harmful in pregnancy, including antidepressants and other medications used for mood disorders (eg, lithium), appetite suppressants, benzodiazepines, diuretics, and excess use of laxatives.

Clinicians monitoring weight gain should weigh patients in a hospital gown; patients with anorexia nervosa may attempt to conceal their true weight by hiding objects in their clothes [46]. In addition, patients may inflate their body weight drinking water. Some patients may prefer to not know their weight, which should be honored, unless weight gain is inadequate. Poor weight gain should prompt a discussion of the nutritional needs of the fetus and the need to eat for the baby, with less focus upon the patient's own weight [4,6]. Providing models or illustrations that portray the size and development of the fetus, as well as fundal height measurements and the results of ultrasound examinations, may be helpful.

Pregnant women with eating disorders should be evaluated for co-morbid psychiatric disorders such as antenatal depression. Pharmacotherapy with adjunctive psychotherapy is often necessary. (See "Severe antenatal unipolar major depression: Choosing treatment".)

Postpartum — Coordinated care of postpartum women with eating disorders must continue after delivery because relapse of eating disorders in the puerperium is common, as is comorbid postpartum depression [4,6].

Communication with pediatricians should occur as well because maternal eating disorders may be associated with how children are fed and with feeding problems:

- One prospective study compared mothers with a lifetime history of anorexia nervosa or bulimia nervosa (n = 441) to mothers without any psychiatric history (n >10,000); feeding difficulties (eg, slow feeding, small quantity feeds, or being unsatisfied after feeding) at age one and six months were greater in babies of mothers with eating disorders [47].

- Another prospective study conducted assessments 36 months after delivery in mothers with bulimia nervosa (n = 98), binge eating disorder (n = 634), or no eating disorder (n >12,000) [48]. Restrictive feeding (limiting the quantity and/or type of food) of children was more common among mothers with either eating disorder than controls. In addition, children of mothers with either disorder had more eating behavior problems (eg, poor intake, gastrointestinal complaints, or not enjoying eating).

- A third prospective study assessed children aged three to nine years, and found that a health conscious/vegetarian diet was more common in children whose mothers had a

history of anorexia nervosa or bulimia nervosa (total n = 315), compared with children of mothers with no eating disorders [49].

However, multiple studies indicate that diet composition and macronutrients (eg, carbohydrate, fat, and protein) are generally comparable for children of mothers with a history of eating disorders and children of mothers with no such history [49-51]. In addition, one study prospectively followed mother-infant pairs (n = 6196) for up to one year; after controlling for potential confounding factors (eg, maternal age, education, and psychiatric symptoms), the analyses found that diet quality was higher for infants of mothers with lifetime histories of an eating disorder (n = 951), compared with infants of mothers who did not have a history of an eating disorder [52].

SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "Society guideline links: Eating disorders".)

SUMMARY

- Anorexia nervosa (table 1), bulimia nervosa (table 2), and binge eating disorder are characterized by persistent disturbances in eating patterns that impair general medical health and psychosocial functioning. (See 'Introduction' above and "Eating disorders: Overview of epidemiology, clinical features, and diagnosis".)

- The initial assessment of patients with a possible diagnosis of an eating disorder can be difficult because patients tend to conceal their abnormal eating patterns and compensatory behaviors. Warning signs that pregnant women may have an eating disorder include history of an eating disorder, lack of weight gain over two consecutive prenatal visits in the second trimester, abnormal body mass index (calculator 1), and dental problems indicative of poor dental enamel from frequent emesis. (See 'Initial assessment' above.)

- In women with a history of anorexia nervosa, fertility rates appear to be comparable to those in the general population, and unplanned pregnancy is common in anorexia nervosa. Gestational weight gain is inadequate in about 20 percent of patients, and the average birth weight is modestly lower in children of mothers with anorexia nervosa than controls. However, patients with a history of anorexia nervosa do not appear to be at increased risk for miscarriage, preeclampsia, preterm delivery, or caesarean delivery, as

well as babies who are large for gestational age. Anorexia nervosa typically remits during pregnancy. (See 'Anorexia nervosa' above.)

- Among women with a history of bulimia nervosa, fertility rates and unplanned pregnancies are comparable to those of women in the general population. Gestational weight gain in patients with bulimia nervosa is frequently excessive, and bulimia nervosa is associated with an increased rate of miscarriages. However, pregnant women with a history of bulimia nervosa do not appear to be at increased risk for preeclampsia, preterm delivery, caesarean delivery, or abnormal infant birth weight, as well as babies who are small for gestational age or large for gestational age. Bulimia nervosa typically remits during pregnancy, but often recurs following parturition. (See 'Bulimia nervosa' above.)

- In patients with binge eating disorder, gestational weight gain is typically excessive, and binge eating disorder may be associated with an increased risk of miscarriages. However, patients do not appear to be at increased risk for preeclampsia, preterm delivery, caesarean delivery, or abnormal infant birth weight, as well as babies that are small for gestational age. Maternal binge eating disorder is associated with initial lower growth rates among infants. Binge eating disorder typically persists during pregnancy, and often persists or recurs following delivery. (See 'Binge eating disorder' above.)

- Patients with eating disorders who want to avoid pregnancy should receive information about contraceptive methods. Eating disorders can cause menstrual irregularities, including secondary amenorrhea; patients may thus assume that they are infertile, not use contraception, and present with unplanned pregnancies. (See "Contraception: Counseling and selection".)

- Women with eating disorders who consider becoming pregnant should receive preconception counseling about the risks to the patient and her child, as well as education about body changes (eg, expected weight gain and increase in size of abdomen) during pregnancy. Patients should postpone pregnancy until the disorder and medical complications are stable. (See 'Prepregnancy' above.)

- Pregnant patients with eating disorders should be managed by a team that includes a psychiatrist, dietician, and obstetrician. Following delivery, the pediatrician should be involved as well. (See 'Pregnancy' above and 'Postpartum' above.)

- The dietary habits of patients with eating disorders must be monitored to ensure proper weight gain and fetal growth, and nutritional guidance should be provided. In addition, the patient should be asked about use of drugs potentially harmful in pregnancy,

including appetite suppressants, diuretics, and excess use of laxatives. (See 'Pregnancy' above.)

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