

## Sexual health and function in pregnancy

**Counseling about sexuality in pregnancy and postpartum offers an opportunity to allay fears and increase patient satisfaction during a unique period in a woman's life.**

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Physiologic changes during pregnancy affect the body's hormonal milieu as well as a woman's sexual desires, responses, and practices. Typically, women's sexual interest and coital frequency declines in the first trimester of pregnancy, shows variable patterns in the second trimester, and decreases sharply in the third trimester.<sup>1</sup> Limited data and resources exist to guide patients on recommendations for sexual activity during pregnancy. In this review, we discuss knowledge gaps, the physiology of the female sexual response during pregnancy, types of sexual activity during pregnancy, and existing literature on anatomic and physiologic changes by trimester and postpartum. We hope that with improved knowledge, patients and providers will approach sexual health in pregnancy with less hesitation and more realistic expectations during this unique time in a woman's life.

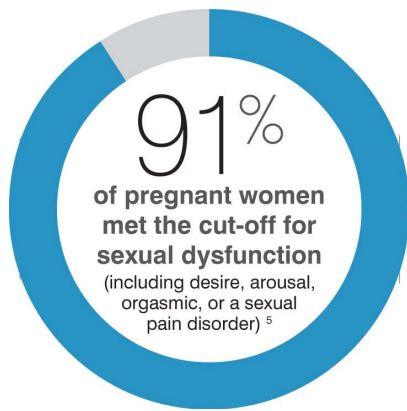


- Open discussion between clinicians and patients may help to alleviate women's fears and close knowledge gaps about being sexually active throughout pregnancy.
- Decline in sexual activity is most prominent during the third trimester, but anywhere between one-third and one-half of women continue to be sexually active during this period.
- Pre-pregnancy anatomy and sexual physiology is usually established by 12 weeks postpartum, but some suggest that vaginal intercourse may be safely resumed as early as the second week.

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### Knowledge gaps

Many women have some level of apprehension about sexual intercourse during pregnancy, which may include fear of harming the fetus or potential for miscarriage or fetal demise, which can often precipitate avoidance of sexual activity during pregnancy.<sup>2</sup> In 1 study, approximately 49% of women surveyed were concerned that intercourse could harm their pregnancy.<sup>3</sup> The state of pregnancy is associated with a significant decrease in frequency of sexual activity, sexual desire, sexual satisfaction, and orgasm.<sup>4</sup> In another study, 91% of pregnant women met the cut-off for sexual dysfunction (including desire, arousal, orgasmic, or a sexual pain disorder) in the Female Sexual Function Index (FSFI), compared to 68% of their non-gravid female counterparts.<sup>5</sup> The FSFI is a validated questionnaire that assesses sexual functioning (ie, arousal, orgasm, satisfaction, and pain) in women.



Theoretically, sexual intercourse may stimulate contractions due to stimulation of the lower uterine segment, endogenous release of oxytocin from orgasm, direct action of prostaglandins in semen, or increased exposure to infectious agents. A few studies associating coital and orgasmic frequency with negative effects to the fetus have suffered from small sample size and incomplete control for confounders, including maternal history of preterm delivery or risk factors.<sup>6-10</sup> Larger studies performed in women during all stages of pregnancy have observed no overall association between pregnancy complications (vaginal bleeding, premature rupture of membranes, preterm birth, low birth weight, or perinatal mortality) and coital frequency.<sup>11</sup> The data, however, have not been stratified by

women's individual obstetrical history.

Evidence currently is insufficient to justify recommending against sexual intercourse during pregnancy. Overwhelmingly, studies of sexual activity in pregnancy have been unable to demonstrate increased risk of preterm labor, delivery, or infectious complications (in the absence of acquired sexually transmitted infections).<sup>11</sup> Despite a dearth of evidence to suggest that sex is harmful during pregnancy, patients may still be apprehensive about engaging in sexual intercourse and may also be unsure of how best to broach this topic with their providers.

In not addressing sexual health in pregnancy with their patients, providers may be falling short of patients' needs and expectations. In 1 study, most women (68%) did not remember discussing sexuality with their providers, and only 17% of them were counseled with respect to sexuality at the 6-week postpartum visit.<sup>12</sup> Another study found that fewer than 10% of participants discussed their sexual health with their physicians, while a third study reported that only one-third of respondents had discussed issues relating to sexuality with any medical staff.<sup>13</sup> Other authors contend that 34% of women felt uncomfortable broaching the subject and only 29% ultimately consulted with their physicians about the topic; 76% of women did not discuss sexual activity in pregnancy although they felt it should have been addressed.<sup>3</sup>

#### [More: Preconception care as primary prevention](#)

Because discussion between patients and clinicians about sex during pregnancy is lacking, patients in 1 study report that the Internet is their leading source of information on the topic.<sup>2</sup> This is an area in which clinicians who treat women during the antenatal period can improve patient care by addressing unmet needs and gaps in patient knowledge. During each prenatal visit, simply asking patients about whether they continue to be sexually active during their pregnancy may be enough to make them comfortable asking questions about their sexual health. When implemented effectively, sexual knowledge education programs have been shown to improve both sexual function and sexual attitudes among pregnant women.<sup>14,15</sup> Increasing health education can be crucial in informing pregnant women of normal changes that occur at different stages of pregnancy, reducing anxiety, and potentially improving sexual function.<sup>16</sup>

#### Sexual physiology in pregnancy

William Masters and Virginia Johnson, widely known for their work on human sexuality, conducted one

of the few physiologic investigations of sexual response in pregnant women.<sup>17</sup> Pregnancy markedly increases the vascularity of the pelvic viscera, leading to pelvic vasocongestion. Masters and Johnson found that a superimposed physiologic response to sexual stimulation further increases this already existing pelvic vasocongestion.<sup>17</sup> In nulliparous women during the excitement phase, the labia minora and majora go through similar patterns of color change as in the non-pregnant state. In contrast, multiparous women can develop engorged labia majora and often localized engorgement of the lateral vaginal walls during the excitement phase.<sup>17</sup>

Orgasms can affect uterine contractions differently depending on gestational age. Following orgasm during the first trimester, intermittent cramping and uterine irritability can occur. By the third trimester, patients may experience tonic spasm of the uterus during orgasm for up to 1 minute. In some women after 36 weeks' gestation, recurrent uterine contractions following orgasm have been demonstrated for up to 30 minutes. During the resolution phase after orgasm, pelvic vasocongestion is not entirely relieved; in the second trimester, it may take 10 to 15 minutes in nulliparous patients to see resolution of vasocongestion, and up to 30 to 45 minutes in multiparous patients.

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49%

**OF WOMEN SURVEYED WERE CONCERNED THAT INTERCOURSE COULD HARM THEIR PREGNANCY.<sup>3</sup>**

Patients reevaluated at 4 to 8 weeks postpartum were noted to have the following physiologic and anatomical changes: fully healed episiotomies and lacerations, decreased vaginal lubrication, and thinned and fattened vaginal rugae, regardless of nursing. Although the cervix was closed in most women, the uterus remained in the abdomen (as opposed to the pelvis) during the early postpartum period. By 12 weeks postpartum, there was evidence of a return to ovulation in non-nursing women, a re-establishment of normal vaginal rugal patterns, and a return of the uterus to the pelvis. Vaginal secretions, labia minora and majora responses, vaginal expansion and lengthening, and contractions during the orgasmic platform all returned to the baseline response patterns typical of non-pregnant women. Overall, normal physiology of the sexual response and orgasm is re-established. Despite objective differences between 5 and 12 weeks postpartum, patients could not necessarily distinguish significant differences in the intensity of their sexual experiences.

Overall, there are no strong data on which to base recommendations regarding when to resume vaginal intercourse postpartum.<sup>18</sup> The aforementioned study suggests that by 12 weeks postpartum, anatomy is restored and pre-pregnancy sexual physiology is re-established. Some authors have suggested that vaginal intercourse can probably be safely resumed in women as early as 2 weeks postpartum, as long as the perineum is healed, contraception is available, and the patient is ready.<sup>19</sup> In Europe and the United States, vaginal intercourse is resumed, on average, at 6 to 8 weeks after birth.<sup>1</sup>

### [NEXT: Influences on type of sexual activity](#)

#### Influences on type of sexual activity

Pregnancy can affect the type of sexual activity in which patients feel comfortable engaging.

Coital activity appears to decline sharply by the third trimester. At 28-weeks of gestation, most couples continue with intercourse; at 32-weeks, about half to three quarters; and at 36-weeks, about one-third are still having sex.<sup>1</sup> One report cited 40% of women engaging in intercourse within 2 weeks of the onset of labor and 17% in the 2 days before the onset of labor.<sup>20</sup> Approximately 10% of women will abstain from coitus once pregnancy is confirmed.<sup>21</sup>

Over the course of pregnancy, the use of man-on-top position declines, and woman-on-top, side-by-side, or rear entry positions are practiced more often.<sup>22</sup> One large meta-analysis showed that up to 98.3% of pregnant women preferred genital-to-genital contact, with other types of sexual activity also being desired: 38.1% oral sex, 20.4% masturbation, and 6.6% anal sex, consistent with a non-pregnant cohort.<sup>1</sup> Another study cited that up to 75% of European and American couples will practice mutual manual genital stimulation and up to 50% will practice oral genital stimulation during pregnancy.<sup>23</sup> In the first and second trimesters, non-genital contact remains unchanged (94% of couples caress more than once a week).<sup>1</sup> With respect to masturbation, up to 31% of women have reported self-stimulation during pregnancy, and up to 20% in the 3 to 6 months postpartum.<sup>21</sup>

Cultural influences can largely affect forms of sexual contact in some populations. Many ethnic and religious factors may come into play which can propagate fears about sexual intercourse, thereby leading to avoidance during pregnancy.<sup>24-27</sup> Authors of a Turkish study contend that rates of sexual dysfunction may be higher than average in Turkish women due to women's attitudes about sexuality issues related to parental teaching.<sup>24</sup> A study from Iran demonstrated that 52.9% of pregnant Iranian women believed that intercourse during pregnancy could result in abortion, and the same number considered it a cause for fetal infections.<sup>28</sup> Fok, et al demonstrated that 93% of Chinese couples reported an overall reduction in sexual intercourse by the third trimester, with 80% attributing it to fear of possible harm to the fetus.<sup>2</sup> Given the diversity of different cultures and backgrounds of pregnant patients in the United States, apprehension about sex in pregnancy remains prevalent in various communities. Clinicians should do their best to assuage patient fears while remaining sensitive to the background from which these fears may have arisen.

### [Recommended: Should women with intrahepatic cholestasis of pregnancy be delivered early?](#)

For pregnant women with female partners, other concerns specific to lesbian couples may arise. However, very limited research has been done on sexual practices of pregnant women with female partners.<sup>29</sup> Wilton, et al found that when pregnant lesbians did not reveal their sexual identity, it was

due to fear of prejudice, altered medical care practices, or lack of confidentiality.<sup>30</sup> The rate of intimate partner violence (IPV) increases during pregnancy and IPV is associated with poor pregnancy outcomes. Unfortunately, the rate of IPV is higher in the lesbian community.<sup>31-32</sup> As such, universal screening for all women is imperative.

### First trimester

Some of the first studies of female sexual response during pregnancy showed that women aged 21 to 43 years reported a 33% to 43% reduction in sexual desire and subjective effectiveness of sexual performance due to nausea, sleepiness, and chronic fatigue, similar to symptoms of the first trimester.<sup>17,33,34</sup> Sixty percent of these same women reported that fear of injury to the fetus affected the freedom of their physical response in sexual activity.<sup>17</sup> In another study of first-trimester gravid women, while 45% expressed a desire to have sexual intercourse, 27.7% experienced a decrease in sexual satisfaction, and 32.5% had a decrease in sexual desire.<sup>35</sup> Increasing estrogen, progesterone, and prolactin lead to biological changes that precipitate nausea and emesis, weight gain, fatigue, and breast pain that can affect sexual desire and arousal.<sup>36</sup> In addition, increased levels of relaxin can lead to enlargement of vaginal epithelial cells, which theoretically can reduce vaginal sensitivity.<sup>37</sup> In a cross-sectional study of 589 women, a decrease in clitoral sensitivity, reduction in sexual desire, and orgasm dysfunction were shown to be the most prevalent sexual disorders during pregnancy.<sup>34</sup> Patients should be reassured that physiologic and hormonal changes in the first trimester commonly potentiate variable changes in pre-pregnancy sexual function.



[NEXT: Second and third trimester](#)

### Second trimester

The second trimester usually allows for increased libido and less physical discomfort as symptoms typical in the first trimester subside. Masters and Johnson noted that second-trimester patients had a marked increase in eroticism and effectiveness of sexual performance regardless of their parity or age. Eighty-two of 101 women described a significant improvement in basic sexuality, not only over the first trimester but well beyond their concept of previously established norms of performance in non-pregnant states.<sup>17</sup>

In general, women experience increased vaginal lubrication and genital blood flow that favor orgasm, generally increasing women's desire to engage in sexual activity.<sup>35</sup> Interestingly, 1 study found that 36% of women were interested in sexual intercourse in the second trimester compared to 45% during the first trimester.<sup>38</sup> Although the second trimester may afford patients higher tolerability to engaging in sexual activity, changes in sexual desire, sexual satisfaction, and coital frequency remain widely variable from the first trimester to the second trimester.

Increased sensation of fetal movements can also impact quality of sexual contact and choice of sexual position.<sup>38</sup> In 1 study of women at 23 to 26 weeks' gestation, the authors demonstrated that in the absence of maternal vaginal infections, frequent intercourse (defined as 1 or more episodes of vaginal intercourse per week) was actually associated with significantly reduced risk of preterm delivery.<sup>39</sup> This may have been associated with the relative good health and lack of pregnancy complications in women who engage in frequent intercourse during pregnancy.

### Third trimester

Decline in sexual activity is most prominent during the third trimester of pregnancy.<sup>34,36</sup>

Several studies report significant reductions in FSFI scores between the first and third trimesters.<sup>33,40</sup> Factors that contribute to this drop in sexual function include fear of obstetrical complications and delivery, emotional stress, decreased libido, anatomical changes, and late symptoms of pregnancy.<sup>41-44</sup>

During the third trimester, women express decreased desire and attenuated sexual arousal, lubrication, and sexual satisfaction, making sex more difficult and less frequent.<sup>3,13,35</sup> Erol et al found a reduction of 94.2% in clitoral sensitivity, 92.6% in libido, and 81% in orgasm.<sup>34</sup> Some women abandon sexual activity during pregnancy altogether due to pain during genital-to-genital contact.<sup>4,41</sup> Some studies suggest that decreasing androgen levels in the third trimester also decrease sexual desire, although studies have shown no relationship between serum androgen levels and sexual function.<sup>45</sup>

Anatomically, when the presenting part of the fetus is engaged in the true pelvis and the cervix is brought into the vaginal axis, direct penile-cervical contact can result in vaginal spotting or bleeding.<sup>17</sup> Bartellas and colleagues found that 57% of women feared vaginal bleeding from intercourse but only 13% recorded its occurrence.<sup>3</sup>

When implemented effectively, sexual knowledge education programs have been shown to improve both sexual function and sexual attitudes among pregnant women.

Later in gestation, women also experience increased dyspnea, edema, contractions, and fatigue.<sup>4,38,46,47</sup> Discomfort due to abdominal enlargement and mass effect can lead to discomfort with certain positions, which also leads to decreased frequency of sex.<sup>48</sup> Sources of discomfort such as shortness of breath, increased abdominal distention, and downward pressure on the pelvis can also lead to a reduction in sexual desire.<sup>3</sup> Studies have found no change in women's body image based on the Body Exposure

During Sexual Activities Questionnaire (BESAQ) over the trimesters, despite significant increases in body mass index (BMI) over the course of pregnancy.<sup>40</sup> Some studies found that obesity negatively affected sexual function in pregnant women but others report no effect of BMI on sexual function.<sup>5,49</sup>

It is worth mentioning again that between one-third and one-half of women continue to be sexually active throughout the third trimester.<sup>1</sup> Although marked physical changes in this trimester can preclude patients from engaging in sexual activity, those who do not feel limited by advancing gestational age may feel fine about continuing sexual activity based on personal comfort and discretion.

## Postpartum

Postpartum resumption of intercourse is variable. Rates of reinitiation of coitus range from 9% to 17% before the sixth postpartum week, 50% to 62% in the sixth week, 66% to 94% in the second month, 88% to 95% in the third month, and 95% by the seventh month.<sup>1</sup> Another study reported 78% return by the third postpartum month and 97% by 1 year.<sup>50</sup>

Barriers also exist to return to pre-pregnancy sexual function. In a large study of over 1400 primiparous Australian women, researchers found that 89% reported sexual health difficulties in the first 3 months postpartum.<sup>50</sup> Some factors that contribute to postpartum sexual dysfunction include vaginal or perineal lacerations, low lubrication levels, and postpartum mood changes and fatigue.<sup>51-53</sup> Typically by 12 months postpartum, vaginal pain and lack of vaginal lubrication will have resolved, yet higher rates of low postpartum libido compared with pre-pregnancy levels have been noted.<sup>50</sup> Psychosocial factors, particularly postpartum anxiety and depression, have been shown to impact all domains of sexual function and can affect the return of sexual activity.<sup>54,55</sup> A woman's perception of her partner's sexual desire can impact the timing of reinitiation of sexual activity as well.<sup>17</sup> Interestingly, neither stress nor body image (as evaluated by validated stress and body image self-consciousness scales) has been shown to correlate with return to sexual activity.<sup>49</sup>

### [More: Are MRI scans safe during pregnancy?](#)

Ultimately, given the multitude of changes and stress factors with the arrival of an infant, the etiology of postpartum sexual dysfunction is multifactorial and warrants a discussion that is beyond the scope of our paper. From reluctance to eagerness, patients and their partners may have a range of feelings and expectations associated with resuming sexual activity following delivery. There may be a tendency on the part of clinicians to assign an arbitrary length of time (usually 6 weeks) after which intercourse is deemed "safe." However, we encourage clinicians to individualize recommendations based on a comprehensive understanding of the patient's history, a postpartum exam and the patient's readiness to resume sexual activity.

### [NEXT: Conclusion and references](#)

## Conclusion

A more open discussion between clinicians and patients about sexual activity during pregnancy is relevant and may help to alleviate women's fears, close knowledge gaps and reassure those who wish to be sexually active throughout pregnancy. As an ob/gyn, approaching sexual health in pregnancy requires both an understanding of physiologic changes that can occur and an attention to culturally sensitive issues that may arise. Throughout the antepartum and postpartum periods, clinicians have the

opportunity to provide direct counseling about sexual activity as well as to indirectly affect patients' intimate partner relationships. As ob/gyns, we provide many vital services to women throughout their lives and, particularly, during their pregnancies. Included in this armamentarium of expertise should be tools to help optimize sexual health and promote sexual wellbeing during pregnancy.

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