



Dietary Modifications: for Dysmenorrhea in Adolescents

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Abstract

Dysmenorrhea, also known as painful periods or menstrual cramps, is pain during menstruation. Its usual onset occurs around the time that menstruation begins. This article provides an overview of dietary modifications for dysmenorrhea, including the foods to eat and the foods to avoid. Dietary modifications for dysmenorrhea are aimed at providing symptomatic relief and also helps to reduce the fatigue and dizziness which usually occur during menstruation. The role of the nurse is giving proper care and advice to the adolescents about the importance of dietary modifications during menstruation.

Keywords: dietary modifications, menstruation, dysmenorrhoea, adolescents

Introduction

Adolescence is the period of transition between puberty and adulthood. Menarche is one of the markers of puberty and therefore can be considered as an important event in the life of adolescent girls. Dysmenorrhea, also known as painful periods or menstrual cramps, that is pain during menstruation. Its usual onset occurs around the time that menstruation begins. Symptoms typically last less than three days. The pain is usually in the pelvis or lower abdomen. Other symptoms may include back pain, diarrhoea or nausea.

Prostaglandin is the chemical responsible for the contraction of the uterus. The higher the prostaglandins, the higher are the contractions. The uterus contracts throughout the menstrual cycle; however, the maximum contraction occurs during menstruation. Dysmenorrhea may be primary or secondary. Primary dysmenorrhea is due to chemicals called prostaglandins secreted during normal

periods. These activate the body's pain pathways. Other causes of dysmenorrhea are disorder of the organs of reproduction. This is called secondary dysmenorrhea.

Epidemiology

Globally, 50–90% of women of reproductive age experience painful menses, of which the majority present with primary dysmenorrhoea.¹ The prevalence of primary dysmenorrhoea is reported to be the highest during the teenage years, with 40–50% of this population reporting symptoms.⁷ Secondary dysmenorrhoea rates are lower in adolescents, as onset of causative conditions occurs only later in life.

Risk factors

The following factors are associated with risk for primary dysmenorrhea. Due to the presence of confounding variables and possible selection bias, further studies are needed to firmly establish these risk factors. Risk factors for secondary dysmenorrhea depend on the underlying pelvic pathology.

- **Age:** The most intense symptoms occur during adolescence and typically decrease with age.
- **Body mass index** less than 20 or greater than 25, along with attempts to lose weight.
- **History of sexual abuse or assault.**
- **Smoking.**
- **Prolonged, irregular or heavy menses.**
- **Family history of dysmenorrhea.**
- **Stress.**
- **Lower parity.**

In addition to the above factors, psychological factors, miscarriage, pelvic inflammatory disease, premenstrual syndrome, sterilization, female genital cutting (“female circumcision”), and work in cold environments may also be associated with risk

Classification

Primary dysmenorrhea is painful menses that is not related to any definable pelvic lesion. Primary dysmenorrhea begins with the first ovulatory cycles in women under age 20 and the pain begins 24-48 hours before menses and then subsides within 12-72 hours. The pain is typically midline but may also radiate to the back or thighs. Accompanying symptoms (related to prostaglandin-induced sequelae) may include nausea, vomiting, diarrhoea, fatigue, headache, and respiratory difficulties. The symptoms of dysmenorrhea typically begin within 2 years of menarche, and prevalence diminishes with age.

Secondary dysmenorrhea is painful menses that is related to the presence of pelvic lesions or pelvic disease (e.g., endometriosis, fibroids, episiotomy, and pelvic inflammatory disease). In contrast to primary dysmenorrhoea, it usually affects older women in their thirties and forties. The pain of secondary dysmenorrhea usually begins earlier in the menstrual cycle and continues beyond the end of menses. Further symptoms may be present depending on the underlying pathology. While secondary causes can manifest at any age, they typically present well after menarche, often as late as the fourth or fifth decade of life.

DIETARY MODIFICATIONS

The rationale for dietary changes in dysmenorrhea comes from the observation that diets that are low in fat or high in fibre reduce plasma oestrogen concentrations and oestrogen activity. Under controlled conditions, high-fibre, low-fat diets have been shown to reduce oestradiol levels by 10-25%. A meta-analysis of intervention studies suggested that, overall, studies reducing dietary fat have reduced serum oestradiol concentrations by 7.4% in premenopausal women and 23% in postmenopausal women, but that greater reductions in dietary fat were associated with greater reductions in oestradiol. Similar findings were evident in a randomized trial of women previously treated for breast cancer. A high-fibre, low-fat diet significantly reduced plasma oestradiol concentrations.

Fiber's ability to reduce plasma oestrogens is explained by its ability to interrupt enterohepatic circulation. That is, as oestrogens are filtered from the blood by the liver and pass through the bile duct into the intestinal tract, fibre carries them away with the wastes. In the absence of fibre, oestrogens can be reabsorbed back into circulation. The mechanism by which lower-fat diets reduce oestrogens is not clear.

Reduced oestrogen concentrations presumably reduce endometrial thickening. In turn, reduced endometrial thickening may reduce the production of prostaglandins (e.g., PGE₂) that cause the uterine muscle contraction and ischemia. Diet can also play a role by helping to suppress the inflammation that contributes to pain perception in patients with dysmenorrhea.

A low-fat, vegan diet has been shown to reduce dysmenorrhea symptoms. In a placebo-controlled crossover trial, a low-fat, vegan diet was shown to increase serum concentrations of sex hormone-binding globulin and reduce dysmenorrhea symptoms. Prior to the diet change, volunteers reported an average of 3.9 days of pain in each cycle, which fell to 2.7 days on a low-fat, vegan diet. In addition, the severity of pain was significantly reduced.

Animal products increase estrogen concentrations, and the arachidonic acid and saturated fat they contain activate inflammatory pathways through upregulating NFκB. Patients with dysmenorrhea have also been found to have higher blood levels of arachidonic acid-derived prostaglandins such as PGE₂ and PGF_{2α}. A systematic review of studies on diet and dysmenorrhea concluded from observational and

clinical trials that a higher dietary ratio of omega-3 to omega-6 fatty acids and supplementation with omega-3 fatty acids are protective against dysmenorrhea by reducing pro-inflammatory prostaglandin formation.

Maintain a healthy weight.: Although mixed, research has revealed that being underweight or overweight increases the risk for dysmenorrhea. In a study including 9,688 women, women with a body mass index (BMI) < 18.5 were at 34% increased risk of dysmenorrhea, and women with a BMI \geq 30 were at 22% increased risk, compared with women with a BMI between 18.5 and 29.99. Women with a BMI \geq 30 who lost weight reduced their risk of dysmenorrhea. Researchers speculate that under- and overweight status lead to menstrual irregularities, which, in turn, increase the risk of dysmenorrhea.

Foods to Eat

- 1. Water:** Drinking a lot of water is always important, and this is especially true during periods time. Staying hydration helps to reduce the chances of getting dehydration headaches which is a common symptom of menstruation. Drinking plenty of water can also the reduction of retaining water and bloating.
- 2. Banana:** Banana is the most popular food item that is helpful for menstruation cramps. They have a high content of fiber and is also beneficial in bowel movement. As a result, you will feel less bloated and experience less pain. Bananas also contain magnesium, which helps in relaxing the muscles.
- 3. Orange:** Oranges are known as one of the top foods for period cramps. They contain higher amounts of vitamin C and they also contain magnesium, potassium, and vitamin D. A couple of oranges during menstrual days may be effective for relieving period cramps.
- 4. Lemons:** Lemons are a good source of citrus, especially vitamin C. Vitamin C helps to absorb iron from foods to blood and tissues. During the monthly periods, a woman loses a lot of blood. It is always helpful to have some vitamin C source to enhance iron absorption. Lemons also contain fiber, which makes them a very good source for muscle spasms.
- 5. Other Fruits:** Water-rich fruits, such as watermelon and cucumber, which helps to hydrate the body.
- 6. Leafy green vegetables:** Leafy green vegetables such as kale and spinach which helps to increase the iron levels. Spinach is also rich in magnesium. It also helps to reduce the fatigue and dizziness which usually occur due to heavy menstrual flow.
- 7. Ginger:** A warm cup of ginger tea can improve certain symptoms of menstruation. Ginger has anti-inflammatory effects, which can soothe achy muscles. Ginger may also reduce nausea and vomiting. Don't consume too much ginger, because consuming more than 4 grams in one day could cause heartburn and stomach aches.

8. **Chicken:** Chicken is another iron- and protein-rich food which is essential for overall health.
9. **Fish:** Fish is rich in iron, protein, and omega-3 fatty acids. Omega-3s can reduce the intensity of period pain and also reduce the mood swings and depression during menstruation.
10. **Turmeric:** Turmeric is known as an anti-inflammatory spice, and curcumin is its main active ingredient. It helps to reduce the premenstrual symptoms.
11. **Yogurt:** Many people get yeast infections during or after their period. Probiotic-rich foods like yogurt can nourish the “good” bacteria in the vagina and may help to fight against the infections. Yogurt is also rich in magnesium and other essential nutrients, like calcium.

Foods To Avoid

1. **Coffee:** Coffee may make the periods worse. Try to cut your coffee during the menstrual cycle and try to stick to one cup of coffee per day. Having excessive coffee can cause vasoconstriction which can worsen the cramps during periods and it can also increase discomfort and bloating.
2. **Refined Carbs and Sugar:** During the menstrual cycle, there is a fluctuation in a blood sugar. It increases cramping and also causes the body to retain sodium and water which leads to bloating and mood swings.
3. **Dairy products:** Dairy products like milk, cheese and ice cream contain arachidonic acid (an omega-6 fatty acid) which can increase inflammation and can intensify the periods pain.
4. **Beans:** Beans are very healthy and rich in fiber and vitamins. However, they may upset the stomach during the period. Women should avoid eating beans during periods and turn to lighter foods.
5. **Canned foods:** Canned foods contain a high amount of salt, which causes more bloating and more cramping. Despite salt content, they pretty much lack nutrients. Refined products can be dangerous as they contain unhealthy chemicals used to preserve the foods. So during menstrual cycle, it is important to stick to a healthy diet.
6. **Fatty Food:** Fatty foods increases the number of prostaglandins in the body and can make the uterus contract. The contraction of the uterus will increase the cramping will make you uncomfortable. Even fatty meats should be avoided during the periods due to saturated fats which can worsen the periods pain.
7. **Processed Foods:** Processed foods should be avoided during the periods time because it may lead the cramps more intense. Trans fats, also known as hydrogenated oils, that are added in processed food can cause inflammation in the body and worsen the period symptoms.

8. **Salty Foods:** Foods containing a high amount of sodium should be avoided during the monthly menstrual cycle. Taking food containing a high amount of sodium can make bloating and water retention in the body. Try to avoid the chips and French fries.
9. **Chocolate:** Chocolate craving is normal during adolescent age, but it is not good because it can elevate the prostaglandin levels and may experience more period cramps.
10. **Spicy foods:** It upset the stomach and it causes diarrhea, nausea and vomiting. So better to be avoid the spicy foods during the periods time.
11. **Red meat:** Red meat may be high in iron, but it is also high in prostaglandins and should be avoided during menstruation.

Conclusion

Dysmenorrhoea is a common health problem that affects the daily activities and quality of life of many adolescents. Primary dysmenorrhoea is caused by excessive levels of prostaglandins, with subsequent contraction of the uterus during menstrual cycle, while secondary dysmenorrhoea may be caused by a number of underlying pathological conditions. Now a days adolescents are taking fast food compare to olden days. So as a nurse we should give proper information about the importance of dietary modifications and having healthy diet.

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