

# Menstrual Disorder in Adolescence

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**Abstract:** Menstrual irregularities are quite common in teenage girls, especially in the early years after menarche, during which periods may be irregular, heavy, or painful. While serious underlying conditions are rare, disruptions in menstruation can significantly impact daily activities and lead to school absences. Although most treatment evidence is derived from adult studies, there are many safe therapeutic options available for adolescents. This article presents a clinical review of current practices, focusing on the management of girls with additional medical conditions and learning disabilities.

**Keywords:** Menstruation, menstrual disorder, Dysmenorrhea, symptoms of menstrual Disorder, medicinal plan

## I. INTRODUCTION

A sectional survey revealed that 25% of girls experienced significant menstrual disruptions that interfered with their daily activities and led to school absences. Adolescent girls often report menstrual issues. An Australian cross-sectional study indicated that periods can be painful or excessively heavy (menorrhagia), and cycles may be irregular (dysmenorrhea). Age-related improvements in menstrual patterns and serious underlying conditions are relatively uncommon. Symptoms can often be managed effectively with reassurance and general advice, such as the appropriate use of over-the-counter analgesics. Generally, primary care physicians are well-equipped to handle these concerns, so referrals to specialists are usually unnecessary.

However, in cases where simple measures do not provide relief, consultation with a pediatrician or adolescent gynecologist may be needed<sup>1,2</sup>.

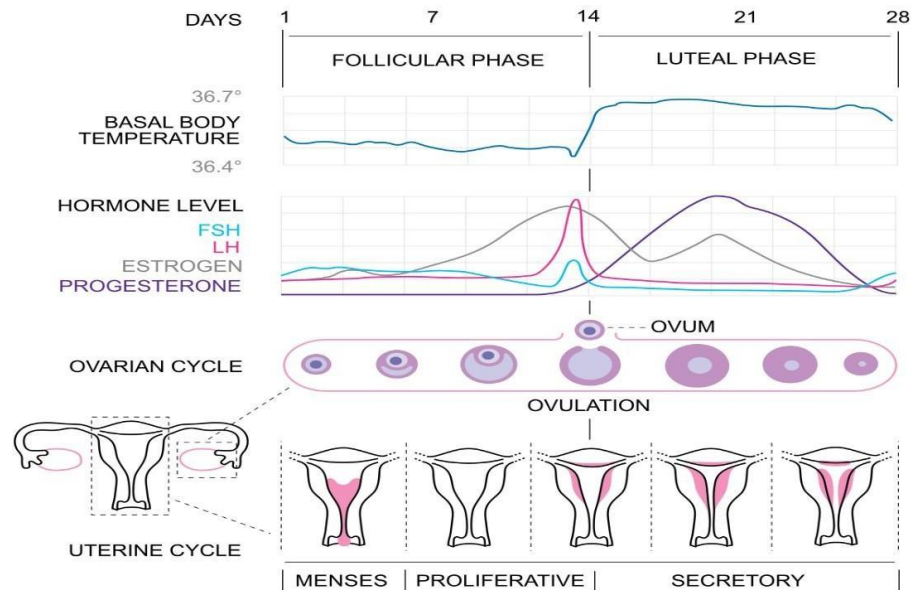


Fig no.1 Menstrual cycle

Through a series of physiological changes during the menstrual cycle, the uterus and ovaries in the female reproductive system facilitate conception. The ovarian cycle not only regulates the development and release of eggs but also controls the cyclical release of progesterone and estrogen. Simultaneously, the uterine cycle prepares and maintains the lining of

the uterus to support a potential embryo. These interrelated cycles continue for approximately 30 to 45 years, typically averaging around 28 days, though they can extend up to 35 days. The cycles are driven by the natural fluctuations of follicle-stimulating hormone, which promotes the growth and maturation of oocytes (immature egg cells), while estrogen stimulates the uterine lining<sup>3</sup>

**Cycles and Phases**

The menstrual cycle comprises both the uterine and ovarian cycles. The ovarian cycle focuses on changes in the ovarian follicles, while the uterine cycle describes alterations in the endometrial lining of the uterus. These phases can be categorized into the two cycles: the ovarian cycle includes the follicular and luteal phases, whereas the uterine cycle consists of menstruation, the proliferative phase, and the secretory phase. Regulation of the menstrual cycle occurs through the anterior pituitary gland, located at the base of the brain, and the hypothalamus. In response to gonadotropin-releasing hormone (GnRH) from the hypothalamus, the anterior pituitary releases follicle-stimulating hormone (FSH) and luteinizing hormone (LH). Before adolescence, GnRH plays a crucial role in initiating these processes.

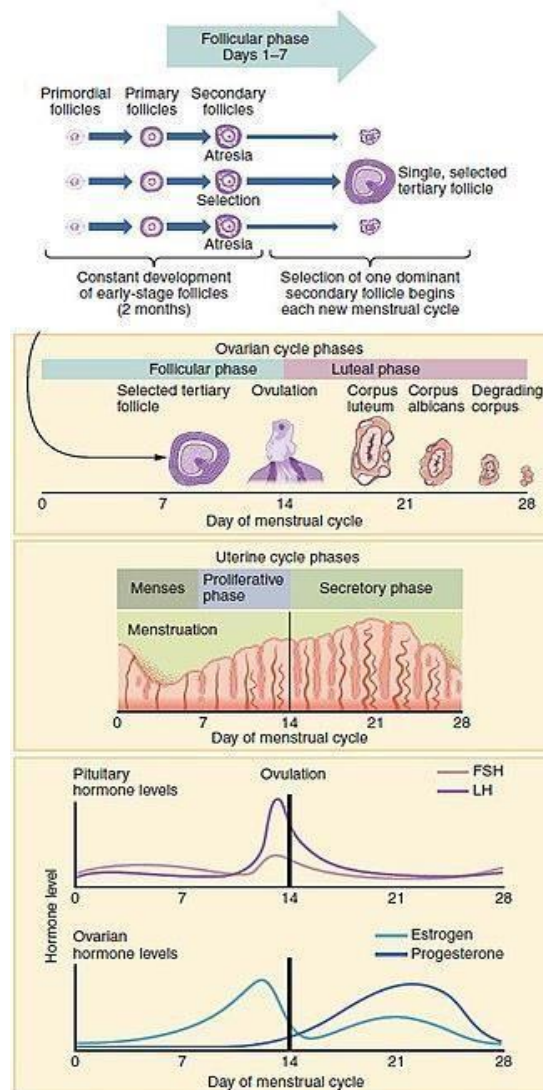


Fig no 2: Progression of the menstrual cycle and some of the hormones contributing to it

The length of a menstrual cycle, measured from the first day of one period to the first day of the next, typically has a median duration of 28 days, although it can vary. A woman's cycle tends to be less regular during the beginning and end of her reproductive years. Puberty marks the transition from childhood to adulthood, with the first period, known as menarche, usually occurring around age 12 and lasting for approximately 30 to 45 years. Menstrual cycles generally cease at menopause, which commonly occurs between the ages of 45 and 55<sup>4,5</sup>

### **Normal Menstrual Cycles**

The length of the menstrual cycle varies among women, with the average cycle occurring every 28 days. Cycles that are consistently longer or shorter than 23 to 35 days are typically considered abnormal.<sup>6</sup>

**Age of Menarche:** In well-nourished populations in developed countries, the median age of menarche has remained consistently between 12 and 13 years, despite global variations and differences within the U.S. According to the U.S. National Health and Nutrition Examination Surveys, the median age of menarche has not significantly changed over the past 30 years, except for the non-Hispanic black population, which has experienced menarche about 5.5 months earlier than three decades ago. Research indicates that a greater increase in body mass index (BMI) during childhood is linked to an earlier onset of puberty, likely due to reaching a minimum required BMI at a younger age. Factors such as diet, socioeconomic status, and access to preventive healthcare can also influence the timing and progression of puberty. Menarche typically occurs at Tanner stage IV breast development, about 2 to 3 years after thelarche (breast budding), and rarely before Tanner stage III. By age 15, 98% of girls will have experienced menarche. Any teenage girl who has not attained menarche by age 15 or within three years of thelarche should be evaluated for primary amenorrhea. An evaluation is also necessary if there is no breast development by age 13.<sup>7</sup>

### **Menstrual Disorders**

Menstrual disorders encompass a range of issues, from heavy and painful periods to the absence of menstruation. Variations in menstrual patterns are common, but women should be concerned if their periods occur less frequently than every 21 days or more than three months apart, or if they last longer than 10 days. Such conditions may indicate ovulation problems or other medical issues

### **Dysmenorrhea (Painful Cramps)**

Dysmenorrhea refers to severe, frequent cramping during menstruation. The pain typically occurs in the lower abdomen but can radiate to the lower back and thighs. Dysmenorrhea is classified into two types:

- Primary Dysmenorrhea: This type is caused by menstrual contractions and is often more severe during heavy bleeding.
- Secondary Dysmenorrhea: This type is related to menstrual pain caused by other medical conditions, such as uterine fibroids<sup>8</sup>.

### **Menorrhagia (Heavy Bleeding)**

Menorrhagia is characterized by menstrual flow that is heavier and longer than normal. It typically lasts more than seven days, with women losing over 80 ml of blood during their periods.

### **Amenorrhea (Absence of Menstruation)**

Amenorrhea refers to the absence of menstruation and can be classified into two types:

- Primary Amenorrhea: This occurs when a girl does not begin menstruating by age 16. Any girl who has not started her period by age 15 should be evaluated for primary amenorrhea.
- Secondary Amenorrhea: This refers to the absence of menstruation for at least three months in someone who previously had regular cycles.

### **Oligomenorrhea**

Oligomenorrhea is a condition characterized by menstrual cycles that occur less frequently than every 35 days. This condition is quite common in early adolescence and typically does not indicate any underlying medical problem.<sup>9</sup>

### **Causes of Painful Menstrual Cramps**

#### **Hormonal Imbalance**

One of the most common causes of menstrual cramps is a hormonal imbalance. Prostaglandins, which are chemicals similar to hormones, trigger contractions in the uterine muscles, leading to pain. Higher levels of prostaglandins can result in more intense cramps during menstruation

#### **Pelvic Inflammatory Disease (PID)**

PID is an infection that affects the female reproductive system and is one of the more severe complications stemming from sexually transmitted infections. It can cause irreparable damage to the fallopian tubes, ovaries, and other reproductive organs. PID is a significant contributor to menstrual cramps and can also be a preventable cause of infertility<sup>10</sup>

#### **Endometriosis**

Endometriosis is a painful condition in which tissue similar to the uterine lining grows outside the uterus, primarily affecting the pelvic region, fallopian tubes, and ovaries. This condition can lead to severe menstrual pain and other complications<sup>11</sup>

### **Symptoms of Menstrual Disorders**

Common symptoms experienced during menstruation include:

Lethargy, Fatigue, and Exhaustion: These feelings are often most pronounced the day before and the first day of menstruation

- Emotional Symptoms: These may include depression, difficulty concentrating, and mood changes.
- Physical Symptoms: Nausea, excessive vomiting, diarrhea, increased sweating, frequent urination, dizziness, loss of appetite, and general unease are also commonly reported.

These symptoms can be associated with various menstrual disorders and may vary in intensity from one individual to another.

#### **Anemia (Reduction in Red Blood Cells)**

Anemia is characterized by a decrease in red blood cells, with menorrhagia being a common cause in premenopausal women. Loss of blood greater than 80 mL (about three tablespoons) per menstrual cycle can lead to anemia. While anemia is often mild, even slight anemia can cause fatigue due to reduced oxygen transport in the blood, diminishing physical capability. Moderate to severe anemia may result in symptoms such as shortness of breath, an accelerated heartbeat, dizziness, headaches, and tinnitus (ringing in the ears)<sup>12</sup>

#### **Infertility**

Excessive bleeding can be linked to important disorders like endometriosis, fibroids, and irregular ovulation, which can contribute to infertility. Conditions that can cause amenorrhea, such as polycystic ovary syndrome (PCOS) and other abnormalities, can also lead to infertility<sup>13</sup>

### **Benefits of Aromatherapy for Painful Menstrual Cramps**

Aromatherapy can be effective for alleviating menstrual cramps through methods such as hot compresses and essential oil massages. Daily massage with essential oils during the menstrual cycle can significantly reduce the duration of period pain.

#### **Heat:**

Applying heat to the lower abdomen is one of the simplest ways to relieve menstrual cramps, as it helps relax the uterine muscles. A heating pad or a hot water bottle can be used until the discomfort decreases<sup>14</sup>

**Lavender Oil:**

Distilled from specific lavender species (*Lavandula latifolia*), lavender oil can help alleviate stress, anxiety, and discomfort during menstruation<sup>15</sup>

**Sweet Marjoram Oil:**

This oil is effective for reducing menstrual cramp pain. It works best when used with a hot compress on the abdomen during cramps<sup>16</sup>

**German Chamomile Oil:**

Known for its anti-inflammatory properties, German chamomile oil can soothe pain and promote relaxation, helping to alleviate tension, irritability, and depression commonly experienced during menstruation<sup>17</sup>

**Physical Activity for Menstrual Disorders**

Regular physical activity is essential for promoting the flow of energy (qi) in the body. A lack of exercise can exacerbate the symptoms and duration of dysmenorrhea. Alongside a consistent exercise routine, practices like meditation can help balance emotions, reduce stress, strengthen organs, and regulate menstruation. Engaging in physical activities, especially before and after your period, can alleviate PMS symptoms and menstrual cramps. Swimming, in particular, can help decrease cramping and enhance menstrual flow<sup>18</sup>

**Daily Nutritional Supplements for Menstrual Disorders A]****Vitamin A:**

This vitamin is crucial for growth and development, promoting healthy endometrial growth.

Women with regular menstruation tend to have higher levels of vitamin A than those experiencing menorrhagia<sup>19</sup>

**Magnesium:**

Magnesium supplements can alleviate discomfort, irritability, mood swings, depression, and fluid retention associated with PMS. It also helps relax smooth muscle and has been shown to significantly reduce menstrual cramps<sup>20</sup>

**Gelatin:**

A good source of phosphate, calcium, and magnesium, gelatin aids in digestion and hormone production, and it can help soothe inflammation, particularly in joints<sup>21</sup>

**Common Herbs Used for Uterine Disorders****Red raspberry –**

Scientific name-*Rubus idaeus*; Rosaceae

**Parts use -leaf**

Method of use-Make a pot of strong raspberry leaf tea and add some orange juice to it. If pain is present, consume 3 cups of this mixture each day while menstruating.

**Cinnamon –**

Scientific name-*Cinnamomum zeylanicum*; Lauraceae

**Part of used-Bark**

Method of use- Taking cinnamon, a spicy and aromatic herb, as an infusion or as part of a herbal tea blend up to 1 g three times per day is recommended. dosage of 2-4 ml, three times per day.<sup>22</sup>

**Fennel-**

Scientific name-cinnamomumzeylanicumj prrs!;Lauraceae

**Part of use-seed**

Method of used-Four grams of fennel seeds are added to a cup of boiling water, and the mixture is simmered for five minutes on low heat before being withdrawn from the heat and strained.

Tea, honey, and well combine. Take this herbal tea. Starting three days in advance, two cups of tea per day The anticipated start time<sup>23</sup>

**Ginger -**

Scientific name-zingiberofficinale Roscoe;Zingiberaceae

**Part of use- Rhizome, ginger root**

Method of used - Ginger can be consumed fresh, as a rhizome decoction, or as a tincture. The dosage of the extract (tincture) is 2.5–3 ml, depending on strength. Low doses during menstruation.

**Cramps Bark-**

Scientific name-viburnum opulus!;Honeysuckle

**Part of used-Bark**

Method of use-When cramps occur, take 1 ml of bark tincture every 2 to 3 hours.

**Feverfew-**

Scientific name-Tanacetumparthenium!;Asteraceae

**Part of used-leaf**

Method of use- If pain is present, the effective amount of feverfew herb might be as little as 50–100 mg per day

**II. CONCLUSION**

The opportunity to educate and establish a foundation for future reproductive health arises when a teenage girl presents concerns about her menstrual cycle. Health services should begin formal gynecologic care around ages 18 to 21, or sooner if the individual is sexually active.

Significant pelvic or menstrual bleeding can also indicate the need for earlier intervention.

We have discussed various alternative home treatments for menstrual disorders, including the use of medicinal herbs. Conditions like dysmenorrhea and amenorrhea can lead to chronic issues with lasting complications. While allopathic medications are commonly used to address these problems, they can result in various side effects. Therefore, the use of medicinal plants offers a promising alternative for managing menstrual issues.

Medicinal plants have proven effective in alleviating symptoms, particularly in rural areas where these herbs are readily available. Emphasizing the role of traditional herbal remedies can provide valuable support for women experiencing menstrual disorders.

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