

# Prostaglandin Balance for Menstrual Comfort

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

## Prostaglandins and Menstruation

Prostaglandins are hormone-like compounds that play a crucial role in the normal menstrual cycle, particularly in the luteal phase when fertilization does not occur. These lipid-derived compounds, synthesized from arachidonic acid via the cyclooxygenase (COX) pathway, are involved in regulating uterine function and the shedding of the endometrial lining.

If an ovum is not fertilized during the luteal phase of a menstrual cycle, declining levels of luteinizing hormone (LH), progesterone, and estrogen trigger the production of prostaglandins in the endometrium. Prostaglandin  $GF_2\alpha$  induces vasoconstriction and ischemia in the endometrium leading to hypoxia and tissue breakdown. Prostaglandins stimulate myometrial contractions, facilitating the detachment and expulsion of the endometrial lining during menstruation. This process helps clear the uterus of the non-viable endometrium and prepares it for the next cycle.

Prostaglandins contribute to menstrual cramping by increasing uterine contractility and the inflammatory response. Higher levels of prostaglandins, particularly  $PGF_2\alpha$  and  $PGE_2\alpha$ , are associated with more intense uterine contractions and pain. In addition, activated macrophages are recruited to the endometrium during menstruation, where proinflammatory cytokines such as TNF $\alpha$ , IL-1, and IL-6 cause the release or synthesis of prostaglandins, further contributing to menstrual cramping and pain.

Nutritional and lifestyle interventions can support the balanced production of prostaglandins, influence endocrine signaling, and improve inflammatory mediators in the endometrium.

## Supportive Lifestyle Practices

Encourage patients to adopt yoga poses like cobra, bridge, cat-cow, and child's pose to help alleviate painful menses.<sup>1</sup>

Gentle movement like yoga supports uterine blood flow and decreases muscular tension.

Suggest the use of topical heat therapy like a heating pad, hot water bottle, or warm bath to help reduce menstrual cramping. Topical heat supports circulation in the pelvis, relieves congestion, and activates thermoreceptors, inhibiting concurrent nociception and reducing pain signals reaching the brain.<sup>2,3</sup>

Consider transcutaneous electrical nerve stimulation (TENS) as a noninvasive therapy for menstrual pain. TENS can provide pain relief by stimulating the release of endogenous opiates into the bloodstream, reduce the excitability of afferent receptors in the spinal cord, and diminish the excitability of nociceptors in the periphery.<sup>4</sup>

## Whole Foods Nutritional Recommendations

Emphasize the importance of consuming foods with high magnesium levels, such as nuts, legumes, leafy greens, whole grains, avocado, and pumpkin. Magnesium supports the proper synthesis of prostaglandins and modulates the action of uterine smooth muscle.<sup>5</sup>

Incorporate omega-3 fatty acids like EPA and DHA into the diet through the consumption of salmon, cod liver, mackerel, tuna, and sardines. EPA competes with arachidonic acid to modulate inflammatory prostaglandins like  $PGE_2$  and  $PGF_2\alpha$ .<sup>6</sup>

Foods rich in Vitamin D, like eggs and fish liver, can help modulate COX-2 expression and endometrial prostaglandin production.<sup>7</sup>

Recommend foods high in vitamin B<sub>6</sub> to help modulate levels of prostaglandins, including  $PGE_2$  and  $PGF_2\alpha$ . Good food sources of Vitamin B<sub>6</sub> include salmon, beef liver, chicken, sweet potato, and avocado.<sup>8</sup>

# Dietary Supplement Regimen



## Cramplex

Suggested Use: **2 tablets 3-4 times daily**

Cramplex contains Corydalis yanhusuo, Raspberry leaf, Wild Yam, Cramp Bark and Ginger to provide antispasmodic support for smooth muscle.\*

These herbs have been traditionally used in herbal preparations to relieve the occasional mild discomfort of menstrual cramps.\*



## Cod Liver Oil

Suggested Use: **3 softgels per day**

Cod Liver Oil helps bridge the gap in dietary omega-3 intake.

- Excellent source of antioxidant vitamin A
- Good source of vitamin D



## Magnesium Lactate

Suggested Use: **3 tablets per day**

Magnesium Lactate contains magnesium to promote cellular energy production.\*

- Provides cofactor support for more than 300 enzymes\*
- Supports ion signaling across cell membranes\*
- Helps facilitate muscle contraction\*
- Excellent source of magnesium



## Flax Oil with B<sub>6</sub>

Suggested Use: **1 softgel per meal**

Flax Oil with B<sub>6</sub> is a vitamin B<sub>6</sub> supplement with flaxseed oil designed to support hormone production and nerve tissue.\*

- Contains flaxseed oil, a natural source of alpha-linolenic acid.
- Supports the formation of eicosanoids\*
- Supports cognitive function\*
- Excellent source of vitamin B<sub>6</sub>

## Assessment of Prostaglandins and Menstrual Health

### In Office/Physical Exam

- Physical Exam: Abdominal and pelvic examination
- Signs/Symptoms like painful or heavy menstrual bleeding, nausea, vomiting, headache, fatigue, bowel movement changes

- Lab studies: urinalysis, complete blood count, iron panel with ferritin, STI testing, Standard Process Omega-3 Index Plus Test
- Medical History: endometriosis, adenomyosis, PCOS
- Consider abdominal and transvaginal ultrasound

### REFERENCES

1. Kim S. D. (2019) Complementary therapies in clinical practice, 36, 94–99.
2. Jo, J., & Lee, S. H. (2018) Scientific reports, 8(1), 16252.
3. Freiwald, J., et al. (2021) Life (Basel, Switzerland), 11(8), 780.
4. McLagan, B., et al (2024) Women's health (London, England), 20, 17455057241266455.
5. Yaralizadeh, M., et al (2024) IJWHR, 12(2), 70-76.
6. Snipe, R. M. J., et al (2024) Nutrition & dietetics: the journal of the Dietitians Association of Australia, 81(1), 94–106.
7. Matsas, A., et al (2023) Life (Basel, Switzerland), 13(6), 1308.
8. EJ Randabunga (2018) INAJOG, 6(4).