Postpartum Care Protocol‡

DEVELOPED IN COLLABORATION WITH OUR SCIENTIFIC AND MEDICAL ADVISORS

Healthcare practitioners play a key role in ensuring women receive personalized care and adequate nutrition during the postpartum period. This postpartum care protocol was created to support recovery, improve nutrient status and promote overall maternal emotional and physical health.

THE COMPLEXITY OF RECOVERING FROM CHILDBIRTH

After childbirth, women face a complex set of physical and emotional challenges. They must heal from delivery, care for their newborn, manage household responsibilities, and cope with sleep deprivation, hormonal changes, and mood fluctuations — all while possibly dealing with pre-existing medical conditions or external stressors.

Considerations in Postpartum Care

Biological

- Quality of nutrition
- Current health status
- Discomfort symptoms & physical healing
- Sleep deprivation & fatigue

Support Systems

- Socio-economic status
- Family support
- Spiritual/religious beliefs
- Social connections

Psychological

- Mood & mental health concerns
- Attachment to baby
- External stressors

DIET AND LIFESTYLE

Pregnancy and lactation are nutritionally expensive for women's bodies and nutrient deficiencies are prevalent in postpartum women. Pregnancy and lactation are anabolic states regulated by hormonal changes that prioritize nutrient delivery to the placenta and mammary glands for fetal and infant growth. When maternal nutrient intake is insufficient, the body compensates by depleting maternal nutrient stores from bone, organs and tissues, increasing the risk of deficiencies that can affect both mother and child.[1]

The Standard American Diet (SAD) is a dietary pattern characterized by high intake of refined carbohydrates, added sugars, unhealthy fats, and excessive sodium, while being low in essential nutrients such as fiber, vitamins, minerals, and antioxidants.

KEY NUTRIENT	PRIMARY ROLE IN MATERNAL HEALTH‡
Vitamin C	Antioxidant support, immune function, tissue repair
Vitamin E	Antioxidant support and immune function support
Vitamin D	Immune support, bone health, mental health
Folate	Neurotransmitter production, production of RBCs, synthesis of DNA & RNA, mental health
Choline	Cognitive health
Vitamin B_6	Cofactor for synthesis of neurotransmitters like dopamine, serotonin, GABA, norepinephrine and in the metabolism of folate
Zinc	Immune health, intestinal health, mental health
Iron	Oxygen transport, mental health
Omega-3 Fatty Acids	Supports a healthy inflammatory response**, cardiovascular, cognitive and mental health

Postpartum women also have low intakes of fiber, whole grains, legumes, fruits and vegetables.[2] These nutritional gaps can impact maternal recovery, lactation, and long-term health.

HEALTHY DIETARY PATTERN

Pregnant and lactating women should not just be advised to eat more (as in calories) they should also be counseled on how to eat *better*. Dietary trends and diets that severely restrict any food group should be avoided, including women following a vegan diet.

A systematic review by Meulenbroeks et al (2024), looked at six studies examining the nutritional intake of pregnant women adhering to a vegan diet and its association with maternal and fetal outcomes. Women consuming a vegan diet were found to have lower intake of Vitamins A, D and B_{12}, iodine, calcium, iodine and protein and had offspring with lower birth weight compared to omnivorous mothers.[3]

**Not all inflammation is associated with disease states. The body's inflammation response to life's occasional, normal stressors is important for optimal health.

HEALTHY DIETARY PATTERN *CONTINUED*

One healthy dietary pattern, the Mediterranean diet, consists primarily of nutrient-dense, whole foods, including:

- Fruits and vegetables
- Wholegrains
- Legumes, nuts and seeds
- Olive oil
- Moderate consumption of fish, eggs, dairy and lean meats
- Avoidance of trans and excess saturated fats, excess sodium, refined carbohydrates and sweets

Recommending a Mediterranean-style diet can help provide many of the nutritional needs of pregnant and lactating women in addition to providing cardiovascular, metabolic, immune, digestive, emotional and cognitive benefits.

PROBIOTICS & PREBIOTICS

Pregnancy, with its accompanying physiological changes acts as a stressor to the body that induces significant changes to the gut microbiota and reduces intestinal barrier function.[4]

Probiotics are live microorganisms that, when administered in adequate amounts, confer a health benefit on the host.[5] These beneficial bacteria and yeasts, primarily from the genera *Lactobacillus* and *Bifidobacterium*, can enhance the gut microbiota, support digestion, modulate immune function and strengthen functions of other organs including the nervous system and endocrine system.[6‡]

Beneficial strains of bacteria from the *Lactobacillus* and *Bifidobacterium* have been shown to improve global mood and stress scores.[7] In a meta-analysis conducted by Halemani et al (2023), researchers appraised the evidence of probiotics on the mental health of pregnant and lactating mothers and the microbiota of the newborn. Probiotics were administered as single strain or combination interventions of *Lactobacillus* and *Bifidobacterium*. The analysis determined that probiotic supplementation supported occasional anxiety and low mood in both pregnant and lactating women and provided additional benefits to the infant.[8‡]

Prebiotics, also known as “dietary probiotics” are typically nondigestable dietary plant fibers or bioactive compounds comprised of polyphenols, flavonols, resistant starches, or complex carbohydrates (short and long chain β-fructans [fructooligosaccharies, FOS and inulin], lactulose and galactooligosaccharides, GOS) which can support the host flora and promote their growth and/or augment the effects of probiotics.[8‡]

Prebiotics are essentially “food” for the gut microbiota and have been shown to support healthy blood sugar regulation and lipid metabolism, increase *Bifidobacterium* and short-chain fatty acid production and promote healthy immune responses.[10‡]

Non-digestible fibers found in prebiotics can play a role in maternal mental health by promoting beneficial microbial growth and influencing cortisol levels, potentially improving stress resilience and emotional health.[9]

Given that many women do not meet nutrient requirements even during pregnancy, proactive and individualized dietary counseling is crucial before, during, and after pregnancy to mitigate deficiencies, support the gut microbiome and promote optimal health outcomes for both mother and child.

STRESS AND MOOD

The World Health Organization defines the mental health of a mother as "a state of well-being in which a mother realizes her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her community."[10]

Postpartum mental health changes are prevalent concerns affecting new mothers. In the first year after childbirth, approximately 10-30% of women globally experience symptoms of low mood that extend beyond the "baby blues", that includes mood instability, loss of interest, feelings of guilt, sleep disturbances, changes in appetite, decreased libido, crying spells, worry, irritability, feelings of isolation and mental liability.[1,11] Unfortunately, nearly 50% of mothers with these symptoms go undetected.[13] These can be signs of a more serious medical condition that require diagnosis and treatment by a qualified healthcare professional.

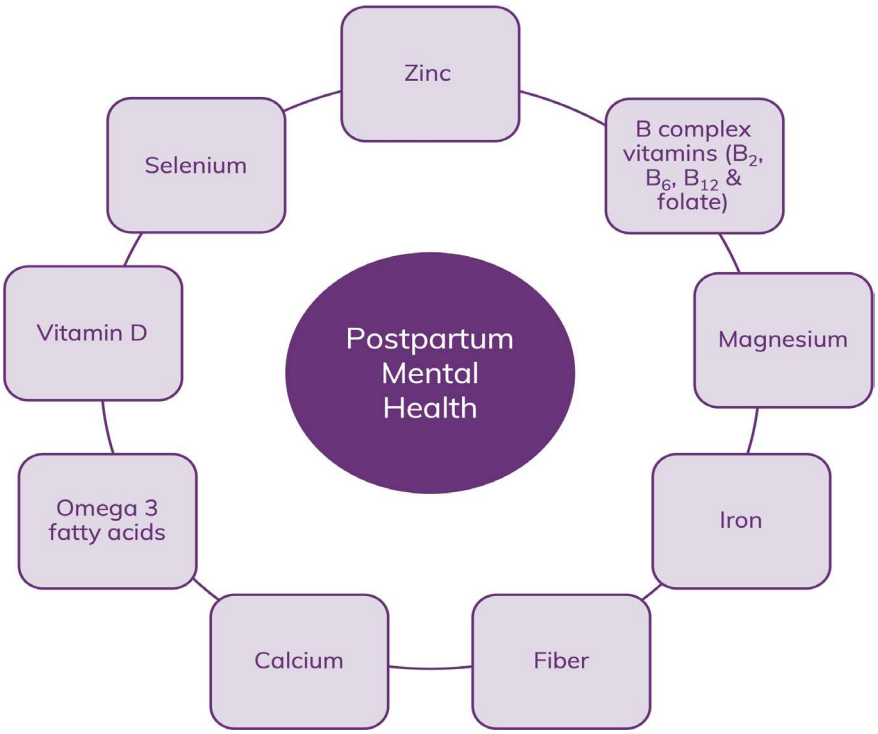
Additionally, postpartum occasional anxiety affects up to 14% of new mothers, characterized by intense worry that interferes with caregiving.[13] These conditions can significantly impact maternal well-being and hinder mother-infant bonding, underscoring the importance of early detection, prevention and intervention.

The exact etiology of postpartum mental health concerns remain incompletely understood, though multiple theories highlight the interaction between hormones, neurotransmitters, genetics, epigenetics and socio-environmental influences.

Nutrition plays a pivotal role in both neurotransmitter synthesis and the regulation of gene expression through methylation processes. Evidence increasingly supports the link between dietary quality and mental well-being, with deficiencies in essential nutrients contributing to mood and behavioral changes.[1]

Importantly, strategic dietary supplementation has demonstrated therapeutic potential in addressing neuropsychiatric symptoms, reinforcing the need for a comprehensive, integrative approach to postpartum care.[12]

There are multiple nutrients for which inadequate intake have been associated with mental health concerns in postpartum women.[1]



GUT HEALTH IN THE POSTPARTUM MOTHER

Pregnancy induces significant hormonal, immunological, and metabolic shifts to support fetal development. These shifts along with the maternal diet also influence the composition of the gut microbiota.

Imbalances in the maternal gut microbiome can contribute to mood concerns during pregnancy and postpartum, via the intricate relationship of the microbiota-gut-brain axis.[13,14]

The Microbiota-Gut-Brain Axis and Postpartum Health

A bidirectional communication system, the microbiota-gut-brain axis links the central nervous system (CNS) with the enteric nervous system (ENS) via neural, endocrine, immune and metabolic pathways.[15] Microbes in the gut can synthesize or act upon various metabolites including hormones, vitamins and other bioactive compounds that influence numerous biological functions. Thus, the microbiota-gut-brain axis has a wide-reaching impact on maternal health, including the stress response, emotions, memory, cognitive, neurological, gastrointestinal, immune, reproductive and metabolic health.

Altered microbial balance and composition along with increased intestinal permeability have been observed in individuals with mental health concerns.[16,17] Gut microbes can influence brain function through neurotransmitter production, immune modulation and neuroendocrine signaling.[18] The gut microbiota produce neurotransmitters like serotonin, dopamine and gammaminobutyric acid (GABA), which help regulate mood.

Crosstalk also occurs between the hypothalamic-pituitary adrenal (HPA) axis and the microbiota-gut-brain axis.

The gut microbiota can activate the HPA axis through numerous mediators and metabolites like cytokines, prostaglandins and short-chain fatty acids, (SCFAs) that cross the blood-brain barrier.[19] Conversely, persistent elevations of cortisol and its effect on the HPA axis can impact the intestinal barrier, alter gut microbiota composition and promote a decrease in beneficial species. This can lead to reduction of metabolites like SCFAs that support gut-brain communication, neurotransmitter activity, mood and behavior.[20]

The following illustration emphasizes the intricate relationship between the peri or postnatal gut microbiome and mental well-being:

The Microbiome and Postpartum Low Mood

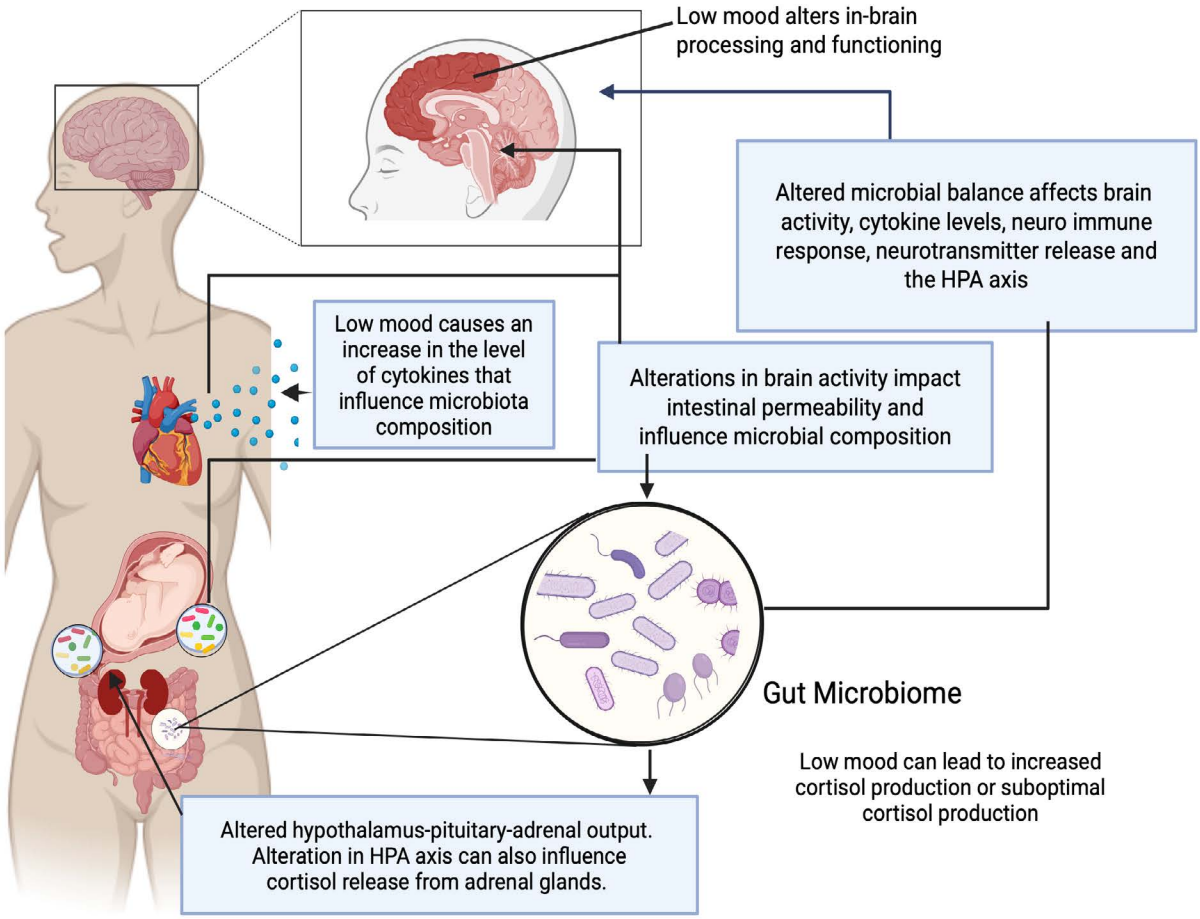


Image created in BioRender.com and adapted from Rupanagunta GP et al. *Saudi Pharm J.* 2023;31(7):1274-1293.

Understanding the connections between the gut microbiome and other body systems opens avenues for microbiome-targeted interventions to support maternal mental and overall health.

LIFESTYLE

Exercise

According to the American College of Obstetricians and Gynecologists, exercise after pregnancy has multiple benefits.[21] It can:

- Help strengthen and tone abdominal muscles
- Boost energy
- Help prevent postpartum mood changes
- Promote better sleep
- Relieve stress
- Help support a healthy weight

Exercise *Continued*

It is advised that exercise recommendations to postpartum women follow those outlined by the American College of Obstetricians and Gynecologists and consider the health of the pregnancy, mode of delivery and any physical discomfort experienced by the patient.

Social Connection

Encouraging social connections for the postpartum mother can help boost her support system, prevent isolation and promote mental health. In a cross-sectional study conducted on postpartum women returning for a routine 6-8 week postpartum examination, 70% of women who practiced confinement at home experienced mental health concerns, compared to 45% of women who did not experience mental health concerns.[22]

Self-Tissue Responses in the Postpartum Patient

New Onset and Exacerbation of Self-Tissue Responses

Females represent up to 80% of self-tissue response cases and the sex ratio reaches 9:1 for certain types during the reproductive years.[23] Pregnancy-related changes are thought to play an underlying role, as the risk of development of self-tissue responses is significantly increased in the first year postpartum.[24]

Thyroid changes are the most common form of self-tissue response in pregnant and postpartum women, with self-tissue response involving low TSH, increased thyroid activity and presence of thyroid antibodies representing 85% of cases.[25] This can be accompanied by symptoms of:

- Unintended weight loss with increased appetite
- Nervousness or irritability
- Fatigue with adequate rest
- Heat intolerance and sweating
- Frequent bowel movements
- Rapid heart rate
- Hair loss
- Muscle weakness
- Eye and skin changes
- Hand tremors
- Changes to the thyroid gland

Some additional concerns related to pregnancy and self-tissue responses in the thyroid are:

- Between 40-60% of women with self-tissue responses related to increased thyroid activity developed the self-tissue responses during the postpartum period.[26]
- Nearly 50% of pregnant women with positive anti-thyroid peroxidase and anti-thyroglobulin antibodies develop thyroid concerns postpartum, even women with no prior history of thyroid concerns.[26]
- Women without prior history of thyroid concerns who develop anti-thyroid antibodies during pregnancy have a four-fold higher chance of developing postpartum thyroid concerns, compared to women with a previous history of certain thyroid markers.[26]
- The presence of anti-thyroid antibodies in a pregnant woman can increase the risk of pregnancy complications, even in women with no history of thyroid concerns.[27]
- Pregnancy complications themselves may also be an important risk factor for new onset of self-tissue responses in women, especially in the first 3 years after childbirth.[25]
- The physiological changes that accompany pregnancy can mask thyroid symptoms in the pregnant woman.[25]

The prevalence of exacerbation and development of thyroid concerns during pregnancy and postpartum necessitate assessment and monitoring of thyroid antibodies and other thyroid markers as a critical component of pre and postnatal care.

Other Self-Tissue Responses During and After Pregnancy:

Immunological shifts during pregnancy can reduce and improve symptoms of many types of self-tissue responses, however, exacerbation of symptoms during the postpartum period occurs in most cases.[26]

Effective preconception, pregnancy and postpartum counseling and monitoring are key to improving mother and child health outcomes.

FOUNDATIONAL SUPPORT

In addition to the healthy dietary patterns and modifiable lifestyle factors discussed above, consider the following foundational supplements to support overall health and well-being:‡

PreNatal Nutrients (PRN21)
- Provides essential vitamins, minerals and nutrients based on scientific recommendations for pregnancy and lactation‡

Magnesium Citrate (MC1 / MC9)
- Supports the metabolism of carbohydrates, amino acids and fats for energy production.‡
- Provides support for cognitive and neuromuscular function and positive mood‡

Calcium K/D (CKD1)
- Offers a high elemental level of calcium plus vitamins K_1, K_2 and D_3
- Supports bone and cardiovascular health‡

FOUNDATIONAL SUPPORT *CONTINUED*

EPA/DHA Essentials (ED11 / ED19)

- Supports healthy inflammatory response**‡

or

DHA Ultimate (DHU1 / DHU6)

- Epidemiological studies indicate that a high intake of DHA is associated with healthy cognitive function in adults as well as infants born to mothers with a diet high in DHA[27]‡

PureGG 25B (PGG6)

- Shelf-stable; highly researched probiotic to support immune, G.I., and overall health‡

or

ProbioMood (PBM6)

- Probiotic support for mood and emotional well-being‡

TARGETED NUTRIENTS

Stand-alone nutrients should be considered in addition to foundational support based upon lab results and/or symptoms. Retesting is recommended with extended use.‡

Zinc 30 (Z31 / Z36)

- Offers broad physiological support, including immune function and emotional wellness‡

Selenium (selenomethionine) (SE1 / SE6)

- Supports antioxidant defenses, immune function and cellular health‡

OptiFerin-C (OF26)

- An iron-based supplement formulated to support red blood cell function and energy production‡

PureMelt B_{12} Folate (PMLB9)

- Dissolving B_{12} folate vitamin lozenge to support red blood cell function, energy metabolism, and neurological health‡

Choline (bitartrate) (CLB1)

- Supports healthy methylation, cell function and neurotransmission‡

**Not all inflammation is associated with disease states. The body's inflammation response to life's occasional, normal stressors is important for optimal health.

ASSOCIATED SUPPORT

CLINICAL OBJECTIVE‡	ASSESSMENT*	PRODUCT RECOMMENDATIONS	SUGGESTED USE
Support for digestive health	Dietary assessment or digestive symptoms indicating need for fiber	**Poly-Prebiotic Powder** (Order Code: PPRP1) A unique powdered blend of researched prebiotic fibers and polyphenols to support gastrointestinal, cellular and immune function by boosting bifidobacteria and microbiome diversity‡	1 serving, 1–2 times daily, mixed with a beverage or into food
Support for occasional stress and mental clarity	Self-reported occasional stress	**Bacopa Monnieri** (Order Code: BA1) Promotes relaxation and mental clarity when under mild stress‡	Take 2 capsules, with each meal

Supportive Herbs for Postpartum

While clinical studies on the use of herbs in lactating women are lacking, there are several herbs that have been determined to be safe to use in women who are breastfeeding.

Lemon Balm (*Melissa officinalis*) is a gentle, well-tolerated herb from the mint family traditionally used as a galactagogue and to calm the nervous system, soothe digestion, and uplift mood.[28] A recent meta-analysis determined it to be significant in improving overall mood scores compared to placebo.[29] The leaves are typically used to make tea or tincture. Lemon Balm's gentle action makes it especially useful in the postpartum period, when emotional shifts, stress, and physical recovery intersect.‡

German chamomile (*Matricaria recutita*) has been traditionally used orally as a galactagogue, for its calming properties and for gastrointestinal conditions.[28] Topically, it has been used for tissue repair and cracked, bleeding nipples.[28‡]

In clinical trials, chamomile has been shown to support feelings of occasional anxiety and low mood. It is generally consumed as a tincture or tea.[30, 31‡]

Lavender (*Lavendula angustifolia*) has traditionally been used for occasional anxiety, sleep and discomfort.[28] While aromatherapy is the most common use, lavender can also be used topically and in tea. A meta-analysis concluded that lavender in each of these different formats had a positive effect on improving sleep quality in postpartum mothers.[32] Topical use on the breast should be avoided.‡

Oats (*Avena sativa*) have been traditionally used to support the nervous system and stress resilience.[33] Two forms of the plant are used, the milky oats, the part of the plant used for oatmeal are harvested before maturity and oatstraw is the green, grassy part of the plant. While both forms of the plant have calming effects, milky oats are often used more acutely for occasional anxiety and stress resilience, while oatstraw is used long term to support sleep, exhaustion and the replenishment of minerals like calcium, magnesium and iron. Milky oats are often found in tincture form, while oatstraw is consumed as a strong tea known as an infusion.‡

Supportive Herbs for Postpartum *Continued*

Stinging Nettle (*Urtica dioica*) preparations have multiple applications in women's health. For postpartum women, stinging nettle has been used as a galactagogue and to support low iron levels.[28] The plant's leaves and stalks are consumed as food in many cultures and it is rich in flavonoids and vitamins and minerals like B vitamins, choline, vitamins A & K, iron, magnesium, calcium and potassium.[34, 35] Both the roots and leaves are used in tea, tinctures and capsules to support hormone balance, energy and fatigue in postpartum women.‡

Herbs can offer gentle yet effective support by helping women navigate the physical recovery, emotional adjustment, hormonal shifts and sleep disruption that comes with the postpartum period. When used thoughtfully and in partnership with a knowledgeable provider, herbs can be a valuable part of a postpartum care plan.

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*All assessments may not be necessary. Testing should be performed at the discretion of the healthcare provider. The information contained herein is for informational purposes only and does not establish a doctor-patient relationship.