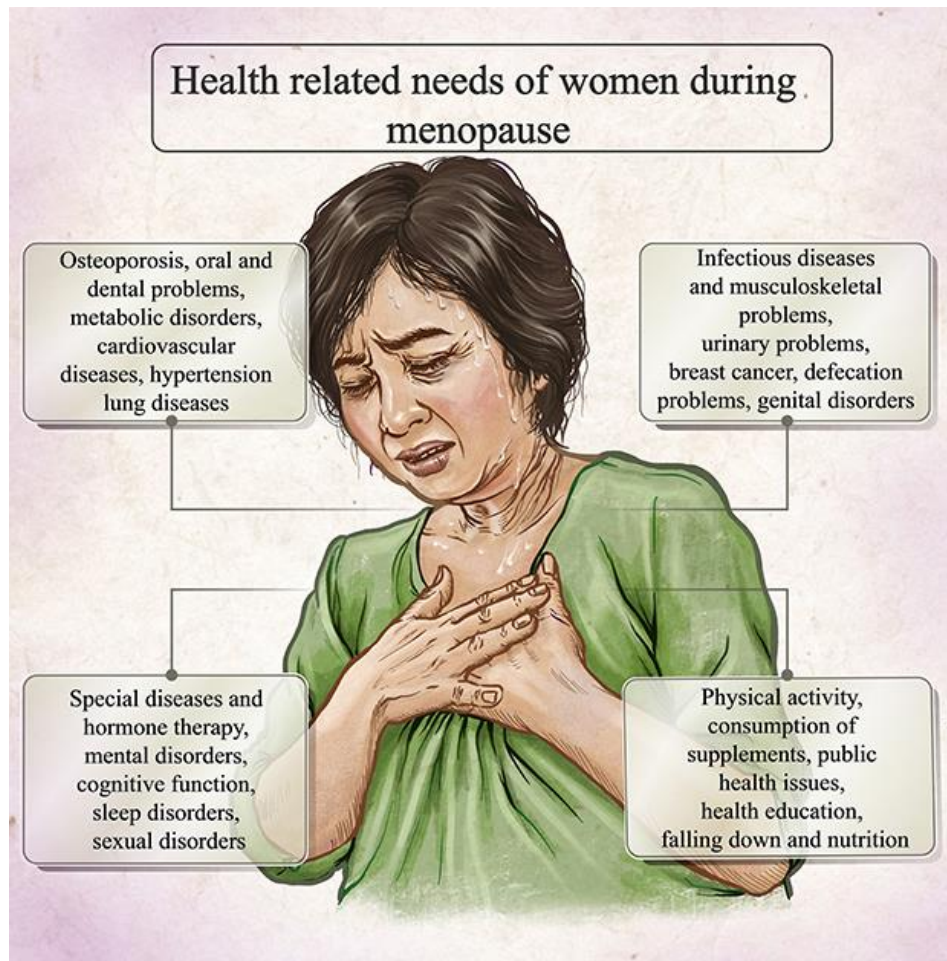


How Glutathione Supports Women in Perimenopause & Menopause

by Joseph V Cassarino

Prolmmune doesn't add glutathione from the outside. It helps your cells make their own glutathione the way the body naturally does. Glutathione is made inside cells, not outside them. Other glutathione products try to supply glutathione into the cell, but it works more effectively when the body produces it internally. Prolmmune is a glutathione precursor, a scientific breakthrough utilizing the exact same ingredients, in a precise ratio and minute particle size that nature utilizes to make glutathione directly inside cells. Prolmmune is designed to support a natural, inside-the-cell process to make glutathione exactly as nature intended. In today's world, where toxins deplete glutathione rapidly, Prolmmune replenishes glutathione levels back to optimal range directly inside cells where it matters most. Prolmmune was researched by a consortium of 18 universities under an \$88M NIH research grant to be the most effective and efficient glutathione. No other glutathione can compare because no other glutathione is the exact replica of how natural selection designed glutathione. This is what differentiates Prolmmune over all glutathione products or NAC and why physicians and scientists across America call Prolmmune a revelation of science and a daily, essential, must have miracle powder.



1. Reduces Oxidative Stress Increased by Hormone Changes

As estrogen decreases, the body loses some of its natural antioxidant protection. This raises oxidative stress, damaging cells and worsening symptoms such as:

- Fatigue
- Brain fog
- Joint pain
- Hot flashes (partially linked to oxidative imbalance)

Glutathione buffers these oxidative processes, helping keep tissues stable.

2. Supports Mitochondrial Energy Production

Perimenopause often brings fatigue because mitochondrial efficiency declines with age and hormonal fluctuation.

Glutathione:

- Protects mitochondria from oxidative damage
- Supports ATP (energy) production
- Reduces age-related mitochondrial decline

Women often report improved energy when glutathione levels are optimized.

3. Detoxification Support (Liver Phase II Conjugation)

The liver uses glutathione to neutralize and eliminate:

- Hormone metabolites (including estrogen breakdown products)
- Toxins
- Environmental endocrine disruptors

During perimenopause, estrogen metabolism becomes less efficient.

Adequate glutathione helps prevent build-up of “dirty estrogens” that can worsen:

- PMS-like symptoms
 - Estrogen dominance
 - Breast tenderness
 - Heavy periods (during perimenopause)
-

4. Supports Immune Balance

Fluctuating hormones impact immune regulation. Some women develop:

- Increased inflammation
- Autoimmune tendencies
- More frequent infections

Glutathione regulates the immune response and lowers inflammatory cytokines, contributing to:

- Reduced systemic inflammation
 - Better immune resilience
 - Less inflammatory pain or swelling
-

5. Helps Mood, Cognition & Sleep

Perimenopause commonly affects:

- Mood stability
- Anxiety levels

- Sleep quality
- Memory and focus

Oxidative stress contributes to neurotransmitter imbalance.
Glutathione supports brain health by:

- Protecting neurons
- Maintaining dopamine and serotonin signaling
- Reducing neuroinflammation

This often leads to clearer thinking and calmer emotional regulation.

Other Female Health Areas Where Glutathione Helps

Polycystic Ovary Syndrome (PCOS)

Women with PCOS often have higher oxidative stress. GSH helps by:

- Lowering inflammation
 - Supporting insulin sensitivity
 - Protecting ovarian tissue
-

Endometriosis

Chronic inflammation is central to endometriosis.
Glutathione helps reduce oxidative damage and inflammatory signaling.

Fertility

Egg cells (oocytes) are extremely sensitive to oxidative stress.
Glutathione:

- Protects egg quality
 - Supports healthy ovulation
 - Improves embryo viability
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How Glutathione Improves Women's Skin

1. Reduces Hyperpigmentation

Glutathione inhibits tyrosinase, an enzyme needed for melanin production.
This leads to:

- Brighter skin
 - More even skin tone
 - Reduction in melasma (which can worsen during hormonal shifts)
-

2. Improves Collagen & Elasticity

By reducing oxidative stress in the dermis, glutathione helps preserve:

- Collagen
- Elastin
- Skin firmness

This results in fewer fine lines and better skin texture.

3. Detoxifies Skin Cells

Toxin buildup and inflammation can worsen:

- Acne
- Rosacea
- Dermatitis

Glutathione supports cellular detox pathways, giving skin a clearer and healthier appearance.

4. Protects Against UV Damage

Glutathione neutralizes free radicals formed by UV exposure, slowing premature aging and preventing cellular DNA damage.

How to Support Healthy Glutathione Levels

- **Nutrients:** ProImmune – Immune Formulation 200 = The Master Antioxidant
- **Lifestyle:** Adequate sleep, exercise, reduction in alcohol/toxins

(Avoid IV glutathione unless medically supervised it doesn't penetrate the cell membrane.)

Summary

Glutathione supports women's health during perimenopause, menopause, and beyond by:

Hormonal Transition Support

- Reducing oxidative stress
- Improving energy production
- Helping detoxify estrogen metabolites
- Balancing inflammation and immunity

Skin & Beauty Benefits

- Brightening skin tone
- Reducing hyperpigmentation
- Protecting collagen

- Improving overall clarity and glow

Reproductive & Overall Health

- Supporting fertility
 - Helping in PCOS and endometriosis
 - Protecting neurons and enhancing mood/cognition
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Glutathione's Role in Women's Health—from Perimenopause to Pregnancy & Postpartum

Glutathione (GSH) is the body's master intracellular antioxidant, supporting detoxification, immune regulation, mitochondrial energy, and cellular repair. Women experience several phases of life where oxidative stress increases and glutathione demand rise—particularly pregnancy, childbirth, and postpartum.

Below is a full-spectrum explanation of how glutathione supports women during perimenopause, menopause, pregnancy, and post-birth recovery, plus skin and hormonal health.

□ How Glutathione Supports Pregnancy

Pregnancy dramatically increases metabolic activity and oxidative stress. The placenta itself produces reactive oxygen species, and both mother and baby rely heavily on antioxidants.

□ 1. Protects Maternal and Fetal Cells

Glutathione protects both mother and developing baby from oxidative damage by:

- neutralizing free radicals
- protecting mitochondrial function
- supporting healthy cellular division

Healthy glutathione levels are associated with:

- lower risk of pregnancy complications related to oxidative stress
 - better placental health
 - healthier fetal development
-

□ 2. Supports Placental Function & Nutrient Transfer

The placenta is highly sensitive to oxidative stress.

Glutathione helps:

- maintain placental integrity
- support healthy blood flow
- protect the placenta from inflammation

This contributes to appropriate nutrient and oxygen transfer to the baby.

□ 3. Detoxification & Hormone Metabolism

During pregnancy, the mother's liver must process:

- increased hormone levels
- increased metabolic byproducts
- environmental toxins

Glutathione plays a central role in liver Phase II conjugation, helping maintain a cleaner internal environment for both mother and fetus.

□ 4. Supports Immune Balance

Pregnancy shifts the immune system into a unique “tolerant but vigilant” state. Glutathione helps balance inflammatory responses to support:

- reduced maternal inflammation
 - decreased oxidative stress in fetal tissues
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□ 5. Helps Reduce Pregnancy-Related Fatigue

As mitochondrial demand increases, glutathione helps maintain ATP production and protects energy-producing pathways. This may support:

- more stable energy
 - less oxidative fatigue
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Glutathione After Childbirth: Why It Drops & Why It's Important

Childbirth is a **high-inflammatory**, **high-energy**, and **high-stress** event. Research consistently shows that oxidative stress markers increase during labor, and mothers experience **temporary glutathione depletion postpartum**.

Here's why, and why replenishment matters:

Why Glutathione Levels Drop After Birth

Childbirth strains the body through:

- high physical exertion
- high inflammatory load
- blood loss
- rapid hormonal shifts
- sleep deprivation
- tissue healing demands

All of these increase the use of glutathione in:

- detoxification
- cell repair
- immune activation
- wound healing

- milk production (which draws on maternal nutrient stores)

Result: **postpartum oxidative stress increases, and glutathione levels decrease.**

How Glutathione Supports Postpartum Recovery

□ 1. Speeds Tissue Repair

Glutathione supports:

- recovery from tears or C-sections
- uterine healing
- reduction of inflammation in pelvic tissues

It works by supporting cellular regeneration and reducing oxidative damage.

□ 2. Supports Mood & Reduces Neuroinflammation

Postpartum women often experience:

- mood shifts
- brain fog
- anxiety
- emotional sensitivity

Oxidative stress and inflammation contribute to these changes.

Glutathione protects neurons and helps maintain neurotransmitters like dopamine and serotonin.

□ 3. Strengthens Immunity After Birth

The immune system is temporarily taxed after labor.

Glutathione aids immune balance so the body can:

- fight infections
- regulate inflammation
- recover more efficiently

This is especially relevant after C-section or prolonged labor.

□ 4. Helps Detoxify Anesthesia & Medications

If a woman receives:

- epidural medication
- IV medications
- antibiotics
- C-section anesthesia

Her liver relies heavily on glutathione to break these compounds down.
Low glutathione = slower detox and recovery.

□ 5. Improves Skin Recovery, Brightness & Pigmentation After Birth

Postpartum women often face:

- melasma (“pregnancy mask”)
- uneven tone
- dull skin
- inflammation-related breakouts

Glutathione helps by:

- inhibiting melanin overproduction
- supporting collagen
- reducing oxidative damage
- improving hydration and glow

This is why many women notice brighter, clearer skin when supporting glutathione levels postpartum.

How Glutathione Fits Across a Woman’s Entire Hormonal Journey

Pregnancy

- protects fetal and maternal cells
- supports placental health
- improves detoxification
- supports immunity and energy

Postpartum

- replenishes depleted antioxidant stores
 - supports tissue healing
 - improves mental clarity and mood
 - brightens and evens skin
 - assists with detoxification pathways
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Summary

Glutathione is profoundly supportive for women’s health because it touches every major cellular system involved in hormonal transitions, pregnancy, and recovery:

- **Antioxidant protection**
- **Hormone metabolism**
- **Energy production**
- **Immune balance**
- **Skin repair**
- **Detoxification**

Women use significantly more glutathione during **pregnancy**, and childbirth causes **temporary depletion**, making replenishment essential for postpartum healing, mood balance, and skin recovery.

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Menopausal Transition

The menopausal transition is caused by a **natural decline of reproductive hormones**, estrogen and progesterone. It triggers physical and emotional changes, marking the end of female reproductive years.

MOST COMMON SYMPTOMS



STAGES OF MENOPAUSE	PERIMENOPAUSE	MENOPAUSE	POSTMENOPAUSE
	<ul style="list-style-type: none">• Starts in mid 40s• Causes most menopausal symptoms	<ul style="list-style-type: none">• Confirmed when period is absent for 12 months in a row	<ul style="list-style-type: none">• Years after menopause• Increases risk of certain serious health problems

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