

Could an SHMT Gene Variant Be Impacting Your Gut, Mood, and Methylation?

This gene helps convert folate into a usable form—critical for DNA repair, neurotransmitters, and gut health.

What Is the SHMT Gene?

SHMT stands for **Serine Hydroxymethyltransferase**. This gene is responsible for converting **folate (vitamin B9)** into **5,10-methylene tetrahydrofolate**, a crucial form needed for **DNA synthesis**, **neurotransmitter production**, and the entire **methylation cycle**.

SHMT also plays a central role in the **balance between methylation and DNA repair**, as well as maintaining the health of fast-dividing cells—especially in the **gut lining** and **immune system**.

What Happens When the SHMT Gene Is Compromised?

SHMT gene variants may slow this conversion process, which can lead to:

- **Impaired folate utilization**
- **Methylation imbalances**
- **Reduced DNA repair**
- **Higher homocysteine levels**
- **Inflammation and oxidative stress**

Symptoms that may be linked to an SHMT variant:

- Digestive issues (like leaky gut or IBS)
- Immune dysfunction or autoimmunity
- Brain fog or difficulty focusing
- Fatigue that doesn't improve with rest
- Mood instability or anxiety
- Hormonal imbalance
- Skin issues or slow wound healing

How to Support an SHMT Gene Variant

The goal is to **optimize folate metabolism, lower inflammation**, and support **methylation balance**.

1. Nutrients That Support SHMT Function:

- **Folate (especially L-5MTHF)** – Supports methylation directly
- **B6 (P5P)** – Cofactor for the SHMT enzyme
- **Serine and glycine** – Amino acids involved in this pathway
- **Zinc and magnesium** – General methylation support

2. Lower Oxidative Stress

- Eat antioxidant-rich foods (berries, leafy greens)
- Support glutathione production (NAC, selenium, whey protein)

3. Heal the Gut Lining

- Use nutrients like **L-glutamine, zinc carnosine**, and **probiotics**
- Avoid processed foods and excess sugar

4. Balance Other Methylation Genes

- SHMT often interacts with **MTHFR, CBS, and MTR/MTRR**
- Consider working with a functional medicine provider for a full methylation panel

Key Takeaway

An **SHMT gene variant** can disrupt your body's ability to use folate properly, affecting **mood, methylation, gut health, and immunity**.

Supporting folate metabolism and reducing inflammation can help you feel clearer, stronger, and more resilient.