

Methylene Blue

dose matters — low is not the same as high

Methylene blue is one of the oldest man-made medicines still in use — a deep-blue compound with a 150-year history in medicine that researchers are taking a fresh look at today. This guide shares its story, how it's understood to work, where it's used, and the safety points that matter most. It reflects our pharmacists' reading of current and still-developing research — it is not medical advice.

A little history

- | | |
|--------------|--|
| 1876 | First made by chemist Heinrich Caro as a synthetic textile dye — one of the first man-made colors. |
| 1890s | Physician Paul Ehrlich used it to stain and study living cells and nerves and explored it as a treatment — part of the work that founded modern drug research. |
| 1891 | Became one of the first synthetic medicines used against malaria, and later a trusted hospital antidote. |
| today | An FDA-approved treatment for a rare blood condition (methemoglobinemia) and a surgical marker dye — plus a subject of active new research. |

How it's thought to work

Inside your cells, tiny structures called **mitochondria** turn food and oxygen into energy by passing electrons along a chain. Methylene blue can step in as an **extra electron carrier**. At the low doses studied for wellness, researchers believe this may help cells use oxygen more efficiently and may act as an antioxidant. At high doses it does the opposite — one reason dosing matters and should come from your prescriber.

Where it's used

Established uses are FDA-approved; the newer ones are not.

Established (FDA-approved): treating methemoglobinemia, a rare blood-oxygen disorder, and use as a diagnostic/surgical dye.

Being studied: cellular energy, brain and memory support, mood, and healthy aging.

These newer uses are **areas of active research — not proven or FDA-approved**, and results so far are early and mixed. We share them because patients ask and the science is genuinely interesting, not as a promise of benefit. Whether methylene blue is right for you is a decision for you and your prescriber.

Safety — what matters most

Antidepressants & other serotonin medicines. Methylene blue can interact strongly with many antidepressants (**SSRIs, SNRIs, MAOIs**) and other serotonin-raising medicines, which can cause a dangerous reaction called **serotonin syndrome**. Tell us and your prescriber every medication and supplement you take before starting methylene blue. Do not combine them on your own.

- **G6PD deficiency.** People with this inherited enzyme condition should usually avoid it — it can affect red blood cells. Ask your prescriber if you're unsure.
- **Pregnancy & breastfeeding.** Not recommended unless your prescriber specifically directs it.
- **Blue-green color.** It can briefly turn your urine, and sometimes your tongue, blue-green. This is harmless and expected.
- **Tell your care team.** It can briefly affect finger-clip oxygen monitor (pulse oximeter) readings during medical visits.

If it's compounded for you

Use it exactly as your label and prescriber direct:

- Take only the dose prescribed — more is not better, and the right amount is small.
- It can **stain teeth, clothing, and surfaces**. Take capsules or troches as directed; for a liquid, ask your pharmacist how to reduce staining.
- Keep it out of reach of children. Spacing doses does **not** make it safe to combine with the medicines above — only your prescriber can OK that.
- Store it as your label states, and bring your full medication list to every appointment.

Questions are welcome. If anything about your methylene blue prescription is unclear — timing, interactions, or what to expect — call and ask to speak with a Village Pharmacy pharmacist.

This guide is general educational information and reflects our pharmacists' observations based on current and still-developing research. It is **not medical advice** and does not replace your prescription label or your prescriber's instructions, which always take priority. Many of the newer uses described are **investigational and not approved by the FDA**; evidence is still emerging and may change. **Always consult your doctor or pharmacist** before starting, changing, or stopping any medication. If you notice a reaction that concerns you, contact your prescriber or pharmacist right away; for a medical emergency, call 911. By using this information you accept that Village Pharmacy & Compounding, its owners, and staff are not liable for any injury, loss, or damage arising from its use.

Web: villagepharmacymiami.com · **Call:** 305-274-8955 · **Visit:** 9408 SW 87th Ave, Suite 105, Miami, FL (MedSquare Building)