

# Understanding and managing anemia in patients following bariatric surgery

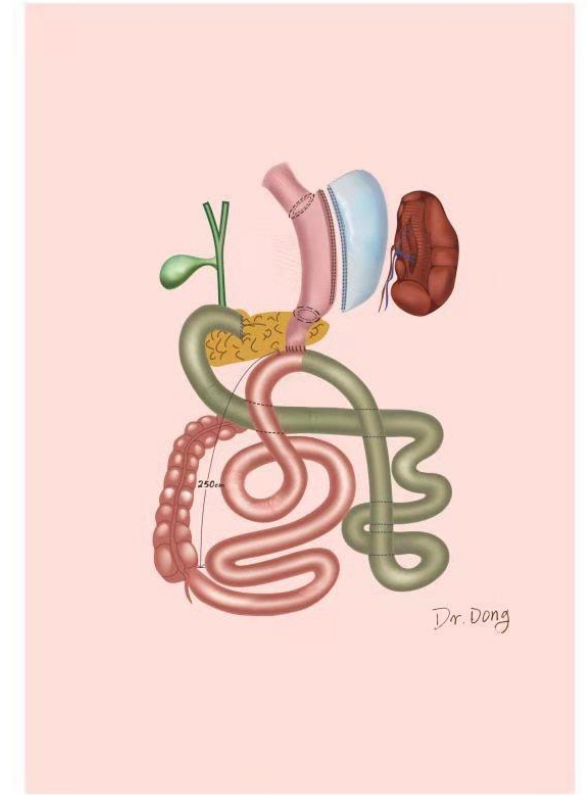
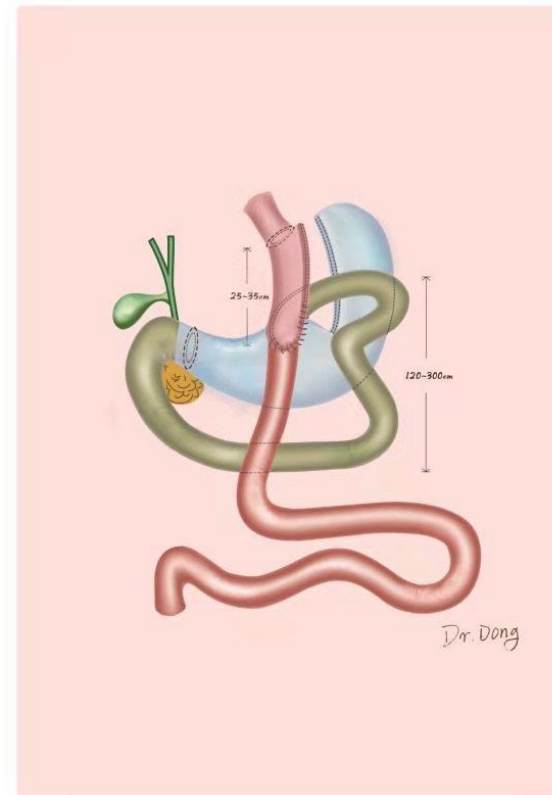
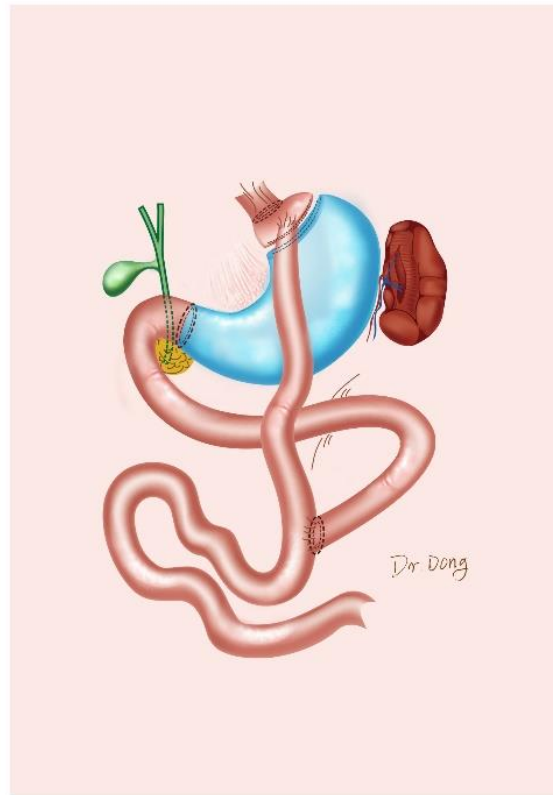
**Zhiyong Dong MD; PhD**

**Team member of Prof.CC Wang  
IFSO-APC training center**

**Bariatric Surgery, the Frist Affiliated Hospital of Jinan University, China**

**I have no potential conflict of interest to report**

# The mechanisms and principles of bariatric surgery



By restricting food intake and altering the gastrointestinal anatomy, the goal of achieving weight loss and improving metabolic diseases such as type 2 diabetes is attained.

# The main causes of anemia

Practice Guideline > Surg Obes Relat Dis. 2017 May;13(5):727-741.

doi: 10.1016/j.soard.2016.12.018. Epub 2017 Jan 19.

## American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients

Julie Parrott<sup>1</sup>, Laura Frank<sup>2</sup>, Rebecca Rabena<sup>3</sup>, Lillian Craggs-Dino<sup>4</sup>, Kellene A Isom<sup>5</sup>,  
Laura Greiman<sup>6</sup>

Surg Obes Relat Dis,2017,13(5):727-741; Surg Obes Relat Dis,2011,7(2):151-156; Obes Surg,2012,22(11):1676-1685

Depending on the type of bariatric surgery, the incidence of iron deficiency after bariatric surgery ranges from 8% to 62%,

vitamin B12 deficiency occurs in 19% to 35% of patients,

and the incidence of folic acid deficiency ranges from 9% to 39%, within 5 years.

# Treatment of iron deficiency anemia after bariatric surgery

**Oral Treatment:** Provide 150–200 mg of elemental iron daily, divided into 2–3 doses, with a maximum dose of 300 mg per day. Oral supplements should be taken in divided doses, separate from calcium supplements, acid-suppressing medications, and foods rich in phytates or polyphenols. Vitamin C supplements can be added to increase iron absorption and reduce the risk of iron overload (Grade B, Level 1).



**Intravenous Iron Therapy:** For patients who are intolerant to or have poor compliance with oral iron, and those who may develop iron deficiency anemia due to insufficient intake in the long term after surgery, high-dose, low-frequency intravenous iron therapy is recommended (Grade A, Level 2). A single infusion of over 1,000 mg may be administered once a year.

Chinese guidelines for the prevention of anemia related to weight loss surgery, 2024



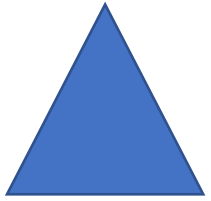
## Treatment of B12 deficiency anemia after bariatric surgery

For patients already diagnosed with vitamin B12 deficiency, **administer 1,000  $\mu\text{g}$  orally per day until serum levels return to normal**, then revert to a regular dose, or 1,000  $\mu\text{g}$  intramuscularly once a week for 8 weeks, followed by a regular dose of 1,000  $\mu\text{g}$  intramuscularly per month (Grade B, Level 1).

Although RYGB surgery can impair vitamin B12 absorption, studies show that oral supplementation is as effective as intramuscular injections for patients with low vitamin B12 levels post-RYGB.

Chinese guidelines for the prevention of anemia related to weight loss surgery, 2024

# Treatment of Folic Acid deficiency anemia after bariatric surgery



For patients with folic acid deficiency, administer 1,000  $\mu\text{g}$  orally per day until serum folic acid levels return to normal, then switch to a regular dose (Grade A, Level 3).

It is not recommended to exceed 1,000  $\mu\text{g}$  per day orally, as higher doses may mask vitamin B12 deficiency (Grade B, Level 1).

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