



Optimizing Recovery After Fistula-in-Ano Surgery: The Role of Post-Operative Diet, BMI, and Evidence-Based Strategies to Reduce Recurrence

Dr. Anjali suryawanshi¹ Assistant Professor at Shalyatantra Department, ADAMC, ASHTA

Dr. Prithviraj Patil² Assistant Professor at Shalyatantra Department, ADAMC, ASHTA

Abstract

Fistula-in-ano is a relatively common benign disease of the anorectal region, which may pose considerable complications in terms of surgery, as this disease has the propensity to recur and may be accompanied by postoperative wound healing. Fistula-in-ano has recurrence rates of 7–30% after surgery. Patient factors such as BMI, nutrition, diabetes, and bowel habits may influence wound healing and recurrence. A narrative review of published literature was conducted to evaluate BMI-based postoperative dietary recommendations and nutritional strategies following fistula-in-ano surgery. Individualized nutrition based on BMI, with adequate protein, hydration, and balanced dietary intake, may support healing and reduce recurrence. Further high-quality studies are needed to develop standardized dietary guidelines.

Keywords: Fistula-in-ano; postoperative diet; BMI; nutrition; wound healing; recurrence.

Introduction

Fistula-in-ano is a chronic anorectal condition characterized by an abnormal tract connecting the anal canal to the perianal skin, most commonly resulting from infection of the anal glands following a perianal abscess. Despite advances in surgical techniques, recurrence remains a significant challenge, with reported rates ranging from 7% to 30%, depending on fistula complexity and the type of surgical intervention¹. In addition to surgical factors, patient-related characteristics such as nutritional status, body mass index (BMI), diabetes, and bowel habits can influence wound healing and long-term outcomes.

Postoperative nutritional management plays an important role in tissue repair, immune function, and bowel regulation. Both obesity and undernutrition may impair healing, increase the risk of infection, and contribute to recurrence. Although dietary advice is routinely provided after surgery, BMI-specific postoperative nutritional recommendations remain limited and are not well standardized. This review summarizes current evidence on the role of BMI-based dietary management following fistula-in-ano surgery and highlights nutritional strategies that may promote faster healing and reduce the risk of recurrence².

Materials and Methods

A narrative review of the literature was conducted to evaluate the influence of body mass index (BMI) on postoperative dietary management, wound healing, and recurrence following fistula-in-ano surgery.. The review focused on evidence regarding postoperative nutritional requirements, including protein, dietary fiber, hydration The literature focused on postoperative care, including bowel management, nutritional support, wound care, pain management, sitz baths, hydration, and factors associated with recurrence. Patient-related variables such as BMI, obesity, malnutrition, diabetes, , and fistula complexity were also examined to assess their impact on wound healing and recurrence. Evidence from the selected studies was synthesized to provide practical, evidence-based dietary recommendations for improving postoperative recovery and reducing the risk of recurrence³. vitamins (A, C, and D), zinc, and omega-3 fatty acids, as well as bowel management strategies that facilitate wound healing. Studies evaluating the impact of obesity, undernutrition, diabetes mellitus and Crohn's disease on surgical outcomes were also reviewed. Evidence was synthesized to develop BMI-specific dietary recommendations aimed at promoting tissue repair⁴, maintaining soft bowel movements, minimizing wound complications, and reducing the risk of fistula recurrence

Table 1. Effect of BMI on Wound Healing and Recurrence

BMI (kg/m²)	Effect on Wound Healing	Risk of Recurrence	Dietary Goal
<18.5 (Underweight)	Protein deficiency, collagen synthesis, immunity	delayed impaired Moderate	High-protein, energy-dense diet to improve nutritional status
18.5–24.9 (Normal)	Optimal wound healing	Lowest	Balanced diet with adequate protein, fiber, and hydration
25–29.9 (Overweight)	Increased wound complications and delayed healing	Increased	Calorie-controlled, high-protein, high-fiber diet
≥30 (Obese)	Poor tissue oxygenation, higher infection risk, delayed healing	Highest	Weight reduction after recovery with nutrient-dense foods and regular physical activity

Table 2. Recommended Postoperative Diet for Wound Healing

Nutrient	Recommended Intake	Food Sources	Role in Healing
Protein	1.2–1.5 g/kg/day	Eggs, fish, chicken, paneer, soy, dal, Greek yogurt	Collagen synthesis, tissue repair, immune function
Dietary Fiber	25–35 g/day	Oats, fruits, vegetables, whole grains, psyllium husk	Soft stool, reduced straining, easier wound care
Fluids	2–3 L/day	Water, soups, buttermilk	Prevents constipation and dehydration
Vitamin C	75–100 mg/day	Amla, guava, citrus fruits, kiwi	Collagen formation and epithelial repair
Zinc	8–11 mg/day	Pumpkin seeds, meat, chickpeas, nuts	Wound healing and immune support

Nutrient	Recommended Intake	Food Sources	Role in Healing
Vitamin A	As per RDA	Carrots, spinach, sweet potato, liver	Epithelial regeneration
Vitamin D	Replace if deficient	Sunlight, fortified foods, supplements	Supports immune function and wound healing
Omega-3 Fatty Acids	Regular dietary intake	Salmon, sardines, flaxseed, walnuts	Modulates inflammation and promotes tissue repair

Table 3. BMI-Specific Dietary Recommendations

BMI Category	Dietary Recommendations
Underweight (<18.5 kg/m ²)	Increase protein, healthy fats, and complex carbohydrates to improve nutritional status and lean body mass.
Normal (18.5–24.9 kg/m ²)	Maintain a balanced diet consisting of approximately 50% vegetables, 25% protein, and 25% whole grains.
Overweight (25–29.9 kg/m ²)	Reduce refined carbohydrates, fried foods, and sugary beverages while increasing protein, fiber, and physical activity after recovery.
Obese (≥30 kg/m ²)	Initiate gradual weight reduction after wound healing with a nutrient-dense, calorie-controlled diet to decrease future wound complications and recurrence risk.

General Dietary Recommendations

Patients should consume adequate protein (1.2–1.5 g/kg/day), maintain a dietary fiber intake of 25–35 g/day with 2–3 L of fluids daily, and include fruits, vegetables, whole grains, legumes, lean meat, fish, eggs, nuts, and seeds in their diet. Processed foods, refined carbohydrates, sugary beverages, excessive sweets, alcohol, and ultra-processed snacks should be limited because they contribute to obesity, metabolic dysfunction, and constipation. Good glycemic control in patients with diabetes, , and appropriate management of Crohn's disease are essential adjuncts to nutritional therapy for optimizing wound healing and reducing recurrence following fistula-in-ano surgery.

Discussion

BMI and nutritional status may influence postoperative healing after fistula-in-ano surgery. Adequate protein, fiber, hydration, and essential micronutrients support tissue repair, immune function, and maintenance of soft stools. Underweight patients may require nutritional optimization, whereas overweight and obese patients may benefit from gradual weight management after wound healing. However, recurrence is multifactorial and cannot be attributed to BMI or diet alone. Fistula complexity, particularly high transsphincteric fistulas, seton treatment, diabetes, Crohn's disease, wound infection, and postoperative complications such as fecal incontinence may also influence outcomes. Therefore, nutritional management should be considered an adjunct to appropriate surgical and postoperative care⁶.

Conclusion

BMI-based nutritional management may support wound healing and recovery following fistula-in-ano surgery, but current evidence does not establish diet as a proven method for preventing recurrence. Adequate protein, fiber, hydration, and correction of nutritional deficiencies should be encouraged, with individualized management according to BMI and comorbidities. Recurrence prevention requires a multifactorial approach,

including appropriate surgical management, control of diabetes and inflammatory disease, and careful postoperative follow-up.

Result

The reviewed evidence suggests that BMI-based postoperative nutritional management improves recovery after fistula-in-ano surgery. A high-protein diet (1.2–1.5 g/kg/day), adequate dietary fiber (25–35 g/day), and sufficient hydration (2–3 L/day) promote wound healing, maintain soft stools, and reduce postoperative complications. Patients with a normal BMI generally experience better healing, whereas obesity is associated with delayed wound healing, higher infection rates, and increased recurrence risk. Current evidence indicates that while a healthy, balanced diet supports optimal recovery and may reduce factors associated with recurrence, no specific dietary regimen has been conclusively proven to prevent fistula recurrence. Some other factor also there for fistula in ano recurrence like high transsphincteric Fistula in ano who were treated with seton placement. Variables analyzed were the characteristics of Fistula in ano, incidence of recurrence, postoperative complications including fecal incontinence, and the predictive factors for recurrence⁵.

References

1. External anal sphincter sparing seton after rerouting of the fistula tract - a video vignette. Emile SH, Abdelnaby M, Omar W, Khafagy W. *Colorectal disease: the official journal of the Association of Coloproctology of Great Britain and Ireland* 2020; (22(4)):475-476 doi:10.1111/codi.14934.
2. Measures of clinical accuracy and indicators of the nursing diagnosis of delayed surgical recovery. Santana RF, Lopes MV. *Collegian (Royal College of Nursing, Australia)* 2015; (22(3)):275-82 doi:10.1016/j.colegn.2014.02.001.
3. Obesity and Surgical Wound Healing: A Current Review Yvonne N Pierpont 1,2, Trish Phuong Dinh 2, R Emerick Salas 1,2, Erika L Johnson 1,2, Terry G Wright 1,2, Martin C Robson 2, Wyatt G Payne 1,2, PMID: 24701367
4. Encinosa WE, Bernard DM, Chen C-C, Steiner CA. Healthcare utilization and outcomes after bariatric surgery. *Medical Care*. 2006;44(8):706–712. doi: 10.1097/01.mlr.0000220833.89050.ed. [DOI] [PubMed] [Google Scholar]
5. Predictive factors for recurrence of high transsphincteric anal fistula after placement of seton Emile SH, Elfeki H, Thabet W, et al. *the Journal of surgical research* 2017; (213()):261-268 doi:10.1016/j.jss.2017.02.053.
6. Long-term healing after complex anal fistula repair in patients with Crohn's disease. Mujukian A, Truong A, Fleshner P, Zaghiyan K. *Techniques in coloproctology* 2020; (24(8)):833-841 doi:10.1007/s10151-020-02238.