

## Systematic Review

Citation	Design/Method Sample/Setting	Variables and Intervention	Outcome Measures	Results/Analysis	Limitations	Quality and Nursing Implications
<p>Croisier, E., Brown, T., &amp; Bauer, J. (2021). The efficacy of dietary fiber in managing gastrointestinal toxicity symptoms in patients with gynecologic cancers undergoing pelvic radiotherapy: A systematic review. <i>Journal of the Academy of Nutrition and Dietetics</i>, 121(2), 261–277.e2. <a href="https://doi.org/10.1016/j.jand.2020.08.077">https://doi.org/10.1016/j.jand.2020.08.077</a></p>	<p><b>Design/Method:</b> Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). Database search: PubMed®, Embase®, CINAHL®, Scopus®, ScienceDirect, ClinicalKey, Web of Science, and Cochrane Library for studies on fiber and nutritional status during pelvic radiation. Academy of Nutrition and Dietetics Quality Criteria Checklist used for appraisal. GRADE methodology applied.</p> <p><b>Sample:</b> 4 included studies with a total of 89 participants with gynecologic cancers undergoing cancer treatment (range = 10–38 participants per study)</p> <p><b>Setting:</b> 3 studies' participants being treated for curative intent, 1 study unknown intent. Use and/or timing of chemotherapy not specified. 3 of 4 studies with intervention taking place during radiation treatment.</p>	<p><b>Independent Variable (IV):</b> Nutritional intervention with fiber modification</p> <p><b>Dependent Variables (DVs):</b> Primary: gastrointestinal toxicity symptoms; secondary: quality of life, nutritional status</p>	<p>Common Toxicity Criteria (CTCAE) for gastrointestinal toxicity</p> <p>European Organisation for Research and Treatment of Cancer Quality-of-Life Questionnaire–Core 30</p>	<p>Quality of life: 1 study (neutral quality); no significant improvement</p> <p>Gastrointestinal toxicity including nausea and vomiting, anorexia, bloating, and abdominal pain: 2 studies (N = 41) (1 negative quality, 1 neutral quality); no significant difference between intervention and control groups</p> <p>Bowel changes and diarrhea: 4 studies reported worsening symptoms during radiation therapy, 2 studies had less decline and reported statistically significant improvement in bowel scores (N = 21) (p &lt; 0.05; negative quality); another study (N = 20) (neutral quality) showed no statistically significant improvement in diarrhea symptoms.</p>	<p>Sample size; limited number of studies included with low samples within each study</p> <p>High heterogeneity</p> <p>High risk of bias; 2 studies were rated negative and 2 neutral in quality ratings; differences in fiber interventions</p>	<p>Studies that were selected appeared to be sound and followed a clear selection process. The methodology was valid, and results reported with reliability. Summary of findings were limited, and interventions varied, making it challenging to suggest recommendations for practice.</p> <p>However, there is value in further research as the systematic review reported potential benefits of supplemental fiber during and after radiation for reducing severity and occurrences of diarrhea.</p>

## General Evidence

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Sanz-Paris, A., Martinez-Trufero, J., Lambea- Sorrosal, J., Calvo- Gracia, F., & Milà- Villaruel, R. (2020). Clinical and nutritional effectiveness of a nutritional protocol with oligomeric enteral nutrition in patients with oncology treatment-related diarrhea. <i>Nutrients</i> , 12(5), 1534. <a href="https://doi.org/10.3390/nu12051534">https://doi.org/10.3390/nu12051534</a>	<b>Design/Method:</b> Multicenter, observational, prospective cohort study  <b>Sample:</b> 162 patients receiving chemotherapy, radiation therapy, chemotherapy and radiation therapy, and targeted therapy who are at risk for malnourishment and treatment-related diarrhea  <b>Setting:</b> Medical oncology, radiation oncology, and nutrition departments in 15 centers in Spain	<b>IV:</b> Oral enteral nutrition (OEN) (2 or 3 bottles)  <b>DVs:</b> Nutritional status, stool consistency (Bristol Stool Form Scale), stool frequency, volume of OEN consumed, and tolerance to OEN treatment  <b>Intervention:</b> 8-week nutritional protocol following stratification by baseline nutritional status for patients to consume 2 or 3 bottles of OEN per day	Subjective global assessment; Bristol Stool Form Scale  Volume of OEN consumed  Tolerance to OEN  Mean number of stools per day	48.3% of patients had improved nutritional status after the 8-week protocol, ( $p < 0.001$ ). Body mass index ( $p = 0.004$ ) and serum albumin ( $p < 0.001$ ) both significantly increased. Stool consistency significantly improved ( $p < 0.001$ ) in 71.1% of patients. The average stools per day significantly decreased ( $p =$ 0.0041). 72.3% of patients reported consuming their prescribed OEN, and 80.3% reported good tolerability.	No control group/ randomization  No blinding  Baseline sample differences included heterogeneous disease types and treatments.  Follow-up was relatively short- term.	Methodology was valid and results reported with reliability though limited by lack of randomization and blinding. The implementation of dietary intervention with oligomeric enteral nutrition has the potential to improve the nutritional status of patients at risk of malnutrition and treatment-related diarrhea. Nurses can work with registered dietitians to assess baseline nutritional status and stool consistency/frequency to determine a consistent approach to nutrition during treatment. Further randomized controlled trials are needed to validate the study findings.
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Sasidharan, B.K., Ramadass, B., Viswanathan, P.N., Samuel, P., Gowri, M., Pugazhendhi, S., & Ramakrishna, B.S. (2019). A phase 2 randomized controlled trial of oral resistant starch supplements in the prevention of acute radiation proctitis in patients treated for cervical cancer. <i>Journal of Cancer Research and Therapeutics</i> , 15(6), 1383–1391. <a href="https://doi.org/10.4103/jcrt.JCRT_152_19">https://doi.org/10.4103/jcrt.JCRT_152_19</a>	<b>Design/Method:</b> Double- blind randomized controlled trial of the use of a resistant starch versus digestible starch  <b>Sample:</b> Patients receiving pelvic radiation and chemotherapy for cervical cancer (stages IIB–IVA). 50 patients in control group, 50 patients in intervention group  <b>Setting:</b> Single-center, radiation, and chemotherapy settings	<b>IV:</b> Resistant starch supplements  <b>DVs:</b> Proctitis, diarrhea, and assessment of microbiome via stool sampling  <b>Intervention:</b> Arm 1 (intervention) received 30 mg of selected resistant starch in 150 ml of milk or water twice daily during days of radiation. Arm 2 (control) received 30 mg digestible starch in 150 ml milk or water twice daily during days of radiation.	Proctitis and diarrhea graded using CTCAE, version 3.0, and Radiation Therapy Oncology Group toxicity scales. Stool samples were analyzed for fatty acid concentration.  DNA separated from stool using double bead beating with DNA Stool Mini Kit	Severity of proctitis was similar in control and intervention groups (12.2% versus 14.6%).  Patients with grade 2 or greater proctitis in control versus intervention group (10.2% versus 16.3%); no significant differences between groups at any stage of treatment ( $p =$ 0.094)  The stool short-chain fatty acid concentrations were not significantly different between groups at any point.  Severity of diarrhea grade 2 or greater was similar (2% versus 8%), with the intervention group slightly higher.	Single institution  The type of diet was not recorded during treatment.  Compared 2 types of starch arms with no arm that looked at no dietary interventions  Only 50% adherence with stool samples  Supplements did not continue after radiation.	Valid methodology and reliable results. There were not significant differences in intervention versus control group. More research is required to understand if there is effectiveness of prebiotic resistance starch intervention in treating radiation-induced proctitis and diarrhea reduction. Further knowledge of the microbiome changes that occur during radiation could be beneficial in determining future prebiotic/probiotic supplement recommendations.