

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Fecal Microbiota Transplantation for Overweight Individuals: Clinical Effectiveness, Cost- Effectiveness, and Guidelines

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Research Questions

1. What is the clinical effectiveness of fecal microbiota transplantation for the treatment of overweight individuals?
2. What is the cost-effectiveness of fecal microbiota transplantation for the treatment of overweight individuals?
3. What are the evidence-based guidelines regarding the use of fecal microbiota transplantation for the treatment of overweight individuals?

Key Findings

No relevant literature was identified regarding fecal microbiota transplantation for overweight individuals.

Methods

A limited literature search was conducted by an information specialist on key resources including Medline, Embase, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were fecal microbiota transplantation (FMT) and overweight or obese individuals. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and May 30, 2019. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Individuals (of any age) who are overweight
Intervention	Fecal microbiota transplantation
Comparator	Q1-2: Dietary interventions; No treatment; Placebo; Usual care Q3: No comparator
Outcomes	Q1: Clinical effectiveness (e.g., decrease in body weight, change in body mass index, metabolic parameters [e.g., uric acid, insulin sensitivity, serum blood glucose, lipid profile, blood pressure, liver function], rates of adverse events) Q2: Cost-effectiveness Q3: Evidence-base guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized trials, economic evaluations, evidence-based guidelines

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines.

No relevant literature was identified regarding fecal microbiota transplantation for overweight individuals.

References of potential interest are provided in the appendix.

Overall Summary of Findings

No relevant literature was found regarding fecal microbiota transplantation for overweight individuals; therefore, no summary can be provided.

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix — Further Information

Systematic Reviews and Meta-analyses – Alternative Outcome

1. Carrera-Quintanar L, Ortuno-Sahagun D, Franco-Arroyo NN, Viveros-Paredes JM, Zepeda-Morales AS, Lopez-Roa RI. The Human Microbiota and Obesity: A Literature Systematic Review of In Vivo Models and Technical Approaches. *Int J Mol Sci*. 2018 Nov 30;19(12):30.
[PubMed: PM30513674](#)

Review Articles

2. Chang CS, Ruan JW, Kao CY. An overview of microbiome based strategies on anti-obesity. *Kaohsiung J Med Sci*. 2019 Jan;35(1):7-16.
[PubMed: PM30844145](#)
3. Kang Y, Cai Y. Gut microbiota and obesity: implications for fecal microbiota transplantation therapy. *Hormones*. 2017 Jul;16(3):223-234.
[PubMed: PM29278509](#)
4. Jayasinghe TN, Chiavaroli V, Holland DJ, Cutfield WS, O'Sullivan JM. The New Era of Treatment for Obesity and Metabolic Disorders: Evidence and Expectations for Gut Microbiome Transplantation. *Front Cell Infect Microbiol*. 2016;6:15.
[PubMed: PM26925392](#)
5. Marotz CA, Zarrinpar A. Treating Obesity and Metabolic Syndrome with Fecal Microbiota Transplantation. *Yale J Biol Med*. 2016 09;89(3):383-388.
[PubMed: PM27698622](#)
6. Aguirre M, Venema K. The art of targeting gut microbiota for tackling human obesity. *Genes Nutr*. 2015 26 Jul;10 (4) (no pagination)(472).
[PubMed: PM4437988](#)
7. Zhang Y, Liu J, Yao J, et al. Obesity: Pathophysiology and intervention. *Nutrients*. 2014 18 Nov;6(11):5153-5183.
[PubMed: PM4245585](#)

Ongoing Clinical Trials

8. Siew Chien NG. NCT03789461 Fecal Microbiota Transplant (FMT) to Induce Weight Loss in Obese Subjects. *ClinicalTrials.gov*. Bethesda (MD): U.S. National Library of Medicine; 2018:
<https://clinicaltrials.gov/ct2/show/NCT03789461>
9. Thompson CC. NCT02741518 Fecal Microbiota Transplantation for the Treatment of Obesity (FMT Obesity). *ClinicalTrials.gov*. Bethesda (MD): U.S. National Library of Medicine; 2016:
<https://clinicaltrials.gov/ct2/show/NCT02741518>
10. Allard J. Stool transplantation for treatment of insulin resistance in morbidly obese patients. *ISRCTN registry*. London (GB): BioMed Central; 2016:
<http://www.isrctn.com/ISRCTN68710020>