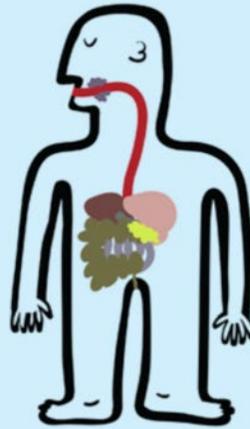


University of Minnesota
Microbiota
Therapeutics
Program



Post - IMT Diet

In many patients *C. difficile* infection is a very traumatizing experience. During the infection *C. difficile* toxins damage the lining of the intestine, which causes inflammation in the colon and drives the diarrhea. The diarrhea is often characterized by extreme fecal urgency, severe abdominal cramps, and episodes of fecal incontinence. This is all psychologically traumatizing. Although successful treatment of *C. difficile* infection results in healing of the colon lining and the colon looks normal, complete healing may take considerably longer. Patients who recover from *C. difficile* infection often develop post-infection irritable bowel syndrome (IBS), which some have called 'post-traumatic syndrome of the colon'. This happens regardless of whether the infection was cured with antibiotics alone or with antibiotics + IMT.

Typically, there is a lot of 'turbulence' in the intestine during the first couple weeks after IMT. Gas and bloating are common but may actually be signs of the new microbes being active and your body getting used to them again. Irregular bowel movements are common as well and should not necessarily be cause for alarm. However, if you are having sustained diarrhea with urgency, especially if you're woken from sleep with diarrhea, your stool should be tested for *C. difficile*. The second week after IMT is the peak window for possible relapse of *C. difficile* infection if IMT failed. Gradually, these GI symptoms abate over 1-2 months and stabilize. Many patients may be left with residual IBS symptoms for many months afterwards and we can tailor further treatments at that time. Generally, we don't start any IBS medications in the first two months after IMT because symptoms do evolve fairly rapidly on their own. However, we do encourage paying attention to the diet.

IBS, including post-infection IBS, is in part a disorder of brain-gut communication. Your gut is very sensitive and your brain is on the super-alert for trouble in the intestine. Diet is a critical element in management of all IBS, post-infection or not, and our recommendations are based in part on our understanding of general dietary management of IBS. However, the new microbes also need nourishment and the dietary recommendations take that into account as well. We should say that there have been no dedicated clinical trials to test these recommendations in patients who experienced *C. difficile* infections or IMT. These recommendations are based on our best current understanding of this IMT and the post-IMT clinical recovery.



As you work to increase foods back into your diet, the following list can provide a staged approach. The following are general recommendations to continue to follow even as diet progresses.

- ◆ Eat and drink slowly, especially early on. Focus on chewing well to help break down foods as this can aid tolerance and digestion
- ◆ Small frequent snacks/meals may be better tolerated at this time
 - This can also be a good way to increase calorie intake if poor appetite
- ◆ Avoid foods that are high in fat or sugar
 - In particular avoid fried/greasy foods and concentrated sweets and beverages (e.g. cakes, cookies, regular soda, juice)
 - Patient experience suggests that it is important to not only pay attention to amount of fat, but also type of fat (e.g. avoid saturated fat). In general, try to emphasize lean protein options in your diet
- ◆ Also avoid items like sugar-free gum, candy, and other “low-calorie” or “light” items. This also includes common water enhancers such as “MiO”
 - The artificial sweeteners used in these products can contribute to GI symptoms
- ◆ There is a possible impact of food additives on microbiome. Try to minimize highly processed food intake and emphasize whole foods with no or short ingredient lists
 - There is a possible benefit to miscellaneous components such as polyphenols commonly found in plant-based foods like the fruits and vegetables listed below
- ◆ Avoid alcohol. Alcohol is a gastric irritant and may have an undefined impact on the gut microbiome
- ◆ Pay attention to serving sizes especially as foods being added and fiber intake increasing
 - Condiments (e.g. ketchup, tomato sauce) can be a large source of sugar
 - Higher-fiber foods such as black beans and lentils can result in a rapid increase in fiber if serving-size is exceeded



PHASE I

The food list that follows consists of foods that should be well tolerated following IMT and is intended as a guide in the 1-month following transplant. The food list emphasizes consumption of soft, fiber-containing foods. Strive for at least 10 grams of fiber from soluble fiber containing food/day and work to slowly increase this as tolerated. The fiber-containing foods on the food list are good sources of soluble fiber. Limit rich sources of insoluble fiber. These foods are commonly referred to as “roughage” and include things like salads, raw vegetables, and fruits with skins

RECOMMENDED FOOD LIST

Grains

(Fiber content may vary; consider preparing oats and barley with extra water for a softer texture)

- ◆ Oats (1/2 cup dry provides 3-4 grams fiber)
- ◆ Barley (If “hulled” ¼ cup dry provides 5 grams fiber; if “pearled” ¼ cup dry provides ~2 grams fiber)

Fruits

(Fiber content may vary)

- ◆ Bananas (1 medium provides 3 grams fiber)
- ◆ Unsweetened Applesauce (1/2 cup provides 2 grams fiber)
- ◆ Blueberries (1 cup provides 3-4 grams fiber)
- ◆ Blackberries (1 cup provides 7-8 grams fiber)
- ◆ Raspberries (1 cup provides 8 grams fiber)

Vegetables

(Fiber content may vary)

- ◆ Squash [Mashed] (1 cup provides 6 grams fiber)
- ◆ Carrots [Cooked] (1 medium provides 2 grams fiber)
- ◆ Pumpkin [Mashed] (1 cup canned provides 7 grams fiber)
- ◆ Potatoes [Mashed; avoid skins] (1/2 cup provides 2 grams fiber)
- ◆ Sweet potatoes [Mashed; avoid skins] (1/2 cup provides 2 grams fiber)

Nuts and Seeds

(can be good source of protein and calories)

- ◆ Nut and seed butters: (1 tablespoon provides 1-2 grams fiber)
- ◆ Flaxseed meal: (2 tablespoons provide 3 grams fiber)
- ◆ Chia seeds: (2 tablespoons provide 8 grams fiber)

Beans/Legumes

(can be good source of plant-based protein and iron)

- ◆ Hummus, plain (1 tablespoon provides 1 gram fiber)
- ◆ Lentils [cooked well] (1/4 cup dry provides 9g fiber)



- ◆ Black beans [cooked well] (1/4 cup dry provides 12 g fiber)

Dairy

(Focus on fermented sources to limit lactose)

- ◆ Yogurt
- ◆ Aged cheese
- ◆ Kefir
- ◆ Non-dairy milk (plain): Oatmilk, Almond Milk, Soy Milk

Meat/Fish

- ◆ All fish
- ◆ Chicken
- ◆ Turkey
- ◆ Eggs (Omega-3 rich preferred)
- ◆ Lean beef (well cooked, ensure chewed well)

Alcohol

- ◆ Avoid at this time

Miscellaneous

- ◆ Raw Honey
- ◆ All herbs (dried or fresh). May need to limit spices such as chili powder
- ◆ Most oils/fats are fine (limit coconut oil due to saturated fat content)
- ◆ Butter contains saturated fat, but is likely a better option than margarine or vegetable spreads due to lack of additives that may fermentable in the colon



PHASE II

In the 1-3 months following transplant, continue to emphasize consumption of soft, fiber-containing foods in your diet, but look to continue to increase variety in diet. At this time, if tolerated, strive for at least 20 grams of fiber/day and continue to work to slowly increase this as tolerated. Goal of at least 30-35 grams fiber/day. Continue the above recommendations and note the following:

- ◆ Wheat, onions, and garlic are allowed in this stage, but should be introduced slowly because they contain a highly fermentable fiber that may cause gas/bloating if consumed in large quantities (pay particular attention to portion sizes of wheat products).
- ◆ All fruits and vegetables are allowed in this stage of the diet but continue to emphasize softer textures introducing hard peels/skins of fruit and raw vegetables slowly.
- ◆ Raw nuts and seeds can be introduced, but ensure these are chewed well

RECOMMENDED FOOD LIST

Grains

(Fiber content may vary)

- ◆ Oats (1/2 cup dry provides 3-4 grams fiber)
- ◆ Barley (If “hulled” ¼ cup dry provides 5 grams fiber; if “pearled” ¼ cup dry provides ~2 grams fiber)
- ◆ Wheat bread (1-3 grams fiber per slice)
- ◆ Wheat pasta (1/2 cup cooked provides 1-3 grams fiber)
- ◆ Brown rice (1/4 cup dry provides 2 grams fiber)
- ◆ Wild rice (1/4 cup dry provides 3 grams fiber)
- ◆ Sourdough

Fruits

(Fiber content may vary)

All Fruits: Continue to emphasize softer textures, but begin to introduce a small amount of hard peels/skins to determine tolerance



Vegetables

(Fiber content may vary)

All vegetables but continue to choose primarily cooked. Begin to introduce a small amount of raw vegetables to determine tolerance.

Nuts and Seeds

(can be good source of protein and calories)

- ◆ Nut and seed butters: (1 tablespoon provides 1-2 grams fiber)
- ◆ Raw nuts and seeds (chew well)
- ◆ Flaxseed meal: (2 tablespoons provides 3 grams fiber)
- ◆ Chia seeds: (2 tablespoons provides 8 grams fiber)

Beans/Legumes

(can be good source of plant-based protein and iron)

- ◆ Hummus, plain (1 tablespoon provides 1 gram fiber)
- ◆ Lentils [cooked well] (1/4 cup dry provides 9g fiber)
- ◆ Black beans [cooked well] (1/4 cup dry provides 12 g fiber)

Dairy

(Focus on fermented sources)

- ◆ Yogurt
- ◆ Aged cheese
- ◆ Kefir
- ◆ Non-dairy milk (plain): Oatmilk, Almond Milk, Soy Milk
- ◆ Begin to introduce Cow's milk if interested to determine tolerance

Meat/Fish

(Continue to emphasize lean options)

- ◆ All fish
- ◆ Chicken
- ◆ Turkey
- ◆ Eggs (Omega-3 rich preferred)
- ◆ Lean beef (well cooked, ensure chewed well)

Alcohol

(Continue to limit or avoid)

- ◆ As tolerated. Pay attention to components like carbonation, concentrated sugar, or artificial sweeteners that may contribute to gastrointestinal symptoms

Miscellaneous

- ◆ Raw Honey
- ◆ All herbs (dried or fresh). May need to limit spices such as chili powder



- ◆ Most oils/fats are fine (limit coconut oil due to saturated fat content)
- ◆ Butter contains saturated fat, but is likely a better option than margarine or vegetable spreads due to lack of additives that may fermentable in the colon

