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# Nutrition Pathway for *Clostridium difficile* Infection (CDI) Colitis in Long-Term Care

## POINTS TO CONSIDER

### Understanding CDI

CDI results in severe diarrhea that can sometimes lead to severe irritation and irreversible damage to the colon, accompanied by dehydration, malabsorption and malnutrition. The colon requires time to heal while the infection is eliminated. Replacement of lost fluids, electrolytes and nutrition is critical for long-term care (LTC) residents, who are at the highest risk for poor outcomes resulting from CDI. The colon's health, along with the resident's identified co-morbidities, will determine at what point the nutrition pathway begins for each person. In consultation with a registered dietitian (RD), a physician's written order starts the pathway for hydration, electrolyte replacement, nutrition support, overall health improvement, and an optimal environment for the re-growth of critical intestinal bacteria.

### Where to Start

Start on admission with a comprehensive nutritional assessment by the RD working closely with the care team. It is critical to develop a resident-specific nutrition plan to include caloric and fluid needs. Consider food allergies and co-morbidities along with ethnic, cultural, religious and other food preferences when developing the plan. Each plan requires close monitoring and adjustment to the resident's changing needs.



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## Hydration Options (Per RD Consult)

### PARENTERAL/ENTERAL OR DIRECTLY TO ORAL

#### A. Parenteral (IV Fluid) Recommendations/ Considerations

- Fluid requirements
- Transition to enteral or oral hydration

#### B. Enteral Hydration (Tube Feeding) Recommendations/ Considerations:

- Fluid requirements
- Transition to oral hydration

#### A. Oral Hydration Recommendations/ Considerations

- 25-40 ml/kg depending on individual medical status
- Appropriate fluid requirements and frequency (25-40 ml/kg depending on co-morbidities)
- Fluid frequency

**NOTE:** Don't rely on thirst in seniors. Thirst is not a good indicator of the need for fluids, so don't wait for residents to ask for fluids.

#### B. Oral Hydration Recommendations/ Considerations:

- 25-40 ml/kg depending on individual medical status
- Appropriate fluid requirement
- Fluid frequency
- Broths, clear supplements

#### C. Maintenance Hydration Recommendations

- Fluid requirements and appropriate fluids
- Fluid frequency

#### NOTES

Co-morbidities, such as congestive heart failure and kidney disease, may affect fluid intake requirements

Nutritional supplements, as well as electrolyte replacement supplements are also available as clear liquids. Consult with the RD on all available supplements.

## Nutrition Options (Per RD Consult)

### PARENTERAL/ENTERAL OR DIRECTLY TO ORAL

#### A. Total Parenteral Nutrition Recommendations/ Considerations:

- Caloric requirements (per Nutrition Assessment)
- Fluid Requirements (per Nutrition Assessment)
- Transition to enteral or oral nutrition
- Long-term management requirements
- Frequency of meals
- Possible future surgery caloric requirements
- Transition to enteral or oral nutrition

#### B Enteral Nutrition (Tube feeding) Recommendations:

- Caloric and fluid requirements (per nutrition assessment)
- Transition to oral nutrition

#### Oral Nutrition Recommendations

- Progressive oral nutrition per facility protocols (clear to full diet)

**NOTE:** Depending on your facility protocols and resident's condition, it is not always necessary to use a progressive diet—you can go directly from clear liquids to appropriate solid foods

#### Specific recommendations

- Soft, easy-to-digest foods
- Small, frequent meals
- Supplemental feedings to maintain caloric and fluid needs
- Probiotics (optional, but encouraged)
- Prebiotics (optional, but encouraged)
- Laboratory values (frequency, follow-up on results per MD orders)

**NOTE:** Laboratory Values: Include periodic check on electrolytes, complete blood count, and nutritional indicators, (albumin, pre-albumin and B12)

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IDEAS!	RECOMMENDED FOODS	VITAMIN/ MINERAL SUPPLEMENTS	PROBIOTICS/ FERMENTED FOOD/PREBIOTICS	FOODS TO AVOID	FOODS THAT MAY WORSEN DIARRHEA
<p>Make meal presentation exciting, colorful and inviting!</p> <p>Generate interest in food and fluids by adding interesting and attractive items to the menu.</p> <p>Small, frequent meals may be more inviting and better tolerated than three full meals.</p> <p>Mix it up—traditional breakfast foods are not always necessary for breakfast. Use the resident's interest in specific meals and foods as a guide.</p> <p>Use juice mixes</p> <p>Smoothies (all fruit, all vegetable, mix of fruits and vegetables)</p> <p>Soups</p> <p>Nutritional supplements</p>	<p>Apple Pulp</p> <p>Bananas (or commercial banana flakes)</p> <p>Beans</p> <p>Beets</p> <p>Celery</p> <p>Chicken</p> <p>Crackers</p> <p>Cucumbers</p> <p>Eggs</p> <p>Flaxseed</p> <p>Green beans</p> <p>Lentils</p> <p>Noodles</p> <p>Oats, oatmeal, oat bran Carrots</p> <p>Oranges, citrus fruits</p> <p>Peas</p> <p>Rice bran</p> <p>Strawberries</p> <p>Turkey</p> <p>White rice</p> <p>Yogurt (with LIVE cultures)</p> <p>Zucchini</p>	<p>B12</p> <p>Calcium (almond milk and soy milk substitutes for cow's milk)</p> <p>Iron</p> <p>Magnesium</p> <p>Potassium</p> <p>Sodium</p> <p>Zinc</p> <p><b>NOTE:</b> Vitamins and minerals in medication form require MD order.</p>	<p><b>Probiotics:</b> "Living" good bacteria that promote a healthy GI system by controlling growth of harmful bacteria.</p> <p>Active cultures in food or medication form</p> <p>Kefir</p> <p>Miso (fermented soybean pastes)</p> <p>Sauerkraut</p> <p>Tempeh (fermented soybeans)</p> <p>Kombucha</p> <p>Yogurt with active cultures</p> <p>Best "Friendly Bacteria":</p> <ul style="list-style-type: none"> <li>• <i>Lacto Bacillus Acidophilus</i></li> <li>• <i>Lacto Bacillus Casei</i></li> <li>• <i>Lacto Bacillus Bulgaricus</i></li> <li>• <i>Streptococcus Thermophilus</i></li> </ul> <p><b>Prebiotics:</b> food items that serve as nourishment for the probiotic bacteria, and are helpful in prevention of relapse: asparagus, bananas, chicory, fruits, garlic, leeks, Jerusalem artichokes, legumes, oatmeal, onions, vegetables and whole wheat</p>	<p>Caffeinated beverages</p> <p>High fats, such as mayonnaise, cooking oils, margarine</p> <p>High fiber, gas producing vegetables:</p> <p>Broccoli</p> <p>Brussel sprouts</p> <p>Cabbage</p> <p>Cauliflower</p> <p>Turnips</p> <p>Milk, milk products</p> <p>Other Foods:</p> <p>Apple Skins</p> <p>Barley</p> <p>Brown rice</p> <p>Nuts</p> <p>Rye</p> <p>Seeds</p> <p>Spicy, fried or greasy foods</p> <p>Wheat</p>	<p>Caffeine</p> <p>Excessive fructose from apple juice, pear juice, grapes, honey, dates, nuts, figs, fruit flavored soft drinks</p> <p>Granulated sugar</p> <p>Lactose: Milk, ice cream, soft cheeses</p> <p>Magnesium-containing antacids</p> <p>Sugar alcohols: sorbitol, mannitol as found in sugar-free gum, mints</p>

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## Resources

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