

Management of the Short Bowel Syndrome Patient

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10:00 – 11:00 AM EST

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Management of the Short Bowel Syndrome Patient

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Disclosures

No conflicts of interest related to this presentation

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Learning Objectives

Three (3) learning objectives which complete the statement:

Upon completion of this session, the learner will be able to....

1. Define short bowel syndrome and differentiate anatomical short bowel syndrome and physiological short bowel syndrome.
2. Manage patients with short bowel syndrome based on intestinal length, presence vs absence of ileocecal valve, and colon continuity.
3. Identify complications of short bowel syndrome and treatment.
4. Describe the prognosis for short bowel syndrome in the context of small bowel transplantation.

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Short Bowel Syndrome

Adults have approximately 850 cm of Small bowel. Equivalent of 27.8 feet.

Short bowel syndrome (SBS) in adults is defined as having less than 200 cm of remaining small bowel. Equivalent of 6.56 feet.

Adults have approximately 150 cm of Colon. Equivalent of 4.9 feet.

- Guillen B, Atherton NS. Short Bowel Syndrome. [Updated 2021 Jul 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; Jan 2022.
- Mayo Clinic: <https://www.mayoclinic.org/diseases-conditions/short-bowel-syndrome/symptoms-causes/syc-20355091#:~:text=Causes%20of%20short%20bowel%20syndrome,cancer%2C%20injuries%20and%20blood%20clots>
- Haack, C. I., Galloway, J. R., & Srinivasan, J. (2014). Enterocutaneous Fistulas: A Look at Causes and Management. In Current Surgery Reports (Vol. 2, Issue 10). Springer Science and Business Media LLC. <https://doi.org/10.1007/s40137-014-0071-0>
- Vara-Luis, F., et al. Chronic Intestinal Failure and Short Bowel Syndrome in Adults: The State of the Art. *GI – Portuguese Journal of Gastroenterology*. May 2024, 31; pp388-400.

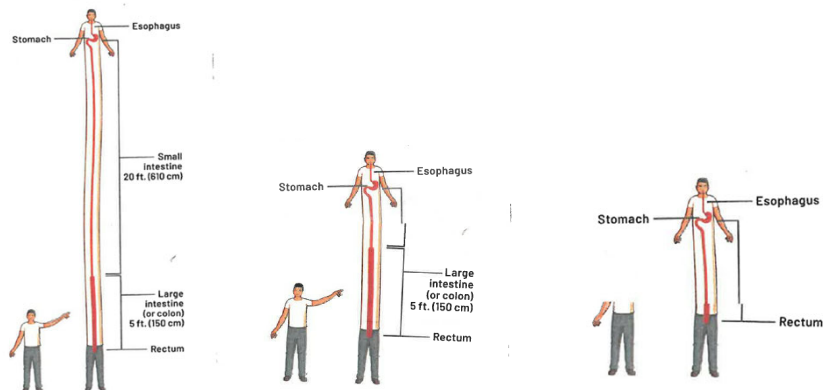
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Normal Bowel

SB with colon

SB w/o colon

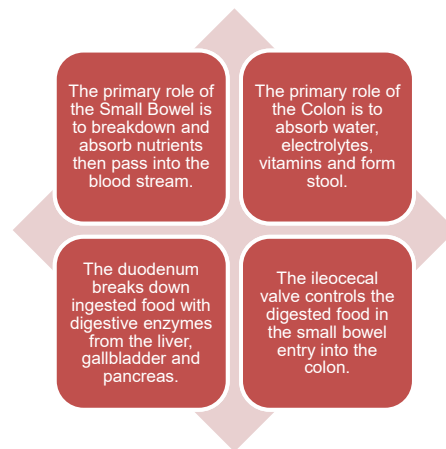


- Parrish, Carol Rees. The Adult Patients Guide to Managing a Short Bowel. 5th Edition. 2021.

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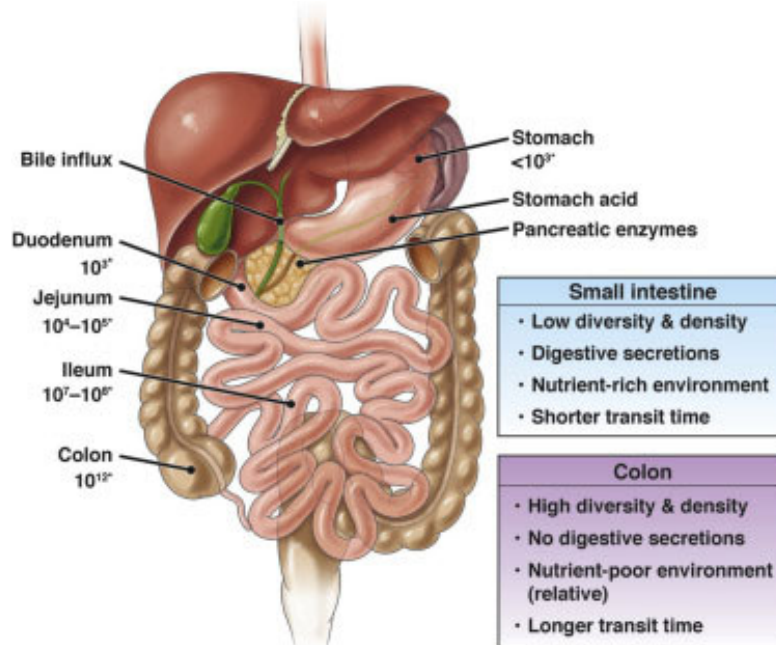
Anatomy & Physiology of the Bowel



- Guillen B, Atherton NS. Short Bowel Syndrome. [Updated 2021 Jul 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; Jan 2022.
- Haack, C. I., Galloway, J. R., & Srinivasan, J. (2014). Enterocutaneous Fistulas: A Look at Causes and Management. In Current Surgery Reports (Vol. 2, Issue 10). Springer Science and Business Media LLC. <https://doi.org/10.1007/s40137-014-0071-0>

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How do patients become Short Bowel?

- Result of abdominal surgeries with small bowel resections.
- Common causes in children: Necrotizing Enterocolitis, Volvulus, Intestinal malformations, Injury to intestines requiring small bowel resections.
- Common causes in adults: Crohn's Disease, Mesenteric ischemia, Radiation enteritis, Injury, Cancer, Post-surgical adhesions and Postoperative complications.

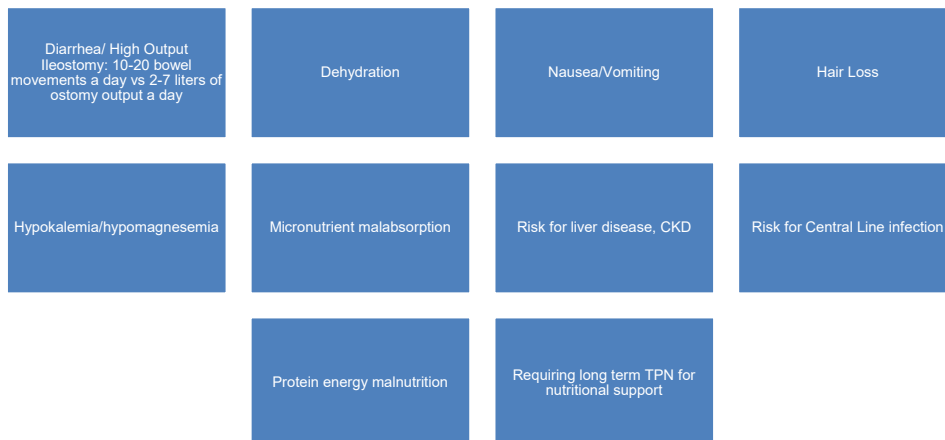


- Vara-Luis, F., et al. Chronic Intestinal Failure and Short Bowel Syndrome in Adults: The State of the Art. *GI – Portuguese Journal of Gastroenterology*. May 2024, 31; pp388-400.

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Complications of Short Bowel Syndrome



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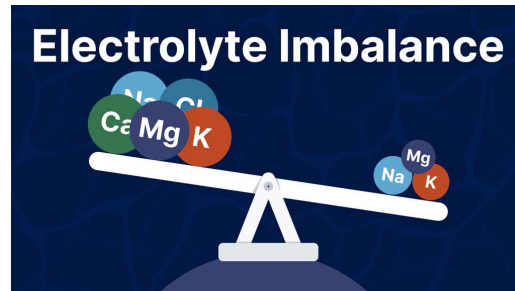
Management of Short Bowel Syndrome Patients

TPN and IVF

Routine Lab analysis CBC, CMP,
Mg, Phos, Lipids

Supplementation adjustments of
electrolytes

Micronutrient Lab analysis with
needed supplementation



- Haack, C. I., Galloway, J. R., & Srinivasan, J. (2014). Enterocutaneous Fistulas: A Look at Causes and Management. In Current Surgery Reports (Vol. 2, Issue 10). Springer Science and Business Media LLC. <https://doi.org/10.1007/s40137-014-0071-0>
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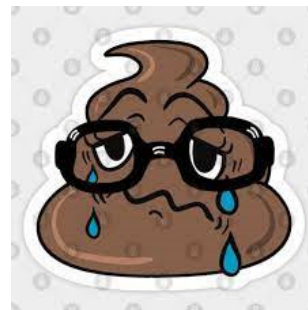
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Management of Short Bowel Syndrome

Anti-diarrheal Medications

- *Diphenoxylate-Atropine* 1-10 tablets 4 times a day
- *Loperamide* 1-2 tablets 4 times a day
- *Tincture of Opium* up to 1 ml 4 times a day
- *Octreotide short-acting* – daily added to TPN or subq injection
- *Octreotide long-acting* – at infusion center every 3-4 weeks
- *Codeine* - 4 times a day
- *Cholestyramine* – 2-3 times a day
- *Pancrelipase* – capsules before meals and with snacks
- *PPI, H2 Blockers* – AM & PM



- Haack, C. I., Galloway, J. R., & Srinivasan, J. (2014). Enterocutaneous Fistulas: A Look at Causes and Management. In Current Surgery Reports (Vol. 2, Issue 10). Springer Science and Business Media LLC. <https://doi.org/10.1007/s40137-014-0071-0>
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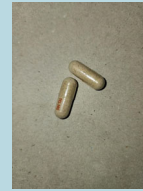
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Management of Short Bowel Syndrome

Alternatives for diarrhea management

- *Psyllium*
- *Pectin, Certo*
- *Fiber Supplements*
- *Konjac Root/ Glucomannan*
- *Bismuth subsalicylate* - *Will turn tongue and stool black due to the Bismol
- *Fresh Deli Sour Kraut*



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Management of Short Bowel Syndrome



Liquids to avoid that increase diarrhea

Plain water
Beverages high in sugar without electrolytes
– soda, juice
Caffeine



Substitutions – oral hydration solutions

Oral Hydration Powders
Electrolyte Sports Drinks and add salt
ORS recipes in the Short Bowel Blue Book

- Parrish, Carol Rees. The Adult Patients Guide to Managing a short Bowel. 5th Edition. 2021.
- Short Bowel Syndrome Foundation: <http://shortbowelfoundation.org/>

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Complications of Short Bowel Syndrome

Liver disease – Lipid
Injectable Emulsion

Kidney disease –
Fluid control

Heart failure – Fluid
control

Intestinal Failure –
TPN

Enterocutaneous
Fistulas – Closely
monitor fistula output,
PO management,
octreotide

Non-compliance –
Education

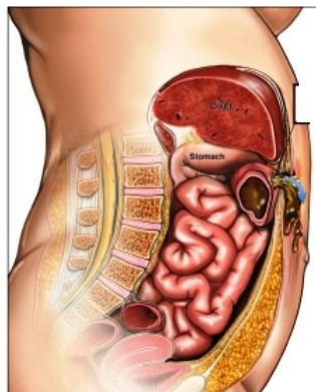
Refeeding syndrome
– Hospital admission
when off TPN over 7-
10 days, close
electrolyte monitoring

- Da Silva, J. S. V., Seres, D. S., Sabino, K., Adams, S. C., Berdahl, G. J., Citty, S. W., Cober, M. P., Evans, D. C., Greaves, J. R., Gura, K. M., Michalski, A., Plogsted, S., Sacks, G. S., Tucker, A. M., Worthington, P., Walker, R. N., & Ayers, P. (2020). ASPEN Consensus Recommendations for Refeeding Syndrome. *In Nutrition in Clinical Practice* (Vol. 35, Issue 2, pp. 178–195). Wiley. <https://doi.org/10.1002/ncp.10474>
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Enterocutaneous Fistula

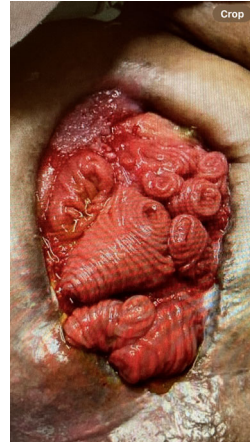


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Enterocutaneous Fistula

- Multiple Fistula's
- After surgical takedown of fistulas patient had 20cm small bowel, no ileocecal valve, and high output ileostomy



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Surgical Options for Short Bowel Syndrome



Small Bowel Transplant – Referral to a Small Bowel Transplant Group



Serial Transverse Enteroplasty – STEP Procedure

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Short Bowel Syndrome Adaptation Strategies

Time – Small bowel adaptation can take up to 2-3 years

Human Growth Hormone

Teduglutide

Epidermal Growth Factor – still undergoing studies

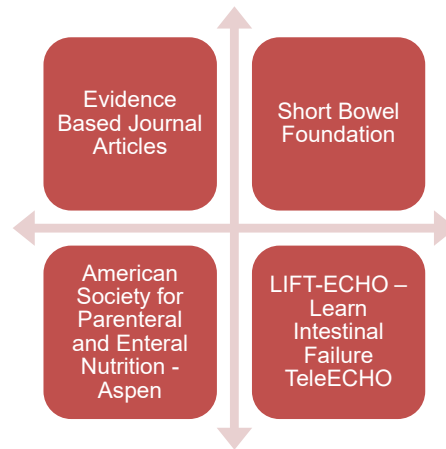
Following the Short Bowel Diet

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- Haack, C. I., Galloway, J. R., & Srinivasan, J. (2014). Enterocutaneous Fistulas: A Look at Causes and Management. In Current Surgery Reports (Vol. 2, Issue 10). Springer Science and Business Media LLC. <https://doi.org/10.1007/s40137-014-0071-0>
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Provider Resources for Short Bowel Syndrome Management



- American Society for Parenteral and Enteral Nutrition, <https://www.nutritioncare.org/>
- Learn Intestinal Failure TeleECHO, <https://liftecho.org/web/home>
- Short Bowel Syndrome Foundation: <http://shortbowelfoundation.org/>

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Learning Assessment Questions

1. What happens when patients do not take their antimotility medications?

- A. No change in bowel pattern.
- B. Increased stool output but no change in consistency.
- C. Increased stool output and changes to loose/liquid diarrhea
- D. Constipation.

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Learning Assessment Questions

2. What liquids do people with short bowel need to avoid drinking?
- A. *They can drink whatever they want.*
 - B. *Avoid plain water.*
 - C. *Avoid soda.*
 - D. *B and C.*

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Learning Assessment Questions

3. What electrolytes require close monitoring in short bowel patients?
- A. *Sodium and Chloride.*
 - B. *Magnesium and Potassium.*
 - C. *Magnesium, Potassium and Calcium.*
 - D. *Calcium, Chloride and Bicarbonate*

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References List

1. American Society for Parenteral and Enteral Nutrition. <https://www.nutritioncare.org/>
2. Da Silva, J. S. V., et al. (2020). ASPEN Consensus Recommendations for Refeeding Syndrome. *In Nutrition in Clinical Practice* (Vol. 35, Issue 2, pp. 178-195). Wiley. <https://doi.org/10.1002/ncp.10474>
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