

# Acute Diarrhea: Adult

## Gastrointestinal

### Clinical Decision Tools for RNs with Additional Authorized Practice [RN(AAP)s]

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## Background

Diarrhea is a change in normal bowel movements characterized by increased frequency, volume, or fluid content from what is normal for the individual (Thomas, 2019). Acute diarrhea is passage of unusually soft or liquid stools greater than three times within 24 hours and lasting less than 14 days (Huether, 2019). Most cases of acute diarrhea in adults are mild, with no signs of blood or mucus, and are typically caused by enteric pathogens (Huether, 2019). Persistent diarrhea lasts from 14 to 30 days and chronic diarrhea lasts longer than 30 days (Huether, 2019). Diarrhea in adults is classified as osmotic, secretory, or motility related (Huether, 2019).

## Immediate Consultation Requirements

The RN(AAP) should seek immediate consultation from a physician/NP when any of the following circumstances exist:

- significant weight loss,
- fever,
- blood or pus in stool,
- severe pain,
- abdominal distention,
- altered mental status,
- severe dehydration, and/or
- severe vomiting (Interprofessional Advisory Group [IPAG], personal communication, October 2, 2019).

## Classification of Diarrhea

• Osmotic	• Secretory	• Motility
<p>Osmotic diarrhea is the result of a non-absorbable substance in the intestine drawing water into the colon and increasing stool weight and volume (Huether, 2019). Typically, the diarrhea stops when the ingestion of the osmotic substance stops. Causes may include:</p> <ul style="list-style-type: none"> <li>• large oral doses of poorly absorbed ions (magnesium, sulfate, phosphate);</li> <li>• excessive ingestion of synthetic, non-absorbable sugars (e.g., sorbitol);</li> <li>• recent initiation of full-strength tube feed formulas;</li> <li>• dumping syndrome; or</li> <li>• malabsorption (e.g., lactase deficiency, celiac disease).</li> </ul>	<p>Secretory diarrhea is caused by excessive mucosal secretion of chloride or bicarbonate-rich fluid or inhibition net sodium absorption. Causes may include:</p> <ul style="list-style-type: none"> <li>• viral infections (e.g., rotavirus),</li> <li>• bacterial endotoxins (e.g., <i>Escherichia coli</i>, <i>Vibrio cholera</i>, Shiga toxin),</li> <li>• exotoxins (e.g., <i>C. difficile</i>),</li> <li>• neoplasms (e.g., gastrinoma or thyroid carcinoma),</li> <li>• inflammatory disorders (e.g., ulcerative colitis, Crohn’s disease), or</li> <li>• fecal impaction.</li> </ul>	<p>Motility diarrhea is the result of conditions that decrease intestinal transit time, mucosal surface contact, and opportunities for fluid absorption. Causes may include:</p> <ul style="list-style-type: none"> <li>• short bowel syndrome (resection of the small intestine),</li> <li>• irritable bowel syndrome,</li> <li>• diabetic neuropathy,</li> <li>• hyperthyroidism, or</li> <li>• laxative abuse.</li> </ul>

(Huether, 2019)

## Predisposing and Risk Factors

Predisposing and risk factors for diarrhea in adult clients include:

- overcrowded housing,
- travel to other countries,
- lack of safe drinking water,
- polypharmacy,
- recent antibiotic use,
- institutionalized living (e.g., care home),
- ≥ 65 years of age,
- motility issues (e.g., hyperthyroidism, diabetes), and
- gastrointestinal surgery (Thomas, 2019).

## Health History and Physical Exam

### Subjective Findings

The circumstances of the presenting complaint should be determined. These include:

- onset (abrupt or gradual) and duration of diarrhea;
- alleviating or provoking factors;
- symptoms of dehydration;
- characteristics of feces (frequency, amount, fluidity, and colour);
- diet history, including food intolerances;
- recent travel;
- exposure to animals (e.g., reptiles which may harbour Salmonella, pets with diarrhea, or a recent visit to a farm or petting zoo);
- source of drinking water;
- intake of untreated water (e.g., swimming in a stream or lake);
- medications (e.g., proton-pump inhibitors, antibiotics, beta-blockers, antihyperglycemics [metformin]);
- medical/surgical history;
- sexual practices, including anal intercourse, number and sex of partners;
- social history, including living conditions;
- family history (e.g., colon cancer, inflammatory bowel disease); and/or
- additional symptoms (e.g., fever, nausea or vomiting, abdominal pain, neurological symptoms, headache, malaise, muscle weakness) (Thomas, 2019).

### Objective Findings

The physical examination should look for signs of dehydration as well as try to uncover the underlying cause of diarrhea, including:

- altered level of consciousness;
- weight loss;
- dry mucous membranes;
- eye appearance (e.g., sunken);
- decreased capillary refill time;
- decreased skin turgor;
- orthostatic changes: decrease in blood pressure and/or increase in heart rate;
- decreased peripheral pulses;
- flat neck veins in supine position;
- oliguria;
- abdomen may be slightly distended and hyperresonant due to gas;
- hyperactive bowel sounds;
- abdomen may be mildly tender in all areas;
- abdominal mass may be present (depending on underlying cause, e.g., Crohn's disease);

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- rectal exam may be positive for tenderness (proctitis), masses, fecal impaction causing overflow diarrhea;
- perianal area may be inflamed or excoriated; and/or
- neurologic symptoms of blurred vision, paresthesia, motor weakness (botulism) (Huether, 2019; Thomas, 2019).

## Differential Diagnosis

The following should be considered as part of the differential diagnosis:

- viral infection,
- bacterial infection,
- parasitic infection,
- diet induced (e.g., excess consumption of alcohol or fruit),
- medication induced (e.g., current or recent antibiotic use, laxatives, supplements),
- irritable bowel syndrome (IBS),
- inflammatory bowel disease (Crohn's colitis, ulcerative colitis, ischemic colitis),
- fecal impaction with overflow diarrhea,
- human immunodeficiency virus (HIV) or acquired immunodeficiency syndrome (AIDS),
- malabsorption syndrome (e.g., lactase deficiency), or
- acute psychosocial stress/anxiety (Thomas, 2019).

## Making the Diagnosis

Systematically ruling out all differential diagnoses through history, physical, and diagnostic testing where appropriate can help lead to a definitive diagnosis.

## Investigations and Diagnostic Tests

Acute diarrhea is typically self-limited and lasts for less than one week although in some instances it may last up to 14 days (Huether, 2019; Thomas, 2019). When diarrhea develops suddenly in otherwise healthy individuals without signs or symptoms of any other organ involvement, the cause is typically a viral infection (Thomas, 2019). The following diagnostic tests may be considered if diarrhea is persistent, chronic, or recurrent:

- stool for blood using the fecal immunochemical test (FIT);
- stool for culture and sensitivity;
- stool for ova and parasites;
- stool for *C. difficile*, if recent antibiotic therapy or hospitalization;
- HIV serology (in chronic diarrhea or if risk behaviours present); and/or
- blood cultures if suspected sepsis (Thomas, 2019).

## Management and Interventions

### Goals of Treatment

The primary goals of immediate treatment are to relieve symptoms, establish normal bowel function, prevent complications (e.g., dehydration), and avoid complications of antidiarrheal medications (e.g., constipation, toxic megacolon).

### Non-Pharmacological Interventions

Refer to the CRNS Dehydration Adult Clinical Decision Tool for information on rehydration and oral rehydration solution. The RN(AAP) should recommend, as appropriate, the following non-pharmacological options:

- dietary adjustments (avoid sorbitol, xylitol, lactose, or known food triggers);
- stop solid foods for a brief period (six hours) or eat small frequent meals slowly throughout the day if stool is frequent and watery or if vomiting occurs in association with diarrhea;
- drink eight to 10 cups of fluid per day through a combination of clear broths, oral rehydration solutions (e.g., Gastrolyte®), and a modest amount of hypotonic fluids (water, half-strength juices, weak tea);
- resumption of a normal diet as soon as tolerated;
- limit fried or fatty foods, and foods high in sugar;
- add sources of soluble fiber to bulk up stool;
- avoid coffee, alcohol, most high fiber fruits and vegetables, red meats, and heavily seasoned foods initially; and
- for persistent or chronic diarrhea, a two-week trial of a lactose-restricted diet may confirm lactose intolerance as a cause (Gastrointestinal Society, 2018; Huether, 2019; RxFiles Academic Detailing, 2021).

### Pharmacological Interventions

The pharmacological interventions recommended for the treatment of diarrhea are in accordance with the *RxFiles: Drug Comparison Charts* (RxFiles Academic Detailing Program, 2021), and *Acute Diarrhea in Adults* (Dynamed, 2018).

Pharmacological interventions are available to relieve symptoms, but routine use is discouraged when an infectious cause is suspected. Over-the-counter pharmacological options might be appropriate in the following mild to moderate cases only:

- in an otherwise healthy adult,
- no fever,
- less than two days duration, and
- no blood in stool.

**Anti-diarrheal Agents**

	Drug	Dose	Route	Frequency	Duration
<b>Adult</b>					
	Bismuth subsalicylate	30 mL or 2 tabs	p.o.	q30 minutes prn to a maximum of 8 doses/day	1-2 days
OR	Loperamide	4 mg then 2 mg after each loose bowel movement (maximum of 16 mg/day)	p.o.	4 mg once and then 2 mg after each bowel movement	1-2 days

**Antiemetics**

	Drug	Dose	Route	Frequency	Duration
<b>Adult</b>					
	DimenHYDRINATE	25-50 mg	IM/IV	once	n/a
THEN	DimenHYDRINATE	50 mg	p.o.	q4-6h prn	1-2 days

**Antispasmodic**

May help relieve abdominal cramping.

	Drug	Dose	Route	Frequency	Duration
<b>Adult</b>					
	Hyoscine butylbromide	20 mg	IM/IV	once	n/a

**Client and Caregiver Education**

The RN(AAP) provides client and caregiver education as follows:

- Counsel about the appropriate use of medications (dose, frequency, side effects, compliance, etc.).
- Inform that proper hand washing prevents the spread of infection.

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- Share strategies on how to prevent recurrent diarrhea (e.g., water purification as appropriate, which is to boil water for 20 minutes or use chlorine tablets or solution).
- Recognize signs and symptoms of dehydration and to return to the clinic if they occur.
- If possible, temporarily discontinue any medications associated with diarrhea.
- Recommend witch hazel cotton pads (Tucks), which may provide relief to the raw perianal area (Dynamed, 2018; Thomas 2019).

## Monitoring and Follow-Up

The RN(AAP) should:

- Monitor hydration, general condition, and vital signs until stable.
- Advise follow-up in 24 hours (sooner if oral intake is not keeping up with losses) and encourage fluid intake after rehydration.
- Ensure adequate follow-up of hydration and nutritional status, especially in elderly clients.

## Complications

The following complications may be associated with diarrhea:

- dehydration,
- electrolyte imbalance,
- metabolic acidosis, and
- weight loss (Huether, 2019).

## Referral

Refer to a physician/NP if client presentation is consistent with those identified in the *Immediate Consultation Requirements* section, where there is diagnostic uncertainty, or who has not responded to treatment (IPAG, personal communication, October 2, 2019).

## References

- Dynamed. (2018). *Acute diarrhea in adults*. <https://www.dynamed.com/approach-to/acute-diarrhea-in-adults#GUID-16323632-73F1-4382-9498-55700CE8F087>
- Huether, S. (2019). Alterations of digestive function. In K. McCance & S. Huether (Eds.), *Pathophysiology: The biologic basis for disease in adults and children* (8th ed., pp.1321-1372). St. Louis, MO: Elsevier.
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- Thomas, D. J. (2019). Common abdominal complaints. In L. Dunphy, J. Winland-Brown, B. Porter, & D. Thomas (Eds.), *Primary care: The art and science of advanced practice nursing – an interprofessional approach* (5th ed., pp. 529-544). F. A. Davis.

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