

JANUARY 2018

# ADVERSE EFFECTS AFTER MEDICAL, COMMERCIAL, OR SELF-ADMINISTERED COLON CLEANSING PROCEDURES

## Adverse effects after medical, commercial, or self-administered colon cleansing procedures

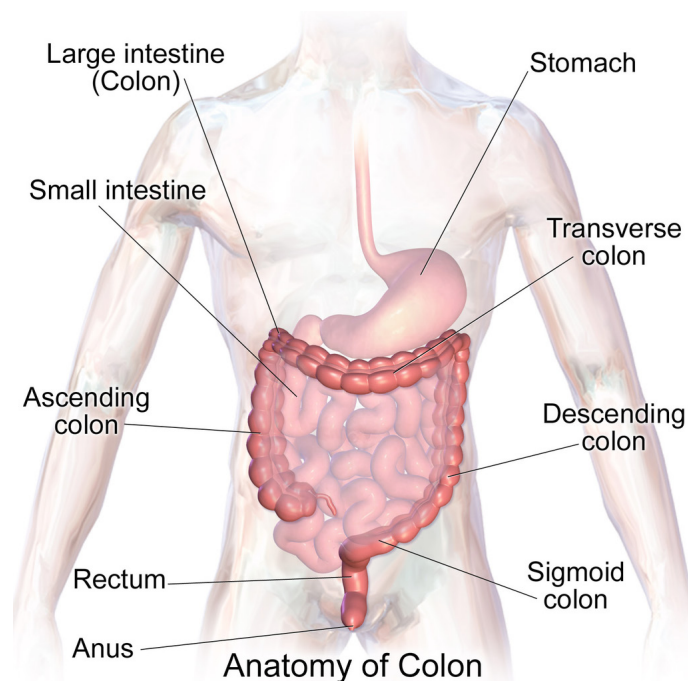
**Primary inquiry:** What information is available regarding the environmental health-related risks of colonics in the academic literature, and how can environmental health practitioners help reduce these risks?

**Please note:** The information provided here is for the purposes of addressing a specific inquiry and is not subjected to external review. The information offered here does not supersede provincial guidance or regulations.

## Background

“Colon cleansing” is a general description that may refer to a number of established practices within the medical field, which are distinct from similarly named practices in alternative health. Cleansing enemas, retrograde colonic irrigation, and trans-anal irrigation generally refer to medical practice, and are common and accepted treatments for neurogenic or postoperative bowel disorders.

In alternative health, colon cleansing may refer to both the oral consumption of laxatives, as well as hot or cold enemas with water, coffee, or other herbal solutions. The terms colon hydrotherapy, colonic lavage, or simply colonics typically refer to procedures that introduce water or solutions into the colon. These procedures may involve a much larger volume of fluid than is used in medical practice (e.g., up to 60 L introduced over a period of 60-90 min). Although some clients may seek these treatments for defecation disorders, colon cleansing in the general population is often motivated by the desire to clean or purge the body of non-specific “toxins.”<sup>1</sup> These toxins are believed to accumulate in the digestive tract and cause a wide range of chronic conditions. A previous examination of the websites of professional colonics associations found that the procedure is promoted for a large and somewhat



*Photo credit: Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014". WikiJournal of Medicine 1 (2).*

implausible range of specific and non-specific conditions, ranging from “mental clarity” to irritable bowel syndrome.<sup>2</sup> However, there is little to no evidence of these benefits in the academic literature.<sup>3</sup>

Despite lack of demonstrated benefit, colon hydrotherapy has become an established practice and is widely available in Canada and other nations. Concerns have been raised, however, that this practice may also carry significant risk of harm due to the potential for infection and injuries,<sup>4</sup> such as tears or perforations of the bowel wall. Although adverse events are generally believed to be rare, the purpose of this inquiry is to collect the most recent information regarding such events to inform the development of guidelines and best practices for environmental health practitioners and service providers.

## Prepared by

Angela Eykelbosh, National Collaborating Centre for Environmental Health  
Michele Wiens, National Collaborating Centre for Environmental Health



National Collaborating Centre  
for Environmental Health

Centre de collaboration nationale  
en santé environnementale

## Results

A rapid academic literature search was carried out by querying EBSCOhost databases (including Medline, CINAHL, Academic Search Complete, ERIC, etc.) and Google Scholar, with variants and Boolean operator combinations of the following keywords:

colon\* OR colonics (additional terms: colonics; colon cleans\*; colon wash\*; colon therapy; colon hydrotherapy; colonics; colon cleansing; colonic irrigation; high colonic; colonic lavage; colonosanation; colonic sanation; colonic washout; transanal irrigation; enema irrigation; tap water enema; coffee enema)

AND

(diverticul\* OR aganglio\* OR acetylsialomucin OR inertia)

(perforat\* OR infect\* OR disinfect\* OR weaken)

(cancer OR chemother\* OR polyp OR neoplasm OR lynch OR carcinogen\*)

(treatment OR therap\* OR hydrotherap\* OR clean\* OR irrigat\* OR wash\* OR drain\* OR detoxification)

(pseudo-obstruction OR disease)

(alternative therap\*)

AND

(success\* OR effect\* OR efficac\* OR impact).

An academic literature search for papers related to the potential health risks of colon cleansing procedures returned 120 hits, of which 19 papers were in English and appeared to be related to an injury or adverse effect. A complete listing of search results can be supplied upon request.

From the 19 adverse effects papers, four risk categories were identified: 1) burns/inflammation of the mucosa, with the potential for rectal stricture; 2) electrolyte depletion (low blood sodium or potassium) caused by absorbing large amounts of water; 3) infection (without apparent perforation); and 4) perforation or tearing (usually leading to septicemia). These papers included a mixture of procedures carried out at home, in medical or institutional settings, or in commercial or alternative health settings. For one study, the setting was unknown.

The literature search also returned documents concerning an outbreak involving colonics administered in an American chiropractic clinic.<sup>5,6</sup> In this incident, at least 36 people contracted amoebiasis and 7 people died. This incident led to the nation-wide requirement to use disposable colonic kits in commercial settings. Because this event fundamentally changed the way in which commercial colon hydrotherapy is performed, the 36 cases have been excluded from the data below.

Of the 47 remaining individuals for whom adverse effects have been documented in the literature, 25 cases occurred (or were likely to have occurred) in a medical or institutional setting, 12 cases were self-administered, and only 9 cases occurred in an alternative health setting (Table 1). In one case, the setting was unknown.

**Table 1.** Number of adverse events according to the setting in which they occurred.

Risk	Alternative Health Clinic	Medical or Institutional	Self-Administered	Unknown	TOTAL cases
Burns/inflammation	0	0	6	0	6
Electrolyte imbalance	2	1	2	0	5
Infection*	3	0	0	0	3
Perforation	4	24	4	1	33
TOTAL Adverse Events	9	25	12	1	47

\*Excluding the results of Istre et al.<sup>5</sup>

A number of reports involving burns of the rectal mucosa were identified, and some of these burns were severe enough to cause rectal stricture necessitating surgical correction. Burns were caused by the use of hot water or hot coffee enemas, all of which were self-administered. Since the original outbreak described by Istre et al.,<sup>5</sup> only three cases of colonic-related infection were identified in the literature, all of which were attributed to translocation of bacteria from the client's gut into the blood or nearby tissues, rather than transmission between clients. Five cases of electrolyte imbalance severe enough to require emergency treatment were observed. Two of these cases resulted in death, but the connection to the prior colonic was not clear.

Perforations were the most severe adverse events associated with colon cleansing, with 13 of 33 events resulting in death. Death was much more likely if diagnosis of the perforation was delayed.<sup>7</sup> Most perforations (24 of 33) occurred in a medical or institutional setting, such as care homes,<sup>7,8</sup> which is to be expected given the widespread use of enemas for a variety of conditions associated with injury and aging. Only four perforations were associated with alternative health clinics.

## Relevance to Environmental Health Practice

This rapid review revealed several points relevant to environmental health practice; at the very least, the results do not indicate that commercial colon hydrotherapy clinics are associated with more frequent adverse effects compared to similar procedures carried out in other settings. However, it is difficult to objectively assess this without reliable statistics on the number of adverse events happening as a percentage of all procedures carried out in each setting. An individual's health status may also affect the likelihood of adverse effects; however, it is unknown how many healthy vs. unhealthy individuals are seeking treatment in alternative health clinics.

The relatively high number of adverse effects occurring in a medical or institutional setting reflects the widespread usage of enemas for the management of chronic bowel disorders. Globally, Christensen et al.<sup>9</sup> estimated that perforations occur at a rate of 6 per million procedures (0.0006%), based on data from 8.1 million medically motivated colonic irrigation procedures performed over a nine-year period. In contrast, very little is known about the number of colonic procedures performed commercially or at home, or the rate of adverse events related to them. A survey performed in the UK collected data on practice and client satisfaction from 38 practitioners and 242 of their clients. From approximately 8,470 treatments, zero adverse effects were reported.<sup>1</sup> However,

it should be noted that providers who had encountered adverse events would be unlikely to respond to a voluntary survey, or to have passed the survey on to any unsatisfied clients. Based on this 2004 survey, the authors estimated that registered UK practitioners were performing approximately 5,600 procedures per month.<sup>1</sup>

Regarding infection risk specifically, no infectious disease outbreaks have been documented in connection to colon hydrotherapy in alternative health settings since the initial outbreak described in Istre et al.<sup>5</sup> This likely reflects the fact that single-use disposable kits have become the industry norm, greatly reducing the risk of disease transmission between clients. However, three cases of infection were identified in the literature (two cases of septicemia and one involving abscess formation),<sup>10-12</sup> all of which were attributed to the translocation of bacteria from the client's own gut into the blood or extraintestinal sites.<sup>13</sup> In two of these cases, translocation may have been facilitated by the presence of a non-intact mucosa (either due to trauma during colon hydrotherapy<sup>10</sup> or the presence of a colovesical fistula<sup>11</sup>). Because some chemotherapeutic agents may damage the intestinal mucosa and compromise its barrier function,<sup>14</sup> recent chemotherapy for breast cancer may have increased the risk of bacterial translocation and septicemia in the third case as well.

Thus, there may be chronically ill populations for whom colon hydrotherapy poses a greater risk. The cases reviewed here proposed a number of conditions that might increase the risk of adverse effects, including Crohn's disease,<sup>4</sup> chronic kidney disease,<sup>15</sup> spinal cord injury,<sup>16</sup> and megacolon in children.<sup>17</sup> Further research is required to understand which populations are most at risk and to what extent these individuals might be affected. Notably, the Association of Registered Colon Hydrotherapists (ARCH, a UK-based professional organization) emphasizes that those with heart disease, renal insufficiency, liver disease, or a range of gastrointestinal disorders (including Crohn's disease, colorectal cancer, etc.) should not receive colon hydrotherapy.<sup>18</sup> However, although professional organizations like ARCH provide best practices, training, and continuing education to their members, there is no mechanism to enforce compliance, and certification is voluntary.

## Summation

Without data on the total number of procedures delivered in each setting, it is not possible to determine whether colon cleansing procedures delivered in alternative health clinics are more or less risky overall than procedures done at home or in a medical setting. However, the use of specialized or commercial colonics equipment that features temperature control may reduce the risk of specific hazards, such as burns, which occurred only at home and appeared to involve an element of inexperience or poor judgement. However, there may be populations for whom colon hydrotherapy poses a greater risk of perforation and/or infection.

EH practitioners can help to reduce these risks by:

- Working with operators to maintain hygienic practices, in particular the use of single-use materials;
- Being vigilant for potentially harmful practices, such as the use of hot solutions or equipment without temperature control;
- Discussing the risks of infection and injury with operators;
- Requiring operators to communicate the risks of perforations, infections, and electrolyte imbalances for both healthy and chronically ill patients, both verbally and through a detailed consent form; and
- Encouraging operators to document and report suspected adverse events, such as sudden illness or bleeding post-procedure.

---

## References

1. Taffinder NJ, Tan E, Webb IG, McDonald PJ. Retrograde commercial colonic hydrotherapy. *Colorectal Dis.* 2004;6(4):258-60. Available from: <http://dx.doi.org/10.1111/j.1463-1318.2004.00573.x>.
2. Ernst E. Colonic irrigation: therapeutic claims by professional organisations, a review. *International J Clin Practice.* 2010;64(4):429-31. Available from: <http://dx.doi.org/10.1111/j.1742-1241.2009.02166.x>.
3. Acosta RD, Cash BD. Clinical effects of colonic cleansing for general health promotion: a systematic review. *Am J Gastroenterol.* 2009 Nov;104(11):2830-6; quiz 7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19724266?dopt=Abstract>.
4. Mishori R. The dangers of colon cleansing. *J Family Pract.* 2011;60(8):454-7. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/21814639>.
5. Istre GR, Kreiss K, Hopkins RS, Healy GR, Benziger M, Canfield TM, et al. An outbreak of amebiasis spread by colonic irrigation at a chiropractic clinic. *N Engl J Med.* 1982 Aug 5;307(6):339-42. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/6283354?dopt=Abstract>.
6. Center for Disease Control and Protection. Amebiasis associated with colonic irrigation -- Colorado. *MMWR Morb Mortal Wkly Rep.* 1981;30(9):101-2. Available from: <http://www.jstor.org.ezproxy.library.ubc.ca/stable/23295789>.
7. Paran H, Butnaru G, Neufeld D, Magen A, Freund U. Enema-induced perforation of the rectum in chronically constipated patients. *Dis Colon Rectum.* 1999 Dec;42(12):1609-12. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/10613482>.
8. Gayer G, Zissin R, Apter S, Oscadchy A, Hertz M. Perforations of the rectosigmoid colon induced by cleansing enema: CT findings in 14 patients. *Abdom Imaging.* 2002 Jul-Aug;27(4):453-7. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/12066245>.
9. Christensen P, Krogh K, Perrouin-Verbe B, Leder D, Bazzocchi G, Petersen Jakobsen B, et al. Global audit on bowel perforations related to transanal irrigation. *Tech Coloproctol.* 2016 Feb;20(2):109-15. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26573811>.
10. Ratnaraja N, Raymond N. Extensive abscesses following colonic hydrotherapy. *Lancet Infect Dis.* 2005;5(8):527. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/16048722>.

11. Dore M, Gleeson T. Escherichia coli septic shock following colonic hydrotherapy. Am J Medicine. 2015;128(10):e31. Available from: <http://dx.doi.org/10.1016/j.amjmed.2015.05.032>.
12. Margolin KA, Green MR. Polymicrobial enteric septicemia from coffee enemas. West J Med. 1984 Mar;140(3):460. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/6710988>.
13. Gatt M, Reddy BS, Macfie J. Review article: bacterial translocation in the critically ill – evidence and methods of prevention. Aliment Pharmacol Ther. 2007;25(7):741-57. Available from: <http://dx.doi.org/10.1111/j.1365-2036.2006.03174.x>.
14. Song D, Shi B, Xue H, Li Y, Yang X, Yu B, et al. Confirmation and prevention of intestinal barrier dysfunction and bacterial translocation caused by methotrexate. Dig Dis Sci. 2006;51(9):1549-56. Available from: <https://doi.org/10.1007/s10620-005-9058-0>.
15. Chen WL, Tsao YT. Fatal aroportia with systemic air embolism after colon hydrotherapy. J Trauma. 2010 Jan;68(1):247. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20065782>.
16. Chertow GM, Brady HR. Hyponatraemia from tap-water enema. Lancet. 1994 Sep 10;344(8924):748. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/7915790>.
17. Ziskind A, Gellis SS. Water intoxication following tap-water enemas. AMA J Dis Child. 1958 Dec;96(6):699-704. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/13594017>.
18. Association of Registered Colon Hydrotherapists. Who are colonics for? 2017. London, UK: ARCH. Available from: <http://www.colonic-association.org/about-colon-hydrotherapy/who-are-colonics-for/>.

Top photo credit - UmbertoPantalone, Getty Images Plus

---

*This document was produced by the National Collaborating Centre for Environmental Health at the British Columbia Centre for Disease Control, January 2018. Permission is granted to reproduce this document in whole, but not in part. Production of this document has been made possible through a financial contribution from the Public Health Agency of Canada through the National Collaborating Centre for Environmental Health.*

---



National Collaborating Centre  
for Environmental Health  
Centre de collaboration nationale  
en santé environnementale

© National Collaborating Centre for Environmental Health 2018  
200-601 West Broadway, Vancouver, BC V5Z 4C2  
Tel: 604-829-2551 | Fax: 604-829-2556  
[contact@nceh.ca](mailto:contact@nceh.ca) | [www.nceh.ca](http://www.nceh.ca)