

# Evidences of specialized care directed to the person with digestive fistula

*Evidências do cuidar especializado direcionado à pessoa com fístula digestória*

*Evidencias del cuidado especializado dirigido a la persona con fístula digestiva*

Renata Ferrari<sup>1</sup>, Ciliana Oliveira<sup>2</sup>, Mitsue Hatanaka<sup>3</sup>

## ORCID IDs

Ferrari R  <http://orcid.org/0000-0002-8451-7810>

Oliveira C  <http://orcid.org/0000-0003-7070-7669>

Hatanaka M  <http://orcid.org/0000-0001-5697-6641>

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## ABSTRACT

**Objective:** to describe the evidences of the specialized care in the attention to the people with digestive fistulas, since these can cause complications of high gravity that prolong the time of hospitalization and it are related to important mortality rates. **Methods:** This is an integrative review with quantitative descriptive analysis. 18 articles were found and submitted to systematic analysis. **Results:** The formation of digestive fistulas is related to a series of complications, such as sepsis and infections, metabolic and electrolytic disorders, nutritional disorders, the presence of skin lesions and feelings of fear and anxiety on the part of the patient. The care plan includes multidisciplinary care and follow-up of the stomatherapist nurse in directing and indicating conducts for effluent control and skin protection, odour control, as well as ensuring mobility and emotional support. **Conclusion:** It is necessary research aimed at the care of people with digestive fistulas and to establish the relationship between clinical practice and well structured studies.

**DESCRIPTORS:** Cutaneous fistula; Fistula of the digestive system; Nursing care; Nursing; Stomatherapy.

<sup>1</sup>A. C. Camargo Cancer Center – Ambulatório de Cirurgia Pélvica – São Paulo/SP – Brazil.

<sup>2</sup>Centro Universitário Teresa D'Ávila – Lorena/SP – Brazil.

<sup>3</sup>Beneficência Portuguesa – Serviço de Estomaterapia – São Paulo/SP – Brazil.

Corresponding author: Renata Ferrari | Rua Juçaral, 211 casa 2 – Parada XV de Novembro | ZIP Code: 08246-106 – São Paulo/SP – Brazil | E-mail: renata.ferrari@accamargo.org.br

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## RESUMO

**Objetivo:** Descrever quais são as evidências do cuidado especializado na atenção às pessoas com fístulas digestórias, uma vez que essas podem ocasionar complicações de alta gravidade que prolongam o tempo de internação e estão relacionadas a importantes taxas de mortalidade. **Métodos:** Trata-se de revisão integrativa com análise descritiva quantitativa. Foram encontrados e submetidos à análise sistemática 18 artigos. **Resultados:** A formação de fístulas digestórias está relacionada a uma série de complicações, como sepse e infecções, distúrbios metabólicos e eletrolíticos, distúrbios nutricionais, presença de lesões de pele e sentimentos de medo e ansiedade por parte do paciente. O plano de cuidados engloba cuidados multidisciplinares e acompanhamento do enfermeiro estomaterapeuta no direcionamento e indicação de condutas para controle de efluente e proteção de pele, controle de odor, além de garantir a mobilidade e o apoio emocional. **Conclusão:** Necessitamos de pesquisas direcionadas aos cuidados de pessoas com fístulas digestórias e que se estabeleça a relação entre a prática clínica e estudos bem estruturados.

**DESCRITORES:** Fístula cutânea; Fístula do sistema digestório; Cuidados de enfermagem; Enfermagem; Estomaterapia.

## RESUMEN

**Objetivo:** Describir cuáles son las evidencias del cuidado especializado en la atención de las personas con fístulas digestivas, ya que las mismas pueden causar complicaciones de alta gravedad que prolongan el tiempo de internación y están relacionadas a importantes tasas de mortalidad. **Métodos:** Se trata de revisión integrativa con análisis descriptivo cuantitativo. Fueron encontrados y sometidos a análisis sistemático 18 artículos. **Resultados:** La formación de fístulas digestivas está relacionada a una serie de complicaciones, como sepsis e infecciones, distúrbios metabólicos y electrolíticos, distúrbios nutricionales, presencia de lesiones de piel y sentimientos de miedo y ansiedad por parte del paciente. El plan de cuidados engloba cuidados multidisciplinares y acompañamiento del enfermero estomaterapeuta en el direccionamiento y recomendación de conductas para control de efluente y protección de piel, control de olor, además de garantizar la movilidad y el apoyo emocional. **Conclusión:** Necesitamos investigaciones orientadas a los cuidados de personas con fístulas digestivas y que se establezca la relación entre la práctica clínica y estudios bien estructurados.

**DESCRIPTORES:** Fístula cutánea; Fístula del sistema digestivo; Cuidados de enfermería; Enfermería; Estomaterapia.

## INTRODUCTION

Digestive fistulas can cause complications of high severity and are characterized by abnormal communication between two structures lined by epithelium. The occurrence of fistulas results in an increase in hospitalization time and in the high cost with hospitalization, since it is related to the important mortality rate<sup>1-3</sup>.

Considering that the person with digestive fistulas is exposed to skin lesions, it is understood that the methods of skin protection should be prescribed by specialist nurses or by trained nurses. Collector bags, coverages, protective barriers or negative pressure dressing may be used according to the characteristics of the effluent<sup>2,4</sup>.

The therapeutic plan requires multidisciplinary action, aiming at the management of the pathophysiological effects, protection and attention in the skin and emotional support. The nurse's evaluation should identify the problems and it be directed to the characteristics of the fistula: origin, characteristics of the secreted effluent, place of exteriorization, odour and surrounding skin conditions. Digestive secretions are rich in aggressive skin enzymes, and even in patients with abdominal drains, extravasation may occur to adjacent

skin and severe skin lesions. These lesions are painful, have a burn appearance and allow the appearance of secondary infection, which may progress to local ulceration<sup>5,6</sup>.

This is a complex theme, due to the consequences of fistulas, and the role of the stomatherapist nurse enables specialized care, attending to specific needs, thus justifying studies on the proposed theme<sup>7</sup>.

## OBJECTIVE

The objective of this work is to describe the scientific evidences of specialized care in the care of people with digestive fistulas.

## METHODS

It is an integrative review elaborated according to the six stages: elaboration of the research question, search of studies

in the data bases, data collector, evaluation of studies, analysis and synthesis of the results and presentation of the review.

The research was based on the following question: what are the main nursing care related to the care of people with digestive fistulas in the literature?

It were searched publications in Portuguese or English for the period from 2006 to 2016, using the Virtual Health Library (VHL-Bireme), in the PubMed/MEDLINE databases, using the descriptors cutaneous fistula, digestive system fistula, nursing care, nursing, and stomatherapy. The descriptors contained in titles, descriptors and summaries were grouped as follows: “fistula and nursing care”, “cutaneous fistula and nursing care”, “digestive system fistula and nursing” and “fistula and nursing”. It were found 191 documents, excluding texts that were not related to the care of people with digestive fistulas, with publications that differed from the established period and in other languages. It were selected 17 articles because its were related to the proposed theme. A search was conducted in a Brazilian journal specialized in stomatherapy, and an article was found in Estima Journal, totaling 18 articles for analysis. The data collector was performed with systematized observation, standardizing the transcription of the information.

The evidence-based classification of selected articles was established:

- I. Evidence of systematic review or meta-analysis of all relevant randomized controlled clinical trials;
- II. Evidence obtained from well-delineated randomized controlled clinical trials;
- III. Evidence obtained from controlled clinical trials well delineated without randomization;
- IV. Evidence from well-designed case-control and cohort studies;
- V. Evidence of systematic review of descriptive and qualitative studies;
- VI. Evidence from a single descriptive or qualitative study;
- VII. Evidence from the opinion of authorities and/or specialist committee report<sup>8</sup>.

After analyzing the obtained results, the discussion was based, organizing the data with the main recommendations presented in the studies.

## RESULTS

Of the 18 articles selected for this research, five (27%) are from journals specifically for nursing (Ostomy

Wound Management - three articles; British Journal of Nursing - one article; Estima Journal – one article). Of the 18 articles found, only three (17%) are national, which proves the scarcity of publications and research on the subject.

With respect to pathophysiology, the formation of digestive fistulas results in a series of complications, such as sepsis and infections, metabolic and electrolytic disorders, nutritional disorders, skin lesions, emotional impairment and decreased mobility<sup>9-14</sup>.

The approach to skin care, including prevention of injury or treatment, is cited in 17 articles (94%), which highlights the necessity for specific interventions. During the assessment, care for the person with digestive fistula and skin protection are directed according to location, including anatomical contours, proximity to bony prominences, rigid or flaccid muscle tone, surrounding skin, number of multiple or single fistula trajectories and volume and drainage characteristics. Skin protection should be started early, as excreted digestive enzymes can result in high, painful skin lesions, increasing the risk of local infections. The effluent from the fistula can be acid or alkaline, depending on its origin, and fistulas of high score or with secretion stasis in the skin can result in tissue damage within 3 hours<sup>9,10,14</sup>.

The drained secretion should be measured, as well as its characteristics such as color, odour and consistency<sup>10,13,15</sup>. The most common causes of impaired skin integrity are mechanical trauma due to the frequent exchange of dressings, adhesives and bags, and allergic reactions to adhesives and bag materials that can cause erythema, edema and exudation, infections secondary to direct contact of secretions and trapped exudates in the skin, resulting in fungal infections, erythema, papules and vesicles due to chemical irritants. Proximate digestive fistulas are more harmful and aggressive due to the presence of proteolytic digestive enzymes that damage tissues and retard healing<sup>13</sup>.

Of the articles surveyed, 11 (61%) report the necessity to use protective skin barriers, including sealants, powders, pastes, plaques, strips and silicones. In addition to skin protection, effluent control is essential to correct fluid and electrolyte losses, and control of drained secretions is necessary. The use of collector bags allows the protection of the skin by the containment of the effluent, in addition to controlling the daily score rate.

Of the articles selected, 15 (83%) report, as care, the use of collector bags.

The choice of characteristics of the bag depends on the consistency of the secretions. The high score fistulas with liquid effluent are managed with urostomy bags, facilitating its emptying, and can also connect a larger collector to the urostomy bag, minimizing the necessity for emptying and excessive filling of the bag, thus improving the efficiency of the team nursing. More consistent effluent outlet fistulas can be managed with colostomy bags with large outlets. The one-piece bags are more flexible and facilitate application on irregular skin surfaces, while the two-piece bags allow the wound to be manipulated without removing all the equipment, thus allowing cleaning and access to the fistula without unnecessary exchanges. Choosing the correct size also allows for proper attachment, without risk of skin exposure to the effluent<sup>13</sup>.

The use of stoma bags allows greater mobility and patient comfort. It is stated that preparation of the wound bed in which the fistula is located with irrigation of warm saline solution minimizes scar tissue damage and local cooling. The use of powder allows absorption of moisture and treatment of injured areas. The use of pastes ensures the preparation of surfaces with folds and

pleats, leaving the site regular and smooth, allowing more efficient adaptation of the collector bags<sup>14</sup>. Persistent odour can cause anxiety and social concern to the person with digestive fistula. Most stoma bags have an anti-odour film. There are deodorants that can be placed on the equipment to aid in the elimination of odours<sup>13</sup>.

A more recent option in managing a digestive fistula is negative pressure therapy (NPT). This technique involves the maintenance of the humid environment, increase of the local blood vascularization and decrease of the bacterial colonization, reducing the tissue edema, providing protection of the skin around the fistula, reducing the area of dehiscence, besides assisting in the control of the effluent. However, it is contraindicated for thick effluent or with presence of lumps due to obstruction of the system<sup>9,16,17</sup>. Studies show that this therapy does not prevent the closure of the digestive fistula spontaneously<sup>14</sup>.

Absorptive dressings were used in low score fistulas<sup>18</sup>.

The use of the fistula system has improved care due to the larger surface area than usual stoma bags and its flexibility, allowing its to adapt to irregular contours<sup>19</sup>.

Table 1 presents the synthesis of the main recommendations regarding the care of people with digestive fistulas and treatment of injuries.

**Table 1.** Summary table with main recommendations in the care of people with digestive fistulas and treatment of injuries. Taubaté, São Paulo, Brazil, 2016.

Reference	Level of Evidence	Recommendations presented
Bleier J, Hedrick T <sup>11</sup>	V	Isolate the fistula from the surrounding wound with the use of collector bags. Negative pressure therapy (NPT) is used with caution to avoid adherence to handles, using non-adherent gauze and non-adherent barriers such as foams.
Bortolazzi F, Saito KAM, Paula PR, Paula MAB, Vasconcellos ACLP <sup>7</sup>	V	Skin protection and fistula score control through specialized care using skin care products such as natural or synthetic resin pastes, powders, solid barriers, sealants, and collector bags.
Campos AC, Branco AB, Matias JEF, Campos LF <sup>20</sup>	V	Use of collector bags to determine the score rate in the 24 hours and minimize the enteric contact with the skin. Secretion drainage systems can be used with the use of NPT. The probes should be placed only when the fistulous path is oriented.
Dionigi G, Dionigi R, Rovera F, Boni L, Padalino P, Minoja G et al. <sup>12</sup>	V	Use of devices that allow the quantification and characterization of drainage of enteric secretion. The use of negative pressure was used as a treatment strategy with no complications associated with the use of this dressing modality.
Galie KL, Whitlow CB <sup>14</sup>	V	Use of collector bags to protect the skin by implementing its use with pastes and powders to compensate for moist and uneven skin. The use of negative pressure results in increased granulation and wound contracture.
Guimarães PSF <sup>10</sup>	V	Use NPT, collector bags, absorbent gauzes, substances (aluminum paste, white cement, egg white, gelatin, elastic colloid) or special protectors such as gums and pastes to protect the wound and the skin, avoiding contact with the effluent.

...continue

Table 1. Continuation...

Reference	Level of Evidence	Recommendations presented
Gul A, Andsoy II, Ozkaya B <sup>21</sup>	V	Perform control of drainage of the fistula through a variety of materials, including skin barriers, adhesives, dressings and bags. The odour control is done with the use of bags.
Haack CI, Galloway JR, Srinivasan J <sup>22</sup>	V	Use simple absorbent dressings in low score fistulas; Complex fistulas require advanced techniques, including barrier creams, powders and sealants to protect the skin. Negative pressure dressing has the advantage of protecting the skin in people with complex fistulas, in which simpler devices are not enough.
Hahler B, Schassberger D, Novakovic R, Lang S <sup>19</sup>	VI	Use collector bags in high score fistulas. Areas with irregularities and abdominal folds can disrupt the application of bags. In cases of fistulas located inside wounds, it is possible to use NPT, allowing to contain the effluent and to promote the cicatrization.
Hoedema RE, Suryadevara S <sup>13</sup>	V	The use of collector equipment associated with the use of belts may help to minimize patient discomfort. Most of the bags have anti-odour plastic, in addition to the anti-odour deodorants available in the form of a tablet, liquid or powder. The use of negative pressure devices may be associated. The materials selected for the treatment of wounds with digestive fistulas depend on their characteristics and include skin barriers, adhesives, dressings, bags and negative pressure dressing.
Lundy JB, Fischer JE <sup>23</sup>	V	Techniques to take care of these injuries are of great historical importance. The evolution of dressings, equipment and adjuvants provided conditions for the management of fistulas, and the use of karaya or carboxymethylcellulose based bags, pectin, powder and sealants was reported. Cited the use of NPT.
Murphy J, Hotouras A, Koers L, Bhan C, Glynn M, Chan CL <sup>24</sup>	V	Fundamental principles in the management of digestive fistulas include nutritional support, fluid management, sepsis control, wound and skin care, and adequate and specialized knowledge is important for its management.
Reed T, Economon D, Wiersema-Bryant L <sup>25</sup>	VI	Use of large bags that cover the entire wound, skin barriers to protect the surrounding skin, and transparent dressings. Moisture from the wound surrounding the fistula often prevents the good adhesion of the bags, necessitating the combination of materials in the management of complex fistulas, including silicones, bags, sealing and gauze devices, compresses, alginates and negative pressure dressings.
Samad S, Chukwuemeka A, Mansoor A, Doughan S <sup>26</sup>	VI	Daily monitoring system in the patient's chart, with medication plan, fluid and fistula score control, nutritional status, laboratory results and surgical plan.
Taggarshe D, Bakston D, Jacobs M, McKendrick A, Mittal VK <sup>25</sup>	V	Use of collector bags with suction and adequate protection of the surrounding skin. More recent therapies include wound closure with the use of NPT and fibrin glue to promote closure of the fistulas. The use of NPT in the wound around the fistulas aims to contain the effluent and protect the skin.
Thompson M, Epanomeritakis E <sup>15</sup>	VI	Use of drainage system, use of collector bags, NPT, use of protective barriers in the form of powder, paste and sealants.
Vischers RGJ, van Gemert WG, Winkens B, Soeters PB, Damink SWMO <sup>18</sup>	V	The wound treatment was managed by a specialized nurse, with drainage system and bags and NPT. In low score fistulas gauze was used.
Wu MH, Wu HY <sup>17</sup>	VI	Use of large collector equipment that covers the entire wound, skin barriers for protection of the surrounding skin and NPT. The silicone device prevents enteric escape and facilitates the normal passage of faeces into the distal colon. Hydrofiber with silver was used to promote granulation tissue and exudate absorption.

## DISCUSSION

The literature review reveals that much of the care of the person with digestive fistula has not been researched in terms of efficacy of client care. There is little evidence for these strategies, and most of the literature found varies between level of evidence V and VI, equivalent to case studies and descriptive studies.

It is essential to obtain detailed medical history and complete physical examination, previous diseases and previous surgical procedures performed<sup>6</sup>. In the evaluation of the person with digestive fistula, it is necessary to characterize the fistula, to evaluate and to monitor the presented aspects; the documentation of the evaluation is critical to determine the progress or deterioration of the patient's health<sup>9,10</sup>.

The plan of care embraces the necessity to improve the life quality, provide educational support to the patient and family, and ensure comfort and mobility<sup>9</sup>. Initial treatment is sepsis control and includes resuscitation and stabilization with volume replacement, electrolyte correction, monitoring and broad-spectrum antibiotic therapy<sup>10,14</sup>. After stabilization, the conduit is generally conservative, thus allowing to improve the general state and conditions for future surgical approach. In addition, short-time surgical reapproach involves more surgical complications due to adhesions and intense inflammatory processes<sup>11</sup>.

Care for the person with digestive fistula should be personalized and there is no ideal process of prevention and cutaneous protection. The ideal is to initiate the protective measures of the skin early, even before the establishment of more significant lesions.

According to the recommendations, the evaluation of a nurse stomatherapist is important to direct the interventions to maintain skin integrity, odour control and containment using devices such as bags for stoma, powders, leveling pastes, absorbent covers and protective

films<sup>9</sup>. The use of negative pressure dressing associated with non adherent gauze in the treatment of people with digestive fistulas allows the containment of the effluent, comfort and protection of the skin surrounding the digestive fistula. Probably its use promotes the spontaneous closure of the digestive fistulas<sup>16</sup>.

Based on the articles analyzed, strategic planning is necessary, with the definition of care goals for all multidisciplinary teams. Clinical skills and knowledge are useful in choosing the right products for a given situation. Thus, product, availability and cost may be limiting factors in process selection. The effective determination of nursing interventions and goals can not be performed in isolation. Collaboration with other team members will ensure the comprehensive and safe approach to caring<sup>9</sup>.

## CONCLUSION

Caring for the person with digestive fistula requires a comprehensive and targeted assessment with appropriate treatment, including prevention and treatment of skin lesions. The products used are reported succinctly, with no wealth of detail about when and how its should be employed. The most cited are protective barriers, bags and equipment collectors, absorbent dressings and NPT.

## AUTHORS'S CONTRIBUTION

Conceptualization, Ferrari R; Hatanaka M; Methodology, Ferrari R; Investigation, Ferrari R; Writing - First version, Ferrari R; Hatanaka M; Oliveira C; Writing - Review & Edition, Ferrari R.

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