

# Comprehensive Management of Swallowing Disorders

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## Abstract

Dysphagia – difficulties in swallowing – are a major factor involved in malnutrition in many cases. Nutritionists can benefit from better understanding this complex process. “Comprehensive Management of Swallowing Disorders” by Ricardo L. Carrau, Thomas Murry and Rebecca J. Howell (San Diego, CA: Plural Publishing: 2017) is one of the most comprehensive books on dysphagia. Its contents inform on the nature of swallowing, the etiology of relevant disease, evaluations, diagnosis and interventions for swallowing problems in adults. It could thus be useful for nutritionists and dietitians, pediatricians, occupational therapists, gastroenterologists, otorhinolaryngologists, neurologists, surgeons, speech and language pathologists, and families of patients with swallowing problems. This second edition textbook, which was published in 2017, is divided into seven sections that each address a fundamental knowledge gap, providing a comprehensive foundation from which future treatment innovation can be made.

## Review

The first part of this book (chapter one) is devoted to the incidence and epidemiology of swallowing disorders in different populations. These populations include stroke patients, nursing home residents, dementia and dysphagia patients, hospitalized patients, the normal elderly population, head and neck oncology patients, and the number of individuals affected by other causes of gastroesophageal reflux, and surgical procedures. Also in this chapter factors affecting the various populations most commonly afflicted by swallowing problems are highlighted.

The second part (chapters two and three) reviews the neural system and the anatomy of the organs involved in eating and swallowing. It is unlikely that this part will present new information for specialists and students from a range of disciplines who already know these details. Nevertheless, a basic essential for high-functioning multidisciplinary dysphagia teams is that all members share a common understanding of the anatomy and physiology of swallowing, as well as their relationship to deglutition – the movement of food from the mouth to the stomach. Thus, this part provides a framework for all of the members of the dysphagia team to learn and use a consistent language for diagnosis and treatment strategies. The normal structure and function of the hard and soft palate, tongue, salivary glands, larynx and pharynx, esophagus, are discussed in this chapter. It also addresses the physiology of natural swallowing and its phases. An understanding of the anatomy and physiology of swallowing by team approach is very important for the accurate diagnosis and treatment of patients with dysphagia.

The third part (chapters four to seventeen) is about the clinical evaluation of swallowing and has two sections. Chapters four to eleven addresses the evaluation of swallowing from seven perspectives: nutrition, otolaryngology, speech pathology, pediatrics, gastroenterology, neurology, physical and rehabilitative medicine, and surgery. Each specialist describes the clinical evaluation and techniques that he or she uses. Each discipline provides a unique perspective for making a diagnosis and planning treatment. Unavoidably, there is connection and repetition in the discussion of their respective diagnostic procedures. The authors have chosen to preserve this redundancy, as it provides the reader with an overview of the philosophy and methods followed by each specialist. Since the management and treatment of swallowing disorders are done by multidisciplinary teams, various health care disciplines have been integrated into a common fund of knowledge that serves as the foundation for clinical pathways. In chapters twelve to seventeen, specific and objective information regarding functional tests of swallowing are reviewed. The final four chapters of this section offer complementary information regarding functional tests of swallowing. Each of these tests offers specific and objective information used by each of the specialists who offer treatment for swallowing disorders. These functional tests of dysphagia include radiological evaluation (the barium swallow) , radio graphical evaluation (the Modified Barium Swallow), functional endoscopic tests of swallowing, Transnasal Esophagoscopy, gastroenterological evaluation of swallowing, and Laryngeal Electromyography. Each of these tests is used by different specialists who offer treatment for swallowing disorders. The goal of the examination is to provide anatomical and functional analyses of the pharynx, esophagus and gastric cardio.

The fourth part (chapters eighteen to thirty-four) is a complete discussion of the diagnosis and management of swallowing disorders that range from consequences connected with life-threatening diseases, such as cerebrovascular accidents, neuromuscular disorders, and cardiopulmonary disorders, to the more benign, such as gastroesophageal reflux. The completion of objective swallowing tests is the basis for recommending a treatment that is customized to each specific situation. Thus, in this part of the book, aspects of the functional tests of swallowing are reviewed in the context of specific diseases and disorders. This part also addresses iatrogenic disorders caused by surgery, radiotherapy, or medications. Treatment protocols based on accurate testing and proper interpretation are emphasized. Each chapter recalls specific observations of the standard tests of swallowing when planning treatments. Careful, multidisciplinary, planned treatment for swallowing disorders based on accurate testing and proper interpretation are emphasized.

The fifth part (chapters thirty-five to thirty-eight), describes nonsurgical treatments for swallowing disorders. Effective treatment of swallowing disorders depends on specialists who have a wide knowledge of nutrition and dentition and know the impact of these when treating the swallowing disorders explained in this part. The significance of nutrition for improving and sustaining total body health must be adapted, based on the origin of the disorder. The authors put special emphasis on the care of the tracheotomized patient, including decannulation, since it affects both the short-term and long-term outcomes of recovery. In this part, the connections of specialists who treat swallowing disorders using nonsurgical approaches is evident from each author's perspective. These four chapters are devoted to diet modification, behavioral techniques, prosthodontics, and swallowing management of patients with tracheotomies.

Effective treatment of swallowing disorders relies on diet modifications involving changes in the texture or consistency of the food consumed to facilitate swallowing; this is very significant for recovering and maintaining total body health (Fig.1). In a level 1 dysphagia pureed diet, the food is blended, preferably with a food processor, to a mashed-potato or pudding-like stability. Foods must be smooth and cannot need bolus formation, controlled manipulation, or mastication. A level 2 dysphagia mechanically altered adds foods that are moist and soft textured. This diet is an intermediate diet between puree and solid textures and mastication is essential at this level. This phase is the most advanced phase of the dysphagia diet and serves as a transition to a regular diet. Patients on this phase should tolerate mixed texture foods. They must have respectable dentition and the ability to chew. Setting the standards to classify the viscosity of liquids is an emerging science. The National Dysphagia Task Force set planned ranges for classifying the viscosity of fluids. Thin liquids include water, milk, gelatin, soup broth, ice pops, juice, ice cream, coffee, tea, soda, ice, sorbet, sherbet, and any food that becomes liquid at body temperature (98°F). Liquids can be thickened using a commercial thickener, flour, corn starch, or potato flakes. Liquids can be thickened to 3 different consistencies; nectarlike, honeylike, and spoon thick.

The sixth part (chapters thirty-nine to forty-nine), provides a discussion of the historical background, indications, patient selection and surgical treatments of swallowing disorders. Selected patients who fail conservative treatment of swallowing disorders may benefit from a variety of surgical procedures that are both temporary and permanent treatments for laryngeal, pharyngeal, esophageal and gastric disorders. Procedures such as tracheotomy or gastrostomy serve as temporizing measures, while the patient recovers his or her swallowing function. Specific deficiencies of the laryngeal sphincter can be addressed using vocal fold injections or laryngeal framework surgery that complements compensatory mechanisms offered by other nonsurgical methods. In certain cases, while tracheostomy does provide easier access to the tracheobronchial tree for pulmonary urinal, the presence of a tracheostomy does not prevent aspiration of oral secretions or liquid food bolus. Since deficiencies of the laryngeal sphincter can also have a negative impact on proper swallowing, vocal fold injection or laryngeal framework surgery can be used. Other specific pharyngeal and esophageal conditions, such as uncontrolled gastroesophageal reflux or Zenker's Diverticulum, are better addressed with primary surgery. This part provides a discussion of the historical background, indications, patient selection, surgical techniques, and possible complications of the most common surgical procedures used for the treatment of swallowing disorders.

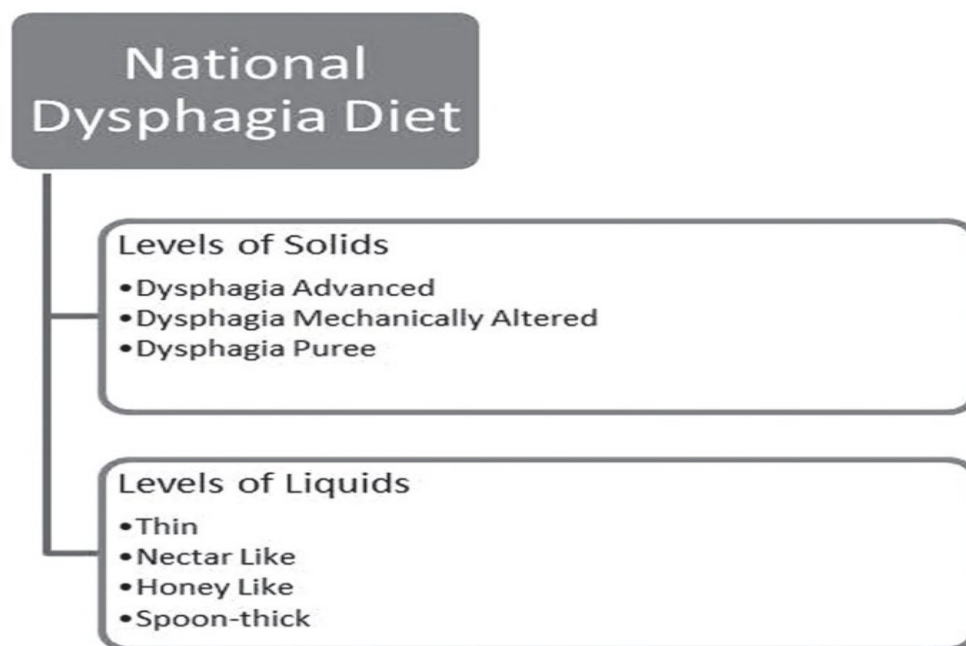


Figure 1. Levels of National Dysphagia Diet

The seventh part (chapters fifty to fifty-five), contains five chapters that present the prevalence and management of swallowing disorders in specific populations of patients presenting separate challenges to the clinicians who manage their swallowing disorder such as pediatric populations, the elderly patients, and serious care patients critically patients with intractable aspiration

pneumonia. According to the authors of this book, for the expanding populations of patients requiring intensive care, the clinician must have a keen awareness of other disorders interfering with the treatment of dysphagia. For infants and children, modifications to both the testing and treating of swallowing disorders are necessary. This section also addresses the palliation of the patient at the terminal stages of esophageal cancer.

Thus, this book provides one of the most comprehensive works on, epidemiology, etiology, evaluation and interventions for swallowing disorders that. We can recommend it for the science of swallowing intervention at different ages.