

Gastrointestinal Disturbances in the Elderly



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KEYWORDS

- Gastrointestinal • Older adults • Age-related changes • Dysphagia • GERD
- GI bleeding • Colorectal cancer screening

KEY POINTS

- The aging process impacts how the gastrointestinal (GI) system digests, absorbs and excretes nutrients and medications and disrupts GI immunity responses.
- All older adults will exhibit some degree of swallowing difficulty, also known as senescent swallowing.
- Older adults may have nonspecific abdominal complaints that may require a thorough history and comprehensive physical examination, as well as prescription and over-the-counter medications.
- Older adults are prone to GI bleeding, gastroesophageal reflux disease, chronic gastritis, constipation, and cholelithiasis.
- Colorectal cancer screening tests should be discussed with all older adults due to the high incidence of colorectal cancer in this patient population.

INTRODUCTION

The gastrointestinal (GI) system is composed of a muscular tube extending from the mouth to anus and accessory digestive organs, which include the liver, gallbladder, and pancreas.¹⁻³ This muscular tube, also known as the alimentary tube,⁴ is approximately 23 feet in length² and consists of the esophagus, stomach, and small and large intestines¹⁻³; also included are the liver, gallbladder, and pancreas.⁵ Recognized as a complex system, the GI tract is dependent on a coordinated network of organs, sphincters, and hormones, as well as enteric nervous, lymphatic, and circulatory systems to achieve its primary responsibility: providing the body with nutrients.¹⁻⁴

The 4 functions of the GI system are digestion, absorption, excretion, and immune defense.^{1,3,4} Nutrients and medications are digested through a series of mechanical

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and chemical processes, ultimately reducing the particles to molecules that are absorbed into the circulatory and lymphatic systems and eliminating nonabsorbable particles through the large intestines.^{1,3,4} Within the mucosa of the GI tract are lymph nodules containing lymphocytes for immunologic response to bacteria that cross epithelial tissue.⁴ The largest accumulation of tissue macrophages in the body is located within liver sinusoids. These phagocytic cells, including Kupffer cells, are bactericidal and vital for our innate immunity responses.³

The GI tract is impacted by the aging process, with some organs and functions more adversely impacted than others (**Table 1**). Effects of chronic disease and sustained use of alcohol, tobacco, and medications often exacerbate GI dysfunction exhibited by older adults.⁵

AGING CHANGES IN THE GASTROINTESTINAL TRACT

Oropharyngeal

Beginning with common age-related dentition issues, many older adults are plagued with chewing and swallowing issues. Poor dentition, coupled with xerostomia,^{3,5,6} often requires changing the consistency of the food before mastication and deglutition can occur.⁷ Some degree of oral motor dysfunction can be expected as one ages, and may contribute to the reason that older adults tend to swallow larger-sized food bites.⁶ Difficulty with the mechanics of swallowing begins to occur in adults age 45 and older.

Gastrointestinal Tract	Age-Related Change
Oropharynx	Dental decay Decreased saliva production Reduced chewing effectiveness Presbyphagia
Esophagus	Decreased upper esophageal sphincter pressure Decreased contractile amplitude during peristalsis Incomplete relaxation of lower esophageal sphincter Esophageal dilation
Stomach	Decreased motility Delayed emptying of liquids Decreased acid and pepsin production Increased gastrin production Decreased gastric mucosal cytoprotective factors
Small intestines	Decreased absorption ^a Decreased motility Decreased blood flow
Colon	Decreased motility Ineffective muscular contractions Decreased tensile strength and increased collagen in colon wall
Gallbladder	Altered chemical composition of bile Decreased emptying
Liver	Decreased size Decreased blood flow and perfusion
Pancreas	Decreased size Increased fibrosis and fatty acid deposits

^a Vitamins B₁₂ and D, folic acid, calcium, copper, zinc, fatty acids, cholesterol.
Adapted from Refs.^{3,5,6}

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