**Gastrointestinal tract**

**Main Function:**

* To regulate the intake, processing and absorption of ingested nutrients and disposal of waste products.
* Several specific processes occur during the passage of food – movement (due to peristalsis of the gut), secretion, digestion, absorption and excretion
* All these processes must work well in order for the gut to achieve its ultimate role in the nutritional state of the body

**Main function of specific Components**

|  |  |
| --- | --- |
| Oesophagus | Conduit between oral cavity and stomach |
| Stomach | Storage, acid and pepsin secretion for early digestion |
| Small bowel | Most of the action happens here. Digestion (enzymes provided by pancreas; bile acids for fat emulsification provided by liver) and absorption of nutrients. |
| Colon | Storage of digested material, small amount of water absorption |

**Clinicopathologic Correlates:**

**Structure and Function**

Clinical manifestations of GI disease are closely related to its STRUCTURE and FUNCTION.

**Structure**  
- Hollow organ – diseases cause ulceration, perforation, obstructions, bleeding  
- Long tubular segments with attached adipose tissue –> possibility of mechanical twisting or telescoping

**Function**  
- Responsible for absorption of ingested nutrients and excretion of waste – hence nutritional deficiencies can occur

**Mindmap of Clinicopathologic correlates** :

<http://blog.nus.edu.sg/pathotest2/1670-2/git-ii-clinicopathologic-correlates/>

**Cardinal signs and symptoms**

* Abdominal or chest pain – due to inflammation, obstruction (colic)
  + Altered ingestion of food – nausea, vomiting, dysphagia (difficulty in swallowing), or

anorexia (lack of appetite)

* Altered bowel movements – diarrhoea or constipation
  + Bleeding – Acute or chronic

**Acute GI bleed** can result in severe blood loss and hypotensive shock

Some characteristics of the bleeding / blood provide clues as to source (upper vs lower GIT).

**Chronic bleed** results more in anaemia – eg. fatigue, pallor, shortness of breath

**Complications:**

*Acute*

* Dehydration – if the GIT is not able to absorb water properly (this is a systemic condition arising from a GIT condition)
* Sepsis
* Hypotensive shock from GI bleeding

*Chronic*

* Malabsorption(malnutrition, deficiency states)
* Obstruction

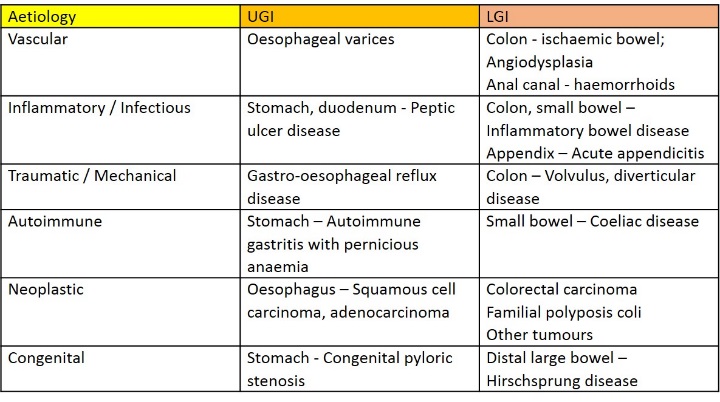
**Classification of disease**

Simplest way is to use both aetiological and anatomical classifications

Anatomy: The GIT can be divided into Upper and Lower GIT. There are several schemes of division:

Upper GI tract – Mouth to Duodenum (Note: For upper GI bleed, usually regarding bleeding above DJ junction)

Lower GI tract – Distal duodenum to Anus

Aetiological classification (table only shows few condition):

**Mindmap GIT diseases overview:** <http://blog.nus.edu.sg/pathotest2/1670-2/git-iii-classification-of-diseases/>

**GIT Tumours**

The GIT is a good example of learning about neoplasms, in terms of:

1. Nomenclature

2. Progression of premalignant conditions to malignant tumours (eg. Adenoma – Carcinoma sequence)

3. Grading and Staging of malignant tumours

- Where to start? The main types of neoplasms in the GIT follow the layers of the gut wall – so revise your histology and look at the layers one by one.

- Pathology may arise from any of the layers – most tumours arise from the mucosa and the histologic type depends on the native mucosa, which the video will elaborate on.

**Mindmap Crash course on GIT tumours**: <http://blog.nus.edu.sg/pathotest2/1670-2/git-iv-git-tumours-crash-course/>

**Talking Pots and Slides** <http://blog.nus.edu.sg/pathotest2/1670-2/v-git-talking-pots-and-slides/>

**Quiz**

<http://blog.nus.edu.sg/pathotest2/1670-2/vi-git-quiz/>