The esophagus is a muscular tube that starts as a continuation of the pharynx and end as a cardia of the stomach.

Its about 25cm length in adult, anatomically it can be divided into 3 parts
- Cervical part: it’s about 5 cm in length.
- Thoracic part: This is approximately 20 cm in length.
- Abdominal esophagus: it’s approximately 2 cm in length.

**The blood supply of esophagus:**
Mainly from inferior thyroid artery, while the thoracic portion receive blood supply from the bronchial and esophageal arteries which arise directly from the aorta.
The blood supply of the abdominal portion from the ascending of the left gastric artery and from the left and right inferior phrenic arteries.

**Histology:**
The esophagus consists of two layers: mucosa and muscularis layers but no serosa.
The mucosa in upper two thirds is sequamous epithelium and lower one third is columnar epithelium. The muscle coat is of two layers the outer longitudinal layer, and inner circular layer. And it’s striated type in the upper one third and smooth muscle type in the lower one third supplied by sympathetic and parasymapathetic (Vagal trunks). And the muscle coat in the middle third is a combination of striated and smooth muscle cells.

**Physiology:**
The esophageal body functions as a pump to push the food bolus were as the lower esophageal sphincter supply as one way valve to allow transport into the stomach and to prevent the return of gastric contents back into the esophagus. The swallowing mechanism is voluntary in the Oropharangyal pouch of the esophagus and involuntary in the remaining part of the esophagus.

**Clinical presentation of esophageal disorders:**
1. **Dysphagia:** difficulty in swallowing which could be to sold or to soluble materials, or for both which is called absolute Dysphagia. It could be painful or painless, continuous or intermittent Dysphagia.
2. **Pain:** as in trauma or in esophagitis.
3. **Regurgitation:** which means the return of gastric content through the mouth without any forceful action or pain in the stomach?
4. **Loss of weight and catchaxia and dehydration:**
5. **Anemia:** usually it is hypochromic microcytic anemia due to continuous bleeding or haematamesis.
Investigations:
1. **Radiological:** This includes plain x-ray which useful in detecting radio opaque foreign bodies or any fluid level in the chest or esophagus.
2. **Barium study:** which include barium swallow in oblique views which is helpful in demonstrating different lesions.(e.g. stricture)
3. **CT scan and MRI:** especially useful in assessment of carcinoma of esophagus.
4. **Intra-esophageal ultrasonography:** especially used in staging and diagnosis of CA esophagus.
5. **Esophagoscopy:** could be either rigid or flexible which can be helpful as a diagnostic and therapeutic option.(removal of foreign bodies, dilatation of benign stricture, ….etc).
6. **Manometric study:** esophageal manometry which is useful in the assessment of esophageal motility disorders with or without ambulatory 24hour PH monitoring.

**Esophageal anomalies:**

**Congenital abnormalities:**
This includes:
1. Tracheo-esophageal fistula.
2. Duplications of the esophagus.
3. Congenital esophageal stenosis.
4. Laryngo-Tracheo esophageal cleft.
7. Dysphagia lusoria.

**Tracheo esophageal fistula:**
Incidence: 2.4/10000 births, no significant sex predilection.
Types:
Type A (85%): proximal atresia and distal Tracheo-esophageal fistula.
Type B (7%) both proximal and distal atresia.
Type C (3%): the H-type fistula.
Type D (1.5%): esophageal atresia with double fistula
Type E (0.4%): esophageal atresia with proximal fistula.
Type F (0.1%): esophageal stenosis.
Management:
- **Clinical presentation of the common type:**
  The baby could be fully mature or premature by weight or date, usually with history of maternal polyhydramnios. Soon after labor there is frothy discharge from the mouth, coughing, choking and cyanosis with feeding.

- **Diagnosis:**
  Radiological: Passing the radio opaque tube in the upper pouch (coiling). Or using contrast study (gastrographine).

- **Preoperative preparation:**
  1. Nil by mouth, and continues suction of saliva to avoid aspiration.
  2. Correction of fluid and electrolytes disturbance.
  3. Antibiotics.
  4. Avoid hypothermia (incubator).

- **Surgical treatment:**
  Usually through right thoracotomy and includes closure of the fistula and primary anastomosis of the upper and lower pouches of the esophagus.

**Perforation of the esophagus:**
**Causes:**
1. Blast, and gunshot injuries (common in Iraq).
2. Iatrogenic during esophagoscopy (instrumentation, biopsy, dilatation).
3. Foreign body ingestion (sharp types like dentures, button battery).
5. Spontaneous rupture of the esophagus (Boerhaave’s syndrome).

**Clinical manifestation:**
1. Sever chest pain.
2. Surgical emphysema.
3. Fever.
4. Respiratory distress.
5. Pneumothorax and pneumo-mediastinum.
6. Painful swallowing.

**Treatment:**
1. Nil by mouth.
2. Correction of fluid and electrolytes disturbances.
3. Broad spectrum antibiotics.
4. Tube thoracostomy.
5. Surgical closure of perforation as early as possible.
Functional disorders of esophagus (motility disorders):  
Are due to in coordination between the nerve supply and muscle response which result in different types of motility disorders like:
1. Achalasia.
2. Hypermotility disorders (diffuse esophageal spasm, nutcracker esophagus, and lower esophageal sphincter hypermotility).
3. Motility disorders secondary to systemic diseases like (scleroderma, stroke, muscle dystrophies and different neuropathies).

Achalasia:
Is a degenerative esophageal disease in which there is loss of peristalsis of the esophageal body and abnormal relaxation of lower esophageal sphincter, due to idiopathic destruction of the esophageal myentric neural plexus.

Clinical presentation:
1. Progressive Dysphagia.
2. Regurgitation.
3. Weight loss.
4. Recurrent chest infection due to aspiration pneumonia.
5. Anemia.

Diagnosis:
2. Barium swallow which shows esophageal dilatation and delay in emptying and tapering of esophago-gastric junction (birdsbeak).
3. Manometry.
4. esophagoscopy

Treatment:
Always palliative and includes medical and surgical treatment:

Medical:
1. Ca channel blockers and long acting nitrates: relax smooth muscles of esophagus.
2. Endoscopic injections of botulinum toxin.
3. Pneumatic dilatation through esophagoscope.

Surgical:
1. Modified Heller’s myotomy which could be through thoracotomy or laprotomy by making longitudinal incision in the muscular coat of the lower esophagus to the esophago cardiac junction down to the mucosa. This operation can be done also by thoracoscopy or laparoscopy.