

# Radiodiagnostic examination of the small intestine

Template:Zkontrolováno

## Anatomy of the small intestine

 For more information see *Small intestine*.

## X-ray image of native abdomen

Native abdominal imaging is the basic examination method for acute conditions to exclude ileitis or pneumoperitoneum. It is also suitable for controlling the development of the ileitis. Radiation load for this method is approx. 1 mSv.

## Utrasound



USG: zánětlivé zesílení stěny aborálního ilea u Crohnovy nemoci (<http://atlas.mudr.org/Case-images-Crohn's-disease-of-terminal-ileum-and-colon-494>)

Ultrasound is a basic examination method, but the small intestine usually cannot be visualized fully - as of it part is covered by gas, and in obese patients it is not possible to use linear probes with a higher frequency (better resolution for shallower structures). Detects wall enlargement, hypervascularization in inflammation (color mapping), surrounding fluid (ascites), distension of loops by fluid (but not air - this limits investigability). There is no radiation exposure.

## GIT passage

Dynamic examination, in which the patient is orally administered with a contrast agent, the passage of which through the digestive tract is monitored under sciascopic control and documented by sciagraphy. Indicated in patients with passage disorder (subileotic conditions). Radiation load estimated at 2-3 mSv.

## Enteroclysis

After insertion of the nasojejunal probe into the duodenojejunal bend under sciascopic control, a bar contrast agent is administered to the probe, followed by methylcellulose solution. The contrast agent gradually fills the small intestine and displays its relief. Indicated for suspected small bowel disease (typically Crohn's disease). It is not indicated as an acute examination. The radiation exposure is estimated at 2-3 mSv, however, the ICRP in its 2008 report states 7.8 mSv.

## CT of the small intestine



CT enterografie: zánětlivé postižení kliček ilea při Crohnově chorobě (<http://atlas.mudr.org/Case-images-Crohn's-disease-of-the-small-bowel-44>)

- **CT enteroclysis:** As with conventional enteroclysis, a nasojejunal tube is inserted to administer methylcellulose solution (2000 mL). An antispasmodic (Buscopan) is given intravenously to slow the intestinal passage and affect the spasms, and CT of the abdomen and small pelvis with contrast agent is performed iv
- **CT enterography:** Mannitol solution (usually) in an amount of 1500–1700 ml the patient drinks for 45–55 minutes, then an antispasmodic (Buscopan) is administered intravenously and a CT of the abdomen and small pelvis with contrast agent is performed iv
- **CT of the abdomen (routine):** Classic CT of the abdomen and small pelvis with an effect is usually indicated in acute cases.

The disadvantage of CT is the higher radiation exposure (approx. 7 mSv), but this can be reduced to 3 mSv in lean patients using a low-dose technique. During the examination, both the intestinal wall and extraintestinal structures (abscess, ascites, skeletal involvement, parenchymal organ involvement) are displayed. CT enterography is more pleasant for the patient than CT enteroclysis, but he must drink the required amount of mannitol solution (it is slightly sweet). Because mannitol and methylcellulose are not absorbed, most patients develop diarrhea after examination. In non-acute cases, CT or MR enterography is the method of choice.

## MRI of the small intestine

Small intestinal distension is also used, e.g mannitol solution is given orally, antispasmodic and clump. Rapid sequences are ideal, there is no radiation exposure . MR enterography is the method of choice for the imaging of the small intestine in the diagnosis of IBD (inflammatory bowel disease).

## Links

### Related articles

- Radiodiagnostic examination of the esophagus and the stomach
- Radiodiagnostic examination of the large intestine

### External links

- **Pictures on the topic atlas.mudr.org**
  - CT enterography (<http://atlas.mudr.org/Case-images-Crohn%27s-disease-terminal-ileum-enterography-607>)
  - CT enterography (<http://atlas.mudr.org/Case-images-Crohn%27s-disease-of-colon-periproctal-abscesses-enterography-56>)
  - CT of the abdomen and pelvis (routine) (<http://atlas.mudr.org/Case-images-Acute-appendicitis-17>)
  - USG ileus (<http://atlas.mudr.org/Case-images-Mild-colitis-170>)
  - USG ileus (<http://atlas.mudr.org/Case-images-Small-bowel-ileus-on-Ultrasound-117>)
  - Native imaging of the abdomen - ileus (<http://atlas.mudr.org/Case-images-Small-bowel-ileus-118>)