



IBUS Module 1 Workshop

Hands-On Sessions – Learning Objectives

Fundamentals of Bowel Ultrasound

Please review this checklist carefully before and during your Module 1 training. It outlines the core competencies and technical skills expected for the **Fundamentals of Bowel Ultrasound**. Use it as a self-assessment and learning guide to ensure you are familiar with all key steps, from equipment setup to recognition of normal and pathological findings. You may also use this document to track your progress and identify areas that need further practice.

1. Equipment & Machine Settings

- Select appropriate probe
 - Choose correct bowel/abdomen preset
 - Optimize gain, depth, and focal zones
 - Use Color Doppler and adjust Doppler Gain and Velocity
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2. Scanning Technique

- Apply graded compression effectively
 - Use a systematic approach and scans the entire abdomen
 - Evaluate bowel in longitudinal and transverse planes
 - Minimize artefacts; recognizes and corrects gas-related artefacts
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3. Recognition of Normal Anatomy

- Use the anatomical landmarks in order to identify specific intestinal segments : iliac vessels for sigmoid colon and terminal ileum, spleen for splenic flexure and Cholecyst for hepatic flexure of the colon
- Identify the five bowel wall layers
- Measure bowel wall thickness accurately
- Recognize normal motility vs abnormal patterns
- Differentiate small bowel from colon
- Identify normal mesentery, fat, and lymph nodes



4. Recognition of Pathological Findings (IBUS Core Competencies)

4.1 Bowel Wall Abnormalities

- Identify bowel wall thickening (>3 mm)
- Detect rigid / non-compressible bowel wall
- Identify luminal narrowing and pre-stenotic dilation
- Distinguish segmental vs diffuse involvement
- Recognize features of acute inflammation, including:
 - Hypoechoic wall thickening
 - Mural hypervascularity (using Color Doppler)

4.2 Vascularity & Doppler Findings

- Apply modified Limberg Score for inflammation
- Distinguish normal from hyperemia
- Recognize reduced or absent flow (suggestive of fibrosis or ischemia)

4.3 Mesentery & Extra-Intestinal Signs

- Identify creeping fat / increased mesenteric echogenicity
- Detect reactive lymphadenopathy (nodes >1 cm, round, hypoechoic)
- Recognize interloop fluid or free fluid

4.4 Complications (optional)

- Identify strictures: thickened bowel, fixed narrowing, ± pre-stenotic dilatation
- Recognize penetrating disease features:
 - Fistula tracks (hypoechoic channels connecting loops or sinus tracks)
 - Abscesses (anechoic/hypoechoic collections with debris, lack of Doppler flow)
- Recognize perforation signs (free fluid, extraluminal gas—if present)

4.5 Severity Assessment Aligned with IBUS

- Integrate wall thickness, Doppler grade, and mesenteric findings into disease severity
- Describe mild, moderate, and severe inflammatory patterns using IBUS terminology

5. Documentation & Reporting (IBUS Standard)

- Use IBUS-standard terminology for pathology
- Report:
 - Wall thickness
 - Vascularity grade
 - Extent of involvement
 - Extraintestinal signs
- Label images appropriately (location, orientation, frequency)
- Save cine loops of pathological segments