

# EFSUMB Common Course

## Syllabus Advanced Abdominal Course

### Introduction

This Syllabus has been discussed in SGUM, OEGUM and DEGUM and was assessed as a good common course of abdominal ultrasound. In SGUM/ÖGUM/DEGUM societies, it will be updated every 3 years. We present it as a basis for joint courses in Europe. We invite all EFSUMB societies to discuss this Syllabus with us. This Syllabus was conceived for all colleagues teaching ultrasound courses and will serve as a common resource and inspiration for other European courses.

In the autumn of 2007, the SGUM decided to reorganize the 3-part course, in agreement with OEGUM and DEGUM. The basic and advanced courses are the foundation of abdominal ultrasound. The final course may vary, depending on interest and specialization. The course described below is oriented to the needs of general practitioners and internists. In addition, SGUM has prepared a final course for nephrologists, which takes into account specific needs. Also, courses designed for specialities other than the abdomen module are possible. **Each of the course leaders can modify the proposed content at his/her discretion.**

This Syllabus is only a summary, a common framework, which is designed to assist and inspire tutors and course leaders. This summary includes following parts:

1. **Content of teaching / learning objectives** for each course is presented.
2. **Theoretical knowledge** is listed.
3. **Schedule example** of one of our actual training programs is precisely defined.
4. **Practical exercises** from our basic course will be presented as an appendix.

As mentioned above, this template should not be construed as a rigid schedule but as a tool for all colleagues who teach and guide ultrasound courses. The Curriculum provides a common platform that will be updated, further developed or extended to meet future course needs every 3 years.

In evaluating a candidate from the "abdomen" module, the emphasis lies with the mastery of B- mode examination techniques. In addition, the candidate should have a basic understanding of the application of Doppler technology in the abdomen (including twinkling and jet phenomenon).

## 1. Content of Teaching / Learning Objectives

### Common advanced abdominal course:

- The graduate becomes familiar with and practiced at identifying the most common and relevant diseases of the liver, gallbladder and bile ducts, spleen, pancreas, retroperitoneum, kidneys and adrenal glands, urinary tract and the internal genitalia.
- He/she should be able to apply the examination techniques (including CDUS) to the major abdominal disorders
- Under the supervision of a tutor and independently, he/she is able to gain further practical experience.

## 2. Theoretical knowledge

### ADVANCED ABDOMINAL COURSE

#### Setting:

Total number of hours: 16-23, of which more than 50% are practical lessons. The maximum number of participants per ultrasound device is 4. There is also one tutor per each US device. The practical exercises with patients should be performed in one hour sequences. To allow for a more varied practical experience, the groups should be rotated every 30 minutes. An examination period of less than 30 minutes is unsatisfactory. A clear division of participants into their respective groups helps them focus more intensely and precisely on the work.

#### Learning Content:

##### Repetition of Systematic Abdominal Examination: Demonstration

- Longitudinal cuts of the liver: US-device customization
- Scanning and palpation of left liver segments under ultrasound view, clinical “elastography”
- Representation of the aorta, celiac trunk, AMS, both renal arteries (CDUS)
- Cross cuts with pancreas, representation of bile duct in head of the pancreas
- Portal vein and extrahepatic bile ducts
- Subcostal cuts of the liver, with systematic scanning technic, hepatic veins with CDUS
- Gallbladder and intrahepatic bile ducts
- Right intercostal cuts: liver / gallbladder, kidney with measurement, pleural
- Intercostal view: left kidney and spleen, pancreas tail, pleura
- Infrarenal aorta with branches (CDUS), pelvic vessels, inferior vena cava
- Lower abdominal longitudinal and transverse bladder and uterus / vagina / urethra, respectively.
- Seminal vesicles, prostate volume measurements
- Intestinal representation specifically (cecum / appendix / terminal ileum, sigma / descending colon)

##### Gallbladder and Bile Ducts

- Cholecystolithiasis
- Sludge
- Acute cholecystitis
- Cholesterolosis
- Gallbladder polyps
- Gallbladder carcinoma
- Intra- and extrahepatic cholestasis
- Choledocholithiasis
- Caroli's disease and other biliary cystoid changes
- Pneumobilia
- Cholangiocarcinoma (Klatskin tumor)

## **Liver Disease Part 1: Diffuse Disease**

- Fatty liver disease, including severity levels 1-3
- Inhomogeneous focal steatosis or non-steatosis
- Acute lesions (hepatitis, intoxication, congestion)
- Chronic hepatitis
- Fibrosis, including hereditary forms
- Budd-Chiari Syndrome
- Forms of cirrhosis (alcohol, primary biliary, virus hepatitis B and C, Wilson`s disease, hereditary hemochromatosis)
- Portal venous flow measurement for various diseases

## **Liver Disease Part 2: Focal Changes**

- Anechoic changes
  - Liver cysts
  - Cystic hydatid
  - Multicystic liver disease
  - Vascular anomalies
  - Bile duct anomalies
- Hypoechoic changes
  - Hematoma
  - Abscesses
  - Focal non-steatosis
  - Metastases
  - Adenomas
  - Focal nodular hyperplasia (FNH)
  - Hepatocellular carcinoma (HCC)
- Hyperechoic changes
  - Hemangiomas
  - Focal steatosis
  - Metastases
  - Calcifications

## **Pancreas**

- Acute pancreatitis
- Chronic pancreatitis
- Cystic pancreatic changes
- Pancreatic cancer

## **Aorta, Inferior Vena Cava, Retroperitoneum, Spleen**

- Aorta and its main branches, iliac arteries
- Vena Cava and other abdominal veins (excl. portal vein)
- Other changes in the retro peritoneum
- Retroperitoneal spaces, acute (inflammatory) changes
- Retroperitoneal Fibrosis
- Changes of lymph nodes
- Spleen:
  - Splenomegaly

- Spleen injuries
- Splenic infarction
- Focal changes

### **Kidneys Part 1: Diffuse Disease**

- Disease associated with large kidneys
  - Acute Glomerulonephritis
  - Acute interstitial Nephritis
  - Acute Pyelonephritis
  - Amyloidosis
- Disease associated with small kidneys
  - Chronic Glomerulonephritis
  - Chronic Pyelonephritis
  - Analgetic Nephropathy
- Renal vascular disease
  - Renal artery stenosis
  - Renal vein thrombosis

### **Kidneys Part 2: Focal Changes and Adrenals**

- Anechoic Changes
  - Renal cysts
  - Polycystic kidney disease
  - Cystic renal cell carcinoma (RCC)
- Hypoechoic changes
  - Renal adenoma / Oncocytoma
  - RCC
  - Focal pyelonephritis / Abscess
- Hyperechoic changes
  - Angiomyolipoma
  - Focal pyelonephritis
- Changes in the adrenals
  - Anechoic changes
    - Adrenal cysts and cystadenomas
    - Adrenal bleeding
  - Hypoechoic changes
    - Adrenal adenoma / Incidentaloma
    - Pheochromocytoma
    - Metastasis / Lymphoma
  - Hyperechoic changes
    - Myelolipoma
- Perirenal changes
  - Hematoma
  - Abscesses
  - Infiltrates of Lymphoma
  - Liposarcoma

### **Urinary tract, Bladder**

- Renal sinus changes
  - Anechoic

- Hydronephrosis
  - Reflux
  - Renal Vein Width
  - Ampullary pelvis
  - Megapolykalikose
  - Parapelvic cysts
- Hypoechoic
  - Renal Pelvic Tumors
  - Bleeding / Hematoma
- Hyperechoic
  - Stones
  - Tb
  - Calcium Milk
  - Vascular Calcification
- Ureter and Bladder Changes
  - Residual urine
  - Urine Jet
  - Stones
  - Bladder Outlet Obstruction and Diverticulum
  - Bladder cancer

#### **Uterus and Andexa;**

##### **Prostate• Uterus**

disease

- Myoma and Leiomyosarcoma
- Endometrial thickening, including Endometrial Carcinoma
- Adnexal disease
  - Salpingitis
  - Cystic Changes
  - Ovarian Cyst
  - Polycystic Ovaries
  - Ovarian Kystoma
  - Ovarian Cancer
  - EUG
- Prostate
  - Benign Prostatic Hyperplasia (BPH)
  - Prostatic Cysts
  - Prostatitis○ Prostate Cancer

#### **Acute intestinal disease**

- Appendicitis
- Diverticulitis

#### **Quiz, Course Evaluation**

## **3. Schedule examples**

### **Common advanced abdominal ultrasound course**

**Day 1:**

08.00-08.15 Introduction  
08.15-08.45 Systematic abdominal ultrasound examination: Demonstration  
08.45-09.45 Practical examination in groups  
09.45-10.00 Break  
10.00-10.30 Gallbladder and Bile Ducts  
10.30-11.30 Practical examination in groups  
11.30-12.00 Liver Disease Part 1: Diffuse Disease  
12.00-13.30 Lunch  
13.30-14.30 Practical examination in groups  
14.30-15.00 Liver Disease Part 2: Focal Changes  
15.00-16.00 Practical examination in groups  
16.00-16.30 Break  
16.30-17.00 Pancreatic Disease  
17.00-18.00 Practical examination in groups

**Day 2:**

08.00-08.15 "Wake-up" Quiz (repetition of the previous day)  
08.15-08.45 Aorta, vena cava, retro peritoneum, spleen  
08.45-09.45 Practical examination in groups  
09.45-10.00 Break  
10.00-10.30 Kidneys, adrenals  
10.30-11.30 Practical examination in groups  
11.30-12.00 Urinary system, bladder, prostate  
12.00-13.30 Lunch  
13.30-14.30 Practical examination in groups  
14.30-15.00 Uterus, Ovaries  
15.00-16.00 Practical examination in groups  
16.00-16.30 Break  
16.30-17.00 Acute intestinal disease  
17.00-18.00 Practical examination in groups  
18.00-18.30 Quiz, Course Evaluation

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