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EUROPEAN FEDERATION OF SOCIETIES FOR ULTRASOUND IN MEDICINE AND BIOLOGY
'Building a European Ultrasound Community'

MINIMUM TRAINING REQUIREMENTS FOR THE PRACTICE OF MEDICAL ULTRASOUND IN EUROPE

Appendix 4: Obstetric Ultrasound

This curriculum is intended for clinicians who perform obstetric ultrasound scans. It includes standards for theoretical knowledge and practical skills. Level 1 competence should be obtained by anyone performing routine unsupervised scans in pregnancy

Level 1

- It is recommended that trainees should perform a minimum of 500 examinations over a 3 to 4 month period under supervision. However trainees will acquire the necessary skills at different rates and the end point of training should be judged by an assessment of competencies
- Examinations should encompass the full range of conditions listed below
- A log book listing the types of examinations undertaken should be kept
- Training should usually be supervised by a level 2 practitioner. In certain circumstances it may be appropriate to delegate some of this supervision to an experienced level 1 practitioner with at least two years of regular practical experience.
- Trainees should attend an appropriate theoretical course (see below) followed by a theoretical examination and the trainee should read appropriate textbooks and literature
- To maintain level 1 status the practitioner should perform at least 500 examinations each year
- During the course of training the competency assessment sheet should be completed as this will determine in which area or areas the trainee can practise independently

Level 1 Knowledge Base and Recommended Contents of Level 1 Theoretical Course

A minimum of 30 hours theoretical teaching is required preferably at the beginning of the training period.

This should include:

- Physics and Technology, Ultrasound Techniques and Administration (see Appendix 2)
- Dating of pregnancy
- Weight estimation and fetal growth
- Normal fetal anatomy
- Common fetal anomalies
- Multiple pregnancy
- Placenta, amniotic fluid
- Screening for fetal chromosomal anomalies: soft markers, nuchal translucency
- Invasive procedures: amniocentesis, chorionic villus biopsy
- Psychological aspects
- Ethical aspects
- Quality Control



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Level 1 Competencies to be acquired

At the end of the training the trainee should be able to

- Perform a systematic abdominal ultrasound examination of
- the pregnant uterus, placenta, amniotic fluid and fetus
- Optimize and correctly orientate the ultrasound image
- Obtain accurate measurements of the fetal biparietal diameter,
- femur length and abdominal diameter or circumference
- for dating and/or weight estimation
- Evaluate fetal anatomy, recognizing the following structures
- and discriminating normal from abnormal findings in these
- structures:
 - Skull/brain
 - Midline echo in brain
 - Cavum septum pellucidum
 - Cerebellum
 - Cisterna magna
 - Cerebral ventricles
 - Neck
 - Thorax
 - Four chamber view of heart plus outflow tracts
 - Stomach
 - Umbilical cord insertion
 - Kidneys
 - Urinary bladder
 - Spine
 - Extremities (arms, legs, hands and feet)
 - The ability to communicate both normal and abnormal findings to the pregnant woman

Level 2

- Training should take the form of at least 30 clinic sessions in a centre under the supervision of at least a level 2 practitioner
- A minimum of 800 examinations will have been undertaken A log book of 10 well documented cases (eg fetal malformations, intrauterine growth restriction, twin complications etc) should be kept. This should include ultrasound images, clinical data and literature research
- The training requisite to this level of practice would be gained by a period of subspecialty training which may either be within or after the completion of a specialist training programme.
- During the course of training the competency assessment sheet should be completed



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- Training should include a theoretical course of at least 30 hours (see below) followed by a theoretical examination
- To maintain level 2 status the practitioner should perform at least 400 obstetric examinations per year

Level 2 Knowledge Base and Recommended Contents of Level 2 Theoretical Course

- Safety of Ultrasound
- Literature search, internet databases, etc
- Fetal malformations (more advanced than level 1)
- Role of ultrasound compared to other imaging modalities, e.g., magnetic resonance imaging
- Fetal echocardiography
- Fetal Doppler
- Soft markers
- Diagnosis of syndromes
- Genetics
- Quality control
- Psychology, counselling
- Ethics

Level 2 Competencies to be acquired

Be able to:

- Diagnose common fetal malformations and have knowledge of their management
- Diagnose intrauterine growth restriction and have knowledge of its management
- Diagnose complications in twin pregnancies and have knowledge of their management

Level 3

A level 3 practitioner is likely to spend the majority of their time undertaking obstetric ultrasound and/or teaching, research and development and will be an 'expert' in this area

Maintenance of Skills

Recommended numbers of examinations to be performed annually to maintain skills at each level are given in the text

Practitioners should:

- Include ultrasound in their ongoing continued medical education (CME) and continued professional development (CPD)
- Audit their practice
- Participate in multidisciplinary meetings
- Keep up to date with relevant literature



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[The Minimum Training Recommendations for the Practice of Medical Ultrasound](#) were published under the EFSUMB Newsletter section in the *Ultraschall in der Medizin/European Journal of Ultrasound*, Volume 27, issue 1 February 2006 page 79-105.

APPENDIX 4: OBSTETRIC ULTRASOUND TRAINING COMPETENCY ASSESSMENT SHEET

Trainee

Trainer

Competencies/Skills to be acquired Level 1

A formal theoretical and practical examination should take place at the end of training

To be competent to perform/diagnose etc the following:

	Trainer Signature	Date
• Systematic examination of pregnant uterus, placenta amniotic fluid & fetus	_____	_____
• Obtain optimal images in a correct orientation	_____	_____
• Obtain accurate measurements of biparietal diameter, femur length, abdominal diameter & circumference	_____	_____
Discriminate normal from abnormal in:		
• Skull/Brain	_____	_____
• Midline echo in brain	_____	_____
• Cavum septum pellucidum	_____	_____
• Cisterna Magna	_____	_____
• Cerebellum	_____	_____
• Cerebral Ventricles	_____	_____

Competencies/Skills to be acquired Level 2

To be competent to perform/diagnose etc the following:

	Trainer Signature	Date
• Diagnose common fetal malformations	_____	_____
• Diagnose intrauterine growth restriction	_____	_____
• Diagnose complications in twin pregnancies	_____	_____
• Logbook of 800 completed cases	_____	_____
• Illustrated logbook of 10 cases including clinical information & completed literature search	_____	_____
• Passed theoretical examination	_____	_____

Competencies/Skills to be acquired Level 1

To be competent to perform/diagnose etc the following:

	Trainer Signature	Date
• Neck	_____	_____
• Thorax	_____	_____
• Four chamber view of heart/outflow tracts	_____	_____
• Stomach	_____	_____
• Umbilical Cord insertion	_____	_____
• Kidneys	_____	_____
• Bladder	_____	_____
• Spine in three planes (coronal, transverse & sagittal)	_____	_____
• Arms, legs, hands & feet	_____	_____
• Ability to communicate findings to pregnant woman	_____	_____