EUROPEAN BOARD OF PAEDIATRICS

SECONDARY PAEDIATRIC TRAINING

Secondary paediatric training follows the basic training as presented in the „Basic Paediatric Training". The goal is the attainment of more comprehensive knowledge and experience of aetiology, pathogenesis, pathophysiology, symptomatology, diagnosis, differential-diagnosis, therapy, rehabilitation and prevention of disorders and diseases and attainment of technical skills as needed for hospital based inpatient and outpatient care of children and adolescents. *Training in secondary paediatrics may also include parts of the subspeciality training as described in the respective syllabus for a specific tertiary paediatric training. It is encouraged that such a training - although limited in time - should be acquired in respective specialised tertiary paediatric training centres.*

1 = General knowledge about the subject
2 = Detailed knowledge about the subject
D = Ability to diagnose
T = Ability to treat
S = Required (technical) skill

SYLLABUS

1 General requirements of secondary paediatric care (mostly hospital based)

1.1 Organisation of paediatric service

- Importance of teamwork **S**
- Relationship to primary and tertiary care **S**
- Diagnostic consultation **S**

1.2 Involvement of parents

- Age adapted information for patient and parents (informed consent, confidentiality) **2**

1.3 Care and treatment for patients with long lasting, life limiting and/or disabling diseases or symptoms

- Family guidance and support **S**
- Multidisciplinary approach including lay support groups **2**
- Organisation of home care **2**

1.4 Avoidance, recognition and management of iatrogenic conditions **2**

1.5 Tools for the performance of evidence based medicine

1.5.1 Use and interpretation of

- References **2**
- Epidemiological data **1**
- Statistical data **1**
- Value and pitfalls of clinical studies **1**

1.5.2 Knowledge how to retrieve biological and medical data from data banks **S**

1.6 Detection and management of child abuse

including adequate documentation, court appearance, and knowledge of the child as a witness **2S**

1.7 Teaching and communication of paediatric knowledge and skills **S**

2 Diagnostic evaluation

2.1 Diagnosis by imaging methods

2.1.1 Evaluation by the use of contrast media **1**

2.1.2 CT **1**

2.1.3 MRI **1**

2.1.4 Ultrasonography **1**

2.1.5 Tests by isotope studies of liver, kidney, and lung function **1**

2.2 Diagnostic procedures and techniques

2.2.1 Vascular access

- Arterial puncture **S**
- Umbilical vein and artery catheterisation **S**

2.2.2 Diagnostic punctures

- Suprapubic bladder puncture **S**
- Bone marrow **S**
- Pleural cavity **S**
- Abdominal cavity **2**
- Liver biopsy **2**
- Abscesses and cysts **2**

3 General therapeutic measures

3.1 Drugs for children, their mechanism of action, dosage, and side effects	**T**
3.2 Early treatment and therapeutic approach of suspected infective disease	**T**
3.3 Analgesia and sedation for procedures	**T**
3.4 Prevention and management of acute and chronic pain	**T**
3.5 Special aspects of drug monitoring	**D**

4 Therapeutic procedures and techniques

4.1 Therapeutic punctures

• Pleural cavity	**S**
• Ascites tap	**2**

4.2 Insertion of catheters and probes

• into peripheral veins	**S**
• indwelling central lines	**S**
• into umbilical vein and arteries	**S**
• into arteries	**S**
• into the bladder	**S**
• nasogastric tube insertion	**S**
• emergency cricothyroid puncture	**2**

5 Growth and Development

• Failure to thrive	**DT**
• Tall and short stature	**2D**
• Precocious and delayed puberty	**2D**

6 Nutrition

• Malnutrition (including kwashiorkor and marasmus)	**DT**
• Obesity	**DT**
• Methods of nutritional rehabilitation	**S**
• Signs and symptoms of particular deficiencies of macronutrients, minerals, vitamins, and trace elements	**DT**

7 Paediatric intensive care

7.1 Management of paediatric emergencies including the ability to perform and teach advanced paediatric life support **T**

7.2 Detailed knowledge of the aetiology, pathology, pathophysiology, diagnosis and differential-diagnosis, prevention and therapy of paediatric diseases, multiorgan failure and perioperative problems needing intensive care

• Evaluation of emergencies and indications for intensive diagnostic and therapeutic measures	**S**
• Respiratory failure	**D**
• Resuscitation and artificial respiration of children of all ages	**T**
• Analgesia and sedation	**T**
• Fluid, electrolyte, and acid base homeostasis	**T**
• Blood loss, haemolysis and coagulation disorders	**T**
• Acute cardiovascular diseases and shock	**DT**
• Acute central nervous system disease and trauma	**DT**
• Unconsciousness – Coma	**DT**
• Measurement of intracranial pressure	**2**
• Clinical toxicology and poison elimination methods	**T**
• Indications for hospitalisation and management of burns	**2**
• Acute abdomen	**D**
• Acute renal failure	**T**
• Infusion therapy, including parenteral nutrition	**T**
• Extracorporeal substitution methods, including ECMO	**1**
• Acute liver failure	**T**
• Monitoring of severely ill children with invasive and non-invasive methods	**S**
• Prevention and treatment of life-threatening infection	**DT**
• Transport of severely ill neonates and older children	**S**
• SID and near miss SID (ALTE)	**2D**
• Determination of brain death	**2**

8 Detailed knowledge of the aetiology, pathophysiology, diagnosis, differential-diagnosis, prevention, and therapy of congenital and acquired diseases

8.1 Ante- and perinatal diseases

- Assessment of fetal well-being and disturbances **1**
- Parental counselling **S**

8.2 Neonatal diseases

- Recognition of the high risk birth **2**
- Neonatal resuscitation **S**
- Adaptation problems (metabolic disturbances, temperature, jaundice, autonomous regulatory functions e.g. breathing, suckling, swallowing, digestion, defecation, micturition etc.) **2DT**
- Feeding problems **2DT**
- Infections **2DT**
- Transport of the sick new-born **S**
- Special problems of prematurity, small and large for date new-borns **2**
- Principles of total homeostatic support for the very immature new-born **2**
- Principles of total homeostatic support for sick neonates **2**
- Cerebral ultrasound **2**
- Neonatal pharmacology and therapeutics **2**
- Use and application of invasive and non-invasive monitoring **1**
- Pleural puncture and drainage **S**
- Exchange transfusion **S**
- Neonatal follow-up **2**

8.3 Malformation and dysmorphic syndroms

- Recognition, differentiation, description, and documentation of physical features of common genetic and dysmorphic disorders **2**
- Genetic diagnosis by laboratory methods **1**
- Principles of genetic counselling **2**

8.4 Infectious diseases

- Common endogenous, imported, and nosocomial infectious diseases **2**
- Indications, limitations, and availability of diagnostic tests **2**
- Isolation guidelines and avoidance of disease transmission **2**

8.5 Diseases of the digestive tract and the liver

- Differentiation of diseases with leading symptoms such as acute and chronic diarrhoea, constipation, vomiting, abdominal pain, abdominal masses, ileus, icterus, and hepatomegaly **2**
- Practice of absorptive tests **D**
- Sonography of the abdomen **2**
- Intestinal biopsy **2**
- Indication for liver biopsy **2**
- Outline of the appropriate diet for children with specific disorders **2**
- Management of enteral and parenteral nutrition **2T**
- Indications for liver transplantation **1**

8.6 Diseases of the respiratory organs

- Recognition of respiratory failure and differentiation of leading respiratory symptoms **2**
- Interpretation of chest X-ray **D**
- Pathological processes in allergic respiratory diseases, especially asthma **2**
- Therapeutic principles of respiratory physiotherapy **2**
- Spirometry **2**
- Management of severe respiratory diseases **T**
- Care of tracheostomy **1**

8.7 Diseases of the heart and great vessels

- Recognition of cardiac symptoms and management of cardiac failure **DT**
- Medical management of congenital heart defects **2T**
- Interpretation of ECG **2**
- Echocardiography **1**
- Indications for invasive cardiac investigations **2**
- Management of hypertension **2**
- Treatment of cardiac arrhythmias **2**

8.8 Allergies and autoimmune disorders

- Diagnostic tests **2**
- Immune modulating therapy **2**
- Prevention of allergic disease **S**

8.9 Acquired and inherited immunodeficiencies

- Diagnostic tests **2**
- Indications of immune substitution **2**
- Prevention and treatment of opportunistic infections **2T**

8.10 Rheumatic and skeletal diseases

- Recognition and treatment of common connective tissue and musculo-skeletal disorders **DT**
- Detailed examination and documentation of joint function **S**
- Diagnostic procedures and interpretation of diagnostic data **2**

8.11 Diseases of blood and coagulation, and neoplasias

- Differential diagnosis of anaemias and leukaemias **D**
- Interpretation of tests for disorders of haemostasis **D**
- Diagnostic methods and management for haemoglobinopathies **2**
- Diagnostic methods and management for platelet disorders **2**
- Bone marrow aspiration **S**
- Transfusion of blood products **T**
- Principles of therapeutic regimes of leukaemia **2**
- Prevention of infections in haematologic and neoplastic diseases **T**
- Principles of bone marrow transplantation and blood cell stimulation **1**
- Participating in the multidisciplinary approach for the management of patients with neoplastic diseases **S**

8.12 Diseases of the genito-urinary system

- Renal function investigations **2**
- Recognition and early management of chronic renal failure **2**
- Indications for renal biopsy and chronic dialysis **1**
- Indications for renal transplantation **1**
- Follow-up for the child after renal transplantation **1**

8.13 Diseases of the nervous system

- Interpretation of test results, e.g. spinal fluid, sonography, CT, MRI **2**
- Assessment of developmental disorders, including cognitive disorders and learning difficulties **2D**
- Management of headache **DT**
- Management of various epileptic syndromes **2**
- Investigations for neuro-degenerative and neuro-metabolic disorders **2**
- Specialised vision and hearing tests **1**
- Mental retardation **2D**
- Prevention of mental retardation **2**
- Testing for psychological and educational problems **2**
- Management of the child with increased intracranial pressure **2D**

8.14 Muscle diseases

- Indications for and interpretation of relevant investigations, e.g. nerve conduction, EMG, muscle biopsy, laboratory investigations **2**

8.15 Endocrinopathies

- Indications and interpretation of appropriate investigations, e.g. hormonal concentrations and loading tests **2**
- Education and management of the child with diabetes mellitus **S**
- Management of the child with congenital adrenal hyperplasia and intersex condition **2**

8.16 Metabolic disorders

- Laboratory investigations of metabolic disorders **2**
- Principles of dietetic and other therapeutic modalities **1**

8.17 Skin diseases

- Recognition of skin disorders as manifestation of systemic disorders **2**

8.18 Psychological, psychosomatic, and behaviour disorders

- Psychotherapeutic methods and psychopharmacotherapy in children **1**
- Nonformal psychotherapeutic dialogues **S**

Final draft as agreed upon on June 4th, 1998, in Helsinki - after language control by Alf Nicholson M.D., Drogheda, Ireland - with a minimal revision (abdominal cavity puncture and ascites tap S → 2) on May 14th, 1999, at the EBP-meeting in Freiburg.

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