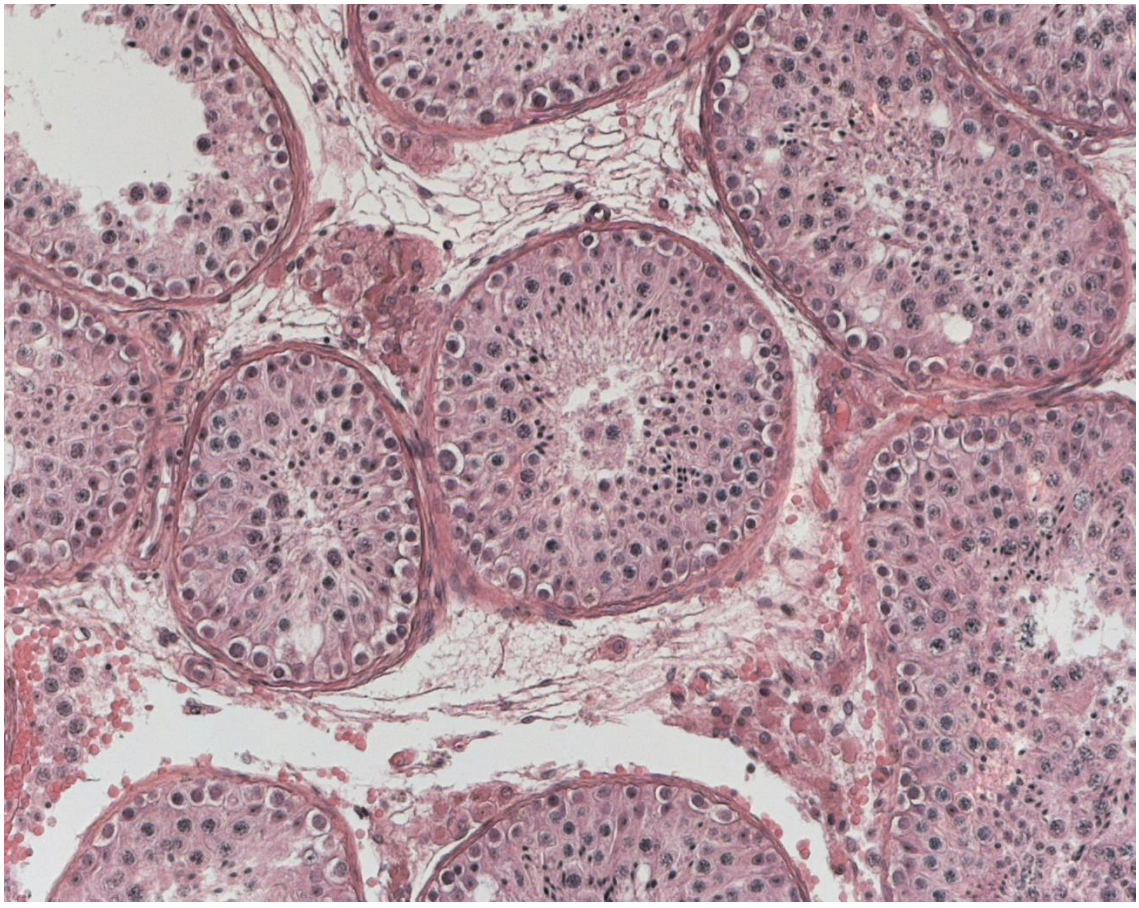
Co-organised by the EAA Centre Zagreb, EAA Centre Copenhagen
and the ANDRONET COST action CA20119,
under the auspices of the European Academy of Andrology (EAA)



EAA SUMMER SCHOOL

Testis Histology and Pathology

for Clinical Andrologists and Embryologists

Zagreb, 10-14 June 2025

PRELIMINARY COURSE PROGRAMME

Tuesday, 10 June 2025

Location: University of Zagreb, School of Medicine – Andrija Štampar School of Public Health, John Davidson Rockefeller Street No. 4

18.00 **Welcome Reception**
Venue: Ground floor

Wednesday, 11 June 2025

Location: University of Zagreb, School of Medicine – Dept. of Pathology, Šalata 10

08.30 – 08.40 **Introduction: Programme Overview**
Davor Ježek

08.45 – 09.30 **Initial test**

09.30 – 10.15 Lecture 1: **Essentials of testis histological techniques**
Tissue fixation; dehydration, embedding; tissue sectioning, standard staining hemalaun eosin; basic principles of immunohistochemistry techniques (IHC); markers of various testis cell types
Davor Ježek

10.15 – 10.30 **Coffee break**

10.30 – 12.30 ***60-min. practical rotations***

Practicals 1: **Back to the lab** – **Tissue handling**
Step-by-step demonstration of testis tissue fixation, dehydration, embedding, sectioning, staining etc. (participants will be able to perform sections on their own and stain them)
Davor Ježek, Ana Planinić and laboratory technicians

Practicals 2: **Back to the lab** – **Immunohistochemistry**
Immunohistochemistry (IHC) reactions; section pre-conditioning; section incubation; buffers; application of primary antibody; use of secondary antibody and augmentation complex; application of the chromogen, visualisation of the IHC reactions
Ana Lukač and laboratory technicians

12.30 – 13.30 **Lunch**

13.30 – 14.15 Lecture 2: **Normal histology of the testis and obstructive azoospermia**
Emphasis on normal spermatogenesis; regular structure of seminiferous tubules; seminiferous epithelium; Sertoli cells and spermatogenic cells; spermiogenesis; round late spermatids and spermatozoa; testicular interstitial tissue; "excretory" part of the testis: straight tubules, rete and mediastinum testis, efferent ducts, epididymis
Ana Katušić Bojanac

14.15 – 14.30 **Coffee break**

14.30 – 14.50 Patient cases 1: **Obstructive azoospermia – typical physical and hormonal findings**
Niels Jørgensen

14.50 – 16.30 Practicals 3: **Normal histology of the testis, obstructive azoospermia**
Real-time microscopy, parallel projection of slides and discussion
Davor Ježek, Ana Planinić

16.30 - 16.40 **Wrap-up of Day 1; Take-home messages; Programme overview of Day 2**
Davor Ježek

Thursday, 12 June 2025

Location: University Hospital Zagreb Department of Urology, Kišpatićeva 12

08.30 – 09.15 Lecture 3: **Sperm retrieval in azoospermia - various surgical approaches**
Dinko Hauptman
Location: University Hospital Zagreb Department of Urology, Lecture Hall

09.30 – 11.00 Practicals 4: **"Open biopsy" of the testis**
Patient pre-treatment; local anaesthesia; biopsy procedure; tissue transfer into the tissue transfer medium; tissue processing: immersion into the cryomedium; tissue fixation for histology
Dinko Hauptman, Zoran Zimak, Davor Ježek, Marija Vilaj, Monika Trupinić and other medical staff
Location: Operation Tower, University Hospital Zagreb Department of Urology, Operational Theatre No.2

11.15 – 13.00 Practicals 5: **Programmed freezing of testicular tissue**
Step-wise freezing of testicular biopsy; manipulation of cryotubes and liquid nitrogen; tissue storage into cryo-containers; testicular tissue bank
Davor Ježek, Marija Vilaj and Monika Trupinić
Location: Andrology Unit - Green Building 1st floor, University Hospital Zagreb Department of Urology

13.00 – 14.00 **Lunch**

14.00 – 14.45 Patient cases 2: **Non-obstructive azoospermia – typical physical and hormonal findings**
(includes a discussion of when to apply cTESE versus mTESE and consider biopsies for detection of GCNIS)
Niels Jørgensen, Lise Aksglæde
Location: University Hospital Zagreb Department of Urology, Lecture Hall

14.45 – 15.00 **Coffee break**

15.15 – 18.00 Practicals 6.1: **Testicular sperm extraction (TESE)**
Thawing of the frozen tissue; tissue manipulation and microdissection, spermatozoa visualisation, isolation and extraction (for ethical reasons, pre-frozen rat tissue will be used)
Patrik Stanić, Davor Ježek
Location: Andrology Unit - Green Building 1st floor, University Hospital Zagreb Department of Urology

Practicals 6.2**: ICSI Station**
Intracytoplasmic sperm injection after spermatozoa isolation/ extraction
Nina Gelo and co-workers
Location: Andrology Unit - Green Building 1st floor, University Hospital Zagreb Department of Urology

18.00 – 18.10 ***Wrap-up of Day 2; Take-home messages; Programme overview of Day 3***
Davor Ježek

Friday, 13 June 2025

Location: University of Zagreb, School of Medicine – Dept. of Pathology, Šalata 10

08.30 – 09.15 Lecture 4: **Non-obstructive azoospermia (NOA): damage of spermatogenesis**

Description of NOA; histology of NOA; current classification(s) of the spermatogenesis damage; hypospermatogenesis, maturation arrest, Sertoli cell-only phenotype, tubular fibrosis, "mixed atrophy", interstitial fibrosis, histology of Klinefelter syndrome and AZFc microdeletion cases, etc.

Davor Ježek

09.30 – 10.00 Patient cases 3: **Impaired semen quality and genetics**

Niels Jørgensen and Lise Aksglæde

10.00 – 11.00 Lecture 5: **Genetic aspects of male infertility & clinical cases**

Emphasis on the chromosomal/genetic background of male infertility; emerging future genetic panels for diagnosis of male infertility

Lise Aksglæde

11.00 – 11.15 **Coffee break**

11.15 – 13.00 Practicals 7: **Molecular diagnostics of male infertility**

Y chromosome microdeletions; clinical chemistry and molecular diagnostics; introduction to principles of molecular laboratory analyses; multiplex PCR/electrophoresis - AZF basic and extension markers; EAA/EMQN - European molecular genetics quality network; CFTR mutations - methods, result and interpretation

Hana Ljubić, Ana Merkler

13.00 – 14.00 **Lunch**

14.00 – 15.30 Practicals 8: **NOA cases**

Hypospermatogenesis, spermatogenic “stop” (maturation arrest – various forms), Sertoli cells only phenotype, tubular fibrosis; real-time microscopy, projection and discussion of slides

Davor Ježek, Ana Planinić

15.30 – 15.45 **Coffee break**

15.45 – 16.30 Lecture 6: **Testicular dysgenesis syndrome (TDS) and germ cell neoplasia in situ (GCNIS)**

Concept of TDS; origin of GCNIS; modern IHC markers of GCNIS

Niels Jørgensen, Lise Aksglæde

16.35 – 17.30 Practicals 9: **Spermatogenesis and GCNIS**

Real-time microscopy; projection and discussion of slides; demonstration of IHC slides and markers

Niels Jørgensen, Lise Aksglæde

17.30 – 17.40 **Wrap-up of Day 3; Take-home messages; Programme overview of Day 4**

Niels Jørgensen, Lise Aksglæde, Davor Ježek

Saturday, 14 June 2025

Location: University of Zagreb, School of Medicine –Dept. of Pathology, Šalata 10

08.30 – 09.15 Lecture 7: **Testicular neoplasms/tumours, essentials**

Current classification of testicular tumours; essential morphological properties

Niels Jørgensen, Lise Aksglæde

09.15 – 09.30 **Coffee break**

09.30 – 10.00 Practicals 10: **Testicular neoplasms/tumours**

Main characteristics of seminoma; non-seminoma; spermatocytic seminoma; real-time microscopy; projection and discussion of slides; demonstration of IHC slides and markers

Niels Jørgensen, Lise Aksglæde

10.00 – 11.00 Lecture 8: **Modern therapeutic approaches to testicular neoplasms and male infertility: clinical cases**

A brief review of modern approaches to testicular neoplasms based on the review of several cases

Niels Jørgensen, Lise Aksglæde

11.00 – 11.20 **Coffee break**

11.20 – 12.35 Lecture 9: **Understanding Testicular Physiology in the Prepubertal Testis: In Vivo Perspectives and In Vitro Methodologies**

Jan-Bernd Stukenborg

12.40 – 13.25 **Test (multiple choice)**

Davor Ježek, Ana Planinić

13.30 – 13.45 **Course evaluation (questionnaire)**

13.45 – 14.30 **Lunch**

14.30 – 15.00 **Test results, certificates, sum-up discussion**

15.00 **Farewell**