



Rigshospitalet

**Andronet**



*co-organized with 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, 27 June - 1 July 2022**

**Organizational details**

**Organizers:** EAA Centre Zagreb and EAA Centre Copenhagen together with the ANDRONET COST action CA20119, under the auspices of the European Academy of Andrology (EAA)

**Who should apply:** Clinical andrologists and embryologists; urologists, gynaecologists, clinical biologists, human reproduction technicians and others dealing with testicular biopsy and MAR test

**No. of participants:** max. 15

**Fee:** Junior residents 200 €; EAA members 350 €; Others: 450 €

**No. of EAA travel grants available:** 5 (350 € each)

**No. of EAA credits:** 5

**Application details:** see <https://www.andrologyacademy.net/eea-zagreb-school>

**DEADLINE for application:** 15 March 2022

**Contact:** Ms Jasna Turković; [jasna.turkovic@mef.hr](mailto:jasna.turkovic@mef.hr); Phone: +385 1 4566 903

**WELCOME TO THE EAA SUMMER SCHOOL:  
Testis Histology and Pathology  
for Clinical Andrologists and Embryologists**

Dear colleagues,

It is our pleasure to welcome you to the *Testis Histology and Pathology for Clinical Andrologists and Embryologists* summer school to be held from 27 June to 1 July 2022 at the University of Zagreb School of Medicine. The summer school is jointly organised by the European Academy of Andrology (EAA) training centres Copenhagen and Zagreb together with the ANDRONET COST action CA20119.

The idea of the summer school is to bring together experts from various fields of the booming science of andrology and unite them in the various theoretical and practical aspects of their profession.

The objectives of this summer school will address the following:

- Refreshing the knowledge of clinical andrologists and clinical embryologists/biologists on normal testis morphology, in particular spermatogenesis;
- Enhancing the knowledge on various degrees of damage of spermatogenesis; make them familiar with the current classifications of spermatogenesis damage;
- Demonstrating open biopsy of the testis – TESE and mTESE, spermatozoa harvesting from testicular biopsy;
- Genetic and epigenetic factors influencing male fertility/infertility (essentials);
- Delivering basic knowledge on testicular dysgenesis syndrome and the early detection of germ cell neoplasia in situ (GCNIS) testis;
- Presenting novel tumour markers and modern classification of testicular tumours;
- Presenting the current EU regulations regarding sperm and testicular tissue bio-banking.

On behalf of the EAA Centre Zagreb, the EAA Centre Copenhagen and our colleagues from the ANDRONET COST action CA20119, we wish you a successful summer school and enjoyable stay in Zagreb, the oldest centre of academic and research excellence in this part of Europe, hoping you will appreciate its multicultural atmosphere, vibrant life and picturesque scenery.



Davor Ježek, MD, PhD  
Director of EAA Centre Zagreb



Niels Jørgensen, MD, PhD  
Director of EAA Centre Copenhagen

## PRELIMINARY COURSE PROGRAMME

**Monday, 27 June 2022**

*Location: University Hospital Zagreb, Educational Centre West, Kišpatičeva 12*

18.00 **Welcome Reception**  
*Venue: Ground floor*

**Tuesday, 28 June 2022**

*Location: University Hospital Zagreb, Educational Centre West – Hahn Hall, Kišpatičeva 12*

- 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 – 13.00 **45-min practical rotations**  
**Practicals 1: Back to the lab – Clinical Department of Pathology**  
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 - Clinical Department of Pathology**  
Immunohistochemistry (IHC) reactions; section pre-conditioning; section incubation; buffers; application of primary antibody; use of secondary antibody and augmentation complex; application of the chromogen, visualization of the IHC reactions  
*Marta Himelreich Perić, Tihana Marić and laboratory technicians*  
**Practicals 3: Back to the lab - Department of Laboratory Diagnostics**  
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; epigenetic analysis (pyrosequencing) - essentials  
*Hana Ljubić, Ana Merkle, Jure Krsić and laboratory technicians*
- 13.00 – 14.00 **Lunch**
- 14.00 – 14.45 **Lecture 2: Normal histology of the testis**  
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*
- 14.45 – 15.00 **Coffee break**
- 15.00 – 17.00 **Practicals 4: Normal histology of the testis**  
Real-time microscopy, parallel projection of slides and discussion  
*Davor Ježek, Ana Katušić Bojanac, Ana Planinić*
- 17.00 - 17.10 **Wrap-up of Day 1; Take-home messages; Programme overview of Day 2**  
*Davor Ježek*

Location: University Hospital Zagreb Department of Urology, Kišpatičeva 12

- 08.30 – 09.15 **Lecture 3: Sperm retrieval in azoospermia - various surgical approaches**  
*Zsolt Kopa*  
Location: University Hospital Zagreb Department of Urology, Lecture Hall
- 09.30 – 11.00 **Practicals 5: "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 and other medical staff*  
Location: Operation Tower, University Hospital Zagreb Department of Urology, Operational Theatre No.2
- 11.15 – 13.00 **Practicals 6: Programmed freezing of testicular tissue**  
Step-wise freezing of testicular biopsy; manipulation of cryotubes and liquid nitrogen; tissue storage into cryocontainers; testicular tissue bank  
*Davor Ježek and co-workers*  
Location: Andrology Unit - Green Building 1<sup>st</sup> floor, University Hospital Zagreb Department of Urology
- 13.00 – 14.00 **Lunch**
- 14.00 – 14.45 **Lecture 4: Current EU regulation on tissue banking**  
Emphasis on semen and testicular tissue banks; EU directives, tissue encoding, tissue transfer within EU  
*Branka Golubić Čepulić and co-workers*  
Location: University Hospital Zagreb Department of Urology, Lecture Hall
- 14.45 – 15.00 **Coffee break**
- 15.00 – 17.50 **Practicals 7.1: Testicular sperm extraction (TESE)**  
Thawing of the frozen tissue; tissue manipulation and microdissection, spermatozoa visualization, isolation and extraction (for ethical reasons, pre-frozen rat tissue will be used)  
*Patrik Stanić, Davor Ježek*  
Location: Andrology Unit - Green Building 1<sup>st</sup> floor, University Hospital Zagreb Department of Urology
- Practicals 7.2: ICSI Station**  
Intracytoplasmic sperm injection after spermatozoa isolation/extraction  
*Nina Gelo and co-workers*  
Location: Andrology Unit - Green Building 1<sup>st</sup> floor, University Hospital Zagreb Department of Urology
- 17.50 – 18.00 **Wrap-up of Day 2; Take-home messages; Programme overview of Day 3**  
*Davor Ježek*

## Thursday, 30 June 2022

Location: University Hospital Zagreb, Educational Centre West – Hahn Hall, Kišpatićeva 12

- 08.30 – 09.15 Lecture 5: **Obstructive (OA) and non-obstructive azoospermia (NOA): damage of spermatogenesis**  
Description of OA and NOA; histology of OA and NOA; current classification(s) of the spermatogenesis damage; hypospermatogenesis, maturation arrest, Sertoli cell-only syndrome, tubular sclerosis, “mixed atrophy”, interstitial fibrosis, histology of Klinefelter syndrome and AZFc microdeletion cases, etc.  
*Davor Ježek*
- 09.30 – 11.00 Practicals 8: **OA cases**  
Real-time microscopy, projection and discussion of slides  
*Davor Ježek, Ana Katušić Bojanac, Ana Planinić*
- 11.00 – 11.15 **Coffee break**
- 11.15 – 13.00 Practicals 9: **NOA cases**  
Real-time microscopy, projection and discussion of slides  
*Davor Ježek, Ana Katušić Bojanac, Ana Planinić*
- 13.00 – 14.00 **Lunch**
- 14.00 – 15.30 Practicals 10: **NOA cases, continued**  
“Special cases”, Klinefelter syndrome, Y chromosome AZFc, partial AZFb microdeletion; real-time microscopy, projection and discussion of slides  
*Davor Ježek, Ana Katušić Bojanac, 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 – 17.45 Practicals 11: **Spermatogenesis and GCNIS**  
Real-time microscopy; projection and discussion of slides; demonstration of IHC slides and markers  
*Niels Jørgensen, Lise Aksglæde*
- 17.50 – 18.00 **Wrap-up of Day 3; Take-home messages; Programme overview of Day 4**  
*Niels Jørgensen, Lise Aksglæde, Davor Ježek*

## Friday, 1 July 2022

Location: University Hospital Zagreb, Educational Centre West – Hahn Hall, Kišpatićeva 12

- 08.30 – 09.15 Lecture 7: **Testicular neoplasms/tumours, essentials**  
Current classification of testicular tumours; essential morphological properties  
*Niels Jørgensen, Lise Aksglæde, Ewa Rajpert-De Meyts*
- 09.15 – 09.30 **Coffee break**
- 09.30 – 10.45 Practicals 12: **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, Ewa Rajpert-De Meyts*
- 11.00 – 11.45 **Test (multiple choice)**  
*Davor Ježek, Ana Planinić*
- 11.45 – 12.00 **Evaluation of the course (questionnaire)**
- 12.00 – 13.00 **Lunch**
- 13.00 – 13.20 **Test results, certificates, sum-up discussion**
- 13:20 **Farewell**

**Literature:**

Ježek D. (ed.): Atlas on the human testis: Normal morphology and pathology. Springer Verlag London, 285 pgs., London, 2013 (ISBN 987-1-4471-2763-5; DOI 10.1007/978-1-4471-2763-5)

*(each participant will get a free e-version of the book)*

Handouts of presentations.

PDFs of papers of interest on Google Drive (TBA).

**Faculty:**

**University of Copenhagen, Royal University Hospital**

*Prof. Dr. Niels Jørgensen*

*Prof. Dr. Ewa Rajpert-De Meyts*

*Dr. Lise Aksglæde, PhD*

**Semmelweis University**

*Prof. Dr. Zsolt Kopa*

**University of Zagreb School of Medicine**

*Prof. Dr. Davor Ježek*

*Prof. Dr. Željko Kaštelan*

*Prof. Jadranka Sertić*

*As. Prof. Dr. Branka Golubić Čepulić*

*As. Prof. Ana Katušić Bojanac*

*Dr. Dinko Hauptman*

*Dr. Zoran Zimak*

*Dr. Ana Planinić*

*Hana Ljubić, PhD*

*Ana Merkler, PhD*

*Dr. Marta Himmelreich Perić*

*Jure Krasić, MSc*

*Tihana Marić, PhD*

*Dr. Ana Lukač*

*Patrik Stanić, PhD*

*Nina Gelo, PhD*

## 4<sup>th</sup> ANDROLOGY SYMPOSIUM

1 July 2022

University of Zagreb School of Medicine, Zagreb, Croatia

Organizers: *University of Zagreb School of Medicine*

*Centre for Excellence in Reproductive and Regenerative Medicine (CERRM) of the  
University of Zagreb School of Medicine – Research unit: Biomedical Research of  
Reproduction and Development*

*Croatian Society for Andrology of Croatian Medical Association*

*EAA Training Centre Zagreb*

*University Hospital Centre Zagreb (KBC Zagreb)*

### PROGRAMME

Friday, 1 July 2022

*Location: University Hospital Zagreb, Educational Centre East, Hall 5, Kišpatićeva 12*

13.30 – 14.00	<b>Registration &amp; poster mounting</b>
14.00 – 14.05	<b>Welcome, Programme overview</b>
14.05 – 14.20	<b>Eduard Ruiz Castañé: Microsurgery in Andrology is Sometimes the Best Solution in Infertility</b>
14.20 – 14.25	<i>Discussion</i>
14.25 – 14.40	<b>Aldo Calogero: Genetic Testing in Male Infertility: the Past, the Present, and the Future</b>
14.40 – 14.45	<i>Discussion</i>
14.45 – 15.00	<b>Stefan Schlatt: Fertility Preservation in Boys and Men – Novel Options for Spermatogenesis ex Vivo</b>
15.00 – 15.05	<i>Discussion</i>
15.05 – 15.20	Coffee break
15.20 – 15.35	<b>Charles Easley: Blastocyst Development after Fertilization with in Vitro Spermatids Derived from Nonhuman Primate Embryonic Stem Cells</b>
15.35 – 15.40	<i>Discussion</i>
15.40 – 15.55	<b>Daniela Fietz: Mast Cells – Players in Testis Development, Health, and Disease</b>
15.55 – 16.00	<i>Discussion</i>
16.00 – 17.20	<b>Poster session</b>



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17.20 – 17.35	<b>Ralf Middendorff: The Male Genital Tract in Motion</b>
17.35 – 17.40	<i>Discussion</i>
17.40 – 17.55	<b>Rafael Oliva Virgili: Proteome of the Sperm Cell and its Contribution to Reproductive Function and Dysfunction</b>
17.55 – 18.00	<i>Discussion</i>
18.00	<b>Concluding remarks</b>
18.15	<b>Wine and cheese party</b>

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