

EAA Andrology Training Centre
Centre Report

2024



Reproductive Medicine Centre
Skane University Hospital
Lund University
Malmö, Sweden

CENTRE REPORT

History of Centre

The Centre was established in 2001 as Fertility Centre, a unit focusing on andrological patients, semen analysis, cryopreservation of spermatozoa and intrauterine insemination with husband's as well as donated sperms.

In March 2007, the Fertility Centre became a part of the new-established Reproductive Medicine Centre (RMC). The ambition behind RMC was to establish a multidisciplinary unit covering:

- *Male and female reproductive function- investigation and treatment*
- *All types of assisted reproduction allowed in Sweden*
- *Fertility preservation for males and females*
- *Basic and advanced methods of semen analysis*
- *Clinical as well as laboratory research*
- *Education at pre- as well as postgraduate level*
- *Collaboration with other departments e.g. endocrinology, urology, pediatric endocrinology, pathology, clinical genetics and occupational and environmental medicine.*

Since 2010 RMC has been a part of extensive collaboration within the area of reproductive medicine established in the Öresund Area (ReproSund: 2010-2013; ReproHigh: 2012-2014; ReproUnion: 2015-2018, ReproUnion 2.0: 2019-2022, ReproUnion Innovation Platform 2023-2026) the Copenhagen EAA Centre also being part of this network. The ReproUnion programs have been funded by the EU Interreg Fund and ReproUnion has also received funding from the three regions (Skane; Capital and Zealand) as well as pharmaceutical industry (Ferring Pharmaceuticals).

At the time of its establishment, the RMC was an independent clinic but in 2014, due to re-organization of the administrative structure of the Skane University Hospital, it became a part of a bigger unit – apart from reproductive medicine – including currently dermatology and ophthalmology.

Organization of Centre

Scanian Andrology Centre is part of Reproductive Medicine Centre (RMC) the latter being located at Skane University Hospital in Malmö.

- *Skane University Hospital includes two hospitals: one in Lund and one in Malmö, both being joined with Lund University.*
 - *RMC was established in 2007 and was then an administrative and economical unit equal to other clinics at Skane University Hospital.*
 - *The first chairman of the RMC, Aleksander Giwercman, was also director of Scanian Andrology Centre.*
 - *The ambition behind RMC was creation of a multidisciplinary unit taking care of management of a broad panorama of reproductive disorders – both in males and females. Thus, apart from management of andrological patients (see below) the RMC is also taking care of:*
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- a) Investigation and management of female reproductive disorders
- b) Assisted reproduction including IVF, ICSI
- c) Cryopreservation and use of donated gametes
- d) Fertility preservation in males and in females
- e) Medical management of patients with gender dysphoria

In 2013 (with starting point in 2014) it was decided to merge several clinics of the Skane University Hospital in order to establish units of approximately same size. RMC is part of Department of Reproductive Medicine – Dermatology – Ophthalmology having a chairman and a Board. - The RMC is managed by a “Section Director” (sektionschef) - responsible for the clinical management of patients and for RMCs physicians and “Area Directors” (områdeschef) responsible for the remaining staff and laboratory activities.

- Aleksander Giwercman has medical responsibility for the andrological activities of RMC as well as for clinical research. Associate professor Dr. Angel Elenkov is now Co-Director of the Centre and will gradually take over the full responsibility for the andrological activities.

Educational activities

RMC has a number educational activities, both at pre- and postgraduate level and directed toward different professional groups. These activities include:

- Medical students

- a) *10 weeks' selective courses in reproductive medicine (usually 8-10 5th semester students per semester) including supervision of bachelor thesis*
- b) *Supervision of 10th semester students – master thesis (1-2 per semester)*
- c) *2 hours' lecture in male reproductive function for all students at 5th semester*
- d) *1,5 hours' lecture I “Infertility” on 9th semester*
- e) *Clinical training of students attending course in gynecology (9th semester)*
- f) *1 hour lecture “male fertility on 9th semester for nurses*

- Postgraduate educational activities

- a) *Courses in male reproduction (infertility or male reproductive endocrinology) organized in collaboration with Copenhagen EAA Centre*
 - b) *Two weeks training of residents in gynecology*
 - c) *4 weeks training of residents in endocrinology and urology*
 - d) *Monthly research seminars in for clinical and laboratory staff framework of Reproductive Medicine Centre*
 - e) *Supervision of PhD students and post docs*
 - f) *three day theoretical course in andrology for residents in urology, endocrinology and gynecology – organised in collaboration with the other EAA Centre in Sweden – ANOVA.*
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Clinical activities

Reproductive Medicine Centre (RMC) is the only public/university centre of reproductive

medicine in Southern Sweden (approx. 2 million inhabitants).

The patients can refer themselves for investigation/treatment but RMC also serves as referral centre for general practitioners; private specialists (e.g. urologists, gynaecologists), and other hospital units – both at university and other hospitals.

The main areas of clinical activities include:

1. Couple infertility out-patient clinic: where the female partner is seen by gynaecologist and the male partner by andrologist
 2. Other types of andrological out-patient activities: with main focus on infertility, hypogonadism incl. sequelae of cancer treatment; erectile dysfunction (medical treatment). Scrotal ultrasound is routinely done in those patients
 3. Fertility preservation: male and female – includes pre- and post-cryopreservation counselling and cryopreservation
 4. MicoTESE/TESA/PESE: for sperm retrieval (NOA/OA) and for diagnosis of Germ Cell Neoplasia in Situ.
 5. Assisted reproduction: IUI; IVF; ICSI incl. use of donated spermatozoa/oocytes
 6. Gynaecological endocrinology out-patient clinic
 7. Transgender dysphoria out-patient clinic.
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Name and address of Centre

Reproductive Medicine Centre
 Skane University Hospital
 Östra Varvsgatan 11F
 SE 21173 Malmö
 Sweden

Type of Centre

University	<input type="checkbox"/>
University Hospital	<input checked="" type="checkbox"/>
Private Centre	<input type="checkbox"/>

Other (please specify)

1. Director

Aleksander Giwercman

Academician Regular Member EAA Certified Clin. Andrologist

2a. Co-director

Angel Elenkov

Academician Regular Member EAA Certified Clin. Andrologist

2b. Clinical responsible

Jonatan Axelsson

Academician Regular Member EAA Certified Clin. Andrologist

2c. Clinical responsible

Peter Zarén

Academician Regular Member EAA Certified Clin. Andrologist

3. Present Staff (*Senior Scientists*)

1) Name Yvonne Lundberg Giwercman
Degree Professor
Speciality Molecular Biology

Academician Regular Member EAA Certified Clin. Andrologist

2) Name Ida Hjelmér
Degree PhD
Speciality Molecular Biology

Academician Regular Member EAA Certified Clin. Andrologist

Insert any additional staff below (if required)

MD/Biologists/Chemists

1) Name Ingela Soltic Liljeqvist
 Degree PhD
 Speciality Embryologist/Lab. director
 Full time/part time Full time

Academician Regular Member EAA Certified Clin. Andrologist

2) Name Sofie Fagerström
 Degree _____
 Speciality Research coordinator
 Full time/part time Full time

Academician Regular Member EAA Certified Clin. Andrologist

3) Name Maria Dahlqvist
 Degree _____
 Speciality Research nurse
 Full time/part time Full time

Academician Regular Member EAA Certified Clin. Andrologist

4) Name Alexandra Kondic
 Degree _____
 Speciality Laboratory technician (research)
 Full time/part time Full time

Academician Regular Member EAA Certified Clin. Andrologist

5) Name Karin Odlén
 Degree _____
 Speciality Laboratory technician (research)
 Full time/part time Full time

Academician Regular Member EAA Certified Clin. Andrologist

6) Name Margareta Kitlinski
 Degree Phd, MD
 Speciality Gynecology/andrology
 Full time/part time Full time

Academician Regular Member EAA Certified Clin. Andrologist

7) Name Emir Henic
 Degree PhD, MD
 Speciality Gynecology
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

8) Name Krzysztof Oleszczuk
 Degree MD/PhD
 Speciality Gynecology/andrology
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

9) Name Amelie Stenqvist
 Degree MD/PhD
 Speciality Gynecology/andrology
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

10) Name _____
 Degree _____
 Speciality _____
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

11) Name _____
 Degree _____
 Speciality _____
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

12) Name _____
 Degree _____
 Speciality _____
 Full time/part time _____

Insert any additional staff below (*if required*)

Specialists

Gynecology/Endocrinology

- | | |
|---------|------------------------------------|
| 1) Name | Ania Rosenklöf |
| 2) Name | Amelie Stenqvist |
| 3) Name | Tim Dahlberg |
| 4) Name | Desire Tevner; Sevcan Arzu Arinkan |
| 5) Name | Åsa Linda Lethagen |

PhD Students

- | | |
|---------|------------------|
| 1) Name | Mathilda Nilsson |
| 2) Name | Peter Zarén |
| 3) Name | |

Nurses

-
1. Senada Alagic
 2. Emma Lindén
 3. Maria Ask
 4. Carina Lindh
 5. Nina Nwese
 6. Annika Bernro
 7. Fanny Kullendorff
 8. Madeleine Sandberg
 9. Andrea Pamp
 10. Emelie Björklund
 11. Lena Melchert Cacia
 12. Anna Ahlbäck
 13. Milena Radjen
 14. Camilla Regedal

Laboratory Technicians

-
1. Annika Billing
 2. Rebecca Rappner
 3. Julia Engström
 4. Cecilia Vallin
 5. Cecilia Tingsmark
 6. Frida Olsson
 7. Izabella Wettermyr
 8. Gulshan Gulu-Zada
 9. Klara Leonhard
 10. Vilmante Kozlova
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Administrative Personnel

1. Emilie Bellander
2. Helene Karlsson
3. Michaela Lundhag
4. Therese Bruhner
5. Carina Eklund
6. Johanna Tofft
7. Malin Malmquist
8. Linda Anderlund
9. Susanne Lundin

4. Clinical Activity

A. Outpatients: Consultations per year in the last 3 years

	2021	2022	2023
New patients	750	793	772
Follow-up patients	656	666	702

Type of patients in the last years (%)	2021	2022	2023
Infertility	20%	27%	28%
Erectile dysfunction	3,5%	2,7%	3,8%
Hypogonadotropic Hypogonadism	6,1%	6,3%	7,9%
Klinefelter	7,3%	8,2%	9,4%
Gynaecomastia	0,4%	1,1%	0,3%
Varicocele	0,1%	0,3%	1,1%
Cryptorchidism	0,2%	0,9%	0,5%
Male sex accessory gland infections	0,0%	0,0%	0,0%
Testicular tumours	0,3%	0,6%	0,3%
Disorders of gender identity	25%	43%	35%
Other	36%	10%	14%

B. Ultrasound (testis, penile, prostate) *

	2021	2022	2023
Total	609	665	631
Controls			

* performed at the Department of Radiology

C. Andrological surgery procedures

	2021	2022	2023
Testicular biopsies	41	53	47
Varicocele ligation	-	-	-
Prostate biopsies	-	-	-
BPH	-	-	-
Prostate cancer	-	-	-
Vasectomy	-	-	-
Vaso-vasostomy	-	-	-
Other	-	-	-

5. A. Andrology laboratory activity

	2021	2022	2023
Semen analyses	3440	3001	3143
Sperm antibodies	8	7	13
Seminal markers	1120	765	30

5. B. Andrology laboratory activity

Sperm banking donors Yes No Sperm banking cancer patients Yes No **If yes:**

	2021	2022	2023
Number of samples	304	331	287

5. C. Histopathological evaluation of biopsies Yes No 6. D. Reproductive Hormones Assays (immunoassays available at the Department of Clinical Chemistry) Yes No

If yes please specify type of assays and number of samples in the last year
 Reproductive Hormones Assays
 (FSH, LH, testosterone, SHBG, prolactin)

5. E. Y chromosome microdeletions according to EAA/EMQN guidelines Yes No **If yes** number of tests in the past year _____Participation to the EAA quality control scheme? Yes No **If no**, specify if available in another lab of the same hospital Yes No Blood karyotyping Yes No **If no**, specify if available in another lab of the same hospital Yes No

Other genetic tests (please specify)

Via Department of Clinical Genetics: a) Panel for hypogonadotropic hypogonadism, b) CFTR mutation analysis, 3) other genetic disturbances

6. Collaborations with other Clinical Units of the University/Hospital

IVF Unit Yes No
If yes please specify: Children, Endocrinology, IVF, Urology, Genetics, Pathology

Urology Clinic Yes No

Endocrine Clinic Yes No

Genetics Lab/Unit Yes No

Paediatric Unit Yes No

Central Hospital Laboratory Yes No

Private Centres Yes No

If yes please specify:

7. Clinical teaching activity

Duration of training (years):

This is the training for EAA andrologist. The duration of other training activities depends on the type of training.

	Number
A: Trainees in the last five years	2
B: Trainees who passed EAA-ESAU\exam for Clinical Andrologist in the last 5 yrs	1
C: Trainees working in the centre preparing to pass the EAA-ESAU examination	2
D: PhD Students	6
E: Medical Students	65
F: Other students (MSc)	8

8. Formal Andrology teaching program Yes No

If yes: specify duration (years/months): Years Months

	Hours of formal teaching per year	Professional training (weeks/months)
Medical Students	180	
PhD Students	100	
Post Graduate students		
Trainees		
Other degrees (please specify)		

9. Research Activity (maximum 1 page)

- The main clinical research activity of our centre is RUBIC, ReproUnion Biobank and Infertility Cohort (paper 12; IF: 3.2). This project is carried out in collaboration with the EAA Andrological Centre at Rigshospitalet and 4 fertility clinics in Copenhagen, Denmark. The ambition is to create world's largest database and biobank with biological material (blood, feces, urine, endometrial biopsies) from infertile couples. Our hope is to enroll 5,000 couples and we have, so far reached close to 40% of this goal. The data and analyses done on the collected biological material will be combined with national register data on the infertile subjects, their parents as well as their offspring. The ambition is to provide new clues regarding infertility helping in developing new ways of prevention, diagnosis and treatment of this condition and its long-term consequences as increased morbidity and mortality.
- Another scientific focus area of our unit is sperm DNA Fragmentation (papers 14, 26 and 73; IF: 6.6; 4.8; 6.6). Since 2000 we have used the Sperm Chromatin Structure Assay as not only a research tool but also in clinical decision making. We have collected data from thousands of males from infertile couples and have shown that sperm DNA Fragmentation Index is not only a marker of fertility, *in vivo* and *in vitro*, but is also associated with the risk of negative pregnancy outcomes and health of the children.
- The Centre has also a longstanding tradition of research related to impact of cancer and cancer treatment on male reproductive function. Initially, our focus was on reproductive issues related to fertility of men treated for cancer in childhood and early adulthood. Subsequently, we turned to the aspect of male hypogonadism. During the last few years, we have been looking at the health of children fathered by men diagnosed with cancer. Using large national register data, we could show that in males, the cancer disease *per se* is associated with increased risk of congenital malformations in their children. Now, using molecular methods applied on biological material obtained as part of clinical studies on men treated for cancer, we try to elucidate the biological mechanisms linking cancer, its treatment and health of the children (publications 5, 19 and 30; IF:4.8; 41.6; 3.4).
- Apart from those projects, following more specific andrological research activities are carried out
 - Association between male fertility and the risk of prostate cancer (papers 11 and 29; IF: 1.4; 2.6) – a study led by Prof. Yvonne Lundberg Giwercman.
 - Study of sperm mutations in relation to lifestyle related and environmental exposures, by MD, PhD Jonatan Axelsson (papers 26 and 75; IF: 3.2; 3.8).

- Finally, use of Artificial Intelligence in microTese – under the auspices of Associate Professor Angel Elenkov.

10. Research Funding

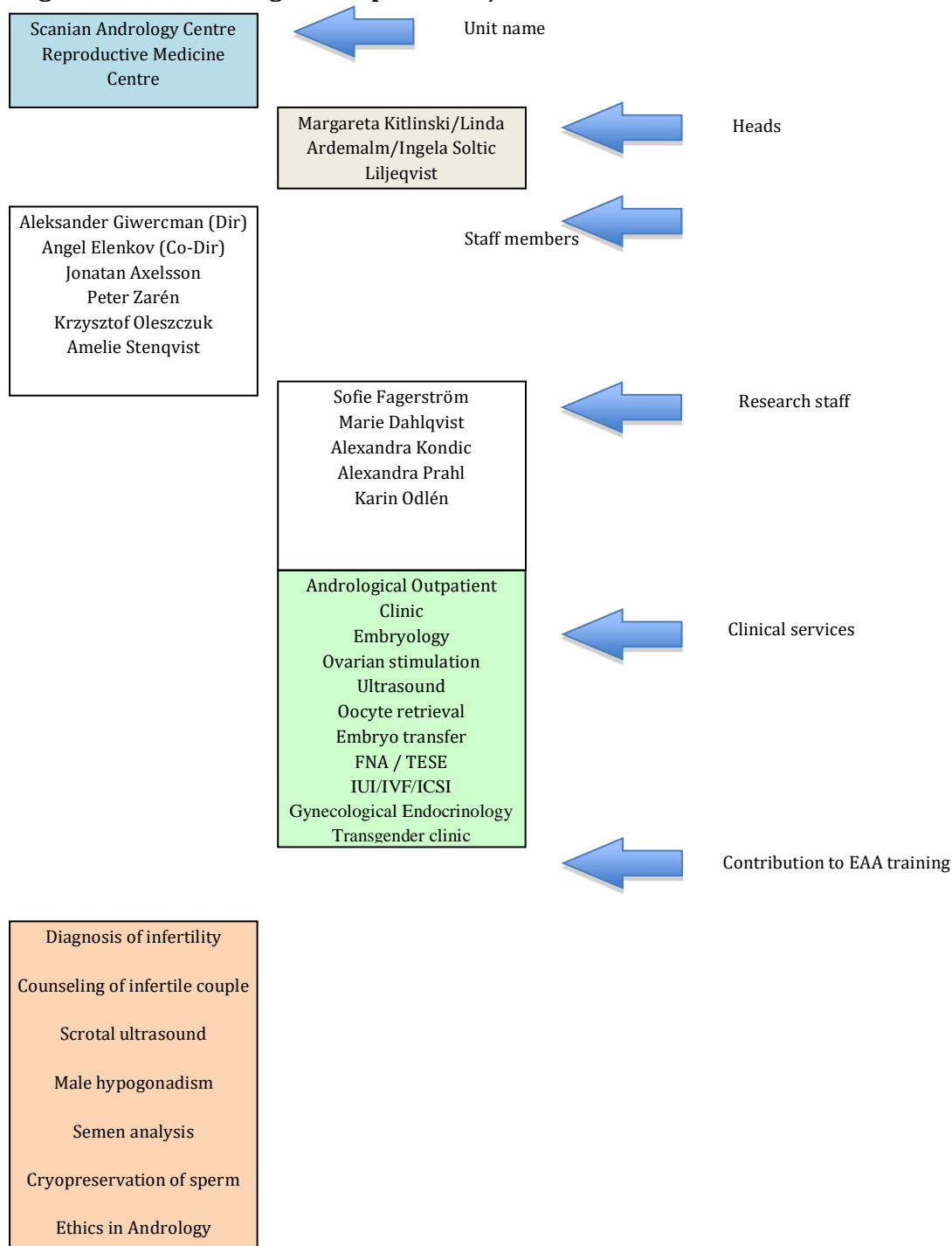
Please specify the amount of available funds in the last 3 years and their source (Government, European Union, University, Local Government, Pharmaceutical Industries, Banks, Foundations....)

Year	2022-2024
Total amount (€)	2,600,000 €
Funding Source(s)	ReproUnion; Swedish Cancer Society, Swedish Childhood Cancer Society, Swedish Governmental Fund for Clinical Research; Local Funds

Insert any additional funding below if required

ORGANIZATION CHARTS

Organization charts legend: Department / Unit Structure



CENTRE PHOTOS



FULL LIST OF PUBLICATIONS (with IF) of staff members from the last 5 years

1. Elenkov A, Giwercman A, Sogaard Tottenborg S, Bonde JPE, Glazer CH, Haervig KK, et al. Male childlessness as independent predictor of risk of cardiovascular and all-cause mortality: A population-based cohort study with more than 30 years follow-up. *PLoS One*. 2020;15(9):e0237422.
2. Elenkov A, Al-Jebari Y, Giwercman YL, Giwercman A. Testosterone replacement therapy in men who conceived with intracytoplasmic sperm injection: nationwide register study. *Eur J Endocrinol*. 2020;182(4):423-8.
3. Egund L, Isaksson S, McGuigan FE, Giwercman A, Akesson KE. High Luteinizing Hormone and Lower Levels of Sex Hormones in Younger Men With Distal Radius Fracture. *JBMR Plus*. 2020;4(11):e10421.
4. Haervig KK, Hoyer BB, Giwercman A, Hougaard KS, Ramlau-Hansen CH, Specht IO, et al. Fetal exposure to paternal smoking and semen quality in the adult son. *Andrology*. 2020;8(5):1117-25.
5. Isaksson S, Bogefors K, Akesson K, Ora I, Egund L, Bobjer J, et al. Low bone mineral density is associated with hypogonadism and cranial irradiation in male childhood cancer survivors. *Osteoporos Int*. 2020;31(7):1261-72.
6. Keglberg Haervig K, Bonde JP, Ramlau-Hansen CH, Toft G, Hougaard KS, Specht IO, et al. Fetal Programming of Semen Quality (FEPOS) Cohort - A DNBC Male-Offspring Cohort. *Clin Epidemiol*. 2020;12:757-70.
7. Kruljac M, Finnbogadottir H, Bobjer J, Giraldi A, Fugl-Meyer K, Giwercman A. Symptoms of sexual dysfunction among men from infertile couples: prevalence and association with testosterone deficiency. *Andrology*. 2020;8(1):160-5.
8. Nilsson PM, Viigimaa M, Giwercman A, Cifkova R. Hypertension and Reproduction. *Curr Hypertens Rep*. 2020;22(4):29.
9. Sahlin KB, Pla I, Sanchez A, Pawlowski K, Leijonhufvud I, Appelqvist R, et al. Short-term effect of pharmacologically induced alterations in testosterone levels on common blood biomarkers in a controlled healthy human model. *Scand J Clin Lab Invest*. 2020;80(1):25-31.
10. Marklund A, Eloranta S, Wikander I, Kitlinski ML, Lood M, Nedstrand E, Thurin-Kjellberg A, Zhang P, Bergh J, Rodriguez-Wallberg KA. Efficacy and safety of controlled ovarian stimulation using GnRH antagonist protocols for emergency fertility preservation in young women with breast cancer-a prospective nationwide Swedish multicenter study. *Hum Reprod*. 2020 Apr 28;35(4):929-938.
11. Elenkov A, Giwercman A, Zhang H, Nilsson PM, Giwercman YL. Increased risk for prostate cancer related mortality among childless men in a population-based cohort followed for up to 40 years. *Scand J Urol*. 2021;55(2):125-8.
12. Elenkov A, Melander O, Nilsson PM, Zhang H, Giwercman A. Impact of genetic risk score on the association between male childlessness and cardiovascular disease and mortality. *Sci Rep*. 2021;11(1):18526.
13. Priskorn L, Tottenborg SS, Almstrup K, Andersson AM, Axelsson J, Brauner EV, et al. RUBIC (ReproUnion Biobank and Infertility Cohort): A binational clinical

- foundation to study risk factors, life course, and treatment of infertility and infertility-related morbidity. *Andrology*. 2021;9(6):1828-42.
14. Malic Voncina S, Stenqvist A, Bungum M, Schyman T, Giwercman A. Sperm DNA fragmentation index and cumulative live birth rate in a cohort of 2,713 couples undergoing assisted reproduction treatment. *Fertil Steril*. 2021;116(6):1483-90.
 15. Chalmel F, Giwercman A, Huhtaniemi I, Jouannet P, Robaire B, Spira A. In memoriam: Bernard Jegou, humanist scientist. *Andrology*. 2021;9(4):1023-4.
 16. Corona G, Rastrelli G, Bartfai G, Casanueva FF, Giwercman A, Antonio L, et al. Self-Reported Shorter Than Desired Ejaculation Latency and Related Distress-Prevalence and Clinical Correlates: Results From the European Male Ageing Study. *J Sex Med*. 2021;18(5):908-19.
 17. Dupont J, Antonio L, Dedeyne L, O'Neill TW, Vanderschueren D, Rastrelli G, et al. Inflammatory markers are associated with quality of life, physical activity, and gait speed but not sarcopenia in aged men (40-79 years). *J Cachexia Sarcopenia Muscle*. 2021;12(6):1818-31.
 18. Giwercman A. Hormonal Male Contraception. *Curr Pharm Des*. 2021;27(24):2770-4.
 19. Mulder RL, Font-Gonzalez A, van Dulmen-den Broeder E, Quinn GP, Ginsberg JP, Loeffen EAH, et al. Communication and ethical considerations for fertility preservation for patients with childhood, adolescent, and young adult cancer: recommendations from the PanCareLIFE Consortium and the International Late Effects of Childhood Cancer Guideline Harmonization Group. *Lancet Oncol*. 2021;22(2):e68-e80.
 20. Netterlid A, Morse H, Giwercman A, Henic E, Akesson KE, Erfurth EM, et al. Premature ovarian failure after childhood cancer and risk of metabolic syndrome: a cross-sectional analysis. *Eur J Endocrinol*. 2021;185(1):67-75.
 21. Sahlin KB, Pla I, de Siqueira Guedes J, Pawlowski K, Appelqvist R, Marko-Varga G, et al. Short-Term Effect of Induced Alterations in Testosterone Levels on Fasting Plasma Amino Acid Levels in Healthy Young Men. *Life (Basel)*. 2021;11(11).
 22. Salonia A, Corona G, Giwercman A, Maggi M, Minhas S, Nappi RE, et al. SARS-CoV-2, testosterone and frailty in males (PROTEGGIMI): A multidimensional research project. *Andrology*. 2021;9(1):19-22.
 23. Sonesson A, Malm J, Rylander L, Giwercman A, Hillarp A. Serum amyloid P component: a new biomarker for low sperm concentration? *Asian J Androl*. 2021;23(5):450-5.
 24. Giwercman A, Sahlin KB, Pla Parada I, Pawlowski K, Fehninger C, Lundberg Giwercman Y, et al. Novel protein markers of androgen activity in humans: proteomic study of plasma from young chemically castrated men. *Elife*. 2022;11.
 25. Anand-Ivell R, Heng K, Severn K, Antonio L, Bartfai G, Casanueva FF, et al. Association of age, hormonal, and lifestyle factors with the Leydig cell biomarker INSL3 in aging men from the European Male Aging Study cohort. *Andrology*. 2022;10(7):1328-38.

26. Axelsson J, Lindh CH, Giwercman A. Exposure to polycyclic aromatic hydrocarbons and nicotine, and associations with sperm DNA fragmentation. *Andrology*. 2022;10(4):740-8.
27. Bjorndahl L, Barratt CLR, Mortimer D, Agarwal A, Aitken RJ, Alvarez JG, et al. Standards in semen examination: publishing reproducible and reliable data based on high-quality methodology. *Hum Reprod*. 2022;37(11):2497-502.
28. de Siqueira Guedes J, Pla I, Sahlin KB, Monnerat G, Appelqvist R, Marko-Varga G, et al. Plasma metabolome study reveals metabolic changes induced by pharmacological castration and testosterone supplementation in healthy young men. *Sci Rep*. 2022;12(1):15931.
29. Deiktakis EE, Ieronymaki E, Zaren P, Hagsund A, Wirestrand E, Malm J, et al. Impact of add-back FSH on human and mouse prostate following gonadotropin ablation by GnRH antagonist treatment. *Endocr Connect*. 2022;11(6).
30. Ekedahl H, Isaksson S, Stahl O, Bogefors K, Romerius P, Eberhard J, et al. Low-grade inflammation in survivors of childhood cancer and testicular cancer and its association with hypogonadism and metabolic risk factors. *BMC Cancer*. 2022;22(1):157.
31. Elenkov A, Giwercman A. Testicular Dysfunction Among Cancer Survivors. *Endocrinol Metab Clin North Am*. 2022;51(1):173-86.
32. Elenkov A, Lundberg Giwercman Y, Giwercman A. [Andrological aspects of infertility]. *Lakartidningen*. 2022;119.
33. Elenkov A, Zaren P, Sundell B, Lundin L, Giwercman A. Testosterone deficiency and metabolic disturbances in men who fathered a child by use of donated spermatozoa. *Sci Rep*. 2022;12(1):14458.
34. Giwercman A, Hofmann MC. Editorial: Andrology Awards 2021. *Andrology*. 2022;10(8):1459.
35. Haervig KK, Petersen KU, Giwercman A, Hougaard KS, Hoyer BB, Lindh C, et al. Fetal exposure to maternal cigarette smoking and male reproductive function in young adulthood. *Eur J Epidemiol*. 2022;37(5):525-38.
36. Haervig KK, Petersen KU, Hougaard KS, Lindh C, Ramlau-Hansen CH, Toft G, et al. Maternal Exposure to Per- and Polyfluoroalkyl Substances (PFAS) and Male Reproductive Function in Young Adulthood: Combined Exposure to Seven PFAS. *Environ Health Perspect*. 2022;130(10):107001.
37. Hofmann MC, Giwercman A. Andrology and humanities. *Andrology*. 2022;10(5):823-4.
38. Hofmann MC, Giwercman A. With our sincere thanks: Farewell to Manuela Simoni and welcome to Aleksander Giwercman. *Andrology*. 2022;10(1):5.
39. Ivell R, Heng K, Severn K, Antonio L, Bartfai G, Casanueva FF, et al. The Leydig cell biomarker INSL3 as a predictor of age-related morbidity: Findings from the EMAS cohort. *Front Endocrinol (Lausanne)*. 2022;13:1016107.
40. Jensen CFS, Ohl DA, Fode M, Jorgensen N, Giwercman A, Bruun NH, et al. Microdissection Testicular Sperm Extraction Versus Multiple Needle-pass Percutaneous Testicular Sperm Aspiration in Men with Nonobstructive Azoospermia: A Randomized Clinical Trial. *Eur Urol*. 2022;82(4):377-84.

41. Jensen CFS, Wang D, Mamsen LS, Giwercman A, Jorgensen N, Fode M, et al. Sertoli and Germ Cells Within Atrophic Seminiferous Tubules of Men With Non-Obstructive Azoospermia. *Front Endocrinol (Lausanne)*. 2022;13:825904.
42. Overman MJ, Pendleton N, O'Neill TW, Bartfai G, Casanueva FF, Forti G, et al. Reproductive hormone levels, androgen receptor CAG repeat length and their longitudinal relationships with decline in cognitive subdomains in men: The European Male Ageing Study. *Physiol Behav*. 2022;252:113825.
43. Rajpert-De Meyts E, Carrell DT, Simoni M, Giwercman A, Hofmann MC. Marking the first decade of Andrology-Conception and early development of the journal. *Andrology*. 2022;10 Suppl 2:139-43.
44. Tharakan T, Corona G, Foran D, Salonia A, Sofikitis N, Giwercman A, et al. Does hormonal therapy improve sperm retrieval rates in men with non-obstructive azoospermia: a systematic review and meta-analysis. *Hum Reprod Update*. 2022;28(5):609-28.
45. Tharakan T, Khoo CC, Giwercman A, Jayasena CN, Sofikitis N, Salonia A, et al. Are sex disparities in COVID-19 a predictable outcome of failing men's health provision? *Nat Rev Urol*. 2022;19(1):47-63.
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