

EAA Andrology Training Centre
Centre Report

2024



Centre identification:

Erasmus MC, Rotterdam the Netherlands
Department of Urology, sub department Andrology

Medical Director:

Marij Dinkelman-Smit MD PhD
Urologist
FECSM
EAA certified Clinical Andrologist

Willem P. A. Boellaard MD
Urologist
Sexologist
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History of the Centre

The Andrology Unit was established in 1989 as an inter-Departmental institute by the University Hospital Dijkzigt, by drawing staff together from the departments of Internal Medicine III; Endocrinology & Reproduction; Urology; Obstetrics and Gynecology. In 1994 the Andrology unit was certified as an EAA "Training Centre in Andrology." In 1996 a multidisciplinary Sexology clinic was started. In 1998 regional sperm cryopreservation service was established for oncology patients and patients treated with gonadotoxic drugs.

Since 2000, the Andrology unit has been a sub-department of the Department of Urology. Rob Weber was appointed as clinical lead/medical director and Hans Romijn was appointed head of the Andrology Laboratory in 2001. That same year, the University Hospital and the Faculty for Medicine and Health Sciences merged in the Erasmus Medical Center Rotterdam with one board of directors. The Departments of Urology and Obstetrics & Gynecology formed one cluster with its own management.

In 2009 the Reproductive Medicine Center was established, in which both the sub department of Andrology with andrology laboratory and the sub department of Reproductive Medicine of the Department of Obstetrics & Gynecology with the IVF laboratory participate. Gert Dohle took over the clinical lead of the Andrology sub-department in 2009. Under his leadership the Andrology unit developed into a national expert and training center for male infertility and sexual dysfunction. The collaboration within the Reproductive Center intensified, coordinating regional reproductive programs of men and women. The andrology laboratory was integrated as the diagnostic laboratory of the Reproductive Center/IVF laboratory, with one central laboratory manager. Weekly staff meetings and multidisciplinary discussion of all patients visiting the reproductive centre were introduced. Research collaboration with the pathology and pediatric department intensified in testicular dysgenesis, liquid molecular diagnostics for Germ Cell Neoplasia In Situ and cryptorchidism resulting in innovative research and collaborative PhD trajectories.

Willem Boellaard and Marij Dinkelman-Smit joined the Andrology team, respectively in 2006 and 2013. The sexology outpatient clinic and training program were professionalized. After a successful national project to reinstall reimbursement for implantation of penile prosthesis in the Netherlands, the Erasmus MC was established as 1 out of 7 national centers for this specialized care and training in 2016. The Dutch government installed a moratorium on assisted reproduction with testicular sperm. In 2007 the Erasmus MC initiated non-obstructive azoospermia work up with subsequent TESE (testicular sperm extraction). Couples were referred to Brussels and Gent (Belgium) for TESE-ICSI treatment with transported surgically retrieved sperm. The moratorium was lifted in 2014 and TESE-ICSI was introduced in the Erasmus MC in 2015. In 2017 the Andrology subdepartment was one of the initiators of the Dutch multidisciplinary TESE consortium, the SIG Andrology, that organize symposia and audit TESE results.

Since 2018 clinical collaboration with pediatric urology, pediatric and adult endocrinology intensified in transitional, supportive, and surgical care for the rare,

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congenital and syndrome disease, including Klinefelter patients. In 2019 Sanne Luijks, nurse practitioner in Turner and Klinefelter Syndrome joined the Andrology and Reproductive Medicine team. She completed her training in clinical andrology, fertility preservation counseling and oncofertility supportive care in 2021.

Since 2019 research collaboration with the department of developmental biology and embryology intensified. In 2021 Marij Dinkelman was elected chair of the multidisciplinary Reproductive Center. Gert Dohle retired in September 2022.

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Organization of the Centre

The Erasmus MC is organized in themes managed dually by a managerial director and the department chairs. The Urology department of the Erasmus MC is part of the theme Daniel and comprises of the subspecialty's pediatric urology, onco-urology, functional urology, and andrology. The urology clinic, outpatient clinic, pediatric urology and expert centers are dually managed by urology staff members and managers. See Figure 1.

Urology Department Erasmus MC Rotterdam

Chair : Prof J.L. Boormans MD PhD

Vice-chair : Prof B.F.M. Blok MD PhD

Theme Daniel
Director

J.S. Haverkamp

Pediatric Urology

Section chair:

F. van der Toorn MD

Clinic:

J.R. Scheepe MD PhD

K.P. Wolffebuttel MD

L. 't Hoen MD PhD

Onco Urology

Section chair:

T.C.M. Zuiverloon MD PhD

Clinic:

Prof C.H. Bangma

Prof J. Boormans

M.B. Busstra MD PhD

D.C. van Diepen MD

P.C.M.S. Verhagen MD

PhD

A.C. Alberts MD PhD

J.Y. Zee physician assistant

Preclinical:

Prof G.W. Jenster

T. Mahmoudi PhD

Prof M.J. Roobol-Bouts

W.M. van Weerden PhD

Functional Urology

Section chair:

Prof B.F.M. Blok

Clinic:

A.B. Stillebroer MD PhD

L. Rongen MD

J. Groen MD

J.L. Boekhorst physician assistant

S. Koedood physician assistant

Preclinical:

E. van Asselt PhD

Andrology

Section chair:

M. Dinkelman-Smit MD PhD

Clinic:

W.P.A. Boellaard MD

T. de Vringer MD

S. Luijks physician assistant

Figure 1. Organogram Department of Urology

The andrology staff is responsible for third line, academic clinical care, education, and research in the full range of male infertility including rare genetic and endocrinological disease, male sexual dysfunction including Peyronie's disease, hypogonadism, oncofertility including counseling/sperm cryopreservation/oncoTESE/cancer survivorship program, testicular tumors (benign and malignant), urethral stricture disease and penile cancer.

Clinical care and research related to fertility is organized within the multidisciplinary Reproductive Center. The Department of Obstetrics & Gynecology and management of the Reproductive Center are part of the theme Sophia.

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The chair of the Reproductive Center rotates every 4-8 years and is held by the Andrology subspecialty chair since 2021. The Reproductive Center of the Erasmus MC is the largest in the Netherlands.

See Figure 2 in Annex for the organization chart of the Reproductive Center.

Male sexual dysfunction clinical care unrelated to subfertility is organized within the department of Urology, sexual dysfunction with concomitant subfertility is integrated in the Reproductive Center.

Clinical care, research, and education in Andrology topics is embedded within Erasmus MC Institutes, National academic expert centers (“NFU expert centers”), European Reference Networks, overarching Erasmus MC programs, expert centers of the Erasmus MC and Regional expert centers. Table 1 gives an overview of the collaborations of the subdepartment of Andrology with the 3 Erasmus MC institutes, overarching Erasmus MC programs and 2 regional non-academic expert Centers.

Erasmus MC Institutes	Erasmus MC Overarching programs	Regional expert centers
Cancer Institute	Rare Disease Innovation Center	Rijnham rehabilitation center (Spinal Cord Injury)
Transplantation Institute	Transitional Care from childhood – adolescence young adulthood	Peripheral Hospital Maasstad Gender dysphoria
Cardio Vascular Institute	Adolescence and Young Adult Cancer Network (AYA)	

Table 1 Overview of subdepartment of Andrology collaborations within Erasmus MC institutes, overarching programs and regional expert centers.

The Erasmus MC is home to 56 National academic expert centers (“NFU expert centers”). The subdepartment of Andrology is embedded in 14 out of 56 National academic expert centers of the Erasmus MC to cover clinical care, education and research collaboration on male infertility, sexual dysfunction and fertility preservation. See Table 2 for an overview of

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National Expert Centers of the Erasmus MC that collaborate with the Andrology sub-department

National Expert Centers in Erasmus MC – collaborations Andrology sub-department
Rare urinary tract tumors & testicular tumors
Disorders of Sex Development (DSD) including Klinefelter and Turner Syndrome
Endocrine Disorders (including rare hypothalamic, pituitary disease, CAH, AGS)
Bone Center
Pediatric Surgical Center for Anatomical Congenital Malformations
Encore (expertise center for neurodevelopmental disorders)
Rare kidney and urinary tract disease
Cystic fibrosis
Sarcoidosis
Prader Willi Syndrome
Inherited cardiovascular disease
Spinal disraphism (Spina bifida)
Rare systemic immune disease
Sickle Cell and Thalassemia Comprehensive Care Center

Quality systems, auditing Reproductive Center

The Erasmus MC was audited by Qualicor Europe in 2021. Continuation of the accreditation status was granted until December 2026. the Quality features of Dutch hospitals can be viewed and compared via [Erasmus MC | Kwaliteit en behandelresultaten | Ziekenhuischeck](#).

The Reproductive Center and Laboratory is ISO 15189 certified since 2017, reference number M301. [M301 - Raad voor Accreditatie \(rva.nl\)](#) recent accreditation was granted for 22-11-2023 till 01-08-2025 for semen analysis, vasectomy control, TESE, cryopreservation of semen, oocytes, slow freezing, and vitrification of embryo's, assisted hatching and IUI, IVF, ICSI.

External quality control is performed in line with national requirements for fertility laboratories by the Dutch society for clinical embryology ("Vereniging voor klinische embryologie" KLEM [Introductie \(embryologen.nl\)](#)). The national KLEM guidelines and quality handbook dictate yearly audits by the Counsel for Accreditation ("Raad voor acceditatie, RvA") and the national society for laboratories CCKL ("Stichting voor de

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bevordering van de kwaliteit van het laboratorium onderzoek en voor de accreditatie van laboratoria in de gezondheidszorg”). These audits have always been successful.

The Reproductive laboratory of the Erasmus MC participates in the national quarterly round sending program for semen analysis, organized by the section Semen of the SKML (“stichting kwaliteitsbewaking medische laboratorium diagnostiek”) [SKML Stichting Kwaliteitsbewaking Medische Laboratoriumdiagnostiek - Semen](#). This external quality control system is based on the ILAC-G13 norm for organizing external quality control programs.

In addition to these mandatory quality control programs, facultative internal audits of the Reproductive laboratory and sperm handling on the Erasmus MC surgical daycare theatres are performed. The progression of the internal quality system is monitored in two monthly quality meetings.

The internal and external quality systems of the Reproductive Center and Laboratory are managed by the quality officer Sylvana Hordijk and supervised by the Head of the Laboratory Esther Baart and manager Wendy Stal. The quality manager of the theme Sophia, Luuk de Jong, supports the quality programs audits and accreditations.

Patient satisfaction

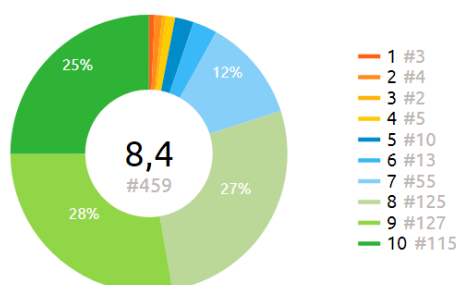
Patient satisfaction is monitored by an institute wide online patient survey among outpatient clinic visiting patients every 6 months. The results of the surveys are analyzed by Expoints and feedback is discussed in the multidisciplinary team.

459 patients awarded our Reproductive Center a mean satisfaction score 8.4 out of 10 in 2023.

Patient satisfaction is monitored, using a benchmark minimal satisfaction of 70%. The translation of the evaluated items in the T-bar diagram left to right are: waiting time at the outpatient clinic, trust in the health care professional, time to discuss disease/problem, comprehensiveness of consultation, knowledge of the medical record, friendliness of front office personnel, provided information after consultation, provided information during outpatient clinic visit, discussing pro&cons of treatment, shared decision making, conflicting information, information about waiting time during outpatient clinic visit, involving family/relatives, discussing side effects of medication, safety, parking, hygiene of the toilets.

Only satisfaction on the items information about waiting time during outpatient clinic visit and parking are scored lower than the benchmark, with respectively 30% and 60% satisfaction reported by patients.

Gemiddeld cijfer



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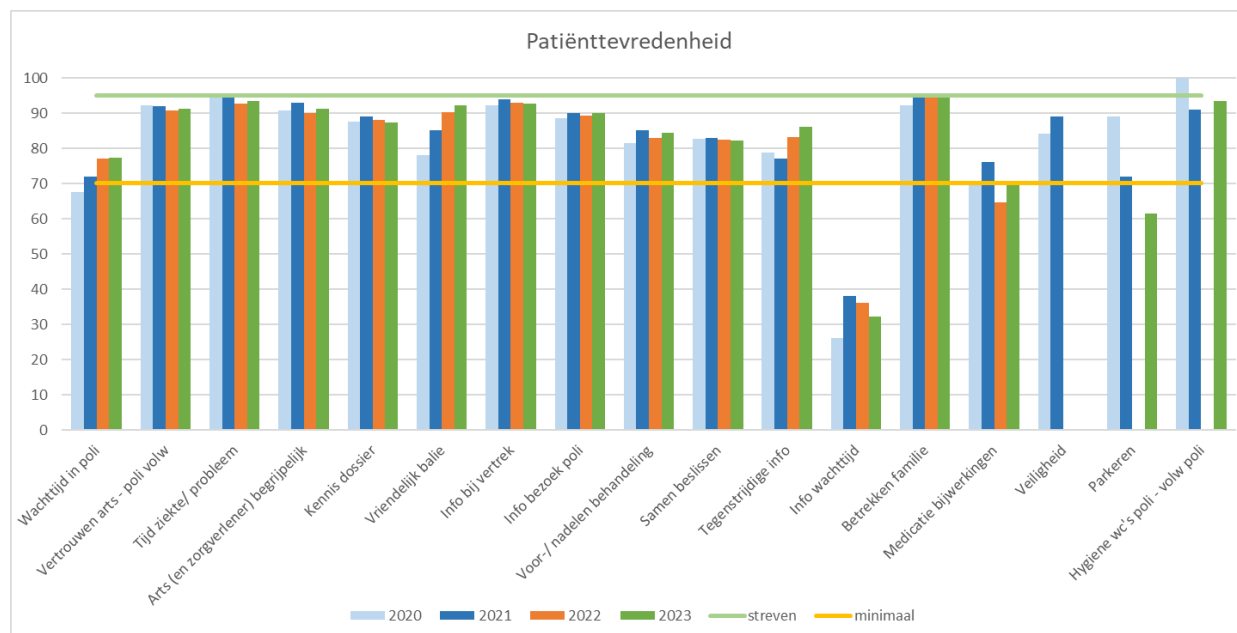


Figure 3 Patient satisfaction score Reproductive Center 2023 (Expoints)

In addition to the Expoints analysis, the Reproductive Laboratory runs a patient satisfaction survey by our own initiative every 3 years.

Patients with complaints are supported by the data protection officer. As well as escalation and feedback to the health care provider. Reported disconformities noted by employees are categorized and analyzed by the quality officer Sylvana Hordijk and manager Wendy Stal. Feedback is given to the multidisciplinary team quarterly. Complications within the Reproductive Center are discussed yearly.

Annually, the patient organization Freya monitors fertility care by quality criteria defined by Freya. The Erasmus MC received the “Freya Pluim” annually. [Monitor Fertilitieitszorg - Freya](#). Patients can compare andrological care on the Freya website.

Employees satisfaction

The Reproductive Center participates in yearly culture barometer surveys organized by the institute and crew resource management programs organized by the theme Sophia. An internal Reproductive Center employee satisfaction survey is conducted every 3 years.

Key Performance Indicators

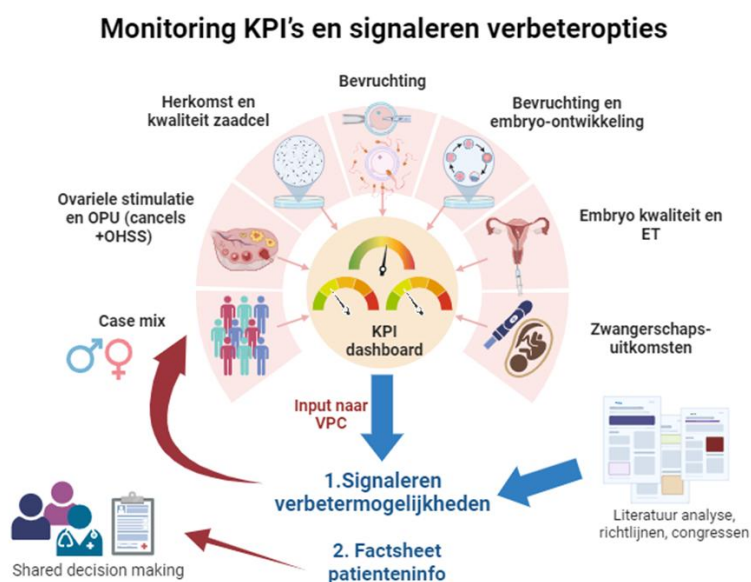
Production and access to clinical care is monitored in monthly production meetings with Key Performance Indicator dashboards supported by the theme Sophia. Outcome of all fertility treatments in the Reproductive Center is monitored monthly and discussed within the multidisciplinary team quarterly. Annually, outcome of assisted reproduction is discussed nationally by the society for embryology [Home \(embryologen.nl\)](#). TESE and TESE-ICSI results are discussed annually in the national TESE consortium [SIG Andrologie – NVOG](#).

Annual internal Management reviews of the laboratory and outpatient clinic performance are reported and discussed in the multidisciplinary team.

Innovation, strategy

Innovation and research projects are discussed, prioritized, and assigned to clinical staff, embryologists, researchers, and management staff. Embryologist and PhD student Kaylee Holleman is assigned to the Andrology focus area for innovation in the laboratory, with the clinical Andrology team and manager Wendy Stal.

Erasmus MC Reproductive Center innovative projects are developed and prioritized during annual strategic meetings. The multiple year strategic plan for the Reproductive Center 2022-2026 was developed in 2022. A continuous PDCA cycle to improve quality of care and collaboration is embedded in the 2 weekly strategic and policy meetings of the multidisciplinary team, chaired by Marij Dinkelman.



Quality systems, auditing Department of Urology

The management team of the department of Urology invites the subspecialty of Andrology and managers of the Urology outpatient clinic and Reproductive Center every 6 months for strategic updates. Adherence to the departments multiple strategic plan that was developed in 2021 is discussed annually during a department of Urology retreat.

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Educational activities

Medical school

The Erasmus MC uro-andrologists and sexologists provide education in sexology in the bachelor program of the Erasmus University medical school curriculum. Lectures in endocrinology, male infertility and oncofertility are provided by the uro-andrologists for master students. Annually, the pediatric urology and andrology sub-specialties organize an 8-week differentiation program for medical students that is well attended and won the award for best program in 2020-2021.

Medical doctors in training have a week of urology training. Medical students can apply for a 20-week Master research project or 12-week Urology training program. In 2021 and 2022 two master medical students conducted their master research at the Andrology sub-department on oncofertility research projects.

Medical training

The Erasmus MC is a regional teaching hospital for urologists and gynecologists in training. Every urologist in training rotates for 3 months Andrology training in supervised male infertility and sexual dysfunction diagnostic workup and surgical treatment. Annually urology staff members perform self-evaluations and are evaluated by residents and urologists in training with a national tool, System of Evaluation of Teaching Qualities.

Urologists in training from the Netherlands can apply for a 6-month differentiation in Andrology [Differentiatiestage Andrologie | Opleidingsetalage](#). Initiation for the EAA exam training can either start during residency, differentiation in Andrology or during a fellowship.

In 2023 Marijn Westgeest, urologist in training from Radboud MC Nijmegen, transferred to the Erasmus MC for her Andrology differentiation. In 2025 Mick Uijldert planned his transfer from the Urology training in Groningen to the Erasmus MC for his Andrology differentiation.

Accreditation by the EAA for the training of Clinical Andrologists is of great importance to the Andrology subdepartment. The auditing of the local training program and the EAA training network enable the subdepartment of Andrology of the Erasmus MC to attract talented urologists and urologists in training. EAA training and the opportunity to conclude training with the EAA Clinical Andrology certification is off utmost importance to Andrological care and awareness in the Netherlands.

Medical personnel internal training

During lunch and learn sessions, Erasmus MC Reproductive Medicine laboratory specialists, nurses and back office administrative employees are trained in andrological care throughout the year by the uro-andrologists and specialized nurses.

Regional training activities

Regional (Rotterdam) and supraregional (Leiden) training in Andrology for gynecology residents is programmed annually. Fertility doctors, fellows of reproductive medicine differentiation residents can apply for 1-to-3-day outpatient Andrology clinic or surgical visits in the Erasmus MC. These short visits are granted to approximately 5 professionals per year.

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National training activities

The uro-andrologists of the Erasmus MC engage in structural national Andrology training programs for Urology residents [UOI – NVU](#) and annual, national training symposia for fertility doctors [Over de VVF - VVF Vereniging van Fertiliteitsartsen](#) and IVF laboratory specialists [LFN - Nederlandse Vereniging van bioMedisch Laboratoriummedewerkers \(nvml.nl\)](#).

International training activities

Gert Dohle and Willy Baarends are members of the Andronet Cost action program (EU funded project to promote andrology training and science in EAA centers)

Gert Dohle is EAA examiner [Examinations \(andrologyacademy.net\)](#)

Marij Dinkelman-Smit chairs the ESU (European School of Urology) course male infertility for the EAU annual meeting since 2022 and is active as an educational lecturer for EAU, ESAU-ESGURS, ESSM (European Society for Sexual Medicine), EAA meetings and invited speaker. In 2023 she joined the EAU guideline panel for Male Sexual and Reproductive Health [Sexual and Reproductive Health - INTRODUCTION - Uroweb](#)

Recent organized symposia/meetings:

- September 2022 national Andrology symposium for the retirement of Gert Dohle
- 2023 Local organizing committee ESSM Rotterdam (Marij Dinkelman-Smit, Hester Pastoor sexologist Erasmus MC)

Dutch EAA trainees that passed the EAA Clinical Andrologist Examination, after training and supervision in the Erasmus MC

Year of examination	Name urologist EAA certified Clinical Andrologist	Current employer/hospital
2022	Jetske van Breda	Utrecht UMC
2021	Tahnee de Vringer	Erasmus MC
2020	Boaz Meijer	Acibadem Amsterdam
2019	Kathleen D'Hauwers	Radboud UMC
2018	Marlies Maatje	Urocare Kusnacht Zurich

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Research activities

Non-obstructive azoospermia

Since 2017 systematic clinical data collection including quantitative and qualitative outcome of TESE surgery, genotyping and time lapse TESE-ICSI treatment outcomes have been installed, parallel to testicular sperm biobanking. We focus on observational clinical studies and treatment evaluation. Our aim is to improve value-based care for patients with non-obstructive azoospermia (NOA). Firstly, by the introduction of customized supportive psychological care, based on objective measures during diagnostic and treatment trajectories. Secondly, by the introduction of innovative personalized sperm selection techniques based on feno- and genotyping of NOA, specific morphological sperm abnormalities and asthenozoospermia. And finally, by modelling using biomarkers and quantitative/qualitative testicular sperm values to improve patient counseling and decision making.

From a biological standpoint, our research collaboration with Willy Baarends (developmental biology), Esther Baart and Kaylee Holleman (embryology) aims to clarify the association between meiotic progression and spermiogenesis defects in NOA and cryptozoospermia patients and subsequent the TESE-ICSI outcome.

Oncofertility, male fertility preservation and fertility counseling in chronic, benign disease

The efficacy of sperm cryopreservation, oncoTESE and cancer & benign related fertility counseling and treatment is the second research focus in our center. This line of research has been strengthened by collaboration with the oncology department of the Netherlands Cancer Institute/Antoni van Leeuwenhoek (Winette de Graaff) and the research group on personalized oncology in adolescent and young adult patients (Olga Husson) resulting in several publications.

Testicular dysgenesis, decrease sperm quality, testicular cancer

The focus of this research line is both mechanistic and epidemiological research, in a prospective cohort study. In the population-based Generation R study cohorts of parents to be and their offspring living in the Rotterdam regional area have been followed for 20 years. Extensive biobanking before, during and pregnancy has been performed, as well as detailed documentation of organ development. The Generation R next study focusses on the effects of lifestyle interventions for healthy development. Testicular development and function, paternal contribution to the health of children and the impact of diet and environmental toxin exposure are topics of collaboration and joint interest with the sub-department of Andrology.

Within the Testicular Tumor Expert Center the Andrology sub-department research focusses on early molecular diagnostics and prevention strategies for testicular cancer, in collaboration with our colleagues from the onco-urology sub-department (Joost Boormans, Tahlita Zuiverloon, Arnout Albers) and oncology department (Ronald de Wit, Nick Beije)

Convergence Erasmus MC and Erasmus University, TU Delft

In line with the institute's strategic plan, research collaborations of the Andrology sub-department and Erasmus University:

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Masters project student Clinical Technology ErasmusMC/Technical University Delft (2023)- Prediction of Metastatic Disease Relapse in Clinical Stage I Seminoma Testis through Deep Learning. K.Kwakkenbos, A. Albers, W.Boellaard, J.Veenland,

Master research project Erasmus MC/Erasmus University Health Economics, Policy and Law (HEPOL) (2022). Male patients' perspectives on fertility care for fertility-compromising treatment for cancer: patient-centered care. V.C. Wierda, E.H. Hulst, M. Dinkelman-Smit

Master project student Industrial Design Technical University Delft (2021)- Erectiometer: diagnostic device to measure nocturnal erection with tissue oxymetry. G. Schoots, W. Boellaard, C.Bangma, A. Kooijman, I. Ruiter

Bachelors project students Clinical Technology Erasmus MC/Technical University Delft (2021). Automatic Detection of Lymphovascular Invasion in Testicular Germ Cell Tumours using Deep Learning . K.Kwakkebos, M.Verdellen, T.Driessen, B.J van Deursen, W.Boellaard, J.Castillo Tovar

Inflammunity

The research group of professor Dolhain focusses on rheumatology and pregnancy, fertility. A PhD candidate from the Rheumatology department of the Erasmus, Luis Perez will defend his thesis on June 25th 2024 on the iFAME project: inflammunity and fertility in men. This project focuses entirely on the effect of immune-mediated diseases on male sexual health and fertility.

Clinical activities

The clinical activities of the Andrology sub-department are summarized below.

Male infertility treatments:

Transitional pediatric urology/endocrinology

Counseling, full andrological diagnostic workup/phenotyping/genotyping male infertility

Hormonal stimulation/hypogonadism treatment, spermatogenesis induction in IHH/Kallmann

Aspermia/anejaculation treatment: penile vibration stimulation, electro-ejaculation

Surgical sperm retrieval: PESA/MESA/conventional TESE/microTESE

Microsurgical varicocelectomy, vasovasostomy, vaso-epididymostomy

Regional sperm cryopreservation service, including oncoTESE (testicular sperm extraction in testicular cancer and other cancer patients that present with azoospermia, including contralateral biopsy and Germ Cell Neoplasia In Situ diagnosis)

Transwomen fertility care (regional)

Microsurgery skillslab training for residents (regional)

Testicular cancer

Expert center, clinical management of small testicular lesions including excision and peroperative frozen section analysis testicular lesion, clinical management of testicular microlithiasis, Germ Cell Neoplasia In Situ

Sexual dysfunction treatments:

Sexuology diagnostic work up and counseling

Medical treatment erectile dysfunction, including specialized nurse counseling injection therapy, vacuum/traction device

Conservative and surgical Peyronie's disease treatment, including grafting

Regional expert center for implantation of inflatable and semi-rigid penile prosthesis

Hypogonadism

Diagnostic work up young adults, late onset hypogonadism and patients with co-morbidity (eg cancersurvivors, transplantation patients, obesity, cardiovascular disease: see tables 2 and 3 for collaborations with expert center and Erasmus MC institutes). In case of hypogonadotropic hypogonadism collaboration with the pituitary and congenital/syndromal endocrinology teams/expert centers.

Urethral stricture treatments, including penile lichen sclerosus

Conservative treatment with (self) dilatation

Penile urethra reconstruction with buccal mucosal graft, 2-stage

Bulbair stricuter excision and primary repair or buccal mucosal graft inlay

Adult hypospadias fistel repair and urethraplasty,

Penile cancer

Mohs surgery (dermatology)

(partial)Glansectomy, (partial) penectomy, perineostomy.

Dynamic sentinel node biopsy

Glanreconstruction (with plastic surgeon)

Patient referrals are submitted to digital triage to ensure efficient preparation and differentiated consultations at the outpatient clinic of urology and the Reproductive Center.

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Standardized documentation in our electronic patient documentation system (“HiX”) is followed to ensure complete and uniform medical records and phenotyping of patients. Combination consultations with semen analysis for non-obstructive azoospermia and fertility preservation/counseling in survivorship are implemented. All consultation rooms are equipped with ultrasound to ensure same day diagnostics. Laboratory and genetic testing is performed after informed consent.

We developed animations and clinical care path information in the Erasmus MC Digizorg app to inform our patients and stimulate them to make their own appointments. The app will be launched for NOA and oncofertility in the summer of 2024.

All patients with an indication for surgical treatment are discussed in weekly Andrology meetings, also attended by urologists in training. Female partners are screened by the Andrologist during male infertility intake. In case of abnormalities, concerns, or multimodal treatment proposal, cases are discussed during weekly Reproductive Center multidisciplinary team meetings.

Multidisciplinary meetings are organized weekly for testicular cancer, monthly for sexology, penile pathology, and DSD, quarterly for endocrinology, regional assisted reproduction National multidisciplinary meeting with the 4 Dutch penile cancer centers weekly. Annual meetings to discuss outcome and complications of TESE and TESE-ICSI treatment, stratified for NOA/OA/oncoTESE/Klinefelter TESE in the 6 Dutch TESE centers. Annual meetings of the 6 Dutch centers that implant penile prosthesis to discuss outcome of surgery and complications.

Clinical care pathways are documented in the online quality system of the Erasmus MC. We collaborate with patient organizations for our clinical pathways, research focus and informative outreach to patients and society. Andrology staff members are medical advisory board members of the Lichen Sclerosus and Klinefelter Syndrome patient societies.

To illustrate our clinical activities and embedded research, we include 3 examples.

Testicular cancer

In 2021 Gert Dohle successfully coordinated the application of NFU testicular tumor expert center. In this expert center, the sub-departments of Andro-Urology, Onco-Urology, Oncology, Radiotherapy and Pathology collaborate on the clinical care pathways, research, education and societal outreach for benign, rare and malignant testicular tumors. The patient society “Stichting Zaadbalkanker” is actively involved.

Clinical care including multidisciplinary patient consultation, fertility preservation in the Erasmus MC including oncoTESE on indication and cancer survivorship themes fertility, fatigue/hypogonadism/sexual dysfunction are coordinated with the regional cancer network EMBRAZE and regional hospitals CONCORD.

The expertise of the Erasmus MC Andrology sub-department is nationally renowned for diagnostic and treatment of small testicular lesions, rare testicular/para-testicular tumors and burned-out testicular tumors. Patients regionally or nationally referred to the oncology department of the Erasmus MC with metastasized disease are referred to the andro-urologists for scrotal ultrasound to differentiate between burned out tumors and extra-gonadal germ cell tumors. The expertise of the uro-pathologist Professor Arno van Leenders and his department is of importance for the diagnosis and surgical treatment of small testicular lesions and rare testicular and para-testicular lesions. Patients from the South-West region and nationally are referred to the Andrology sub-department for diagnosis, follow up or frozen section analysis of excisional biopsies and surgery by the Erasmus MC andro-urologists.

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Erasmus MC onco-urologist Tahlita Zuiverloon coordinates the Erasmus MC expert center for Complex Retroperitoneal Surgery. This center and the testis expert center are bundled in the Center of Expertise for rare Urinary Tract Tumors & Testicular Tumors; member of the Europe Reference Network eUROGEN.

Annually Willem Boellaard educates medical students of the Erasmus MC on testicular cancer. In 2022 the national educational lecture for urologists in training on testicular cancer and fertility preservation/oncoTESE was provided by Marij Dinkelman. In 2023 Tahlita Zuiverloon and Arnout Alberts launched a national campaign to promote testicular self examination [Wees een vent, zorg dat je je ballen kent! - Erasmus MC Foundation](#)

Male sexual dysfunction

Male sexual dysfunction care is organized in collaboration with the sub-department of Reproductive Medicine that employs the psychologist and physician sexologists Hester Pastoor and Hanneke Bolt. Patients with male sexual dysfunction enter the Erasmus MC pathway via sexology specialized outpatient clinics of Willem Boellaard, Marij Dinkelman, Tahnee de Vringer and the Andrology differentiator Marijn Westgeest. Diagnosis including penile ultrasound, counseling, medical or surgical treatment is performed by the andrologist. On indication, patients are referred to the outpatient clinic of the Erasmus MC cardiovascular institute for cardiovascular disease screening, counseling and prevention. Specialized urology nurses support patients with vacuum devices, injection therapy and postoperative consultations after penile surgery. The sexual medicine and male infertility supportive care programs including education for nurses and patients being treated in the Erasmus MC Cancer Institute, Transplantation Institute and Cardio Vascular Institute are provided by Willem Boellaard and Hester Pastoor. See their webinars for the Transplantation Institute as examples [Webinars voor transplantatiepatiënten - Erasmus MC](#)

(Rare) endocrinological disorders

Patients with rare endocrine disorders diagnosed in childhood or adolescence enter our clinical care paths through pediatric endocrinology, pediatric Urology and specific Erasmus MC expert centers. (see Table 2 for an overview). Spermatogenesis induction, fertility preservation, future fertility perspective counseling for patients and parents, supportive care for sexual development, treatment of sexual dysfunction is provided by the Andrology team. Patients can enter our fertility counseling and spermatogenesis induction care path through the internal medicine led Pituitary expert center.

Endocrinologist Laura de Graaff leads the Erasmus MC center for adults with hereditary and congenital disease (“Centrum voor volwassenen met Erfelijke en Aangeboren Aandoeningen” EAA). This unique center coordinates diagnosis, clinical and supportive care with an extensive multidisciplinary team for patients with rare genetic syndromes like Prader Willi Syndrome, Kallmann Syndrome, Congenital Adrenal Hyperplasia and DSD. [Centrum voor volwassenen met Erfelijke en Aangeboren Aandoeningen - Centrum - Erasmus MC](#). The EAA team and Andrology team collaborate in multimodal clinical care for adult patients. Although Klinefelter Syndrome is not considered a rare genetic disease, patients diagnosed during azoospermia work up that may benefit from neuropsychological and metabolic assessment and treatment are referred to the EAA center. Quarterly multidisciplinary EAA/Andrology meetings ensure continuous learning and transfer of knowledge for staff, urologists and endocrinologists in training and fellows. Back and forth educational lectures and outpatient clinics complement the meetings.

The overarching program for adolescents to adult patients with rare disease in the Erasmus MC is led by nurse practitioners. Judith van Eck coordinates pediatric endocrinology patients. The Andrology nurse practitioner Sanne Luijks and EAA nurse practitioner Kristen Davidse coordinate the clinical care, research data/biobanking and follow up of adult patients with endocrine disease. Sanny Luijks focuses on patients with Klinefelter and Turner Syndrome.

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Kirsten Davidse focusses on patients with rare endocrinological genetic disease and Klinefelter Syndrome patients with more severe co-morbidity.

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Name and address of Centre :

Erasmus MC, Rotterdam the Netherlands
Department of Urology, sub department Andrology

Dr Molewaterplein 40

3015 GD Rotterdam

The Netherlands

+31 10 7040704

m.smit.3@erasmusmc.nl

Type of Centre

University

University Hospital

Private Centre

Other (please specify) _____

1. Director

Marij Dinkelman-Smit

Academician Regular Member EAA Certified Clin. Andrologist

2a. Clinical responsible

Willem Boellaard

Academician Regular Member EAA Certified Clin. Andrologist

2b. Clinical responsible

Tahnee de Vringer

Academician Regular Member EAA Certified Clin. Andrologist

2c. Clinical responsible

Sanne Luijks

Academician Regular Member EAA Certified Clin. Andrologist

3. Present Staff (*Senior Scientists*)

1) Name _____
Degree _____
Speciality _____

Academician Regular Member EAA Certified Clin. Andrologist

2) Name _____
Degree _____
Speciality _____

Academician Regular Member EAA Certified Clin. Andrologist

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Insert any additional staff below (*if required*)

Staff of the Reproductive Center, close collaborators that work on the same production floor as the Clinical Andrologists, Physician Assistant, Andrology residents, trainees and fellow.

Specialists

Embryologists

1. Esther Baart
2. Kaylee Holleman
3. Eefje Chavli
4. Jeroen Speksnijder

PhD students Embryology

1. Kaylee Holleman
2. Eefje Chavli

Laboratory technicians

1. Amy Dons
2. Claudia Heijmans
3. Patricia Duis v Damm
4. Ilina Eshan
5. Jeroen IJpelaar
6. Karin van der Horn
7. Lana Fateh
8. Larissa de Graaff
9. Tine Dompeling
10. Virashtri Gobardhan
11. Yuraina Reigina
12. Michelle Chan
13. Miranda Foppen
14. Shirley Waterval
15. Sylvana Hordijk
16. Thomas Huizer
17. Benjamin Smith

Nurses – Reproductive Center

Quality officer Reproductive Center

1. Sylvana Hordijk

Biobank officers

1. Nancy Verheij
2. Abbey Maarleveld

Reproductive Medicine gynecologist – specialty

1. Joop Laven – chair subdepartment
-

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2. Yvonne Louwers – premature ovarian aging
3. Wendy van Dorp – DSD/pediatric gynecology
4. Sofie Benneheij – fertility preservation
5. Jits Schipper – donor programs
6. Ramon Dykgraaf – Turner Syndrome

Fertility doctors

1. Marit van Meegen
2. Pauline Boom
3. Maija Dam
4. Rosanne Grolle
5. Margriet de Groot-Heemskerk
6. Tina Lo
7. Esther Verduin

Sexologists

1. Hester Pastoor
2. Hanneke Bolt

Staff from departments of the Erasmus MC that closely collaborate with the Reproductive Center of the Erasmus MC and Clinical Andrologists, Physician Assistant, Andrology residents, trainees and fellow.

Clinical Genetics

1. Yolande van Bever
2. Vyne van der Sloot
3. Kyra Stuurman
4. Florentine Thurink (in training)

Laboratory Genetics

1. Martina Wilke (co-author of EAA/EMQN best practice guidelines for molecular diagnosis of Y-chromosomal microdeletions)
2. Hennie Bruggenwirth (DNA)
3. Berna Beverloo (karyotyping)

Psychosocial workers, specialized in Reproductive Medicine, sperm donation, grief counseling in negative sperm retrieval

1. Marsha Koeiman
2. Hanneke van der Lelij

Endocrinology EAA

1. Laura de Graaff
2. Kirsten Davidse

Pediatric endocrinology

1. Erica van den Akker
2. Theo Sas

3. Judith van Eck

Urology department:

Onco-urology

1. Joost Boormans - testicular/bladder cancer
2. Tahlita Zuiverloon - testicular/bladder cancer
3. Arnout Alberts - testicular/bladder/kidney cancer
4. Paul Verhagen - kidney cancer
5. Danielle van Diepen - bladder/kidney cancer
6. Kim van Kessel - bladder/uppertract cancer
7. Willem Boellaard-testicular/kidney/penile cancer
8. Chris Bangma - prostate cancer
9. Martijn Busstra - prostate cancer
10. Roderick van den Bergh - prostate cancer

Functional urology

11. Bertil Blok - neuro urology
12. Alexander Stillebroer - neuro/transitional urology
13. Lieske Rongen - neuro urology

Andrology

14. Marij Dinkelman-Smit - male infertility, sexual disfunction, penile prothesis, hypogonadism, urethral stricture, lichen sclerosus, Peyronie's disease, DSD
15. Willem Boellaard - penile & testicular cancer, sexual disfunction, male fertility and hypogonadism
16. Tahnee de Vringer - male infertility, sexual disfunction, penile prothesis, hypogonadism, urethral stricture, lichen sclerosus, Peyronie's disease, DSD

Pediatric Urology

17. Katja Wolffenbuttel- DSD/hypospasia
18. Fred van der Toorn - hypospasia
19. Jeroen Scheepe - functional urology
20. Lisette 't Hoen - DSD/hypospasia

Nurses - Urology outpatient clinic

1. Coriena van Bruchem
2. Cees de Vlieger
3. Suzanna Bakboord
4. Ikram Asoud-El Farissi
5. Niels Heister
6. Jamie Eikelenboom

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4. Clinical Activity

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

	2021	2022	2023
New patients	1360	1291	1368
Follow-up patients	1375	1492	1720

Type of <u>new</u> patients in the last years (%)	2021	2022	2023
Infertility	47	45	45
Erectile dysfunction	10	25	20
Hypogonadotropic Hypogonadism	5	5	5
Klinefelter	8	8	8
Gynaecomastia	0.5	0.5	0.5
Varicocele	5	5	5
Cryptorchidism	3	3	3
Male sex accessory gland infections	1	1	1
Testicular tumours	10	12	14
Disorders of gender identity	0.1	0.2	2
Penile curvature	10	15	15

B. Ultrasound (testis, penile, prostate) * In the Erasmus MC these are performed within the department of urology/andrology sub-specialty

	2021	2022	2023
Total (registration issue)	?	?	504
Controls			

* performed at the Department of Radiology

C. Andrological surgery procedures

	2021	2022	2023
Testicular biopsies (TESE)	157	170	148
Varicocele ligation	15	25	20
Prostate biopsies	0	0	0
BPH	0	0	0
Prostate cancer	0	0	0
Vasectomy	0	0	0
Vaso-vasostomy	20	22	17
Other			

5. A. Andrology laboratory activity

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	2021	2022	2023
Semen analyses	1077	1294	1190
Sperm antibodies *			
Seminal markers **			

* on first semen analysis only ** none

5. B. Andrology laboratory activity

Sperm banking donors Yes No

Sperm banking cancer patients Yes No

<i>If yes:</i>			
	2021	2022	2023
Number of samples	206	262	221

5. C. Histopathological evaluation of biopsies (Performed at the Department of Pathology) Yes No

5. D. Reproductive Hormones Assays (LCMS Performed at the Central Clinical Endocrinology Laboratory of the Erasmus MC) Yes No

If yes please specify type of assays and number of samples in the last year

Reproductive Hormones Assays
(FSH, LH, LCMS testosterone, SHBG, prolactin, AMH,
Oestradiol: all tests are performed at the central
Erasmus MC Endocrinology laboratory; see ISO
certificate, head Sjoerd van den Berg
LH, FSH, SHBG, Prolactine en Estradiol Siemens Atellica
IM1300 immunochemistry platform
Testosteron Waters XEVO TQ-XS platform for routine
LCMS and Siemens Atellica IM1300 immunochemistry
platform for emergency/cito/acute testing

5. E. Y chromosome microdeletions according to EAA/EMQN guidelines (Performed by the Department of Clinical Genetics Erasmus MC; regional laboratory, the majority of tests is ordered by the Andrology subdepartment of the Erasmus MC) Yes No

490

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 Yes No

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hospital

Blood karyotyping Yes No

If no, specify if available in another lab of the same hospital Yes No

Karyotyping, DNA analysis, CFTR gene mutation analysis, Cilio pathy panel, DSD panel are alle performed by the Department of Clinical Genetics of the Erasmus MC. The majority of tests is ordered by the Andrology subdepartment of the Erasmus MC)

Other genetic tests (please specify)

FISH sperm : no

Pre-implantation genetic diagnosis : no (but referral to national center in Maastricht UMC)

Amniotic fluid karyotyping: yes

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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: see text organizational structure, collaborations within Erasmus MC and region.

7. Clinical teaching activity

Duration of training (years):

	Number
A: Trainees in the last five years	5
B: Trainees who passed EAA-ESAU\exam for Clinical Andrologist in the last 5 yrs	4
C: Trainees working in the centre preparing to pass the EAA-ESAU examination	1
D: PhD Students	0
E: Medical Students (master research)	2
F: Other students (MSc)	0

8. Formal Andrology teaching program Yes No

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

Andrology differentiation in the Urology training is 6 months, Andrology Fellowship 2 years, EAA Andrology training 18 months.

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	Hours of formal teaching per year	Professional training (weeks/months)
Medical Students		
PhD Students	4 lectures/year	
Post Graduate students		52 weeks fellowship
Trainees		52 weeks
Other degrees (please specify)		

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9. Research Activity (maximum 1 page)

Please shortly describe the main research topics of the center and list the most relevant papers in peer review journals (with IF) related to these activities.

The full list of publications (years 2015 - 2020) are presented at the end of this report.

Please see the text for research activities

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

Total amount (€) 0

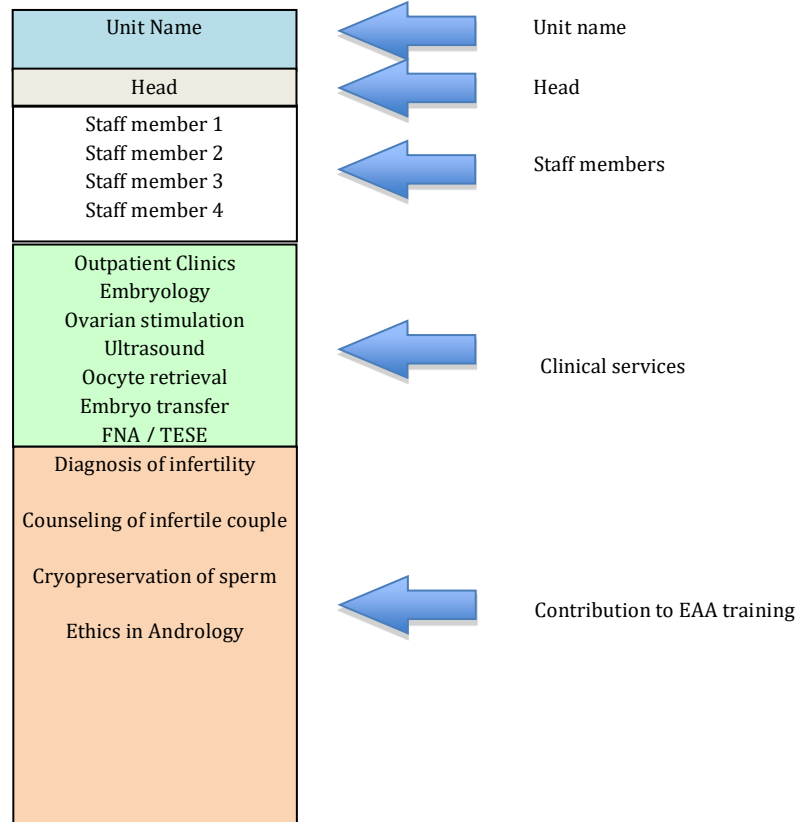
Funding Source(s)

Insert any additional funding below if required

ORGANIZATION CHARTS

Chart format cannot be filled in. Please see chapter organizational structure for department and unit structure

Organization charts legend: Department / Unit Structure



Erasmus MC Rotterdam the Netherlands

CENTRE PHOTOS

Please see video's that introduce the Reproductive Center ("Voortplantingscentrum") and laboratory ("Voortplantingscentrum laboratorium")

[OaYeah 15s OLV 16x9 \(youtube.com\)](#)



[Voortplantingscentrum laboratorium - Erasmus MC - YouTube](#)



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

[Pre-treatment fertility preservation and post-treatment reproduction in long-term survivors of adolescent and young adult \(AYA\) cancer.](#)

Lehmann V, Vlooswijk C, van der Graaf WTA, Bijlsma R, Kaal SEJ, Kerst JM, Tromp JM, Bos MEMM, van der Hulle T, Lalisang RI, Nuver J, Kouwenhoven MCM, Lok CAR, Beerendonk CCM, Dinkelman-Smit M, Husson O.J *Cancer Surviv.* 2024 Feb 6. doi: 10.1007/s11764-024-01538-x. Online ahead of print. PMID: 38316726

[The increasing burden of testicular seminomas and non-seminomas in adolescents and young adults \(AYAs\): incidence, treatment, disease-specific survival and mortality trends in the Netherlands between 1989 and 2019.](#)

van der Meer DJ, Karim-Kos HE, Elzevier HW, Dinkelman-Smit M, Kerst JM, Ateman V, Lehmann V, Husson O, van der Graaf WTA. *ESMO Open.* 2024 Feb;9(2):102231. doi: 10.1016/j.esmoop.2023.102231. Epub 2024 Jan 19. PMID: 38244349

[Is methotrexate safe for men with an immune-mediated inflammatory disease and an active desire to become a father? Results of a prospective cohort study \(iFAME-MTX\).](#)

Perez-Garcia LF, Röder E, Krijthe BP, Kranenburg-van Koppen LJ, van Adrichem R, Zirkzee E, Griffioen PH, Peeters K, Lin M, Struys EA, Jansen G, van Doorn MB, de Jonge R, Dohle GR, Dolhain RJ. *Ann Rheum Dis.* 2023 Aug;82(8):1068-1075. doi: 10.1136/ard-2023-224032. Epub 2023 Jun 1. PMID: 37263756

[Spontaneous Iliac Vein Ruptures: A Systematic Review.](#)

Kooiman AL, Bakas JM, van Fessem JMK, Boellaard WPA, Cornelissen SAP, van Rijn MJE. *Vasc Endovascular Surg.* 2023 Aug;57(6):617-625. doi: 10.1177/15385744231163707. Epub 2023 Mar 13. PMID: 36913198

[Associations of maternal urinary bisphenol and phthalate concentrations with offspring reproductive development.](#)

Blaauwendraad SM, Jaddoe VW, Santos S, Kannan K, Dohle GR, Trasande L, Gaillard R. *Environ Pollut.* 2022 Sep 15;309:119745. doi: 10.1016/j.envpol.2022.119745. Epub 2022 Jul 9. PMID: 35820574

[Current practices regarding corporotomy localization during penoscrotal inflatable penile implant surgery: a multicenter cohort study.](#)

van Renterghem K, Jacobs B, Yafi F, Osmonov D, Ralph D, Venturino L, Barnard JT, Ziegelmann M, Wang R, Kannady C, Lentz A, Garcia EL, Andrianne R, Bettocchi C, Hatzichristodoulou G, Gross M, Faix A, Otero JR, Salamanca JIM, Sedigh O, Albersen M, Dinkelman-Smit M, Mykoniatis I. *Int J Impot Res.* 2022 Apr;34(3):302-307. doi: 10.1038/s41443-021-00431-w. Epub 2021 Apr 12. PMID: 33846587

[Time-lapse imaging of human embryos fertilized with testicular sperm reveals an impact on the first embryonic cell cycle.](#)

van Marion ES, Speksnijder JP, Hoek J, Boellaard WPA, Dinkelman-Smit M, Chavli EA, Steegers-Theunissen RPM, Laven JSE, Baart EB. *Biol Reprod.* 2021 Jun 4;104(6):1218-1227. doi: 10.1093/biolre/ioab031. PMID: 33690817

[The impact of the origin of surgical sperm retrieval on placental and embryonic development: The Rotterdam Periconception cohort.](#)

Hoek J, Boellaard WPA, van Marion ES, Willemsen SP, Baart EB, Steegers-Theunissen RPM, Schoenmakers S. *Andrology.* 2021 Mar;9(2):599-609. doi: 10.1111/andr.12943. Epub 2020 Nov 29. PMID: 33207074

[Fertility preservation for male patients with childhood, adolescent, and young adult cancer: recommendations from the PanCareLIFE Consortium and the International Late Effects of Childhood Cancer Guideline Harmonization Group.](#)

Mulder RL, Font-Gonzalez A, Green DM, Loeffen EAH, Hudson MM, Loonen J, Yu R, Ginsberg JP, Mitchell RT, Byrne J, Skinner R, Anazodo A, Constine LS, de Vries A, Jahnukainen K, Lorenzo A, Meissner A, Nahata L, Dinkelman-Smit M, Tournaye H, Haupt R, van den Heuvel-Eibrink MM, van Santen HM, van Pelt AMM, Dirksen U, den Hartogh J, van Dulmen-den Broeder E, Wallace WH, Levine J, Tissing WJE, Kremer LCM, Kenney LB, van de Wetering MD; PanCareLIFE Consortium. *Lancet Oncol.* 2021 Feb;22(2):e57-e67. doi: 10.1016/S1470-2045(20)30582-9. PMID: 33539754 Review.

[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.](#)

Mulder RL, Font-Gonzalez A, van Dulmen-den Broeder E, Quinn GP, Ginsberg JP, Loeffen EAH, Hudson MM, Burns KC, van Santen HM, Berger C, Diesch T, Dirksen U, Giwercman A, Gracia C, Hunter SE, Kelvin JF, Klosky JL, Laven JSE, Lockart BA, Neggers SJCMM, Peate M, Phillips B, Reed DR, Tinner EME, Byrne J, Veening M, van de Berg M, Verhaak CM, Anazodo A, Rodriguez-Wallberg K, van den Heuvel-Eibrink MM, Asogwa OA, Brownsdon A, Wallace WH, Green DM, Skinner R, Haupt R, Kenney LB, Levine J, van de Wetering MD, Tissing WJE, Paul NW, Kremer LCM, Inthorn J; PanCareLIFE Consortium. *Lancet Oncol.* 2021 Feb;22(2):e68-e80. doi: 10.1016/S1470-2045(20)30595-7. PMID: 33539755
Review.

[Management of Testicular Microlithiasis.](#)

Dinkelman-Smit M. *Eur Urol Focus.* 2021 Sep;7(5):940-942. doi: 10.1016/j.euf.2021.09.020. Epub 2021 Sep 29. PMID: 34598911

[A single blinded randomized controlled trial comparing semi-mechanical with hand-sewn cervical anastomosis after esophagectomy for cancer \(SHARE-study\).](#)

Nederlof N, Tilanus HW, de Vringer T, van Lanschot JJB, Willemsen SP, Hop WCJ, Wijnhoven BPL. *J Surg Oncol.* 2020 Dec;122(8):1616-1623. doi: 10.1002/jso.26209. Epub 2020 Sep 28. PMID: 32989770

[CRIPTO and miR-371a-3p Are Serum Biomarkers of Testicular Germ Cell Tumors and Are Detected in Seminal Plasma from Azoospermic Males.](#)

Spiller CM, Lobo J, Boellaard WPA, Gillis AJM, Bowles J, Looijenga LHJ. *Cancers (Basel).* 2020 Mar 23;12(3):760. doi: 10.3390/cancers12030760. PMID: 32210110

[Potential benefits of the use of sympathomimetics for asthmatic disease, on semen quality in men of subfertile couples.](#)

Oostingh EC, Huijgen NA, Koedooder R, Dohle GR, Stricker BH, Steegers-Theunissen RP. *Reprod Biomed Online.* 2020 Mar;40(3):423-428. doi: 10.1016/j.rbmo.2019.12.009. Epub 2019 Dec 23. PMID: 32122752

Meiotic arrest occurs most frequently at metaphase and is often incomplete in azoospermic men.

Enguita-Marruedo A, Sleddens-Linkels E, Ooms M, de Geus V, Wilke M, Blom E, Dohle GR, Looijenga LHJ, van Cappellen W, Baart EB, Baarends WM. *Fertil Steril*. 2019 Dec;112(6):1059-1070.e3. doi: 10.1016/j.fertnstert.2019.08.004. Epub 2019 Nov 22. PMID: 31767154

Sperm recovery and ICSI outcomes in men with non-obstructive azoospermia: a systematic review and meta-analysis.

Corona G, Minhas S, Giwercman A, Bettocchi C, Dinkelman-Smit M, Dohle G, Fusco F, Kadioglou A, Kliesch S, Kopa Z, Krausz C, Pelliccione F, Pizzocaro A, Rassweiler J, Verze P, Vignozzi L, Weidner W, Maggi M, Sofikitis N. *Hum Reprod Update*. 2019 Nov 5;25(6):733-757. doi: 10.1093/humupd/dmz028. PMID: 31665451

Cellular origin of microRNA-371a-3p in healthy males based on systematic urogenital tract tissue evaluation.

Boellaard WPA, Gillis AJM, van Leenders GJLH, Stoop H, van Agthoven T, Dorssers LCJ, Dinkelman-Smit M, Boormans JL, Looijenga LHJ. *Andrology*. 2019 Jul;7(4):463-468. doi: 10.1111/andr.12595. Epub 2019 Feb 20. PMID: 30786164

Paediatric and adult-onset male hypogonadism.

Salonia A, Rastrelli G, Hackett G, Seminara SB, Huhtaniemi IT, Rey RA, Hellstrom WJG, Palmert MR, Corona G, Dohle GR, Khera M, Chan YM, Maggi M. *Nat Rev Dis Primers*. 2019 May 30;5(1):38. doi: 10.1038/s41572-019-0087-y. PMID: 31147553 Review.

Dutch publications

Fertiliteitcounseling, semencryopreservatie en oncoTESE bij zaadbalkankerpatiënten: wanneer, waarom en hoe; praktische tips

Dr. Marij Dinkelman-Smit Tahnee de Vringer 24-8-2023 Tijdschrift voor Urologie

[Fertiliteitcounseling, semencryopreservatie en oncoTESE bij zaadbalkankerpatiënten: wanneer, waarom en hoe; praktische tips | mijn-bsl](#)

Varicocele, wat moet je ermee? Een overzicht van evidence based informatie en controverse als basis voor een goed gesprek

Dr. Marij Dinkelman-Smit 8-2-2022 Tijdschrift voor Urologie

[Varicocele, wat moet je ermee? Een overzicht van evidence based informatie en controverse als basis voor een goed gesprek | mijn-bsl](#)

Vijf jaar regionalisatie van de behandeling erectieprothese bij therapieresistente erectiele disfunctie in Nederland, de eerste uitkomsten en ervaringen

drs. Eveline Broers, dr. Jack Beck, dr. Marij Dinkelman-Smit, dr. Gert Dohle, dr. Henk Elzevier, dr. Kathleen D'Hauwers, dr. Wim Levens, drs. Boaz Meijer, dr. Garry Pigot, drs. Brechje Ronkes, drs. Janneke van Uhm, drs. Jeannette Verkerk-Geelhoed, dr. Afina Glas 8-2-2022 Tijdschrift voor Urologie

[Vijf jaar regionalisatie van de behandeling erectieprothese bij therapieresistente erectiele disfunctie in Nederland, de eerste uitkomsten en ervaringen | mijn-bsl](#)

Relevant publications of Erasmus MC of Department of Clinical Genetics

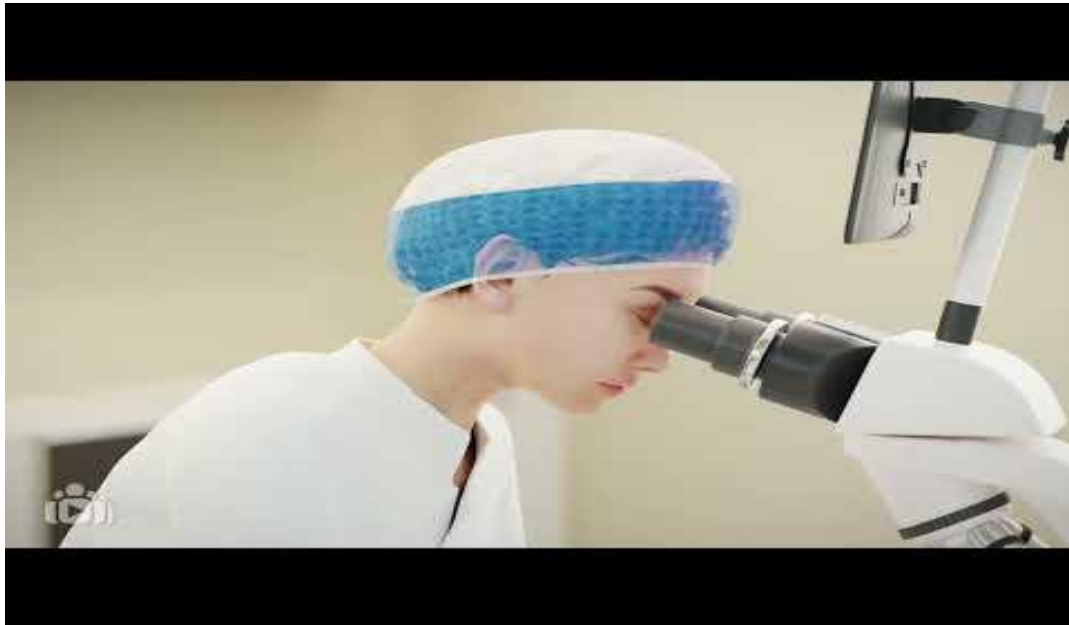
[EAA/EMQN best practice guidelines for molecular diagnosis of Y-chromosomal microdeletions: State of the art 2023.](#)

Krausz C, Navarro-Costa P, Wilke M, Tüttelmann F. *Andrology*. 2024 Mar;12(3):487-504. doi: 10.1111/andr.13514. Epub 2023 Sep 6. PMID: 37674303
Review.

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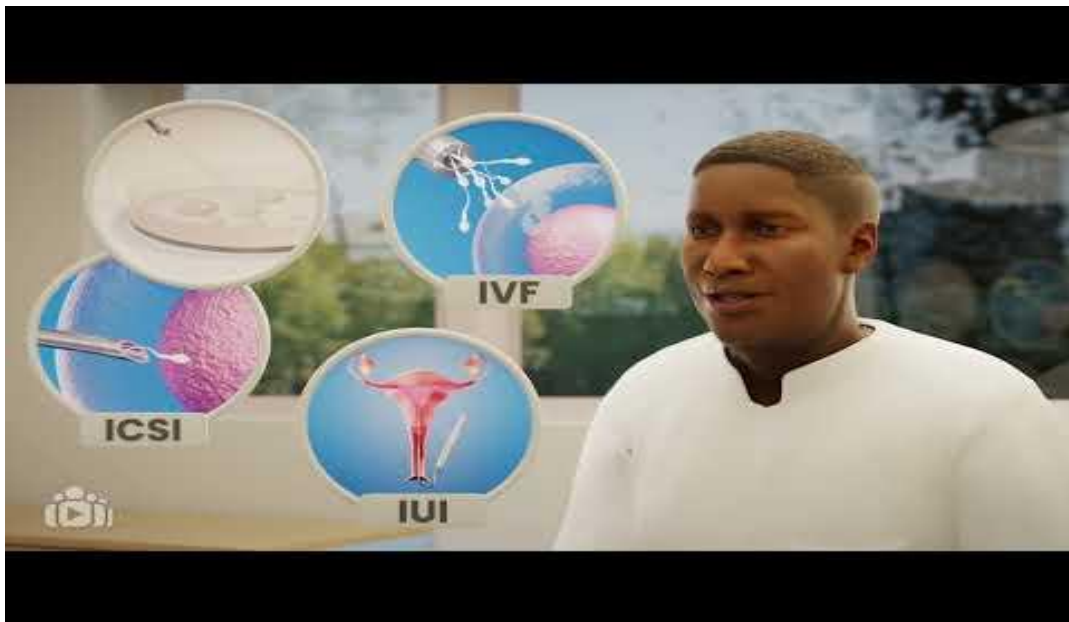
FULL LIST OF SOCIETAL CONTRIBUTIONS of staff members from the last 5 years

Patient information animations, developed by the subdepartment of Andrology Erasmus MC:



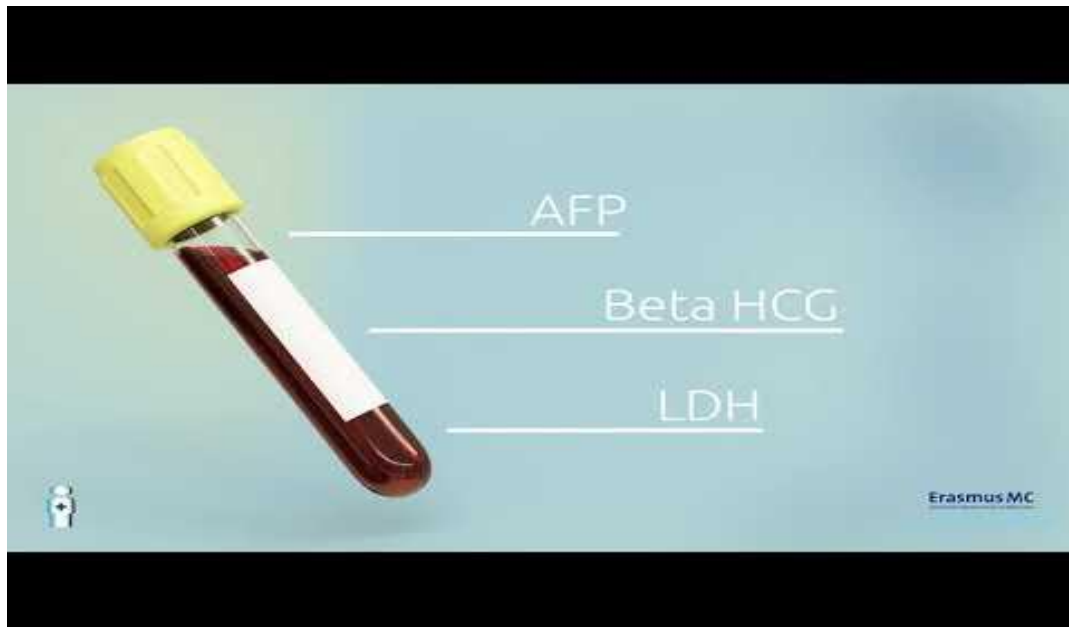
[Andrologie Tese operatie \(youtube.com\)](https://www.youtube.com/watch?v=...)

[Andrologie Fertiliteit preservatie \(youtube.com\)](https://www.youtube.com/watch?v=...)



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[Het Erasmus MC legt uit – sStadium 1 zaadbalkanker \(youtube.com\)](#)



[Scrotaal zelfonderzoek \(youtube.com\)](#)



Erasmus MC Rotterdam the Netherlands

Online lectures for the University of the Netherlands:

[OLV EV9 FU Swivel Seats 16x9 15s v3 \(youtube.com\)](#)



[Waarom hebben mannen steeds slechter zaad? :: Universiteit van Nederland](#)

[YT 16x9 6sec 3vlees&5fruit eten \(youtube.com\)](#)



[De pil voor mannen: komt hij eindelijk? :: Universiteit van Nederland](#)

Erasmus MC Rotterdam the Netherlands

Podcast contributions:

15-5-2024 We should be talking about sperm

Gert Dohle

[We moeten het over sperma hebben - De Correspondent](#)

6-5-2024 Andropauze – does it exist?

Marij Dinkelman-Smit

[De Overgang - HUMAN](#)

19-3-2024 EDCs and anabolic steroids – Dennis Storm

Marij Dinkelman-Smit

[Schitterend Doemscenario op Apple Podcasts](#)

6-12-2022 Decrease sperm quality

Gert Dohle

[Steeds meer trage zwemmers: zaadkwaliteit sterk gedaald - Amazing Erasmus MC](#)

Book contributions:

13-6-2024 book presentation: Less of a man (Minder man) Jesse Beentjes

Marij Dinkelman-Smit

[Jesse Beentjes - De Bezige Bij](#)

National news

8-2-2024 fibroblasts and erectile dysfunction

Comment Marij Dinkelman-Smit

[Speciale cellen spelen belangrijke rol bij erectie, blijkt uit onderzoek \(nos.nl\)](#)

9-1-2023 Sperm quality decrease – EDCs

Gert Dohle

[Spermakwaliteit holt achteruit door plastic, maar strengere EU-wetten blijven nog uit \(nos.nl\)](#)