

EAA Andrology Training Centre
Centre Report Bonn

2024



Clinic of Andrology
Building B42
Venusberg-Campus 1
53127 Bonn
Germany
[UKB | Abteilung für Andrologie/ Männerkunde](#)

CENTRE REPORT

History of Centre

-Andrology-

The history of Andrology in Bonn originated from the Department of Dermatology where it was first located since 1993 when Prof. G.Haidl became head of the Andrological Unit at the Department of Dermatology. The centre has been first acknowledged as EAA Training Centre in 2003. After retirement of G.Haidl in 2020 the university Bonn founded a separate and independent clinic for andrology because of the rising needs for diagnostics of infertility patients and men's health issues. The new clinic is chaired by Prof. J.-P. Allam who has an expertise in immunological infertility in men.

-Urology-

The Department of Urology in Bonn was one of the first independent departments of Urology in Germany and was founded in the year 1967 with Prof. Dr. W. Vahlensieck being the first chair of the department. In 1994, Prof. Dr. S. C. Müller was elected chief of the department followed by Prof. M. Ritter in 2018. Since 1994, urologic andrology was integrated in an interdisciplinary team of andrology including reproductive medicine, endocrinological medicine and dermatological andrology. The fruitful collaboration over - meanwhile 30 years has resulted in improvements of patient care as well as interdisciplinary research.

-Endocrinology-

Endocrinology has played a central role since the founding of the Institute of Clinical Biochemistry 44 years ago: the internationally renowned endocrinologists Prof. Heinz Breuer, Prof. Frank Bidlingmaier and Prof. Lothar Siekmann were directors of the institute. In 1987, D. Klingmüller became head of the Endocrinology Unit of the Institute of Clinical Biochemistry. To date the department is located in the clinic for internal medicine chaired by Prof. C.P. Strassburg. The collaboration is focused on testosterone deficiency in obese and diabetic men as well as transgender care.

-Reproductive medicine and gynecological endocrinology-

The IVF programme was established at the Woman Hospital of the University of Bonn by Prof. Krebs and Prof. Diedrich in 1984. This IVF programme was one of the first in Germany and was soon nationally and internationally recognised. In 1994 the IVF programme and the section of Gynecological Endocrinology (former head: Prof. W. Nocke) were combined to the Department of Gynecological Endocrinology and Reproductive Medicine. The head of this Department became Prof. H. van der Ven followed by Prof. N. Sängler in 2018.

Altogether the clinic for andrology and Reproductive medicine and gynecological endocrinology founded the fertility center „Venuskind“. It is the first of its kind taking care

of female and male infertility patients. Both departments moved into a new building in 2024.

Organization of Centre

The Bonn EAA centre consists of the clinic for Andrology (Prof. J.-P. Allam), the Urological Clinic (Prof. M. Ritter), the Department of Gynecological Endocrinology and Reproductive Medicine (Prof. N. Sanger and the Department of Endocrinology (Prof. Strassburg). Close cooperation existis with the Institute of Human Genetics (Prof. Noethen), the Radiologic Clinic and the Phsychiatry Clinic (Prof. Philipsen) Thus, andrological patients have access to all medical requirements within short distance

Educational activities

There are regular meetings of the members of the centre, acknowledgement as "Gonads Rounds" where andrologist, urologists, endocrinologists and gynecologists discuss patients. In Septembre 2023 the DVR congress was held in Bonn organized by Prof. Allam, Prof. Sanger and PD Nordhoff. In Octobre 2024 the workshop "Immunology in Andrology" took place in Bonn, founded by the Sino-German-Science-Center. A course on semen analysis is organized anually at the department of Reproductive medicine and gynecological endocrinology. A EAA school is scheduled for 2025 together with the EAA center in Gieen.

Research activities

Current research activities focus on immunological mechanisms involved in male in- and subfertility. In this context adaptive immune responses have been studied in testis with azoospermia. Thereby an immunological pattern pointing to autoimmunity in regard to an adaptive Th17 immune response could be demonstrated. Subsequently, Th17 associated cytokines and chemokines have been and are currently investigated in the ejaculate of subfertile men testing the hypothesis that Th17 immunity is not only involved in azoospermia but also in much earlier occurring chronic inflammation (CI) (Duan et al., 2011; Chen et al., 2016). In this regard we could already demonstrate that several cytokines such as IL-6 are not only detected in CI but are also associated with decreased sperm DNA-Integrity (Haidl F et al., 2015). Moreover we demonstrated that the cellular 6 Book I sources of pro-inflammatory cytokines such as IL-6 are macrophages rather than neutrophils in ejaculate with CI (Fathy et al., 2014). As IL-6 binds to its receptor IL-6R we conducted investigation of this structure on sperms. In this regard we could demonstrate that IL-6R is expressed on the mid-piece of sperms and that its expression correlates to

seminal IL-6. Subsequently, activation of IL-6R on sperm led to a slight but significant decrease of sperm motility (Djourabchi et al., 2021). Ongoing research pinpoints IL-17 and Th17 associated chemokine CCL20 in ejaculates with CI. The main interest is to reveal how these cytokines influence sperm functions. In this context we could demonstrate that CCL20 – released by follicles – is involved in sperm chemotaxis and that CCL20 saturated sperms as well as sperms from seminal plasma with high CCL20 concentration lack chemotaxis (Duan et al 2021). Further research activities deal with late onset hypogonadism (LOH) and its status in daily routine in general medicine. For this reason we conducted a multi-center longitudinal cohort study recruiting males presenting at general practitioners for either routine checkup or for seeking treatment for all kinds of diseases. Recruited subjects are tested for total and free serum testosterone levels after taking detailed medical history as well as filling out LOH questionnaire. As a member of dermatology our department also investigates the role of testosterone in dermatological autoimmune diseases such as psoriasis as testosterone has a suppressive immunological effect. In this regard we could demonstrate that low testosterone levels inversely correlate with psoriasis severity. This study could show that psoriasis patients are more likely to suffer from hypogonadism and disease severity correlates inverse to serum testosterone (Allam et al., 2019). Moreover, ongoing projects also focus on expression of several immune receptors on sperms. Beyond laboratory projects we took action to establish a German-Chinese research cooperation by organizing a scientific workshop in 2020 and 2023 supported by the German as well as Chinese state research department. To date we have 4 medical students and 1 post-doc student from china working on these projects.

Clinical activities

-Andrology-

The clinic for Andrology sees more than 600 new patients with andrological problems each year. Most of them come for male infertility, in addition, patients with erectile dysfunction, hypogonadism and delayed puberty, klinefelter syndrome, penile dermatoses are treated as well as patients with gynaecomastia and with questions around problems of the aging male. For patients with malignant tumors the possibility of cryopreservation prior to chemotherapy is offered. All modern diagnostic techniques are available including ultrasonography of the genital organs or colour duplex sonography. The laboratory tests are listed below. Seminal fluid analysis is performed according to WHO guidelines, an internal quality control system is operated for semen analysis as well as attendance at an external quality control programme run by the German Society of Andrology. The Clinic for Andrology offers all necessary sperm function tests, endocrinological laboratory tests are performed in the central laboratory of the university hospital. Cryoconservations are carried out at the fertility center „Venuskind“ by the department of Reproductive medicine and gynecological endocrinology who participate in the german programme „FertiProtect“. TESE, mikroTESE, MESA, treatment of varicoceles and further urological-andrological surgical procedures are performed at the Department of Urology. Sclerotherapy of varicoceles occurs at the Department of Radiology. In cooperation with

the Department of Urology, the Department of Endocrinology and the Department of Gynecological Endocrinology and Reproductive Medicine as well as the Institute of Human genetics the whole spectrum of Andrology and Reproductive Medicine is covered.

Name and address of Centre

Type of Centre

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

Other (please specify)

1. Director

Academician Regular Member EAA Certified Clin. Andrologist

2a. Clinical responsible

Prof. N. Sanger (Reproductive Medicine)

Academician Regular Member EAA Certified Clin. Andrologist

2b. Clinical responsible

Prof. M. Ritter (Urology)

Academician Regular Member EAA Certified Clin. Andrologist

2c. Clinical responsible

Prof. C. Strassburg (Endocrinology)

Academician Regular Member EAA Certified Clin. Andrologist

3. Present Staff (*Senior Scientists*)

1) Name PD. Dr. Hauser
Degree MD., PhD.
Speciality Urology, , Surgical Andrology

Academician Regular Member EAA Certified Clin. Andrologist

2) Name Dr. Bischoff
Degree MD
Speciality Endocrinology

Academician Regular Member EAA Certified Clin. Andrologist

Insert any additional staff below (if required)

MD/Biologists/Chemists

1) Name Dr. A. Schallmoser
 Degree PhD
 Speciality Embryologist
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

2) Name Dr. C. Faerber
 Degree PhD
 Speciality Embryologist
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

3) Name Fei Wei, grant by Chinese scholarship council
 Degree PhD – post-doc position
 Speciality Biologist
 Full time/part time _____

Academician Regular Member EAA Certified Clin. Andrologist

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

Academician Regular Member EAA Certified Clin. Andrologist

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

Academician Regular Member EAA Certified Clin. Andrologist

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

Academician Regular Member EAA Certified Clin. Andrologist

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

Academician Regular Member EAA Certified Clin. Andrologist

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

Academician Regular Member EAA Certified Clin. Andrologist

9) Name _____
Degree _____
Speciality _____
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

- 1) Name _____
2) Name _____
3) Name _____
4) Name _____
5) Name _____

PhD Students

- 1) Name Simon Göttlich (TNF-R expression sperms)
2) Name Philipp Laghai (CB-R expression on sperms)
3) Name Valentina Laghai (Sperm allergy in atopic patients)
4) Name Chris Bunzek (Hypogonadism in general medicine)
5) Name _____

Nurses

- 1) Name Nathalie Mahlberg
2) Name _____
3) Name _____

Laboratory Technicians

- 1) Name Iris Oltermann
2) Name Martina Schlösser
3) Name Yassin Chabane

Administrative Personnel

- 1) Name _____
2) Name _____
3) Name _____

4. Clinical Activity

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

	2021	2022	2023
New patients	686	751	822
Follow-up patients	1262	1402	1622

Type of patients in the last years (%)	2021	2022	2023
Infertility	80	80	80
Erectile dysfunction	6	6	6
Hypogonadotropic Hypogonadism	5	5	5
Klinefelter	3	3	3
Gynaecomastia	2	2	2
Varicocele	50 (infertility)	50 (infertility)	50 (infertility)
Cryptorchidism	10 (infertility)	10 (infertility)	10 (infertility)
Male sex accessory gland infections	45 (infertility)	45 (infertility)	45 (infertility)
Testicular tumours	1	1	1
Disorders of gender identity	1	1	1
Other	3	3	3

B. Ultrasound (testis, penile, prostate) *

	2021	2022	2023
Total	1200	1300	1400
Controls	400	420	450

* performed at the Department of Urology

C. Andrological surgery procedures

	2021	2022	2023
Testicular biopsies	35	34	36
Varicocele ligation	20	25	30
Prostate biopsies	70	75	80
BPH	130	140	150
Prostate cancer	40	43	45
Vasectomy	5	5	5
Vaso-vasostomy	2	1	1
Other			

5. A. Andrology laboratory activity

	2021	2022	2023
Semen analyses	1465	1629	1604
Sperm antibodies	710	801	456
Seminal markers	2605	3430	3910

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	153	160	153

5. C. Histopathological evaluation of biopsies Yes No 5. D. Reproductive Hormones Assays 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)

FISH sperm

Pre-implantation genetic diagnosis

Amniotic fluid karyotyping

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):

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

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	32	16 hours/month for 7 month
PhD Students	3 hours/week	20 hour/month
Post Graduate students	3 hours/week	20 hour/month
Trainees		
Other degrees (please specify)		

9. Research Activity (maximum 1 page)

Current research activities focus on immunological mechanisms involved in male in- and subfertility. In continuation of our research regarding action of different cytokines we investigated binding of IL-6 to its receptor IL-6R. We could demonstrate that IL-6R is expressed on the mid-piece of sperms and that its expression correlates to seminal IL-6. Subsequently, activation of IL-6R on sperm led to a slight but significant decrease of sperm motility (Djourabchi et al., in press). Ongoing research pinpoints IL-17 and Th17 associated chemokine CCL20 in ejaculates with inflammatory signs and to look how these cytokines influence sperm functions. In this context we could demonstrate that CCL20 – released by follicles – is involved in sperm chemotaxis and that CCL20 saturated sperms as well as sperms from seminal plasma with high CCL20 concentration lack chemotaxis (Duan et al., in submission). Further research activities deal with late onset hypogonadism (LOH) and its status in daily routine in general medicine. There is an ongoing a multi-center longitudinal cohort study recruiting males presenting at general practitioners for either routine check-up or for seeking treatment for all kinds of diseases. Recruited subjects are tested for total and free serum testosterone levels after taking detailed medical history as well as filling out LOH questionnaire. In addition we are interested in the role of testosterone in dermatological autoimmune diseases such as psoriasis as testosterone has a suppressive immunological effect. We could demonstrate that low testosterone levels inversely correlate with psoriasis severity. This study could show that psoriasis patients are more likely to suffer from hypogonadism and disease severity correlates inverse to serum testosterone (Allam et al., 2019). Moreover, ongoing projects also focus on expression of several immune receptors on sperms. To date we have 3 medical students working on these projects Beyond laboratory projects we established a German-Chinese research cooperation by organizing a scientific workshop in 2020 supported by the German as well as Chinese

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research cooperation by organizing a scientific workshops since 2020 supported by the German as well as Chinese government.

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	2018-2022
Total amount (€)	280.000 €
Funding Source(s)	DFG

Year	2020
Total amount (€)	22.874 €
Funding Source(s)	Chinesisch-Deutsches Zentrum für Wissenschaftsförderung

Insert any additional funding below if required

ORGANIZATION CHARTS

Organization charts legend: Department / Unit Structure

Unit Name	←	Clinic of Andrology
Prof. Allam	←	Prof. Dr. Allam
Iris Oltermann Natathalie Mahlberg Martina Schlösser Yassin Chabane	←	Staff members
Outpatient Clinics Embryology Ovarian stimulation Ultrasound Oocyte retrieval Embryo transfer FNA / TESE	←	Clinical services
Diagnosis of infertility Counseling of infertile couples Cryopreservation of sperm Ethics in Andrology	←	Contribution to EAA training

CENTRE PHOTOS

Please, include at least one high resolution photos

FULL LIST OF PUBLICATIONS (with IF) of staff members from the last 5 yearsMyd88 Signaling Is Involved in the Inflammatory Response in LPS-Induced Mouse Epididymitis and Bone-Marrow-Derived Dendritic Cells.

Liu JC, Wang P, Zeng QX, Yang C, Lyu M, Li Y, Yeung WS, Chiu PC, Haidl G, Allam JP, Duan YG. *Int J Mol Sci.* 2023 Apr 25;24(9):7838. doi: 10.3390/ijms24097838.PMID: 37175545

(IP: 4.9)

Citrylglutamate synthase deficient male mice are subfertile with impaired histone and transition protein 2 removal in late spermatids.

Wang-Eckhardt L, Sylvester M, Becker I, Allam JP, Eckhardt M. *Biochem J.* 2022 May 13;479(9):953-972. doi: 10.1042/BCJ20210844.PMID: 35419597

(IP: 4.4)

Fertility preservation and management of pregnancy in melanoma patients requiring systemic therapy.

Hassel JC, Livingstone E, Allam JP, Behre HM, Bojunga J, Klein HH, Landsberg J, Nawroth F, Schüring A, Susok L, Thoms KM, Kiesel L, Berking C. *ESMO Open.* 2021 Oct;6(5):100248. doi: 10.1016/j.esmoop.2021.100248. Epub 2021 Aug 23.PMID: 34438241

(IP: 7.1)

Chlamydia trachomatis infection of the male genital tract: what seems to be the trouble?

Haidl G, Allam JP. *Asian J Androl.* 2022 Jan-Feb;24(1):121-122. doi: 10.4103/aja.aja_47_21.PMID: 34169924

(IP: 3.0)

Effects of Pulsed-Wave Photobiomodulation Therapy on Human Spermatozoa.

Espey BT, Kielwein K, van der Ven H, Steger K, Allam JP, Paradowska-Dogan A, van der Ven K. *Lasers Surg Med.* 2022 Apr;54(4):540-553. doi: 10.1002/lsm.23399. Epub 2021 Apr 1.PMID: 33792933

(IP: 2.4)

Effect of mild α -chymotrypsin treatment of highly viscous semen samples on fertilization rates.

Schallmoser A, Bakjaji F, Königsberger S, John J, Färber C, Schmidt E, Breitenbach-Koller H, Allam JP, Verguts J, Sängler N. *Transl Androl Urol.* 2021 Jan;10(1):448-454. doi: 10.21037/tau-20-1013.PMID: 33532332

(IP: 1.9)

Natural killer and NKT cells in the male reproductive tract.

Duan YG, Gong J, Yeung WSB, Haidl G, Allam JP. *J Reprod Immunol.* 2020 Nov;142:103178. doi: 10.1016/j.jri.2020.103178. Epub 2020 Jul 12.PMID: 32739646 Review.

(IP: 2.9)

CCL20-CCR6 axis directs sperm-oocyte interaction and its dysregulation correlates/associates with male infertility‡.

Duan YG, Wehry UP, Buhren BA, Schrupf H, Oláh P, Bünemann E, Yu CF, Chen SJ, Müller A, Hirschhain J, Lierop A, Novak N, Cai ZM, Krüssel JS, Schuppe HC, Haidl G, Gerber PA, Allam JP, Homey B. *Biol Reprod.* 2020 Aug 21;103(3):630-642. doi: 10.1093/biolre/ioaa072.PMID: 32412043

(IP: 3.1)

Human spermatozoa of male patients with subfertility express the interleukin-6 receptor.

Djourabchi Borojerdi AS, Welchowski T, Peng W, Buchen A, Novak N, Haidl G, Duan YG, Allam JP. *Andrologia.* 2020 May;52(4):e13511. doi: 10.1111/and.13511. Epub 2020 Feb 12.PMID: 32052474

(IP: 2.8)

Androgens have an anti-inflammatory effect on human basophils in vitro.

Grobe W, Peng W, Allam JP, Yu CF, Novak N. *Allergy.* 2020 Apr;75(4):992-994. doi: 10.1111/all.14131. Epub 2019 Dec 17.PMID: 31762044 No abstract available.

(IP: 12.6)

Low serum testosterone levels in male psoriasis patients correlate with disease severity.

Allam JP, Bunzek C, Schnell L, Heltzel M, Weckbecker L, Wilsmann-Theis D, Brendes K, Haidl G, Novak N. *Eur J Dermatol.* 2019 Aug 1;29(4):375-382. doi: 10.1684/ejd.2019.3605.PMID: 31625919

(IP: 2.0)