



Fundació Puigvert

EAA Andrology Training Centre

Barcelona
Centre Report



EUROPEAN ACADEMY OF
ANDROLOGY

2024

index of the Centre Report Andrology- Puigvert Foundation

page 3	History
page 6	Educational Activities
page 17	Present staff of the Andrology Department
page 26	Staff of the Assisted Reproduction Program and its related Activity
page 28	Other Collaborations: Sant Pau Hospital Activity
page 31	Staff photos

CENTRE REPORT

***Andrology Department
Fundació Puigvert
Cartagena Street, 340
08025 Barcelona, Spain***

Tel + 34 93 416 9700

Fax+ 34 93 416 9730

E-mail: secrecomun@fundacio-puigvert.es

www.fundacio-puigvert.es

History of Centre

The Puigvert Foundation (Barcelona) is a landmark Centre for urology, nephrology and andrology in Spain.

The origins of the centre can be traced back to the urology department, situated in one of the wings of Sant Pau Hospital.

In 1961, the Foundation was constituted and established. The construction of a new building, which was fully operational in 1966, and the more recent and more modern one, was inaugurated in 2012.

In 1970, the Center took over management from the hospital administration and accepted patients from both the Spanish National Health Service and private.

The main established departments included urology, nephrology, andrology, laboratories, radiology, and psychology.

The current staff of the Andrology Department is nourished by specialists in urology, endocrinology, gynaecology and psychology, providing multidisciplinary care to patients suffering from reproductive and sexual disorders.

The Institution has an interesting history as it was a basic stone of Andrology in Spain, with strong ties with the beginning of Andrology as a specialty in Europe and American countries.

Dr. A. Puigvert and Dr. E. Mancini, both from Barcelona and Buenos Aires, created the International Committee of Andrology (CIDA) chair in the Institution, with the collaboration of many enthusiastic and recognized scientific abroad members. Later, with the growing interest and members, the CIDA despaired and became the International Society of Andrology.

During its origins, the institution's manager, Mrs. Martí, held the position of Treasurer of the CIDA and the (ISA). She was an enthusiastic, defender and collaborated extensively with Andrology. CIDA decided to create its journal, and the first volume of IJA was published in 1978, the Institution funded the International Journal of Andrology (IJA). In 1989, IJA became the official journal of the European Academy of Andrology (EAA), which appointed Prof. R. Eliasson as the editor-in-chief. In 1989, Mrs. Martí, on behalf of Fundacio Puigvert, withdrew the journal and donated to Dr. Eliasson, which in turn passed the propriety to the EAA.

Dr. Pomerol-Serra, who was the first director of the initial Andrology section. He occupied the Secretary of the CIDA.

The Department progressively increased the number of staff members being the world's first known of these characteristics.

The Puigvert Foundation has been a crucial powerful force behind the creation and success of the Spanish Association of Andrology (ASESA). It is remarkable that in 1980, Dr. Pomerol-Serra, was elected as ASESA's inaugural president that evidenced the Institution's exceptional leadership and proficiency in this field.

He also occupied the Secretary of the CIDA, he retired in 1993 and died in 2004.

The Centre has a long teaching experience. It was declared a postgraduate Specialization School in July 1967 and was incorporated into the Medicine School of the Autonomous

University of Barcelona, Sant Pau Hospital teaching unit.

Different training programs for postgraduate MDs, PhDs and specialists are available for Andrologists and related disciplines, with a duration ranging from 3 to 36 months.

It was recognized as a training Clinical Centre in Andrology by the European Academy of Andrology in 1998 in the Site Visit 19 of October 1998. The EAA Subcommittee, consisting of Prof. R. Eliasson from Stockholm, Prof. G. Forti from Florence, and Prof. F. Wu from Manchester, conducted the first accreditation. The process was initiated by the Head of the Department, who delegated the responsibility to Prof. O. Rajmil, as Academician and Co-Director of the Centre, for overseeing all procedures.

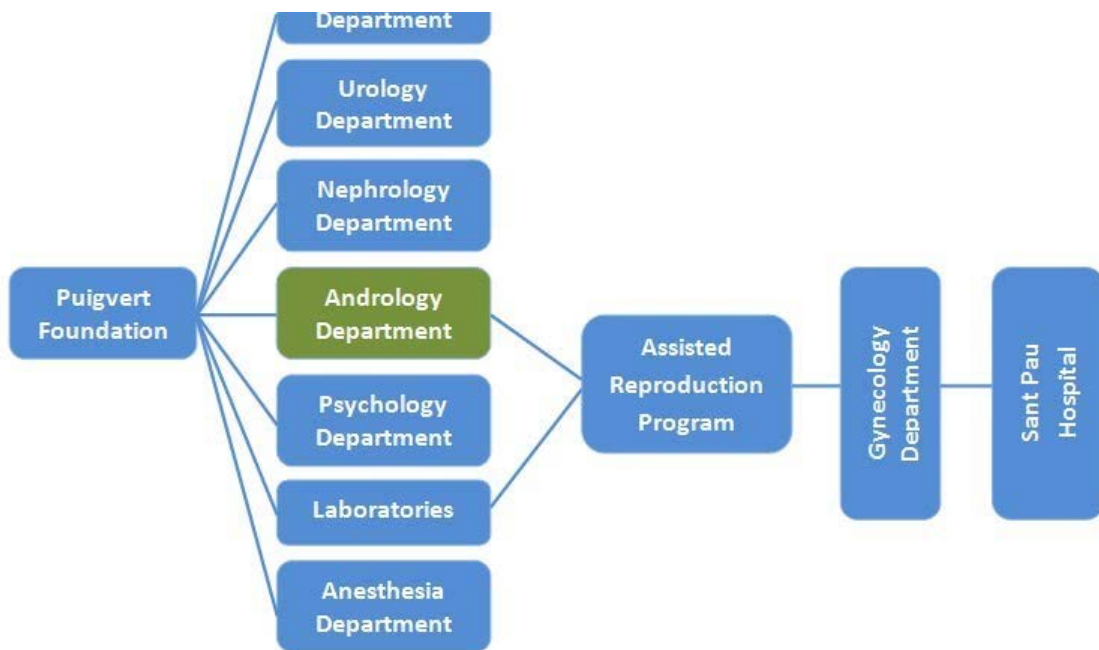
The Direction of the Department since 2004 was assumed by Dr. E Ruiz-Castañé. Research activities are mainly focused on clinical investigations related to infertility and genetic implications, meiotic abnormalities and new treatments for erectile dysfunction. The Department has participated in multicentric trials under the auspices of the WHO and has played a prominent role in related areas. Present research is focused on infertility, genetic abnormalities, diagnosis and treatment for sexual and erectile dysfunctions and sexually transmitted infections.

In 2014, Barcelona hosted the European Congress of Andrology (ECA), which was presided over by Dr. O Rajmil, as the local organizing committee.

In 2022, Barcelona hosted the (ECA) which was presided by Dr. E. Ruiz-Castañé, as the chair of the local organizing committee.

The department is an esteemed referral Center that supplies to a substantial population of approximately 8 million people in Catalonia.

Organization of Centre



Educational activities

Medical Students

Lectures are presented by the staff members at the "Teaching Unit of the Sant Pau Hospital Campus", School of Medicine at the Autonomous University of Barcelona (UAB).

Postgraduate activities

1. Training Programs for residents from urology and endocrinology.
2. Training Programs for embryologists and specialists in clinical biochemistry.
3. Short courses focused on specific topics.

Training programs in Clinical Andrology

There are two types of postgraduate programs: 1) **Fellow in Andrology** and 2) **master's degree in clinical Andrology**.

List of students who completed the previous **three-year** MD training program (marked with the* who passed the European Academy examination):

- 1986 Ferran García. Barcelona, Spain
- 1987 Enrique Fabian. Portoalegre, Brasil
- 1988 Anna Puigvert-Martinez. Barcelona, Spain
- 1989 Joaquim Sarquella Geli. Girona, Spain*
- 1990 Xavier Ruiz Romero. Barcelona, Spain
- 1991 Anna Segura Paños. Alicante, Spain*
- 1992 Héctor Narvaez. Colombia
- 1995 Fernando Ferreira. Brasil
- 1996 Carlos H. Ferreira. Brasil
- 1997 Álvaro Vives. Barcelona, Spain
- 1997 Natalia Ribé. Barcelona, Spain
- 1998 Susana Egozcue. Barcelona, Spain
- 1999 Oscar Briceño. Caracas, Venezuela
- 2000 Erwin Amaya. Colombia
- 2002 Rossana Rodriguez. Palma de Mallorca, Spain
- 2004 José Antonio Arrús Soldi. Lima, Perú

A **two-year** training program of **Fellows** is currently available in conformity with the latest EAA recommendations of the EAA/ESAU curriculum.

List of students who have already completed or are about to complete the **two-year** MD training program:

- 2004 César Rojas. Bogotá. Colombia *
- 2005 Marlín Fernández-Camilo. Santo Domingo
- 2005 Alejandro Carvajal-Obando. Cali, Colombia*
- 2006 Josvany Sánchez-Curbelo. Barcelona, Spain
- 2006 Mirna Echeverría México DF, México*
- 2008 Humberto Suárez Regardiz. Valencia, Venezuela*
- 2008 Andrés Vazquez. Buenos Aires, Argentina
- 2009 M^a Fernanda Peraza-Godoy. Spain *
- 2009 Cristian Palma. Santiago de Chile, Chile
- 2010 Gerardo Ortiz. Monterrey, Mexico *
- 2011 Saulo Camarena. Guadalajara, Mexico*
- 2012 Marco Cosentino. Padova, Italia
- 2015 Daniel Moreno. Spain *
- 2015 José- Ignacio Vinay. Santiago, Chile
- 2017 Juan- Fernando Villegas-Osorio. Sevilla, Spain*
- 2017 Carles Gasanz. Barcelona, Spain*
- 2021 Maurizio De Rocco* Padua, Italy
- 2021 Doron Vantman*. Santiago, Chile
- 2023 Luis Malca. Perú
- 2023 Santiago Martinez*. Córdoba, Argentina*

Master Program of Clinical Andrology

In 2012, a Master Program was launched jointly with the Autonomous University of Barcelona (UAB). The program is in line with the curriculum of the EAA/ESAU designed for Clinical Andrology training. It is based on 70 ETC credits (1 credit = 25 hours including theory and practice). More than 50 students have completed the program to until 2024.

The program was validated by the Educational sub-committee (EDUCOM) and the Executive committee of the EAA in 2014 and allows the candidates to take the examination for the EAA.

Since the beginning of the Master there were three students who passed the EAA exam.

Courses: 2021-2023

Year 2021

Pandemic situation.

Year 2022

18th Institutional triennial Andrology course - October. 172 delegates.

12th European Congress of Andrology. 397 delegates.

Start 6th edition of the Clinical Andrology Master. Central University of Catalonia-Uvic.

Year 2023

Meeting Conference on Female Sexual Dysfunction. 70 delegates.

Meeting Conference Sexual transmitted diseases. 349 delegates.

Research activities.

The Andrology Group, which is associated with the Research Institute of Sant Pau Hospital (IR) that earn the accreditation of ISCII. The last is a prestigious network reserved for top research centers that receive public funding. IR Sant Pau is among 35 Spanish institutions that have achieved level of excellence and Fundació Puigvert has been part of IR since 2011.

The Medicine Research Ethics Committee was accredited by the Department of Health in 1996 and later validated as a European IRB with CTIS code CEIm ORG-100038907. Members of the Andrology Department have been involved in research focused on the diagnosis and treatment of male and female sexual dysfunction, male infertility, sexual transmitted infections, and endocrinology impairments. Their objective is to enhance the medical and surgical approaches for these problems.

In 2007, the Fundació Puigvert funded a study on Genetic risk factors involved in cryptorchidism and since that time the topic of androgenetic became one of the major research fields of the EAA Center.

The research team participated in several collaborative studies, with other EAA centers (Florence and Munster EAA Centers) and with members of the Marie Curie Repro-Train project and the International Male Infertility Genomics Consortium. “REPRO-TRAIN integrated a research environment involving complementary frontier “omic” approaches in male reproductive biology for the first time with the aim of identifying novel human fertility genes and the gene networks that are deregulated in the infertile and malignant testis”.

Currently the Center director (Dr Ruiz- Castañe) and Dr Riera-Escamilla take part of the ANDRONET Cost action (working group “research coordination”).

Research activities.

Publications related to this project:

- Nuti F, Marinari E, Erdei E, El-Hamshari M, Echavarria MG, Ars E, Balercia G, Merksz M, Giachini C, Shaer KZ, Forti G, Ruiz Castañe E, Krausz C. (2008). The leucine-rich repeat-containing G. protein-coupled receptor 8 gene T222P mutation does not cause cryptorchidism. *J. Clin. Endocrinol Metab.* 93(3):1072-6.
- Aston KI, Krausz C, Laface I, Ruiz Castañe E, Carrell DT. (2010). Evaluation of 172 candidate polymorphisms for association with oligozoospermia or azoospermia in a large cohort of men of European descent. *Hum Reprod.* 25(6):1383-97.
- Ars E, Lo Giacco D, Bassas L, Nuti F, Rajmil O, Ruíz P, Garat JM, Ruiz Castañe E, Krausz C. (2011). Further insights into the role of T222P variant of RXFP2 in non-syndromic cryptorchidism in two Mediterranean populations. *Int J Androl* 34(4):333-8.
- Lo Giacco D, Ars E, Bassas L, Jorge Galan J, Rajmil O, Ruíz P, Caffaratti J,

Guarducci E, Ruiz- Castañé E, Krausz C. (2011). ESR1 promoter polymorphism is not associated with non- syndromic cryptorchidism. *Fertil Steril.* 95(1):369-71.

In 2008 four triennial projects funded by the Spanish Ministry of Health (FIS of Instituto de Salud Carlos III) were granted to the Andro-genetic group of the Fundacio Puigvert. Amount: 94.380,00 €. FIS project 2008 (2008- 2011): Gene dosage of the AZFc region of the Y chromosome; clinical consequences and mRNA profiling. Amount of the grant: 40.200,00 €.

Related publications

- Chianese C, Lo Giacco D, Tüttelmann F, Ferlin A, Ntostis P, Vinci S, Balercia G, Ars E, Ruiz-Castañé E, Giglio S, Forti G, Kliesch S, Krausz C. Y-chromosome microdeletions are not associated with SHOX haploinsufficiency. *Hum Reprod.* 2013, 28(11):3155-60.
- Lo Giacco D, Chianese C, Sánchez-Curbelo J, Bassas L, Ruiz P, Rajmil O, Sarquella J, Vives A, Ruiz-Castañé E, Oliva R, Ars E, Krausz C. Clinical relevance of Y-linked CNV screening in male infertility: new insights based on the 8-year experience of a diagnostic genetic laboratory. *Eur J Hum Genet.* 2014; 22(6):754-61.

FIS project 2011 (2011-2014):

- X-linked Chromosome Copy Number Variations and spermatogenesis candidate genes in male infertility. Amount of the grant 78.000 €.

Publications related to this project

- Krausz C, Giachini C, Lo Giacco D, Daguin F, Chianese C, Ars E, Ruiz Castañé E, Forti G, Rossi E. High resolution X chromosome-specific array-CGH detects new CNVs in infertile males. *PLoS One.* 2012;7(10): e44887.
- Lo Giacco D, Chianese C, Ars E, Ruiz Castañé E, Forti G, Krausz C. Recurrent X chromosome-linked deletions: discovery of new genetic factors in male infertility. *J Med Genet.* 2014 ;51(5):340-4.
- Chianese C, Gunning AC, Giachini C, Daguin F, Balercia G, Ars E, Lo Giacco D, Ruiz Castañé E, Forti G, Krausz C. X chromosome-linked CNVs in male infertility: discovery of overall duplication load and recurrent, patient-specific gains with potential clinical relevance. *PLoS One.* 2014;9(6): e97746.

FIS project 2014 (2015-2018):

- Genetic and genomic study of specific subtypes of secretory azoospermia: new tools

for diagnostic/prognostic. Amount of the grant: 86.500,00 €.

FIS project 2017 FIS/FEDER-PI17/01822:

- Genetic and genomic study in infertile patients and patients with testicular germ cell tumors: development of new tools for an early diagnosis. Amount of the grant: 104.000 €.
- Merck Salud (2017-2020): Evaluation of the effect of cytostatic therapy on the genome and epigenome of the male gamete. Clinical study that began in 2015 with oncologic patients. Amount of the grant: 30.000 €.

Related publications

- Kumar K, Lewis S, Vinci S, Riera-Escamilla A, Fino MG, Tamburrino L, Muratori M, Larsen P, Krausz C. Evaluation of sperm DNA quality in men presenting with testicular cancer and lymphoma using alkaline and neutral Comet assays. *Andrology*. 2018 Jan; 6(1):230- 235.

Side projects:

- Monomorphic teratozoospermia

Related publications

- Chianese C, Fino MG, Riera Escamilla A, López Rodrigo O, Vinci S, Guarducci E, Daguin F, Muratori M, Tamburrino L, Lo Giacco D, Ars E, Bassas L, Costa M, Pisatauro V, Noci I, Coccia E, Provenzano A, Ruiz-Castañé E, Giglio S, Piomboni P, Krausz C Comprehensive investigation in patients affected by sperm macrocephaly and globozoospermia. *Andrology*. 2015 Mar;3(2):203-12.
- Krausz C, Escamilla AR, Chianese C. Genetics of male infertility: from research to clinic. *Reproduction*. 2015 Nov; 150 (5): R159-74.
- Krausz C, Riera-Escamilla A. Genetics of male infertility. *Nat Rev Urol*. 2018 Apr 5. doi: 10.1038/s41585-018-0003-3. [Epub ahead of print] Review. PubMed PMID: 29622783.
- Krausz C, Cioppi F, Riera-Escamilla A. Testing for genetic contributions to infertility: potential clinical impact. *Expert Rev Mol Diagn*. 2018 Mar 22:1-16.

Grants in collaboration with the Institute of biomedical Investigation, Bellvitge Hospital (IDIBELL)

-
- Analysis of gene expression profile of male infertility due to severe defects during meiosis. Financing Entity: Instituto de Salud Carlos III. Project number: FIS-FEDER PI05/0759 Amount of the grant: 89.110 €. Period: 2006-2008 P.I.: S. Larriba. Investigators from Fundació Puigvert: L Bassas, A Mata.
 - Regulation of RNA expression in the severe meiotic defects: analysis of the DNA methylation and the expression profile of testicular miRNA. Financing Entity: Instituto de Salud Carlos III. Project number: PI 09/01727. Amount: 69.575 €. Period: 2010-2012. P.I.: S Larriba S.
 - Assessment of the sperm transcriptome as a fertility biomarker and its potential use in the treatment of male infertility. Financing Entity: FIS/FEDER, Instituto de Salud Carlos. Project number: PI 12/00361. Amount of the grant: 50.215 €. Period: 2013-2015. P.I.: Larriba S. Investigators from Fundació Puigvert: L Bassas, A Mata.
 - Genomic and functional analysis of human hereditary infertility. Financing Entity: CSI. Project number: 114U14. Amount of the grant: 29.000 €. Period: 2015. P.I.: A Martín Pendás. (Centro de Investigación del Cáncer). 01/01/2015. Investigators from Fundació Puigvert: L Bassas.
 - Identification of new diagnostic and prognostic factors of Genitourinary pathologies based on microRNAs from seminal plasma. Financing Entity: FIS/FEDER, Instituto de Salud Carlos III. Project number: PI 15/00153. Amount of the grant: 98.615 €. Period: 2016-2018. P.I.: Larriba S. Investigators from Fundació Puigvert: L Bassas, A Mata.
 - Exosomal miRNA in semen as biomarkers of the origin of azoospermia and the presence of mature sperm in testicular tissue. Financing Entity: FIPSE. Project number: 3178-17. Amount of the grant: 30.000 €. Period: 2018. P.I.: S Larriba. Investigators from Fundació Puigvert: L Bassas, O López

Related publications

- Martínez J, Bonache S, Carvajal A, Bassas L, Larriba S. Mutations of SYCP3 are rare in infertile Spanish men with meiotic arrest. *Fertil Steril*. 2007 Oct;88(4):988-9. PubMed PMID: 17434513.
- Bonache S, Martínez J, Fernández M, Bassas L, Larriba S. Single nucleotide polymorphisms in succinate dehydrogenase subunits and citrate synthase genes: association results for impaired spermatogenesis. *Int J Androl*. 2007 Jun;30(3):144-52. PubMed PMID: 17298551.
- Terribas E, Bonache S, García-Arévalo M, Sánchez J, Franco E, Bassas L, Larriba S. Changes in the expression profile of the meiosis-involved mismatch repair genes

in impaired human spermatogenesis. *J Androl.* 2010 Jul-Aug;31(4):346-57. doi: 10.2164/jandrol.109.008805. Epub 2010 Jan 14. PubMed. PMID: 20075417.

- Heyn H, Ferreira HJ, Bassas L, Bonache S, Sayols S, Sandoval J, Esteller M, Larriba S. Epigenetic disruption of the PIWI pathway in human spermatogenic disorders. *PLoS One.* 2012;7(10): e47892. doi: 10.1371/journal.pone.0047892. Epub 2012 Oct 24. PubMed PMID: 23112866.
- Bonache S, Mata A, Ramos MD, Bassas L, Larriba S. Sperm gene expression profile is related to pregnancy rate after insemination and is predictive of low fecundity in normozoospermic men. *Hum Reprod.* 2012 Jun;27(6):1556-67. PubMed PMID: 22447625.
- Bonache S, Algaba F, Franco E, Bassas L, Larriba S. Altered gene expression signature of early stages of the germ line supports the pre-meiotic origin of human spermatogenic failure. *Andrology.* 2014 Jul;2(4):596-606. PubMed PMID: 24803180.
- Muñoz X, Navarro M, Mata A, Bassas L, Larriba S. Association of PIWIL4 genetic variants with germ cell maturation arrest in infertile Spanish men. *Asian J Androl.* 2014 Nov- Dec;16(6):931-3. PubMed. PMID: 24969058.
- Urduñigo RG, Bayón GF, Dmitrijeva M, Toraño EG, Bravo C, Fraga MF, Bassas L, Larriba S, Fernández AF. Aberrant DNA methylation patterns of spermatozoa in men with unexplained infertility. *Hum Reprod.* 2015 May;30(5):1014-28. PubMed PMID: 25753583.
- Muñoz X, Mata A, Bassas L, Larriba S. Altered miRNA Signature of Developing Germ-cells in Infertile Patients Relates to the Severity of Spermatogenic Failure and Persists in Spermatozoa. *Sci Rep.* 2015. PubMed PMID: 26648257.
- Barceló M, Mata A, Bassas L, Larriba S. Exosomal microRNAs in seminal plasma are markers of the origin of azoospermia and can predict the presence of sperm in testicular tissue. *Hum Reprod.* 2018. Jun 1;33(6):1087-1098. PubMed PMID: 29635626

International patent

- Sara Larriba Bartolomé; Lluís Bassas Arnau. 11382187.0-2402. In vitro method for predicting fecundity of semen España. 06/06/2011. IDIBELL/Fundación Puigvert.

Other collaborations and publications

-
- Ramón y Cajal T, Polo A, Martínez O, Giménez C, Arjona C, Llord G, Bassas L, Viscasillas P, Calaf f J. Preimplantation genetic diagnosis for inherited breast cancer: first clinical application and live birth in Spain. *Fam Cancer*. 2012 Jun;11(2):175-9. PubMed PMID: 22179695.
 - Martorell MR, Martínez-Pasarell O, Lopez O, Polo A, Sandalinas M, Garcia-Guixé E, Bassas L. Chromosome 16 abnormalities in embryos and in sperm from a male with a fragile site at 16q22.1. *Cytogenet Genome Res*. 2014; 142(2):134-9. PubMed PMID: 24434955.
 - Rosen RC, Wu F, Behre HM, Porst H, Meuleman EJH, Maggi M, Romero-Otero J, Martinez-Salamanca JI, Jones TH, Debruyne FMJ, Kurth KH, Hackett GI, Quinton R, Stroberg P, Reisman Y, Pescatori ES, Morales A, Bassas L, Cruz N, Cunningham GR, Wheaton OA; RHYME Investigators. Quality of Life and Sexual Function Benefits of Long- Term Testosterone Treatment: Longitudinal Results From the Registry of Hypogonadism in Men (RHYME). *J Sex Med*. 2017 Sep;14(9):1104-1115. PubMed PMID: 28781213.

During the period 2021-2023, the team has participated in the following non-competitive clinical research projects of external sponsors or sponsored by our institution itself:

- C2022/10; 000400, EUDRA CT: 2023-508430-34-00 (2021-004254-37). A randomised, double-blind, placebo-controlled trial to assess the efficacy and safety of FE 999049 for treatment of men with idiopathic infertility (ADAM Study), PI: RUIZ-CASTAÑÉ, E. Sponsor: Ferring Pharmaceuticals A/S. Period: 2023 –
- C2021/29; EAU-RF 2018-01, Prospective registry for Patients Undergoing Penile Prosthesis Implantation for Male Erectile Dysfunction (PHOENIX Study), PI: RUIZ-CASTAÑÉ, E. Sponsor: EAU-RF. Period: 2021 –
- C2021/41; Vascular study of patients with erectile dysfunction undergoing RigiScan©. PI: DE ROCCO, M. Sponsor: FUNDACIÓ PUIGVERT. Period: 2021 –
- C2020/13; SHI-OSP-2019-01, Treatment satisfaction and adherence in women with vulvovaginal atrophy: transversal study (CRETA Study), PI: GONZÁLEZ, M. Sponsor: SHIONOGI S.L.U. Period: 2020-2021.
- 2017/11; IDIURO-2016-001, Observational study for the validation of the Peyronie's disease questionnaire in its Spanish version (PDQ Study), PI: RUIZ-CASTAÑÉ, E. Sponsor: ASOCIACION ESPAÑOLA DE UROLOGIA (AEU). Period: 2018 –
- C2021/38; ManAgement of priapism and its impact on outcomes: an international register (MARS Study). PI: DE ROCCO, M. Sponsor: Dr. Russo - H. P. Rodolico-

San Marco (Catania). Period: 2021 –

- C2023/37, Sexual function in young cancer patients, impact of treatments and psychological factors. PI: DE ROCCO, M. Sponsor: FUNDACIÓ PUIGVERT. Period: 2023 –

“Genetics applied to male infertility”, is an active line of investigation during the period 2021-2023, the projects granted with public and private competitive funds are:

- 2020/02c, Exome analysis in azoospermic patients with spermatogenic arrest: development of a diagnostic gene panel with prognostic value prior testicular biopsy. Co-PI A. Riera-Escamilla Instituto de Salud Carlos III Expte. PI20/01562. Budget: 97.889,00 €. Period: 2021 –
- 2023/02c, Genomic characterization of Sertoli cell only azoospermia: development of a diagnostic and pre-testis biopsy prognostic gene panel. Co-PI A. Riera Escamilla Instituto de Salud Carlos III Expte. PI23/00425. Budget: 102.500 €. Grant: 2023. Period: 2024-2026.
- C2021/03, Impact of COVID-19 on male reproductive health PI: BASSAS, LL. Fundació La Marató de TV3 - ed. 2021 Expte 219/C/2021 Budget for F. Puigvert: 50.000,00 € Period: 2021 –

Thanks to the collaboration between Dr Bassas Fundacio Puigvert and Dr. Sara Larriba of IDIBELL a patent was deposited, shared by the two researchers, Fundació Puigvert and IDIBELL: “Methods and markers for the characterization of azoospermia”, no. PCT/EP2019/057079.

Publications related with the development of the above-mentioned research projects are included in Publications of the Site visit report.

Main areas of clinical activities

1. Infertility
2. Hypogonadism including sequelae of cancer treatment.
3. Erectile dysfunction (medical treatment and surgery)
4. Fertility gamete preservation: male and female
5. Sperm retrieval (NOA/OA)
6. Assisted reproduction: IUI; IVF; ICSI including use of donor spermatozoa/oocytes
7. Female sexual dysfunction (partners of males consulting for sexual Dysfunction)
8. Sperm conservation in oncological patients
9. Sexual incongruence patients
10. Male surgical contraception
11. Genital reconstruction and restitution (Peyronie Disease, phalloplasty, etc)
12. Psychologic diagnosis and treatment of male sexual dysfunctions

Centre characteristics

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

Present staff

- 1. Director: Eduard Ruiz Castañé, MD, Urologist.**
Academician Affiliated Member Clinical Andrologist
- 2. Osvaldo Rajmil, MD, PhD, Endocrinologist.**
Academician Clinical Andrologist Consultant senior advisor
- 3. Lluís Bassas, MD, PhD, Endocrinologist.**
Academician Clinical Andrologist Consultant senior advisor
- 4. Joaquim Sarquella, MD, Clinical Andrologist Certified by the EAA.**
Academician Clinical Andrologist
- 5. Alvaro Vives, MD, PhD Clinical Andrologist. Specialist in Sexually Transmitted Infections.**
Academician Clinical Andrologist
- 6. Josvany René Sánchez-Curbelo, MD, Endocrinologist, MSc in Andrology, Autonomous University of Barcelona.**
Academician Affiliated Member Clinical Andrologist. Clinical Head Andrology Office
- 7. Mónica Gonzalez, MD, Gynecologist, MSc Sexual Therapy.**
- 8. José Antonio Arrus- Soldi, MD, Urologist, Andrologist.**
- 9. Doron Vantman, MD, Urologist, Clinical Andrologist: EAA Certified.**
- 10. Maurizio De Rocco, MD, Endocrinologist. Clinical Andrologist: EAA Certified.**
- 11. Luis Malca, MD, Urologist, Andrologist.**

Nurses

1) **Gabino Adalid**, Nurse.

Full time Part time If yes, n. of hours 7

Director of semen laboratory: Lluís Bassas, MD, PhD.

Physicians:

MD/Biologists

1) **Olga López**, Biologist, PhD, Semen and Embriology Lab. Full time x.

2) **M^a Mar Arjona**, Laboratory Technicians. Full time x.

Reproduction and Embriology Laboratory

1) **Olga Martinez-Pasarell**, Biologist, PhD, Full time x.

2) **Silvia Garcia Monclús**, Bsc.

3) **Noelia Moya Rodrigo**, Bsc.

4) **Elisabet Lancharro Muñoz**, Bsc.

5) **Blanca Secall Perez**, Bsc.

6) **Sergi Sanfeliu**, Bsc.

Pathology Section

Director: Ferran Algaba, MD, PhD, Assoc Professor of Pathology.

Physicians:

1) **Yolanda Arce**, MD.

2) **Montserrat Castro**, MD.

Molecular Biology Lab

1) **Elisabet Ars Criach**, Chemist, PhD, Full time.

2) **Antoni Riera-Escamilla**, Biologist, MSc, PhD, Full time (in long absence).

3) **Matilde Spinelli**, Biotechnologist, Bsc, Full time.

Psychology Department

Director: Francesc J. Maestre, Expert in Clinical Psychology, Psychotherapist.

1) **Anna Mir**, Clinical Psychologist, Psychotherapist.

2) **Cristina Granell Rodríguez**, Expert in Clinical Psychology, Psychotherapist.

3) **Maria Paula Bonelli de Marziani**, Psychologist, Psychotherapist.

Person in charge (if more Institutions in the Centre)

Andrology Fellows

Santiago Martínez, MD, Endocrinologist, MsC in Andrology, Autonomous University of Barcelona.

Administrative Personnel

- 1) Dolors Guart (Head) Part time x
- 2) Jemima Matabacas Part time x
- 3) Lluïsa Ponsa Part time x
- 4) Nuria Viñolas Part time x
- 5) Seila Ballerini Part time x

For each category, please specify changes (increased or decreased number) from EAA site visit:

Physicians: unchanged increased x decreased

Nurses: unchanged x Laboratory Technicians: unchanged x

Overall Comment: the staff meets the requirements for Centre activities yes

Clinical Activity

Activity per year in the last 3 years

Year	2021	2022	2023
New patients	2605	2841	3066
Nocturnal penile studies (Rigiscan®)	152	98	117

Testicular Ultrasound (US)	146	219	157
Training for self-injection therapy	185	422	529
Cryotherapy for HPV	334	316	307

Male Infertility	322	341	359
Hypogonadism	48	50	52
Varicocele	119	119	114
Testicular tumours-orchiectomy (Urology plus Andrology)	102	120	140

Surgical activity

All the staff is involved in this activity under Dr. Sarquella's supervision who he is also in charge of microsurgery training. External teaching programs are also provided with all members participation.

Andrological Surgical procedures			
asectomy	162	188	216
aricocele repair	41	39	36
enile prosthesis implant	49	42	52
orporoplasty plus patch	2	3	5
total	504	450	459

Hormone Laboratory Activity

Hormone determinations			
LH	1099	1226	1170
Prolactin	473	446	474

Concept		2019		2021		2023
Membrane integrity (vitality, HOS)		459		412		250
Sperm DNA fragmentation (SCD)		459		336		417

Sperm banking donors yes not

Related clinical activity to the semen laboratory						
Accepted sperm donors		7	9		41	32

Sperm banking cancer patients yes not

Year	2021	2022	2023

Histopathological evaluation of biopsies yes not

Reproductive hormone assays yes not

Genetic testing

Y chromosome microdeletions according to EAA/EMQN guidelines yes

Blood karyotyping yes

Year	2021	2022	2023
Y chromosome microdeletions	73	54	74

**Collaboration with other Clinical Units of the
University/Hospital**

IVF Unit yes x

Year		2022	2021
PGD cycle (direct diagnosis 1 mutation and neuploidy screening)		1	0
Detection of direct mutation or additional TR		8	5

Other genetics studies			
all amplified by karyomapping SR	0	7	0
Pre-test PGT-M karyomapping	20	3	0

Staff of the Assisted Reproduction Program with the Gynecology Department, Sant Pau Hospital

Anna Polo, MD, PhD, Chair of the Joint Reproduction Program.

Pere Parés, MD, PhD.

Susanna Peón, MD.

Maria J. Saiz, MD.

Beatriz Álvaro, MD, PhD.

Sofia Gaggiotti, MD, PhD.

Pamela Santucci, MD.

Infertility Work up

The Department of Gynecology of Sant Pau Hospital and the Andrology Department, in collaboration with the Semen and the Embryology Lab work together in human reproduction. This collaboration established a standardized pattern for attending couples consulting for infertility.

Assisted reproductive techniques (ARTs) are applied conveniently as a treatment for infertility. Decisions of ART are taken jointly. A specific surgical area close to the Embryology Lab, designed for oocyte retrieval and embryo transfer, with a nearest post anesthetic recovery zone, for ART's patients is provided.

and intrauterine mination	274	215	305
ICSI-ET (cicles)	770	797	814

Clinical Psychology Department

Psychology members work closely with the Andrology Department to provide a comprehensive sexual health care program. This program is based on a biopsychosocial model that incorporates an internationally accepted approach for addressing sexuality issues, a biographical-professional sexual education model, and an integration of biological, psychological, and sociocultural factors to formulate diagnoses and design effective treatment plans.

Our program implements a collaborative care pathway that enables personalized interventions. The process begins with andrologists receiving and assessing the patient's consultation request. Psychologists then evaluate the patient's help-seeking needs, analyze current etiological factors, and produce an interdisciplinary report. Based on the most pertinent etiological factors (both andrological and psychological), and a therapeutic approach is suggested. Finally, the andrologists review the patient's case and initiate the treatment plan.

Other collaborations

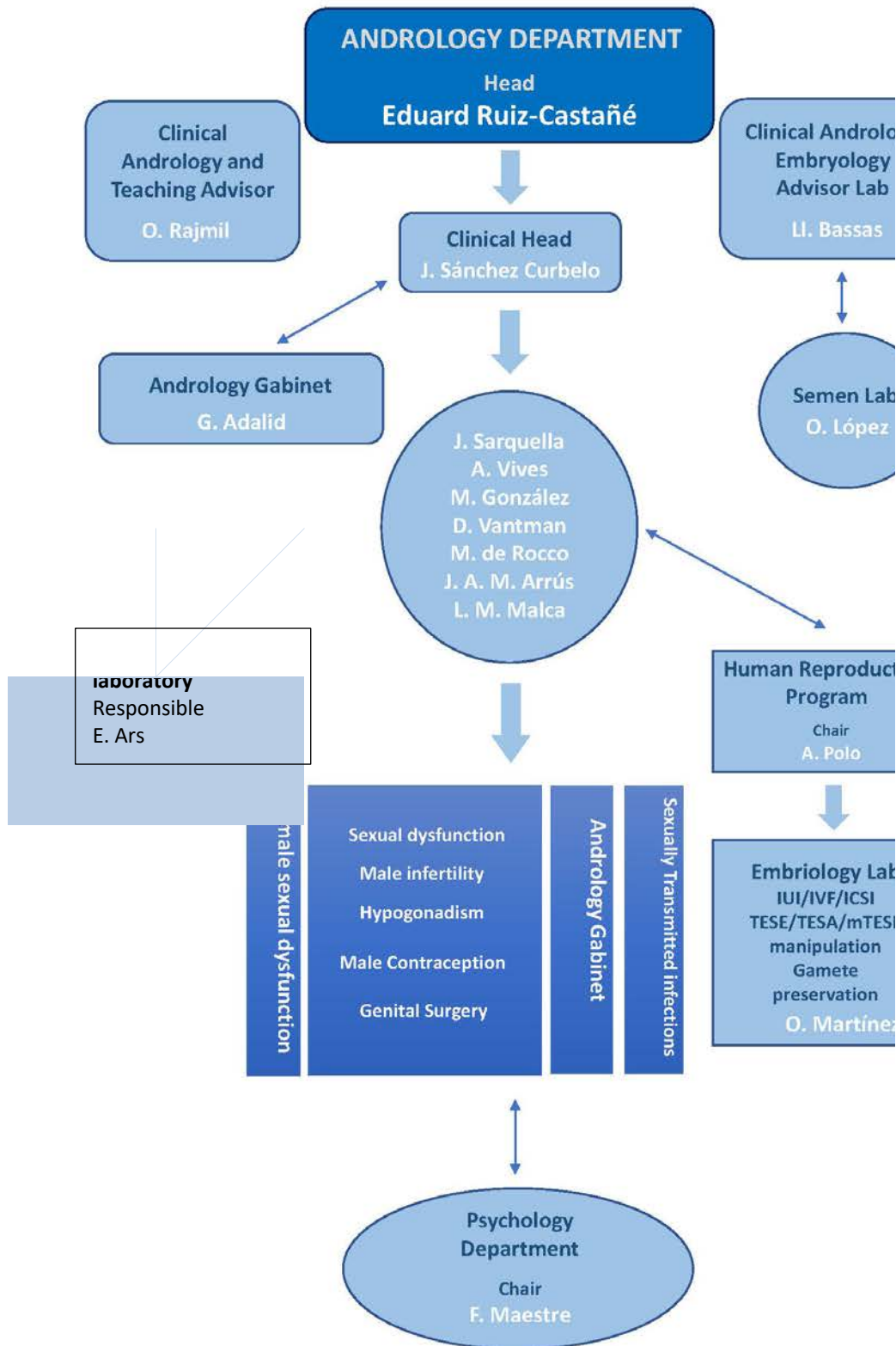
Urology Clinic yes
Endocrine Clinic yes
Genetics Lab/Unit yes
Pediatric Unit yes
Central Hospital Laboratory yes
Private Centres yes
Plastic Surgery yes

Clinical Teaching Activity: Duration of training (years): Two

Trainees working in the centre preparing to pass the EAA examination	2
Medical Students	20

ORGANIZATION CHART

Department Structure



CENTRE PHOTOS



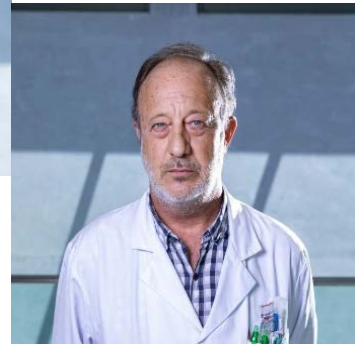
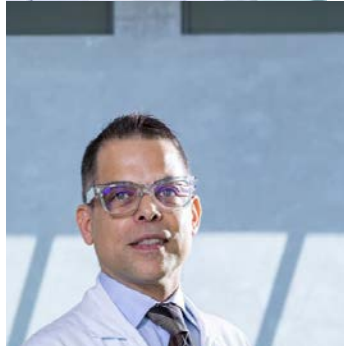
STAFF OF THE ANDROLOGY DEPARTMENT



Dr. O. Rajmil



Dr. A. Bassas



STAFF OF THE ANDROLOGY DEPARTMENT



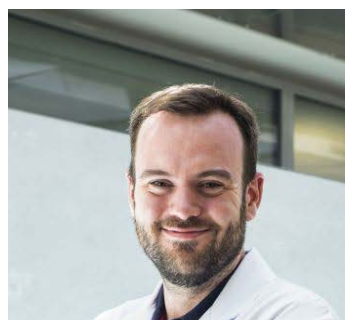
Dr. S. Martínez



Dr. D. Vantmann

STAFF OF THE LABORATORY OF SEMEN ANALYSIS AND EMBRIOLOGY

MEMBERS OF THE MOLECULAR- GENETIC LAB



Dr. E. Ars



FULL LIST OF PUBLICATIONS (with IF) by staff members (2021-2023)

- 1 Larriba S, Sánchez-Herrero JF, Pluvinet R, López-Rodrigo O, Bassas L, Sumoy L. **Seminal extracellular vesicle sncRNA sequencing reveals altered miRNA/isomiR profiles as sperm retrieval biomarkers for azoospermia.** *Andrology*. 2024 Jan;12(1):137-156. doi: 10.1111/andr.13461. Epub 2023 Jun 12. PMID: 37245055. IF 4,6.
- 2 Rajmil O, Moreno-Sepulveda J **Recovery of spermatogenesis after androgenic anabolic steroids abuse in men. A systematic review of the literature.** *Actas Urol Esp (Engl Ed)*. 2023 Aug 9; S2173-5786(23)00098-7. English, Spanish. doi:10.1016/j.acuroe.2023.07.007. Epub ahead of print. PMID: 37567343. IF 1,1.
- 3 Farkouh A, Agarwal A, Hamoda TAA, Kavoussi P, et al **Controversy and Consensus on Indications for Sperm DNA Fragmentation. Testing in Male Infertility: A Global Survey, Current Guidelines, and Expert Recommendations.** *Global Andrology Forum. World J Mens Health*. 2023 Jul;41(3):575-602. doi: 10.5534/wjmh.220282. Epub 2023 Apr 10. PMID: 37118960; PMCID: PMC10307662. IF 4,8.
- 4 Agarwal A, Farkouh A, Saleh R, Abdel-Meguid Hamoda TA, Harraz AM, Kavoussi P, Arafa M, Salvio G et al. **Controversy and Consensus on Indications for Sperm DNA Fragmentation Testing in Male Infertility: A Global Survey, Current Guidelines, and Expert Recommendations.** *World J Mens Health*. 2023 Jul;41(3):575-602. doi: 10.5534/wjmh.220282. Epub 2023 Apr 10. PMID: 37118960; PMCID: PMC10307662. IF 4,8.
- 5 Larriba S, Vigués F, Bassas L. **Using Small Non-Coding RNAs in Extracellular Vesicles of Semen as Biomarkers of Male Reproductive System Health: Opportunities and Challenges***Int. J Mol Sci*. 2023 Mar 13;24(6):5447. doi: 10.3390/ijms24065447. PMID: 36982521; PMCID: PMC10051672. IF 5,4.
- 6 Farnetani G, Fino MG, Cioppi F, Riera-Escamilla A, Tamburrino L, Vannucci M, Rosta V, Vinci S, Casamonti E, Turki L, Degl'Innocenti S, Spinelli M, Marchiani S, Lotti F, Muratori M, Krausz C **Long-term effect of cytotoxic treatments on sperm DNA fragmentation in patients affected by testicular germ cell tumor.** *Andrology*. 2023 Nov;11(8):1653-1661. doi: 10.1111/andr.13429. Epub 2023 Mar 29. PMID: 36932666. IF 4,6.
- 7 Chan D, Oros Klein K, Riera-Escamilla A, Krausz C, O'Flaherty C, Chan P, Robaire B, Trasler JM. **Sperm DNA methylome abnormalities occur both pre- and post-treatment in men with Hodgkin disease and testicular cancer.** *Clin Epigenetics*. 2023 Jan 7;15(1):5. doi: 10.1186/s13148-022-01417-1. PMID:36611168; PMCID: PMC9826600. IF 5,7.
- 8 Guzmán-Jiménez A, González-Muñoz S, Cerván-Martín M, Rivera-Egea R, Garrido N, Luján S, Santos-Ribeiro S, Castilla JA, Gonzalvo MC, Clavero A, Vicente FJ, Maldonado V, Villegas-Salmerón J, Burgos M, Jiménez R, Pinto MG, Pereira I, Nunes J, Sánchez-Curbelo J, López-Rodrigo O, Pereira-Caetano I, Marques PI, Carvalho F, Barros A, Bassas L, Seixas S, Gonçalves J, Lopes AM, Larriba S, Palomino-Morales RJ, Carmona FD, Bossini-Castillo L;

IVIRMA Group; Lisbon Clinical Group: **Contribution of genetic variants to the risk of developing severe non-obstructive oligozoospermia** *Front Cell Dev Biol.* 2022 Dec 15;10:1089782. doi: 10.3389/fcell.2022.1089782. PMID: 36589743; PMCID: PMC9797780. IF 5,5.

- 9 Nagirnaja L, Lopes AM, Charng WL, Miller B, Stakaitis R, Golubickaite I, Stendahl A, Luan T, Friedrich C, Mahyari E, Fadial E, Kasak L, Vigh-Conrad K, Oud MS, Xavier MJ, Cheers SR, James ER, Guo J, Jenkins TG, Riera-Escamilla A, Barros A, Carvalho F, Fernandes S, Gonçalves J, Gurnett CA, Jørgensen N, Jezek D, Jungheim ES, Kliesch S, McLachlan RI, Omurtag KR, Pilatz A, Sandlow JI, Smith J, Eisenberg ML, Hotaling JM, Jarvi KA, Punab M, Rajpert-De Meyts E, Carrell DT, Krausz C, Laan M, O'Bryan MK, Schlegel PN, Tüttelmann F, Veltman JA, Almstrup K, Aston KI, Conrad DF. **Diverse monogenic subforms of human spermatogenic failure.** *Nat Commun.* 2022 Dec 26;13(1):7953. doi: 10.1038/s41467-022-35661-z. PMID: 36572685; PMCID: PMC9792524. IF 16,6.
- 10 Cerván-Martín M, Tüttelmann F, Lopes AM, Bossini-Castillo L, Rivera-Egea R, Garrido N, Lujan S, Romeu G, Santos-Ribeiro S, Castilla JA, Carmen Gonzalvo M, Clavero A, Maldonado V, Vicente FJ, González-Muñoz S, Guzmán-Jiménez A, Burgos M, Jiménez R, Pacheco A, González C, Gómez S, Amorós D, Aguilar J, Quintana F, Calhaz-Jorge C, Aguiar A, Nunes J, Sousa S, Pereira I, Pinto MG, Correia S, Sánchez-Curbelo J, López-Rodrigo O, Martín J, Pereira-Caetano I, Marques PI, Carvalho F, Barros A, Gromoll J, Bassas L, Seixas S, Gonçalves J, Larriba S, Kliesch S, Palomino-Morales RJ, Carmona FD. **Immune and spermatogenesis-related loci are involved in the development of extreme patterns of male infertility.** *Commun Biol.* 2022 Nov 10;5(1):1220. doi: 10.1038/s42003-022-04192-0. PMID: 36357561; PMCID: PMC9649734. IF 5,9.
- 11 Borràs J, Alonso-Tarrés C, Vives A, Palou **Neisseria meningitidis y el aumento del sexo oral. A propósito de un caso [Neisseria meningitidis and the increase of oral sex. A case report].** *J. Rev Int Androl.* 2023 Jan-Mar;21(1):100323. Spanish. doi: 10.1016/j.androl.2021.02.010. Epub 2022 Oct 26. PMID: 36307367. IF 0,8.
- 12 Björndahl L, Barratt CLR, Mortimer D, Agarwal A, Aitken RJ, Alvarez JG, Aneck-Hahn N, Arver S, Baldi E, Bassas L, Boitrelle F, Bornman R, Carrell DT, Castilla JA, Cerezo Parra G, Check JH, Cuasnicu PS, Darney SP, de Jager C, De Jonge CJ, Drevet JR, Drobnis EZ, Du Plessis SS, Eisenberg ML, Esteves SC, EvgeniEA, Ferlin A, Garrido N, Giwercman A, Goovaerts IGF, Haugen TB, Henkel R, Henningsohn L, Hofmann MC, Hotaling JM, Jedrzejczak P, Jouannet P, Jørgensen N, Kirkman Brown JC, Krausz C, Kurpisz M, Kvist U, Lamb DJ, Levine H, Loveland KL, McLachlan RI, MahraA, Maree L, Martins da Silva S, Mbizvo MT, Meinhardt A, Menkveld R, Mortimer ST, Moskovtsev S, Muller CH, Munuce MJ, Muratori M, Niederberger C, O'Flaherty C, Oliva R, Ombelet W, Pacey AA, Palladino MA, Ramasamy R, Ramos L, Rives N, Roldan ER, Rothmann S, Sakkas D, Salonia A, Sánchez-Pozo MC, Sapiro R, Schlatt S, Schlegel PN, Schuppe HC, Shah R, Skakkebaek NE, Teerds K, Toskin I, Tournaye H, Turek PJ, van der Horst G, Vazquez-Levin M, Wang C, Wetzels A, Zeginiadou T, Zini A : **Standards in semen examination: publishing reproducible and reliable data based on high-quality methodology** *Hum Reprod.* 2022 Oct 31;37(11):2497-2502. doi: 10.1093/humrep/deac189. PMID:36112046; PMCID: PMC9627864. IF 6,1.
- 13 Gasanz C, Moreno-Mendoza D, Villegas JF, Peraza MF, Sarquella J, Ruiz-Castañé E, Sánchez-Curbelo J. **Efecto del tadalafilo 5mg/día en la hemodinámica peniana en**

pacientes con disfunción eréctil [Effect of tadalafil 5mg daily treatment on penile haemodynamics in patients with erectile dysfunction]. Rev Int Androl.2022 Jan-Mar;20(1):49-53. Spanish. doi: 10.1016/j.androl.2020.08.002. Epub 2020 Dec 23. PMID: 33358311. IF 0,8.

- 14 Plata-Peña L, López-Rodrigo O, Bassas L, Larriba S. **Experimental validation of seminal miR-31-5p as biomarker for azoospermia and evaluation of the effect of preanalytical variables** Andrology. 2023 May;11(4):668-676. doi:10.1111/andr.13286. Epub 2022 Sep 17. PMID: 36057114. IF 4,6.
- 15 Lotti F, Frizza F, Balercia G, Barbonetti A, Behre HM, Calogero AE, Cremers JF, Francavilla F, Isidori AM, Kliesch S, La Vignera S, Lenzi A, Marcou M, Pilatz A, Poolamets O, Punab M, Godoy MFP, Quintian C, Rajmil O, Salvio G, Shaeer O, Weidner W, Maseroli E, Cipriani S, Baldi E, Degl'Innocenti S, Danza G, Caldini AL, Terreni A, Boni L, Krausz C, Maggi M. **The European Academy of Andrology (EAA) ultrasound study on healthy, fertile men: An overview on male genital tract ultrasound reference ranges.** Andrology. 2022 Oct;10 Suppl 2(Suppl 2):118-132. doi: 10.1111/andr.13260. PMID: 35930758; PMCID: PMC9828651. IF 4,6.
- 16 Riera-Escamilla A, Vockel M, Nagirnaja L, Xavier MJ, Carbonell A, Moreno- Mendoza D, Pybus M, Farnetani G, Rosta V, Cioppi F, Friedrich C, Oud MS, van der Heijden GW, Soave A, Diemer T, Ars E, Sánchez-Curbelo J, Kliesch S, O'Bryan MK, Ruiz-Castañe E; GEMINI Consortium; Azorín F, Veltman JA, Aston KI, Conrad DF, Tüttelmann F, Krausz C. **Large-scale analyses of the X chromosome in 2,354 infertile men discover recurrently affected genes associated with spermatogenic failure.** Am J Hum Genet. 2022 Aug 4;109(8):1458-1471. doi: 10.1016/j.ajhg.2022.06.007. Epub 2022 Jul 8. PMID: 35809576; PMCID: PMC9388793. IF 9,8.
- 17 Shah R, Agarwal A, Kavoussi P, Rambhatla A, Saleh R, Cannarella R, HarrazAM, Boitrelle F, Kuroda S, Hamoda TAA, Zini A, Ko E, Calik G, Toprak T, KandilH, Gül M, Bakırcioğlu ME, Parekh N, Russo GI, Tadros N, Kadioglu A, Arafa M, Chung E, Rajmil O; et al. **Global Andrology Forum. Consensus and Diversity in the Management of Varicocele for Male Infertility: Results of a Global Practice Survey and Comparison with Guidelines and Recommendations.** World J Mens Health. 2023 Jan;41(1):164-197. doi:10.5534/wjmh.220048. Epub 2022 Jun. PMID: 35791302; PMCID: PMC9826919. IF 4,8.
- 18 Cerván-Martín M, Bossini-Castillo L, Guzmán-Jiménez A, Rivera-Egea R, Garrido N, Lujan S, Romeu G, Santos-Ribeiro S; IVIRMA Group; Lisbon Clinical Group; Castilla JA, Gonzalvo MDC, Clavero A, Maldonado V, Vicente FJ, Burgos M, Jiménez R, González-Muñoz S, Sánchez-Curbelo J, López-Rodrigo O, Pereira-Caetano I, Marques PI, Carvalho F, Barros A, Bassas L, Seixas S, Gonçalves J, Larriba S, Lopes AM, Palomino-Morales RJ, Carmona FD. **Common genetic variation in KATNAL1 non-coding regions is involved in the susceptibility to severe phenotypes of male infertility.** Andrology. 2022 Oct;10(7):1339-1350. doi: 10.1111/andr.13221. Epub 2022 Jul 8. PMID: 35752927; PMCID: PMC9546047. IF 4,6.
- 19 Lotti F, Frizza F, Balercia G, Barbonetti A, Behre HM, Calogero AE, Cremers JF, Francavilla F, Isidori AM, Kliesch S, La Vignera S, Lenzi A, Marcou M, Pilatz A, Poolamets O, Punab M, Godoy MFP, Quintian C, Rajmil O, Salvio G, Shaeer O, Weidner W, Maseroli E, Cipriani S,

-
- Baldi E, Degl'Innocenti S, Danza G, Caldini AL, Terreni A, Boni L, Krausz C, Maggi M. **The European Academy of Andrology (EAA) ultrasound study on healthy, fertile men: Prostate-vesicular transrectal ultrasound reference ranges and associations with clinical, seminal and biochemical characteristics.** *Andrology*. 2022 Sep;10(6):1150-1171. doi: 10.1111/andr.13217. Epub 2022 Jul 19. PMID: 35735741; PMCID: PMC9544532. IF 4,6.
- 20 Moreno-Sepulveda J, Rajmil O. **Seminal human papillomavirus infection and reproduction: a systematic review and meta-analysis.** *Andrology*. 2021 Mar;9(2):478-502. doi: 10.1111/andr.12948. Epub 2020 Dec 11. PMID: 33220146. IF 4,4.
- 21 López-Rodrigo O, Bossini-Castillo L, Carmona FD, Bassas L, Larriba S. **Genome-wide compound heterozygote analysis highlights DPY19L2 alleles in a non-consanguineous Spanish family with total globozoospermia.** *Reprod Biomed Online*. 2022 Aug;45(2):332-340. doi: 10.1016/j.rbmo.2022.03.035. Epub 2022 Apr 10. PMID: 35610156. IF 4,0.
- 22 Kasak L, Lillepea K, Nagirnaja L, Aston KI, Schlegel PN, Gonçalves J, Carvalho F, Moreno-Mendoza D, Almstrup K, Eisenberg ML, Jarvi KA, O'Bryan MK, Lopes AM, Conrad DF; GEMINI Consortium; Punab M, Laan M. **Actionable secondary findings following exome sequencing of 836 non-obstructive azoospermia cases and their value in patient management.** *Hum Reprod*. 2022 Jun 30;37(7):1652-1663. doi:10.1093/humrep/deac100. PMID: 35535697; PMCID: PMC9631463. IF 6,1.
- 23 Agarwal A, Gupta S, Sharma RK, Finelli R, et al. **Post-Vasectomy Semen Analysis: Optimizing Laboratory Procedures and Test Interpretation through a Clinical Audit and Global Survey of Practices.** *World J Mens Health*. 2022 Jul;40(3):425-441. doi: 10.5534/wjmh.210191. Epub 2022 Jan 2. PMID: 35021311; PMCID: PMC9253792. IF 4,8.
- 24 Gupta S, Sharma R, Agarwal A, Boitrelle F, Finelli R, et al. **Antisperm Antibody Testing: A Comprehensive Review of Its Role in the Management of Immunological Male Infertility and Results of a Global Survey of Clinical Practices.** *World J Mens Health*. 2022 Jul;40(3):380-398. doi:10.5534/wjmh.210164. Epub 2022 Jan 1. PMID: 35021297; PMCID: PMC9253805. IF 4,8.
- 25 Oud MS, Smits RM, Smith HE, Mastrorosa FK, Holt GS, Houston BJ, de Vries PF, Alobaidi BKS, Batty LE, Ismail H, Greenwood J, Sheth H, Mikulasova A, Astuti GDN, Gilissen C, McEleny K, Turner H, Coxhead J, Cockell S, Braat DDM, Fleischer K, D'Hauwers KWM, Schaafsma E; Genetics of Male Infertility Initiative (GEMINI) consortium; Nagirnaja L, Conrad DF, Friedrich C, Kliesch S, Aston KI, Riera-Escamilla A, Krausz C, Gonzaga-Jauregui C, Santibanez-Koref M, Elliott DJ, Vissers LELM, Tüttelmann F, O'Bryan MK, Ramos L, Xavier MJ, van der Heijden GW, Veltman JA. **A de novo paradigm for male infertility.** *Nat Commun*. 2022 Jan 10;13(1):154. doi: 10.1038/s41467-021-27132-8. PMID: 35013161; PMCID: PMC8748898. IF 16,6.
- 26 Vives A, Cosentino M, Bassas L, Alonso C, Millan F. **Epidemiological, clinical and laboratory differences between male urethral infections due to *Haemophilus* spp. and those due to *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, *Mycoplasma genitalium* and *Ureaplasma urealyticum*: A descriptive study.** *Arch Ital Urol Androl*. 2021 Dec 21;93(4):468-474. doi: 10.4081/aiua.2021.4.468. PMID: 34933533. IF 0,34.

-
- 27 Agarwal A, Sharma RK, Gupta S, Boitrelle F, Finelli R, et al. **Sperm Vitality and Necrozoospermia: Diagnosis, Management, and Results of a Global Survey of Clinical Practice.** World J Mens Health. 2022 Apr;40(2):228-242. doi: 10.5534/wjmh.210149. Epub 2021 Oct 13. PMID: 34666422; PMCID: PMC8987132. IF 4,8.
- 28 Santaballa A, Márquez-Vega C, Rodríguez-Lescure Á, Rovirosa Á, Vázquez L, Zeberio-Etxetxipia I, Andrés M, Bassas L, Ceballos-García E, Domingo J, Manau-Trullas D. **Multidisciplinary consensus on the criteria for fertility preservation in cancer patients.** Clin Transl Oncol. 2022 Feb;24(2):227-243. doi:10.1007/s12094-021-02699-2. Epub 2021 Oct 11. PMID: 34635959; PMCID: PMC8794945. IF 3,4.
- 29 García-Gómez B, Martínez-Salamanca JI, Sarquella-Geli J, Justo-Quintas J, García-Rojo E, Fernández-Pascual E, Ruíz-Castañé E, Romero-Otero J. **Peyronie's Disease Questionnaire (PDQ): Spanish translation and validation.** Int J Impot Res. 2022 Aug;34(5):501-504. doi: 10.1038/s41443-021-00460-5. Epub 2021 Jul 19. Erratum in: Int J Impot Res. 2024 Feb;36(1):102. PMID: 34282285. IF 2,6.
- 30 Gupta S, Sharma R, Agarwal A, Parekh N, Finelli R, et al. **A Comprehensive Guide to Sperm Recovery in Infertile Men with Retrograde Ejaculation.** World J Mens Health. 2022 Apr;40(2):208-216. doi: 10.5534/wjmh.210069. Epub 2021 Jun 1. PMID: 34169680; PMCID: PMC8987146. IF 4,8.
- 31 De Rocco Ponce M, Selice R, Di Mambro A, De Toni L, Foresta C, Garolla A. **Estradiol-Testosterone Imbalance Is Associated with Erectile Dysfunction in Patients with Klinefelter Syndrome J Clin Med.** 2021 May 26;10(11):2319. doi: 10.3390/jcm10112319. PMID: 34073338; PMCID: PMC8197918. IF 3,9.
- 32 Agarwal A, Finelli R, Selvam MKP, Leisegang K, Majzoub A, Tadros N A, et al. **Global Survey of Reproductive Specialists to Determine the Clinical Utility of Oxidative Stress Testing and Antioxidant Use in Male Infertility,** World J Mens Health. 2021 Jul;39(3):470-488. doi: 10.5534/wjmh.210025. Epub 2021 Apr 1. PMID: 33831977; PMCID: PMC8255391. IF 6,4.
- 33 Cerván-Martín M, Bossini-Castillo L, Rivera-Egea R, Garrido N, Luján S, Romeu G, Santos-Ribeiro S; IVIRMA Group, Lisbon Clinical Group; Castilla JA, Gonzalvo MDC, Clavero A, Vicente FJ, Guzmán-Jiménez A, Burgos M, Barrionuevo FJ, Jiménez R, Sánchez-Curbelo J, López-Rodrigo O, Peraza MF, Pereira-Caetano I, Marques PI, Carvalho F, Barros A, Bassas L, Seixas S, Gonçalves J, Larriba S, Lopes AM, Carmona FD, Palomino-Morales RJ. **Effect and in silico characterization of genetic variants associated with severe spermatogenic disorders in a large Iberian cohort.** Andrology. 2021 Jul;9(4):1151-1165. doi: 10.1111/andr.13009. Epub 2021 Apr 20. PMID: 33784440. IF 4,4.
- 34 Lotti F, Frizza F, Balercia G, Barbonetti A, Behre HM, Calogero AE, Cremers JF, Francavilla F, Isidori AM, Kliesch S, La Vignera S, Lenzi A, Marcou M, Pilatz A, Poolamets O, Punab M, Peraza Godoy MF, Rajmil O, Salvio G, Shaeer O, Weidner W, Maseroli E, Cipriani S, Baldi E, Degl'Innocenti S, Danza G, Caldini AL, Terreni A, Boni L, Krausz C, Maggi M. **The European Academy of Andrology (EAA) ultrasound study on healthy, fertile men: Scrotal ultrasound reference ranges and associations with clinical, seminal, and biochemical**

characteristics. *Andrology*. 2021 Mar;9(2):559-576. doi: 10.1111/andr.12951. Epub 2021 Jan 19. PMID: 33244893. IF 4,4.

- 35 Capalbo A, Poli M, Riera-Escamilla A, Shukla V, Kudo Høffding M, Krausz C, Hoffmann ER, Simon C. **Preconception genome medicine: current state and future perspectives to improve infertility diagnosis and reproductive and health outcomes based on individual genomic data.** *Hum Reprod Update*. 2021 Feb 19;27(2):254-279. doi: 10.1093/humupd/dmaa044. PMID: 33197264. IF 19,1.
- 36 Vinay J, Moreno D, Rajmil O, Ruiz-Castañe E, Sanchez-Curbelo J. **Penile low intensity shock wave treatment for PDE5I refractory erectile dysfunction: a randomized double-blind sham-controlled clinical trial.** *World J Urol*. 2021 Jun;39(6):2217-2222. doi: 10.1007/s00345-020-03373-y. Epub 2020 Jul 21. PMID: 32696128. IF 3,6.
- 37 Vives A, da Silva GVM, Alonso-Tarrés C, Suarez JB, Palmisano F, Cosentino M. **Haemophilus urethritis in males: A series of 30 cases.** *Rev Int Androl*. 2021 Jul-Sep;19(3):160-163. doi: 10.1016/j.androl.2020.01.002. Epub 2020 Jun 17. PMID: 32563585. IF 0,6.
- 38 Vockel M, Riera-Escamilla A, Tüttelmann F, Krausz C. **The X chromosome and male infertility.** *Hum Genet*. 2021 Jan;140(1):203-215. doi: 10.1007/s00439-019-02101-w. Epub 2019 Dec 24. PMID: 31875237; PMCID: PMC7864851. IF 5,8.