

Pituitary Gland Disorders

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DESCRIPTION

We investigate pituitary diseases and their impact, such as acromegaly and Cushing's syndrome. (coordinators of the European registry ERCUSYN), hypopituitarism, among others. We are currently carrying out the project "Epidemiology in Catalonia" & investigating residual myopathy and the impact on psychological aspects and health-related quality of life (with specific questionnaires developed by us and used worldwide) after treating these diseases, pathophysiology of oxytocin deficiency including its effect on sleep and precision medicine in acromegaly, thanks to a recently funded project by the IMPACT strategy in a multicentric study.

MAIN LINES OF RESEARCH

- ERCUSYN: European Registry of Cushing's Syndrome. Maintenance and operation of the database, which contains more than 2,500 patients and is the largest one worldwide to date. (Webb Youdale, Susana; Santos Vives, Alicia).
- Study of the physiological and pathological secretion of oxytocin in humans besides pregnancy and lactation. Identification and clinical relevance of an oxytocin-deficient state in patients with hypothalamic and pituitary diseases, who are presumably at highest risk for an oxytocin deficiency. (Aulinas Maso, Anna).
- Effects of Mindfulness therapy in patients with acromegaly and Cushing's syndrome. Leader (Santos Vives, Alicia).

- Spanish Molecular Registry on Pituitary Adenomas (REMAH study). (Gil Ortega, Joan; Webb Youdale, Susana).
- ACROFAST and ACROMICS: Personalised Medicine in acromegaly, to identify markers with a therapeutic value. (Gil Ortega, Joan; Aulinas Maso, Anna ; Webb Youdale, Susana).
- Epidemiology of hypothalamic-pituitary diseases in Catalonia. (Aulinas Maso, Anna; Webb Youdale, Susana).
- Study of bone microarchitecture and resistance and factors that determine them in Cushing's syndrome or acromegaly in remission. Model for investigating the interaction between the body's bone and fat. (Webb Youdale, Susana).
- Role of myosteatosis in the development and persistence of residual muscle weakness in treated acromegaly and Cushing syndrome. Study of the involved mechanisms. (Webb Youdale, Susana).
- Pathophysiology of sleep disorders in patients with hypothalamic and pituitary damage, using a multidisciplinary approach. (Aulinas Maso, Anna).
- Conduct in vitro molecular analysis of operated pituitary adenomas within the REMAH (Molecular Registry of Pituitary Adenomas) study, initially sponsored by the Spanish Endocrinology and Nutrition Society (SEEN), to investigate personalised markers of therapeutic response (mainly in acromegaly, corticotroph adenomas and non-functioning pituitary adenomas).
- Analyse clinical and molecular aspects of pituitary adenomas diagnosed at a young age, in collaboration with Hospital Universitario Cruces.
- Perform the first epidemiological study in Catalonia on hypothalamic-pituitary diseases and compare it with the PADRIS database of CatSalut.
- Personalised Medicine (IMPACT strategy) through next-generation precision medicine in the diagnosis and treatment of Acromegaly.

SCIENTIFIC CHALLENGES

- Evaluate long-term persistent morbidity and mortality in patients who have had Cushing's syndrome or acromegaly, especially bone quality, psychological outcomes, muscular dysfunction and quality of life.
- Analyse and update the European database of patients with Cushing syndrome (ERCUSYN), which in 2024 included over 2500 patients, with partners from 61 centres in 27 countries.
- Identification of a provocative test to unmask an oxytocin-deficient state in patients with hypothalamic and pituitary diseases using a randomised, crossover, placebo-controlled design.
- Increase our understanding of oxytocin physiology and pathophysiology in healthy humans and clinical conditions (patients with hypothalamic and pituitary diseases, obesity and eating disorders), and its effect on sleep abnormalities.

ACTIVE & AWARDED GRANTS

- Aulinas Maso, Anna. Identificación y relevancia clínica de un estado deficiente de oxitocina: estudio piloto fisiopatológico aleatorizado, cruzado y controlado con placebo. PI20/01165. Instituto de Salud Carlos III (ISCIII). Duration: 2021-2025. 210.540,00 €.
- Aulinas Maso, Anna. Enfoque multidisciplinar para elucidar la fisiopatología de los trastornos del sueño en pacientes con daño hipotalámico e hipofisario. PI24/01428. Instituto de Salud Carlos III (ISCIII). Duration: 2025-2027. 190.000,00 €

DOCTORAL THESES DEFENDED

- Manuel Mateu Salat. Title: Epidemiology, physiopathology and healthcare management of pituitary diseases in Catalonia. Start of PhD studies: 30/10/2020. Directors: Prof. S Webb and Dr. A Aulinas. Tutor: A Aulinas. Universitat de Vic-Universitat Central de Catalunya. Foreseen defence date: 2026.
- Queralt Asla Roca. Title: Physiology and pathophysiology of endogenous oxytocin secretion in patients with hypopituitarism:

identification and clinical relevance of an oxytocin deficient state. Directors: Dr. A Aulinas and Prof. SM Webb. Tutor: A Aulinas. Universitat de Vic-Universitat Central de Catalunya. Start of PhD studies: 30/10/2021. Foreseen defense date: 2026.

- Francesca Galbiati. Title: Oxytocin effects on anterior pituitary hormone dynamics in humans with obesity. Directors: Dr. Aulinas and Dr. Elizabeth Lawson (Harvard Medical School, Boston). Tutor: Dr. A Aulinas. Universitat de Vic-Universitat Central de Catalunya. Start of PhD studies: 30/10/2023. Foreseen defense date: 2027.

SCIENTIFIC PRODUCTION

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