

Women and Perinatal Health

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DESCRIPTION

The Women and Perinatal Health Research Group focuses on the study of diseases resulting from placental insufficiency, including preeclampsia and growth restriction, as well as maternal cardiovascular risk later in life, alterations in the fetal heart, and neurodevelopment. The group is the coordinator of the national network RICORS-SAMID entitled "Spanish Network in Maternal, Neonatal, Child and Developmental Health Research" (RD24/0013/0001, ISCIII), following the previous RICORS-SAMID (RD21/0012/0001, ISCIII). It was recognized as a consolidated group by the Agència de Gestió d'Ajuts Universitaris i de Recerca, AGAUR Generalitat de Catalunya (2021 SGR 01002).

MAIN LINES OF RESEARCH

- Prediction and prevention of complications arising from placental insufficiency, intrauterine growth restriction/preeclampsia (IUGR/PE). (Llurba Olive, Elisa; Garrido Giménez, Carmen)
- Placental insufficiency and maternal cardiovascular risk later in life. (Llurba Olive, Elisa).
- Development of predictive methods based on the Integration of prenatal and postnatal factors for the detection of abnormal neurodevelopment in congenital heart disease. (Llurba Olive, Elisa).
- Toxics and air pollution effects on pregnancy and fetal programming. (Llurba Olive, Elisa; Garrido Giménez, Carmen; Cruz Lemini, Monica Cristina).

- Management of pelvic floor dysfunction: chronic pelvic pain, urinary incontinence and pelvic organ prolapse. (Mora Hervás, Irene).
- Maternal and fetal cardiovascular programming in assisted reproduction treatments (ART). (Llurba Olive, Elisa; Polo Ramos, Ana Maria).
- Cardiovascular Health and ART outcomes. (Llurba Olive, Elisa; Cruz Lemini, Monica Cristina; Polo Ramos, Ana Maria).
- COVID-19 and gestation. (Medina Mallén, María Del Carmen).
- Innovative methods in the delivery of care. (Cruz Lemini, Monica Cristina; Medina Mallén, María Del Carmen).

SCIENTIFIC CHALLENGES

- To study new placental biomarkers for the diagnosis and prognosis of preeclampsia (PE) and intrauterine growth restriction (IUGR), aiming to generate future hypotheses on prevention targets and therapeutic interventions for these diseases.
- To determine the utility of new placental biomarkers (sFlt-1/PIGF ratio) in the diagnosis and prognosis of preeclampsia (PE) with the aim of changing existing healthcare policies and thus improving maternal and neonatal health.
- To study new maternal cardiovascular risk biomarkers after experiencing placental insufficiency and explore preventive strategies to identify which mothers are at risk of long-term cardiovascular diseases.
- To study the role of placental insufficiency and hypoxia in congenital heart diseases with the aim of increasing our understanding of the relationship between hypoxia-dependent placental morphogenesis, placental function, and effects on fetal oxygen metabolism.
- To identify new biomarkers detectable during fetal and neonatal stages that help predict postnatal neurological risk in congenital heart diseases.
- To evaluate the impact of maternal exposure to environmental factors on gestation, placental complications, and fetal neurodevelopment with the aim of generating evidence to support the regulation and implementation of necessary interventions by health authorities.
- To evaluate the impact of SARS-CoV-2 infection on gestation and the neonate.
- To conduct clinical research focused on improving obstetric care by implementing innovative solutions in the labour and postpartum process.

ACTIVE & AWARDED GRANTS

- Cruz Lemini, Monica Cristina. Contractes Juan Rodés 2019. JR19/00047. Instituto de Salud Carlos III (ISCIII). Duration: 2020-2024. 180.000,00 €
- Cruz Lemini, Monica Cristina & Polo Ramos, Ana Maria. Impacto del ejercicio y la dieta mediterranea vs aspirina en la tasa de nacimientos vivos y programacion cardiovascular en la fertilizacion in vitro. PI20/01504. Instituto de Salud Carlos III (ISCIII). Duration: 2021-2025. 183.920,00 €
- Cruz Lemini, Monica Cristina & Medina Mallén, María Del Carmen. Inducción cervical con balón ambulatorio vs hospitalario para mejoría en la experiencia del parto (ORBITED): ensayo clínico abierto aleatorizado. PI24/00404. Instituto de Salud Carlos III (ISCIII). Duration: 2025-2027. 102.500,00 €
- Llurba Olive, Elisa. Remodelado y disfunción cardíaca en pacientes con preeclampsia regulado por el ambiente anti-angiogénico: estudio clínico y experimental. PI19/00702. Instituto de Salud Carlos III (ISCIII). Duration: 2020-2024. 146.410,00 €
- Llurba Olive, Elisa. Primary care interventions to prevent maternal and child chronic diseases of perinatal and developmental origin. RD21/0012/0001. Instituto de Salud Carlos III (ISCIII). Duration: 2022-2024. 245.080,00 €
- Llurba Olive, Elisa. GRUP DE RECERCA EN MEDICINA PERINATAL I DE LA DONA. 2022 INV-1 00048. Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR). Duration: 2022-2024. 66.217,84 €
- Llurba Olive, Elisa. Evaluación del riesgo cardiovascular en mujeres jóvenes después de embarazo con o sin complicaciones

placentarias (Estudio CARDIOMOM).
PI22/00462. Instituto de Salud Carlos III
(ISCIII). Duration: 2023-2025. 165.770,00 €

- Llurba Olive, Elisa. Pérdidas reproductivas precoces: del malestar físico y emocional invisible al posible duelo personal, familiar y social. CC21-0185. Convocatoria Conecta: de la investigación a la práctica social 2022. Fundació La Caixa. Duration: 2023-2025. 7.150,00 €
- Llurba Olive, Elisa. Spanish network in maternal, neonatal, child and developmental health research (RICORS- SAMID). RD24/0013/0001. Instituto de Salud Carlos III (ISCIII). Duration: 2025-2027. 383.570,00 €
- Llurba Olive, Elisa. Investigación y desarrollo de una nueva terapia para el tratamiento de la endometriosis (EP4Endo). CPP2023-010439. Ministerio de Ciencia, Innovación y Universidades. Duration: 2024-2027. 321.600,00 €
- Mora Hervas, Irene. Estudio multicéntrico sobre fijación a músculo elevador del ano en la colposacropexia laparoscópica (Estudio Multicéntrico FIMEA). PI21/00852. Instituto de Salud Carlos III (ISCIII). Duration: 2022-2024. 30.250,00 €
- Murcia Oliveras, Maria Teresa. Contratos Río Hortega 2023. CM23/00270. Instituto de Salud Carlos III (ISCIII). Duration: 2024-2026. 65.000,00 €
- Trilla Sola, Cristina & Polo Ramos, Ana Maria. Evaluación integral de la pérdida gestacional en el primer trimestre: analizando su impacto y vías biológicas para desarrollar estrategias de manejo de atención personalizadas. (estudio FIRST-CARE). PI24/01735. Instituto de Salud Carlos III (ISCIII). Duration: 2025-2027. 152.500,00 €

DOCTORAL THESES DEFENDED

- Domínguez Gallardo, Carla. Speckle-tracking como herramienta en la evaluación funcional del corazón fetal, cambios fisiológicos durante la gestación y respuesta de la deformación miocárdica fetal ante la presencia de insuficiencia placentaria.

12/06/2024. Universitat Autònoma de Barcelona. Supervisors: Llurba Olive, Elisa; Cruz Lemini, Monica Cristina. <https://hdl.handle.net/10803/692019>

- Giler Cantos, Otto Eddy. Análisis epidemiológico sobre el virus del papiloma humano (vph) asociado a lesiones preinvasivas y cáncer de cérvix en la población femenina del Ecuador. 10/10/2024. Universitat Autònoma de Barcelona. Supervisors: Gil Moreno, Antonio; Llurba Olive, Elisa. <https://hdl.handle.net/10803/692866>
- Rovira Negre, Ramon. Metodología y herramientas para el aprendizaje de las habilidades quirúrgicas asociadas a la cirugía mínimamente invasiva. 20/11/2024. Universitat Autònoma de Barcelona. Supervisors: Llurba Olive, Elisa; Cassadó Garriga, Jordi. <https://hdl.handle.net/10803/693147>
- Vega Puyal, Laia. Factores postnatales y perquirúrgicos predictivos de alteraciones en el neurodesarrollo temprano en cardiopatía congénita. 10/12/2024. Universitat Autònoma de Barcelona. Supervisors: Llurba Olive, Elisa; Ruiz Campillo, Cèsar W.; Sánchez de Toledo Sancho, Joan. <https://hdl.handle.net/10803/693245>.

SCIENTIFIC PRODUCTION

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- Domínguez C, Ginjaume N, Ullmo J, Parra J, Vázquez A, Cruz M, Llurba E. Fetal Left Ventricle Function Evaluated by Two-Dimensional Speckle-Tracking Echocardiography across Clinical Stages of Severity in Growth-Restricted Fetuses. *Diagnostics*. 2024; 14(5):548. DOI:10.3390/diagnostics14050548. PMID:38473020. IF:3,000 (Q1/2D). Document type: Article.
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 - Perelló J, Estadella J, Gich I, Bailón M, Llurba E, Calaf J. Health-related quality of life and satisfaction associated with 3-year use of a levonorgestrel 13.5 mg intrauterine device vs Nova T copper 380 mm2 intrauterine device: Results of a phase 4 randomized controlled trial. *CONTRACEPTION*. 2024; 133:110367. DOI:10.1016/j.contraception.2024.110367. PMID:38232939. IF:2,800 (Q1/3D). Document type: Article.
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 - Sánchez O, Ribera I, Ruiz A, Eixarch E, Antolín E, Cruz M, Domínguez C, Arévalo S, Ferrer Q, Rodríguez V, Crispi F, Llurba E. Angiogenic imbalance in maternal and cord blood is associated with neonatal birthweight and head circumference biometrics in major fetal congenital heart defects. *ULTRASOUND IN OBSTETRICS & GYNECOLOGY*. 2024; 63(2). DOI:10.1002/uog.27441. PMID:37519145. IF:6,100 (Q1/1D). Document type: Article.
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