

## Cerebrovascular Diseases

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### DESCRIPTION

Our research has a strong clinical basis and focuses on non-traumatic vascular diseases of the central nervous system, both ischemic stroke (cerebral infarction, transient ischemic attack) and hemorrhagic stroke (spontaneous intracerebral hemorrhage and subarachnoid hemorrhage). We are also interested in translational research applied to stroke.

### MAIN LINES OF RESEARCH

- Reperfusion treatments in acute ischemic stroke: Intravenous thrombolysis, endovascular treatment (mechanical thrombectomy).  
Factors associated with the degree and maintenance of collateral circulation.  
Blood pressure management after endovascular treatment.  
Mechanisms, prevention and clinical significance of hemorrhagic complications.  
Reperfusion injury.  
Intra and extracranial stenting during mechanical thrombectomy.  
Relevance of progenitor endothelial cell counts.
- Vulnerability of the atheromatous carotid plaque.  
Positron emission tomography, plasma, and ultrasonographic markers of inflammation. Variables associated with stroke recurrence.  
Asymptomatic carotid stenosis.
- Acute spontaneous intracerebral hemorrhage:  
Factors related to hematoma growth.



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Logistical aspects (type of hospital, time to treatment, inter-hospital transfer).

Relevance of the microbiota in clinical, radiological, and prognostic variables.

Frequency, markers, and prognostic relevance of perihematoma edema.

Inflammatory factors associated with recurrence.

Prevention of recurrence in patients with atrial fibrillation and cerebral hemorrhage.

Treatment with statins in patients with cerebral hemorrhage.

Benefits and risks of antithrombotics and statins in the secondary prevention of stroke.

Influence of microbleeds, hyperintense white matter lesions and cortical superficial siderosis in the risk of intracerebral hemorrhage associated with oral anticoagulants.

tras el tratamiento endovascular en pacientes con ictus isquémico (Estudio HOPE). ICI20/00137.

Instituto de Salud Carlos III (ISCIII). Duration: 2021-2024. 362.939,50 €.

- Marti Fabregas, Joan. PREVICTUS:Farmacogenética para prevenir los efectos adversos del tratamiento del ictus. pmp21/00165. Instituto de Salud Carlos III (ISCIII). Duration: 2022-2025. 1.067.000,00 €.
- Marti Fabregas, Joan. Red de Enfermedades Vasculares Cerebrales. INVICTUS PLUS. RD16/0019/0010. Instituto de Salud Carlos III (ISCIII). Duration: 2017-2022. 137.522,00 €
- Marti Fabregas, Joan. RICORS-ICTUS. RD21/0006/0006. Instituto de Salud Carlos III (ISCIII). Duration: 2022-2024. 249.005,90 €.
- Marti Fabregas, Joan. Edema cerebral en la hemorragia intracerebral: variables asociadas y estudio evolutivo de su implicación clínica y pronóstica. PI22/01156. Instituto de Salud Carlos III (ISCIII). Duration: 2023-2025. 196.020,00 €.
- Prats Sánchez, Luis Antonio. Proyecto MISTIC: papel del Microbioma inteStinal en la evolución neurològica de pacienTes con hemorragia IntraCerebral espontánea. PI20/00925. Instituto de Salud Carlos III (ISCIII). Duration: 2021-2023. 87.120,00 €.
- Puig Grifol, Nuria. Contractes Predoctorals PFIS 2020. FI20/00252. Instituto de Salud Carlos III (ISCIII). Duration: 2021-2024. 82.400,00 €.

### SCIENTIFIC CHALLENGES

- To enhance cooperation with other groups in the framework of Spanish stroke research (Spanish research network (RICORS/ICTUS) and also intra-hospital and extra-hospital cooperation.
- To obtaining funding from national calls (Instituto de Salud Carlos III), European community calls, regional authorities, and private companies.
- To increase the number of hired and grant-aided researchers and professional development of existing researchers.
- To obtain patents.

### ACTIVE GRANTS

- Camps Renom, Pol. Impacto de la Inflamación en la Progresión de la Aterosclerosis Carotidea y el Riesgo de Ictus (estudio INCREASE). PI22/01659. Instituto de Salud Carlos III (ISCIII). Duration: 2023-2025. 141.570,00 €.
- Gallego Fabrega, Cristina. CD20/00043. Instituto de Salud Carlos III (ISCIII). Duration: 2021-2023. 80.598,00 €.
- Lambea Gil, Álvaro. Contratos Rio Hortega 2022. CM22/00265. Instituto de Salud Carlos III (ISCIII). Duration: 2023-2024. 65.000,00 €.
- Marti Fabregas, Joan. Ensayo clínico sobre optimización hemodinámica de la perfusión cerebral

### DOCTORAL THESES DEFENDED

- Guisado Alonso, Daniel. Estratègies per optimitzar el tractament endovascular en l'íctus agut: anàlisi dels criteris de selecció i de la relació entre la circulació col·lateral i la pressió arterial. 28/04/2023. Universitat Autònoma de Barcelona. Supervisors: Martí Fàbregas, Joan; Delgado Mederos, Raquel; Granell Moreno, Esther.
- Cárcel Márquez, Jara. Study of genetic risk factors associated with ischemic stroke. 24/01/2023. Universitat Autònoma de Barcelona. Supervisors: Fernández Cadenas, Israel; Martí i Fàbregas, Joan. <http://hdl.handle.net/10803/688764>
- Puig Grifol, Núria. Lipoprotein-related biomarkers and carotid plaque inflammation in ischemic



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ictus". 30/11/2023. Universitat Autònoma de Barcelona. Supervisors: Benítez González, Sónia; Sánchez Quesada, José Luis; Camps Renom, Pol.

## SCIENTIFIC PRODUCTION

- Benitez S, Puig N, Rives J, Sole A, Sánchez JL. Can Electronegative LDL Act as a Multienzymatic Complex?. *INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES*. 2023; 24(8):7074. DOI:10.3390/ijms24087074. PMID:37108253. IF:5,600 (Q1/3D). Document type: Review.
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- Lambea A. Neurology teaching difficulties and the academic consequences of the COVID-19 pandemic. Reply. *REVISTA DE NEUROLOGIA*. 2023; 77(5). DOI:10.33588/rn.7705.2023189. PMID:37612831. IF:1,200 (Q4/10D). Document type: Letter.
- Lledós M, Prats L, Lluçà L, Cárcel J, Muino E, Cullèll N, Gallego C, Martín JM, Aguilera A, Guasch M, Guisado D, Ramos A, Martínez A, Izquierdo A, Marín R, Camps P, Martí J, Fernández I. Ischaemic stroke patients present sex differences in gut microbiota. *EUROPEAN JOURNAL OF NEUROLOGY*. 2023; 30(11). DOI:10.1111/ene.15931. PMID:37329328. IF:5,100 (Q1/3D). Document type: Article.
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- Martí J, Camps P, Best JG, Ramos A, Guasch M, Martínez A, Guisado D, Gomez BM, Ambler G, Wilson D, Lee KJ, Lim JS, Bae HJ, Shiozawa M, Koga M, Toyoda K, Hennerici MG, Chabriat H, Jouvent E, Wong DYK, Mak H, Lau KK, Kim YD, Song TJ, Heo JH, Eppinger S, Gattringer T, Uysal E, Demirelli DS, Bornstein N, Ben E, Halleivi H, Molad JA, Nishihara M, Tanaka J, Hara H, Yakushiji Y, Coutts SB, Smith E, Polymeris AA, Wagner B, Seiffge D, Lyrer PA, Peters N, Engelter ST, Salman RA, Jager HR, Lip GYH, Goeldlin M, Panos L, Karayiannis CC, Phan TG, Srikanth VK, Christ N, Gunkel S, Fluri F, Leung TW, Soo Y, Chu WN, Abrigo J, Barbato C, Browning S, Simister R, Mendyk AM, Bordet R, Hlal S, Gyanwali B, Chen CSP, Jung SM, Orken DN, Werring D, Prats L, Microbleeds Int Collaborative N. Stroke Risk and Antithrombotic Treatment During Follow-up of Patients With Ischemic Stroke and Cortical Superficial Siderosis. *NEUROLOGY*. 2023; 100(12):e1267-e1281. DOI:10.1212/WNL.00000000000201723. PMID:36535778. IF:9,900 (Q1/1D). Document type: Article.
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