



Innovative Medicines Initiative

Europain

Understanding chronic pain and
improving its treatment

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We are on *pain!*



- Chronic pain: 1 out of 5 Europeans suffers from it
- We suffer different types of pain: acute pain, arthritis pain, post-surgical pain, neuropathic pain....
- Neuropathic pain: 5% of the population
- Low quality of life and high burden on patients and society
- Huge unmet need: only 1/3 of chronic pain patients obtain adequate pain relief



Why is pain so important?



Who wants to suffer?

NOBODY !

EUROPAIN aims at understanding pain mechanisms and improving the development of new treatments for chronic pain.



So many patients So many etiologies...



Diabetic neuropathy



Postherpetic neuralgia

So complicated!



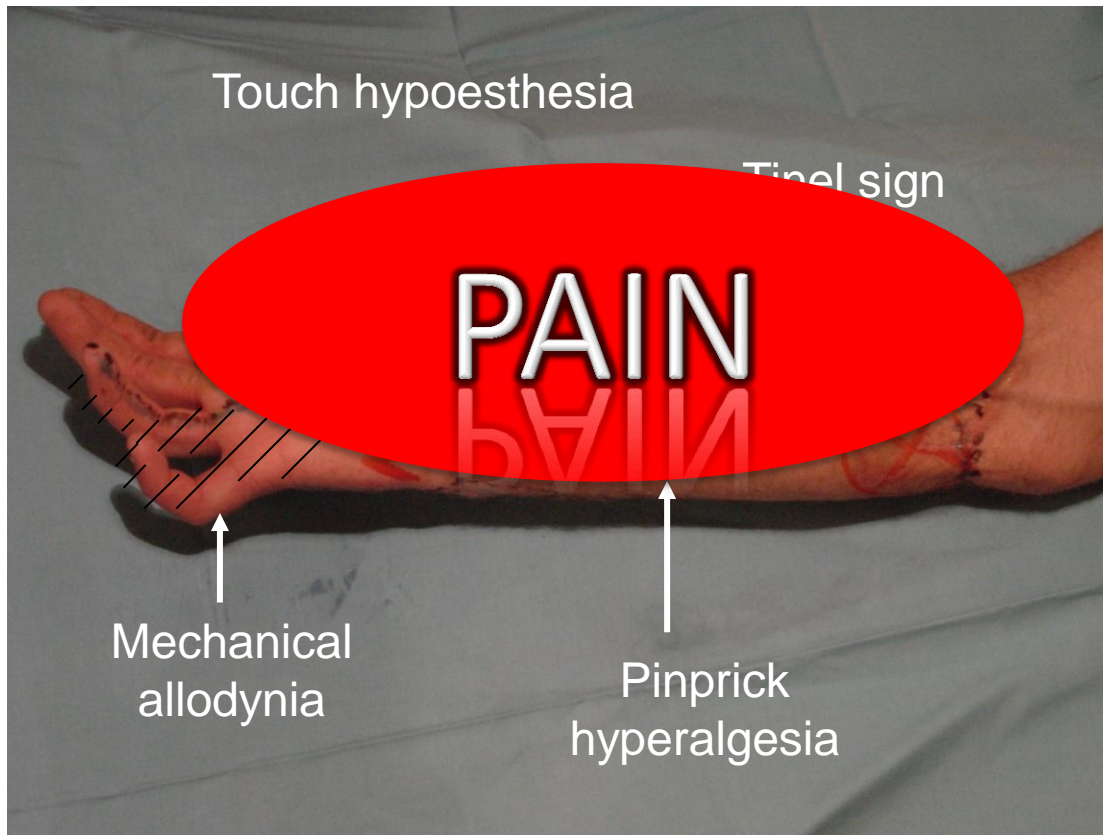
Focal nerve injury



Radiculopathy



Neuropathic pain: so many symptoms, so many mechanisms!



Key research challenges



Why we do not have yet a really **GOOD** drug for
Neuropathic Pain?

- No predictive biomarkers for spontaneous pain
- Limited knowledge of *critical* pain mechanisms
- Huge attrition rate during clinical development



EFPIA

- AstraZeneca
- BoehringerIngelheimGmbH
- Pfizer Limited
- Eli Lilly and Company Ltd
- Esteve S.A.
- UCB Pharma
- Sanofi-Aventis R&D
- Grünenthal GmbH
- Astellas
- AbbVie

Financing

- IMI funding: 6 MEUR
- EFPIA in kind contribution: 12.5 M €
- Total project cost: 18.5 M €

Academia

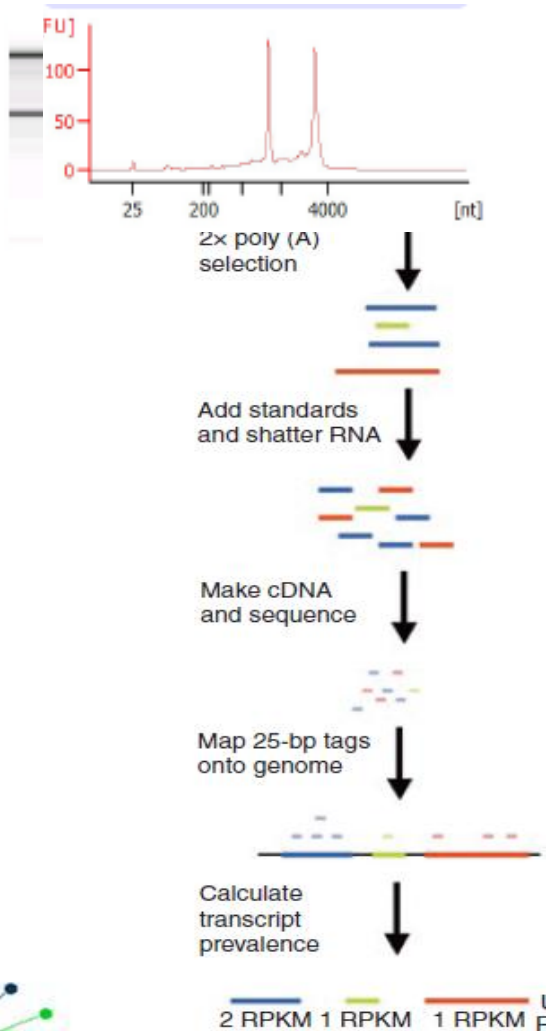
- King's College London
- University College London
- University of Oxford
- Imperial College London
- Christian-Albrechts-Universität zu Kiel
- Ruprecht-Karls Universität Heidelberg
- Technische Universität München
- BG Universitätsklinikum Bergmannsheil GmbH
- Klinikum der Johann Wolfgang Goethe-Universität
- Aarhus University Hospital
- Region Hovedstaden
- University of Southern Denmark

SME

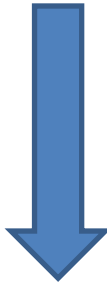
- Neurosciences Technologies S.L.



Headline achievements: Genomics, proteomics



INPUT:
Total RNA

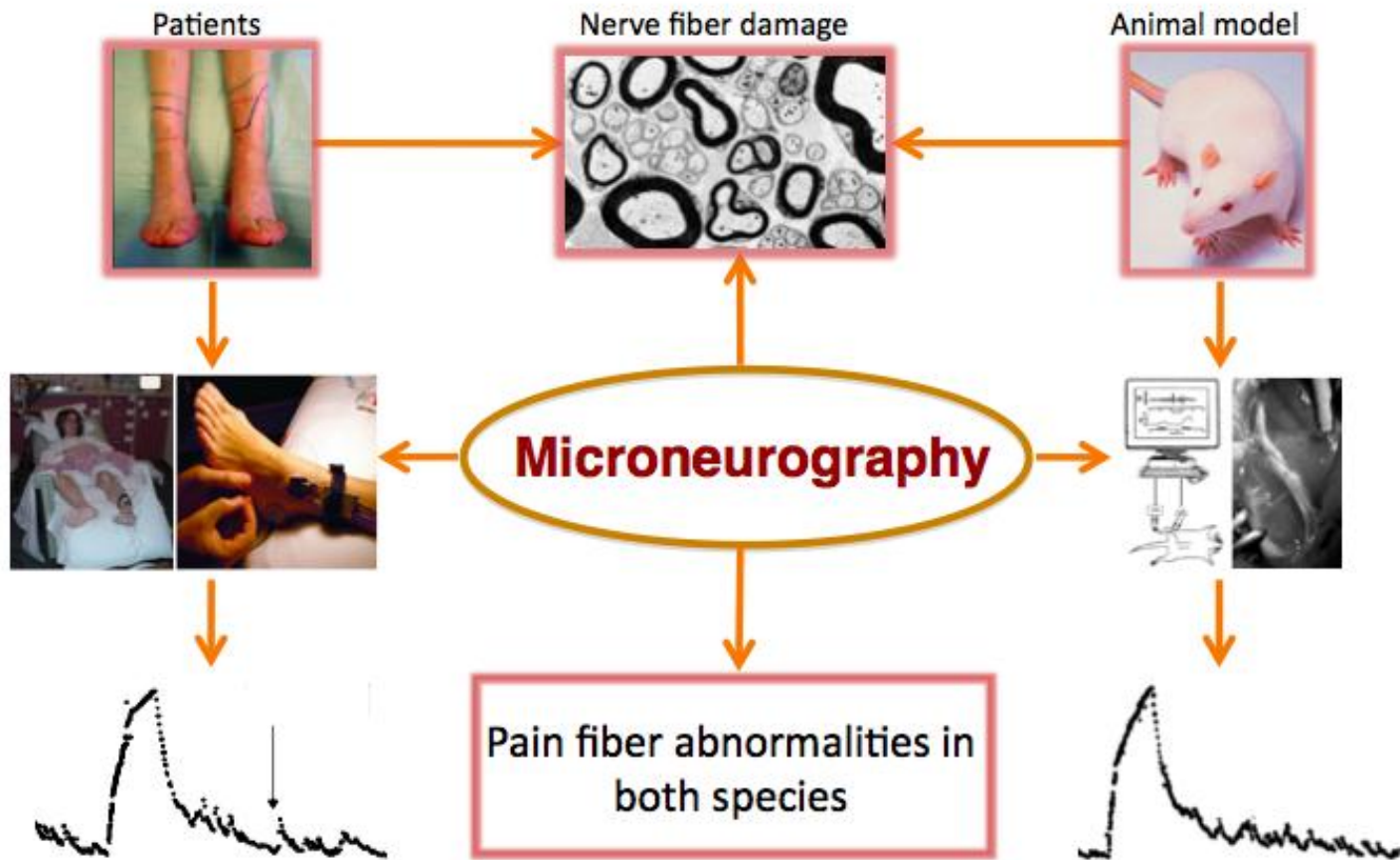


OUTPUT

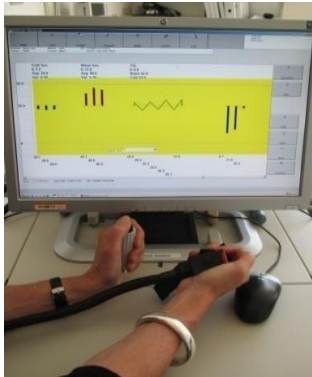
- ABSOLUTE QUANTIFICATION OF GENE EXPRESSION
- EXON AND SPLICE JUNCTION READS
- NOVEL EXONS/SPLICE VARIANTS
- NOVEL GENES



Headline achievements: Electrophysiology



Headline achievements: Patient profiling

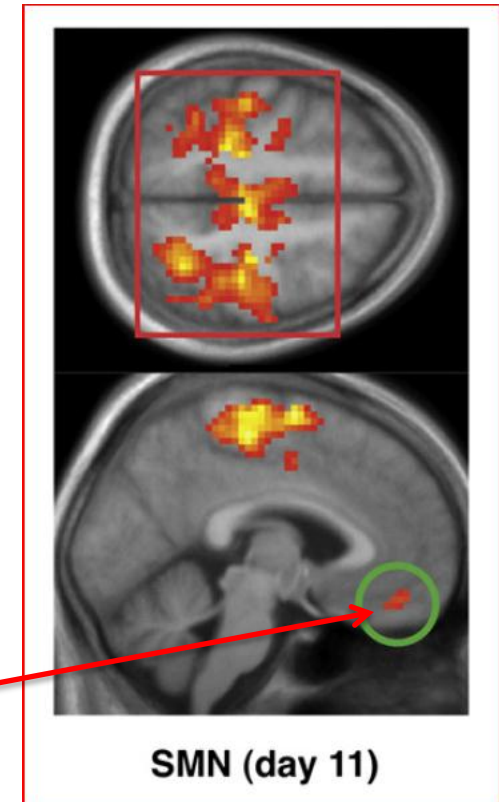
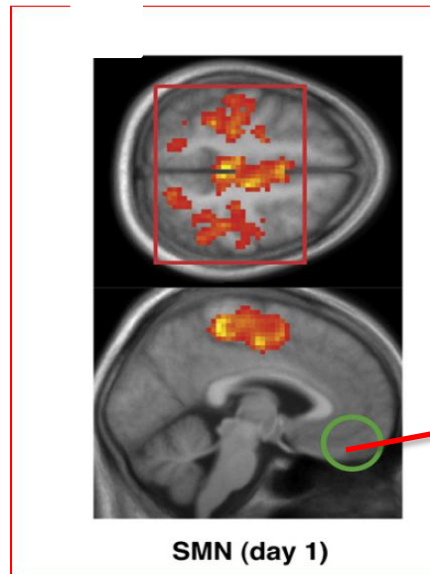


Headline achievements: Neuroimaging



Repeated pain induces adaptations of intrinsic brain activity to reflect past and predict future pain

Valentin Riedl^{a,c,*}, Michael Valet^a, Andreas Wöller^b, Christian Sorg^b, Dominik Vogel^a, Till Sprenger^d, Henning Boecker^e, Afra M. Wohlschläger^e, Thomas R. Tölle^a



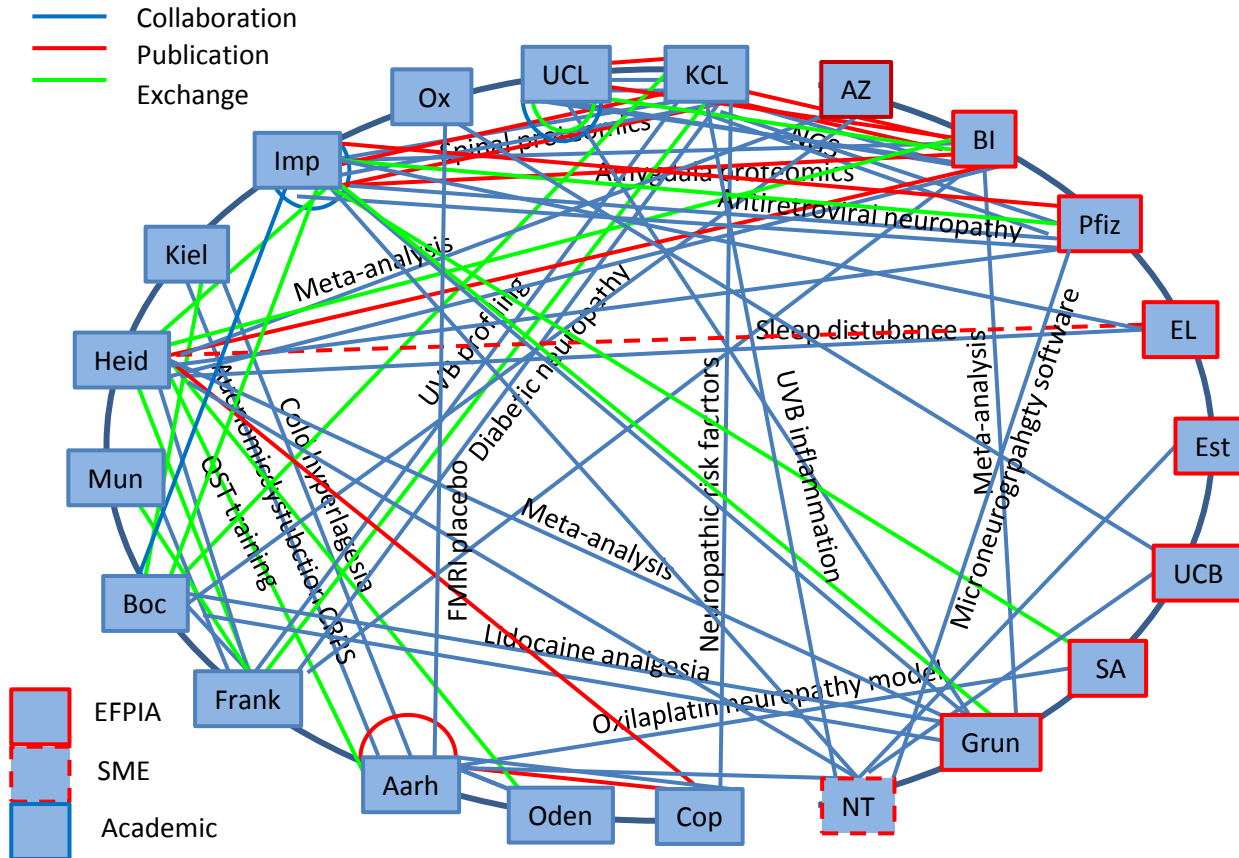
Headline achievements: Delivering added value



- We have done intensive research & published extensively (>120)
- We are having international consensus meetings: for ex., how to conduct preclinical trials
- We are conducting clinical trials to improve patient stratification
- We are developing tools to predict which patients will respond to treatments
- We are understanding placebo effect to reduce clinical trial failures
- We have initiated EMA interactions to frame regulatory landscape



Headline achievements: Coordination - Collaboration



Remaining challenges



Operational

- Integration of data
- Continuity of initiated efforts

Scientific

- Finding true biomarkers of spontaneous pain
- Developing potent, effective pain killers



Thank you



Europain

www.imieuropain.org

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