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Identification and study of different immune cell populations and their role in chronic pain (IM-PAIN)

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Approximately one in five individuals is likely to suffer from chronic pain in their lifetime. Many diseases and conditions can cause intractable pain, such as rheumatoid arthritis or nerve damage caused by an injury or viral infection. The pain from these conditions frequently has devastating consequences. While scientists have yet to identify broadly efficacious treatments, they have made some important advances in understanding what goes wrong in the body of a chronic pain sufferer.

We now know that the way our immune system responds to injury or infection can have an important impact on chronic pain. What is less clear is exactly which cell types are involved and what it is about their response that is so damaging to the surrounding neurons. Could the nature of the immune response predispose people towards developing chronic pain?

In this project we will investigate these questions using new experimental methods to isolate immune cells and study their molecular responses. We will also study patients suffering from acute pain in order to identify whether their immune response makes them more or less likely to develop persistent pain. Our research can potentially identify risk factors for chronic pain as well as novel avenues for treatment.

