

**Title:** The Neurobiology of Social Cognition.

**Synopsis:**

**Keywords.** Oxytocin, genetics, neuropharmacology, neuroimaging, cognitive empathy, theory-of-mind, trust, cooperation, reward, reinforcement learning, mirror neurons, emotion recognition, anorexia nervosa, schizophrenia.

**Context.** Understanding the neurochemistry and circuitry mediating social cognition is key to treat a large range of neuropsychiatric disorders – as social deficits are often present at their origin and often do not subside with treatment. Working out what others think, intend and feel (i.e. cognitive empathy or theory-of-mind) is essential for optimal communication and cooperation and is dysfunctional in schizophrenia, borderline personality disorder, drug addiction, anorexia nervosa, and autism, among others. We are characterizing what molecules and brain pathways are involved in social cognition, for example: how does oxytocin promote cognitive empathy? Where does it act? What effect does it have in brain and sympathetic function?

**Tools.** We study healthy humans and patients with structural and functional neuroimaging (MRI, DTI and MRS), double blind placebo-controlled pharmacological and TMS administration, psychophysiological testing, EEG, DNA testing and computational modelling. We use mainly MATLAB, SPSS, and other more specific quantitative data analysis and task presentation software.

**Collaborations.** King's College London (UK), Emory University (USA), IST (Portugal), ISCTE (Portugal), FPUL (Portugal), Champalimaud Neuroscience (Portugal), ISPA (Portugal), and The Netherlands Institute for Neuroscience (The Netherlands).

A specific MSc project will spin-off from the above larger project depending on MSc candidate's background and preferences.

**Supervisor:** *Diana Prata, DPrata Lab, [diana.prata@medicina.ulisboa.pt](mailto:diana.prata@medicina.ulisboa.pt)*

*Webpage of the group: <https://imm.medicina.ulisboa.pt/en/investigacao/labs/prata-diana-lab/>*

**Remunerated or volunteer training:** Volunteer