

Profile

Cristina Tassorelli: making a difference in headache research

Some observers might call Cristina Tassorelli a workaholic. After all, when we speak, she had sent her last e-mail late in the previous evening and, at 7am, had her first meeting of the day. Describing herself as highly motivated, curious, and energetic, she explains: "I'm never tired and I am in love with and believe in the work that I do". Tassorelli is a Professor of Neurology and Dean of the Medical School at the University of Pavia, Italy. She also directs the Headache Science and Neurorehabilitation Centre and the Complex Unit of Neurorehabilitation at the IRCCS Neurological Institute C Mondino in Pavia. In her various roles, she always strives to motivate her students and colleagues "to love and invest in what they do" because "all of us can make a difference in life. It can be small, but I think that's the trick of life, to try to make the best out of it. And to try to make the world we live in better."

Tassorelli grew up in a small village outside Pavia and was the first in her family to study medicine. As a teenager, she wanted to become a psychiatrist but diverted to neurology while at medical school at the University of Pavia. There, while training in neurology, she became interested in headache. Primary headaches were "a natural next step for a neurologist who remained fond of psychiatry. They are complex neurological diseases with a big impact on the mind; 60% of patients with chronic migraine have depression as a comorbidity", she explains. After her MD and neurology residency, she became more involved with research and did a PhD in human psychobiology at the University of Modena, Italy. A pivotal point in her research career came when she devised an animal model of migraine while doing a post-doctorate at the University of Rochester, NY, USA. At the time, she was a novice at animal research but realised that there was a need for an animal model for migraine to be able to investigate the complex brain circuitry involved. She recalls thinking that: "as I cannot open the skull of a patient and look inside, I can induce migraine in rats, observe them, and look at what's happening in their brains". Tassorelli, who has migraine herself, was able to induce migraine in rats using nitroglycerin and map the areas of the rat brain that are activated during a migraine attack.

Returning to Italy in 1995, she continued to work on her migraine model at the first animal research facility at IRCCS Neurological Institute C Mondino. She now leads a group of biologists there who, she says, "continue to use this model with different types of application and have enriched it". Tassorelli's animal model has also been taken up by several

other research groups and she is proud it has helped increase understanding of the pathophysiological mechanisms of primary headaches, including migraine. "This animal model and others have increased knowledge about migraine and have increased the number of people working in this area, making primary headaches a respected and attractive field of neurology."

Nowadays, since completing her 2-year term as President of the International Headache Society (2021–23), her position as Dean of the Medical School takes up most of her time. "You might think that it is boring. It's not boring. It's beautiful", she says, "because really, you can improve multiple situations". She explains: "there are problems, but you can find solutions. And when you do, you see that there is immediately a change, not only in the procedures, but also in the impact on students and faculty members."

When her focus returns to research in the future, she wants to work on identifying biomarkers for primary headaches to improve recognition of these disorders, patient care, and research. She believes that biomarkers for primary headaches are needed to determine individuals' responses to treatment and avoid the "trial and error" prescribing that happens now. "This is not the medicine that we want to do. We want to be able to say to patients, 'I'm prescribing you this drug because you have the highest chance that it is going to work for you.' I think it's the next step that we have to take". She notes that such work will need to be collaborative. We need "people with expertise in the lab because we need data from animals where we cannot get data from patients. We need people with an expertise in genetics. We need people with an expertise in neuroimaging because maybe the biomarker is of that type. So it is a collaborative effort. But I see a lot of beautiful minds at work in this area and I'm sure biomarkers for primary headaches are right around the corner."

Outside of work, Tassorelli enjoys spending time with her "beautiful family" (her husband, daughter, and husky dog) and doing outdoor activities. She used to be a dragon-boat racer, but nowadays, she can be found walking, trekking, or snowshoeing with her dog or swimming or kayaking. These activities are what "keeps me sane", she reveals. But even on holiday, moments of leisure are interspersed with work. Tassorelli doesn't mind though. "Work for me is a pleasure, it's not a burden", she remarks.

Udani Samarasekera



See [Articles](#) page 382

For more on the **nitroglycerin model of migraine** see *Neurobiol Pain* 2022; **12**: 100105

For more on the **International Headache Society** see <https://ihs-headache.org/>