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# University Hospital Research





***The physician Silvia Mas-Peiro wants to find out how to help patients whose heart valves are narrowed. She carries out her research even after working hours.***

Outside, in front of Building 23C at Frankfurt University Hospital, several booths have been set up and first evening drinks slide across the counters. There are a few groups of people, their work clothing somewhat loosened, an occasional toasts. It would be exaggerated to call this a street festival, but there is nonetheless a noticeable effort to celebrate the end of the working day.

Silvia Mas-Peiros's shift is also over, her patient visits concluded. The 29 year-old senior resident with light brown hair walks briskly in her blue scrubs through the glass door of the cardiological outpatient clinic. "Hello," she says in a friendly greeting, stretching out her hand. Her working day has not yet ended. Because after her shift, Mas-

In her position as a senior resident, she has the same number of hours as her colleagues, the same night and weekend shifts. But when it comes to research, she is happy to take on the extra work. Even if this sometimes means staying longer after a shift, or coming to work on a day off. In spite of this, she doesn't live just for science – she still has enough time for friends or sports.

Why did she want to become a doctor? Mas-Peiro shrugs, as if someone has just asked her a question she had never asked herself. "It's what I always wanted to do," she says and then adds, as if noticing the answer is not enough: "I love science – it's intellectually challenging and exciting, and I love to take care of real people, people I also meet." As a doctor, she has new challenges every day, from which she



"Just a few years ago,

patients had to undergo open-heart surgery," Mas-Peiro explains. "Now we have something called transcatheter aortic valve implantation, or TAVI." It's a new, less invasive strategy in which we enter an artery through the groin and from there guide the valve to the heart. It doesn't even require full anaesthesia.

Peiro looks for ways to better help the people she takes care of day in and day out. How, exactly? “Maybe we should go to the meeting room,” says Mas-Peiro. “It’s a bit quieter there.”

Mas-Peiro was born in Barcelona, where she also studied medicine before she came to Germany in 2015 for her doctorate. Why did she decide to come to Frankfurt? She knew Germany already because she’d gone to school in Freiburg for a while. But she also went to school in England and francophone Canada, and even studied there, and can therefore speak four languages fluently. How did that come about? She shrugs. “It’s a global world.” But Germany is a good location for science and in Frankfurt she can combine medicine and research. “It works wonderfully,” says Mas-Peiro.

Combining science and research – for Mas-Peiro this means that she not only diagnoses, treats and takes care of her patients – she also researches the causes, risk factors and mechanisms of a disease, evaluates the results achieved by current therapies and looks for ways to improve them. That’s what

challenges every day, for which she “translates” the laboratory work of basic researchers by asking: “What does this mean for my patients?”



In her current project she translates insights for patients with narrowed heart valves. This is caused by calcification, is especially common among older people and leads to symptoms such as dizziness and chest pain. To treat the disease, patients receive a new heart valve.

Mas-Peiro is now investigating a certain mutation and how it is connected to valve narrowing. With her research team, she recently made a discovery, but it is still so new that she isn’t really able to talk about it on this Thursday in the meeting room. In five days, she will present the finding at the annual congress of the European Society of Cardiology – one of the largest and most important meetings for cardiology researchers and physicians. Her findings are under embargo for public availability until her presentation in the category “Late Breaking Basic and Translational Science”.

Five days after our meeting at the Frankfurt University Hospital, shortly after she had given her presentation in Paris, Mas-Peiro sends me an e-mail. She writes: “As promised please find attached the publication that came out today.” And what does it say? Mas-Peiro, with her team, found out that the mutation she is researching can cause inflammation in patients with narrowed heart valves. And the inflammation seems to increase the probability of a patient dying even after a successful

“clinical research” is, says Mas-Peiro.  
“That’s what a university hospital has to  
do to further progress in medicine.”

TAVI. “But these are just initial results,”  
says Mas-Peiro. “In the future, we want  
to – and must – understand the  
mechanisms more precisely.” Then they  
might be able to treat the inflammation.

*by Jan Schwenkenbecher  
Photos by Katrin Binner*

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