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Hey there! I am Jennifer Maurer, pharmacist, athlete and a creative mind. I am currently a PhD student at the Institute of Clinical Chemistry and Pathobiochemistry at the University Hospital Tübingen, Germany. When you can't find me in the lab, you'll find me training in the swimming pool, running, or doing creative

activities like drawing and illustrating. I am a member of the Molecular Diabetology research group of Prof. Dr. Cora Weigert, where we are interested in the positive preventive effect of exercise at the molecular level. Besides exercise as a preventive and therapeutic intervention in the treatment of type 2 diabetes, metformin is the first choice in drug therapy. Despite more than 150 million patients worldwide being on metformin, the complete mechanism of action is still not fully understood. My PhD project focuses on understanding the effects of metformin on human skeletal muscle, as this has been poorly investigated to date. In particular, I am interested in molecular mechanisms related to two aspects: 1) How can increased lactate production by metformin be explained and can muscle contribute to the development of lactic acidosis as a side effect? 2) Which mechanisms support clinical observations of negative interactions between metformin therapy and exercise regarding health beneficial exercise adaptation processes?

I am honoured to receive the DZD Award for my presentation at the DDG Congress 2022 in Berlin, where I shared the results from the first part of my work. I found that metformin induces an increase in lactate production in primary human myotubes. The previously described mechanism of Complex I inhibition may contribute to this at high doses of metformin in my cell culture model. For the increased lactate production at lower concentrations, altered pyruvate metabolism by inhibition of the PDH complex is a new potential mechanism.