

Research finds new cause for common lung problem

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New research has found that in cases of lung edema, or fluid in the lungs, not only do the lungs fail to keep water out as previously believed, but they are also allowing water to pump in.

"Usually, our lungs pump fluid out of the air space, and it was previously believed that this pump mechanism just stopped when people had lung edema," said Dr. Wolfgang Kuebler, a scientist at St. Michael's Hospital. "But we've found not only do they stop pumping fluid out as they're supposed to do, they've gotten confused and are actually pumping in the reverse direction, bringing fluid into the lungs."

The research was published online in *Proceedings of the National Academy of Sciences*.

Dr. Kuebler said this finding has important implications for the treatment of lung edema, a common symptom of [heart disease](#). Stopping the pumping mechanism, although seemingly counterintuitive, is protective for the lung and important for effective treatment.

For the first time, this explains why Lasix, a commonly prescribed drug, works in treating lung edema – it simply prevents the pumps from allowing fluid into the air spaces. Lasix was previously believed to work exclusively by targeting the kidneys.

"With this information, more effective drugs that target just the lungs, and not the kidneys, can now be developed," said Dr. Kuebler, also a

scientist at the Li Ka Shing Knowledge Institute.

Dr. Kuebler points out that this mechanism of pumping fluid into the air spaces is similar to what happens in the fetal lung. In the [womb](#), the lung works to pump fluids in and only after the baby is born, does that pumping mechanism reverse itself to pump fluid out. "You can actually now interpret lung edema as a regression of the adult lung to a [fetal stage](#)," he said.

Provided by St. Michael's Hospital

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