In my diploma thesis, I researched the effect of mirtazapine on a developing embryo. Nowadays, new drugs are being developed and used for the treatment of depression. These drugs also include mirtazapine. The risk of using mirtazapine during pregnancy has not been documented yet and therefore it can not be used by pregnant women. These drugs are often very effective and well tolerated so it is very important to recognize the effect on a developing embryo.

In our research, we used the method of CHEST (chick embryotoxicity screening test). We applied a dose of mirtazapine solution dissolved in DMSO to 4-day old chickens. The doses were 0.2µg, 0.15µg, 0.1µg, 0.05µg, 0.03µg in 3µl of the solution. As controls, we applied 3µl DMSO and 3µl destilled water. Embryos were being incubated for 5 days in an incubator and on the 9th day, we evaluated dead and malformed embryos and the spectrum of defects.

From our observations, we have obtained the lethal dose, which was above 0.15µg and the dose that was equivalent to the LD50 – 0.05µg. Lower doses were safe, although these embryos were malformed. These malformations, however, were not statistically significantly different from the malformations occurring in controls. It is neccessary to continue and complete data for 2 -and 3-day old embryos, so that we cover all developmental periods and therefore prove the safety of mirtazapine in pregnancy. Due to problems with interpolation of data obtained from other animal species to men, it is understandable to interpret the results with caution