Researcher attacks pre-term labor problem

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A Florida State University researcher is tackling a new and inventive way to slow down and perhaps prevent preterm labor.

The solution? A pair of goggles.

Specifically, Associate Professor James Olcese is developing goggles – he's calling them light emitting devices – that could intermittently flash a blue light at a sleeping pregnant mother at risk for preterm labor. That flash of light could cause a drop in the brain hormone melatonin, which is tied to contractions.

Ideally, the contractions would slow down or stop.

"They could simply have them on their night stand and put them on if they are feeling contractions," Olcese said.

In 2009, Olcese discovered that many women go into labor at night when melatonin is at its peak. Future research through a partnership with preterm labor patients at Tallahassee Memorial Hospital found that when women were exposed to bright light overnight, the cells associated with contractions saw a drop in melatonin levels, suppressing contractions and potentially delaying labor.

"We can use that information to develop ways of helping women either in inducing labor or, conversely, mechanisms that would prevent or slow the contractions a month or two earlier in the pregnancy," Olcese said.

Olcese patented his theory that reducing melatonin would produce better results for women at risk of preterm labor.

In the study at TMH, the patients were exposed to a computer-monitor-sized lamp shining full-spectrum light. But, that interrupted sleeping patterns and was generally uncomfortable for some participants.

So Olcese, a recent winner of a $35,000 GAP award from the university, is working to develop a pair goggles that will flash blue light –which is less likely to disturb a good night's sleep – at the mother.

The GAP funding will be used to fund a second trial at Tallahassee Memorial Hospital and help figure out how to best deliver the blue light flashes. Brigham and Women's Hospital in Boston is testing out Olcese's approach as well.

"We just have to figure out how much light and how often," he said.

Depending on how the next round of studies go, a product could be ready for market in the next few years.

Preterm birth is the birth of an infant prior to 37 weeks of pregnancy. According to the Centers for Disease Control and Prevention, one of eight infants in the United States is born prior to the 37-week mark.

Thirty-five percent of infant deaths are associated with preterm labor.

Provided by Florida State University