

## **World's tiniest preemies are growing up and doing fine**

EurekaAlert

MAYWOOD, IL. -- In 1989, Madeline Mann became the world's smallest surviving baby after she was born at Loyola University Medical Center. She weighed 280 g. (9.9 oz.) -- about the size of an iPhone.

In 2004, Rumaisa Rahmam set a Guinness World Record after she was born at Loyola, weighing 260 g. (9.2 oz.).

Remarkably, Madeline and Rumaisa both have normal motor and language development, Loyola physicians wrote in a case report in *Pediatrics*, the official journal of the American Academy of Pediatrics. The article was published online Dec. 12.

Rumaisa remains the world's smallest surviving baby, and Madeline now is the world's fourth smallest surviving baby, according to a registry kept by the University of Iowa Children's Hospital. Rumaisa and Madeline are the smallest and second smallest surviving babies born in the United States. And Rumaisa and her twin sister, Hiba, are the world's smallest surviving twins. (Hiba weighed 1 pound, 5 oz. at birth).

Of the 85 smallest surviving babies in the United States, three were born at Loyola and five others were cared for by physicians trained at Loyola.

Lead author Jonathan Muraskas, MD, and colleagues caution that successful outcomes such as Madeline and Rumaisa are not necessarily typical. Many extremely low-birth-weight preemies either do not survive or grow up with severe, lifelong disabilities such as cerebral palsy, mental retardation and blindness. Comparing other micropreemies with Madeline and Rumaisa could "propagate false expectations for families, caregivers and the medico-legal community alike," Muraskas and colleagues wrote.

Madeline and Rumaisa had several advantages. Female preemies tend to do better than males. They had relatively long gestational ages for their birthweights. And their mothers were given steroids before birth, which helped their lungs and brains mature more quickly.

During their pregnancies, Madeline's and Rumaisa's mothers experienced preeclampsia (pregnancy-induced high blood pressure). There was decreased blood flow through the placenta, which restricted the babies' growth. Madeline was born at 26 weeks, six days, and Rumaisa was born at 25 weeks, six days. Under normal conditions, it would take a fetus just 18 weeks to reach their birthweights.

Madeline spent 122 days in Loyola's neonatal intensive care unit, and Rumaisa spent 142 days. They each have met developmental milestones at appropriate ages. Rumaisa, 7, is a first grader and Madeline, 22, is an honor student at Augustana College in Rock Island, IL. But they both remain small for their ages.

Advances in neonatal care have allowed the resuscitation and survival of smaller and smaller newborns, Muraskas and colleagues wrote. They suggest that at the threshold of viability, three critical factors should be considered: gestational age, steroid treatment before birth and female gender.

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"With Japan lowering its limit of viability to 22 weeks and public fascination with micropreemies, how small is too small? The medical, ethical and economic issues will continue to be vigorously debated."

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