

Neonatal ICU: New Technology Helping Babies Progress Faster



Cedars-Sinai Neonatal Intensive Care Unit, part of the Maxine Dunitz Children's Health Center, is using new devices to personalise the nutritional care of premature babies for more rapid and healthier weight gain. In addition to improving nutrition, Cedars-Sinai is also using new specially designed mattresses to help improve sleep patterns and head shape development in preemies.

A device known as the Pea Pod, which resembles a miniature MRI machine, is used to measure the body composition of the infants. The Pea Pod is heated and the baby is placed inside for about three minutes. Using an air displacement method, the machine senses change in pressure and can determine the percentage of body weight that is fat and the percentage that is lean body mass. With this information, the NICU team can then personalise the baby's nutritional supplements to help with proper weight gain.

"The Pea Pod is important in helping the NICU team facilitate a healthy weight gain in the smallest infants by calculating the amount of lean mass and body fat in the infant on a daily or weekly basis," said Charles Simmons, MD, Chair of the Department of Pediatrics and Director of the Division of Neonatology. There are several units of the Pea Pod in use around the US and throughout the world.

Also, Cedars-Sinai is continuing a study of breast milk composition, utilising a device that analyses the percentages of fat, protein and carbohydrates in breast milk. To date, the research team has performed hundreds of analyses of breast milk.

The information from both analyses should ultimately lead to healthier weight gain, better neurological outcomes and shorter hospital stays for babies in the neonatal intensive care unit, according to Dr. Simmons, the Ruth and Harry Roman Chair in Neonatology, a position created in honour of Larry Baum.

New Mattress Helps with Head Shape and Sleep Cycles

The mattress, known as Lifenest, has oval-shaped netting in the centre and is intended to reduce pressure on different parts of the infant's body including the head. Cedars-Sinai is currently the only hospital in the US with the new technologically advanced mattresses.

Since the 1990s, when babies were placed on their backs to reduce the risk of sudden infant death syndrome, the incidence of plagiocephaly – commonly known as flat head – has risen dramatically.

"We are interested in these mattresses because with the lower surface tension we expect less risk of head flattening and less risk for pressure ulcers," said Ellen Mack, RNC, MN, neonatal clinical nurse specialist. The babies are constantly evaluated to determine if they are sleeping well and the infants seem to be comfortable with the new mattresses, she added.

"Together, these new technologies are helping us reduce the babies' stay in the NICU and sending them home to their families, where they belong," Dr. Simmons noted.

Source: [Cedars-Sinai Medical Center](#)

Image Credit: Reuters/Rick Wilking

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