Miris Interviews

Empowering parents through human milk analysis

Laura Serke
RD, CSPCC, LD, IBCLC

MIRIS

Empowering parents through human milk analysis

Laura Serke (RD, CSPCC, LD, IBCLC) has worked as a dietitian and lactation consultant at the University of Louisville Hospital (USA) since 2011, offering her expertise in a Level III NICU. After beginning her work in the NICU, she realized how much she needed to learn about human milk. Her interest grew when her team included her in conducting research with the Miris Human Milk Analyzer™ (Miris HMA™) and updating their human milk policies. Her facility currently uses the Miris HMA™ for research and bedside use. We interviewed Laura to hear more about her journey.

How did your interest in breastfeeding and lactation start?

When I started working in the NICU, I got to take a Certified Lactation Counselor (CLC) course. I realized how little I knew about lactation, despite my training in nutrition. After certification, I helped parents with pumping and direct breastfeeding in the NICU. I still had a lot to learn, so I checked in regularly with our IBCLC lactation consultants.

At the same time, our facility was updating our human milk handling policies. I reviewed the literature to identify best practices for milk expression, transport, storage in the refrigerator or freezer, thawing, mixing, labeling, feeding administration, and charting. There was so much to think about!

How has the situation for breastfeeding mothers changed since you started working in this field?

There has been growing awareness and knowledge about breastfeeding in recent years —from medical professionals, parent groups, social media posts, and lived experiences. There are improved pumping innovations like custom settings, battery packs, quiet motors, and flanges in different shapes and sizes.

Workplaces are starting to provide parental leave, parents are asking about pumping when they return to work, and parents are more empowered to nurse in public. You can even see more breastfeeding themes appearing in movies and television shows. It's great that more people are talking about lactation! Parents with previous unfulfilling breastfeeding experiences may find healing in understanding the odds they were up against and learning about new support that is available.

Our culture is shifting to see the bigger picture of parenting. The AAP recently aligned with the WHO to expand breastfeeding recommendations until two years of age or longer. While this can feel overwhelming to parents and providers alike, it highlights the need for continued education and support.

How did you begin working with human milk analysis?

When I joined the NICU, our neonatal nutrition research team was already using the Miris HMA™ to learn more about preterm milk. Analysis days always felt so exciting, and they still do!


“The Miris HMA™ helped me see how I could empower parents to optimize their milk.”

"With this proactive, lactation-focused approach, the parent is in the driver's seat to optimize the nutritional content of their milk, and the medical team is armed with a wealth of information to make informed feeding and fortification decisions."

The first thing I learned was that early milk is the highest in protein. Seeing these results reinforced our practice of using the earliest (highest protein) milk first. To accomplish this, we use laboratory bins with dividers to organize each parent's milk. Analysis results from Miris HMA™ continue to reinforce this practice as we care for extremely preterm infants, ensuring we use the milk with the highest protein content for the longest duration of time.

Next, I learned about the energy in human milk, which appeared to be mostly unpredictable. Then we analyzed fractionated milk and I saw the striking difference between the beginning foremilk (12 kcal/oz) and the ending hindmilk (32 kcal/oz). How many parents stopped their pumping session when an undersized bottle was full? Or switching undersized bottles in the middle of pumping? Did they know how to get those last drops of hindmilk out?

The Miris HMA™ helped me see how I could empower parents to optimize their milk. If they pumped early and often, they could increase their supply of the earliest highest protein milk. If they expressed fully each time, they could increase the consistency of the energy in their milk. Achieving adequate volumes of this milk is beneficial for the NICU baby, but instilling confidence and self-efficacy in the parent is critical for the success of the long-term lactation journey.

Does your NICU use freshly pumped milk?

Our IBCLC helped me realize that freezing breast milk kills living cells, and fresh milk contains timely bioactive factors that change in response to the baby's suckling environment.

When preparing feeds, we still use the earliest frozen milk for half of the daily feeding volume. Early milk is not just higher in protein, it is also higher in essential electrolytes, vitamins, minerals (like zinc), and bioactive factors. We don't want this stored in the freezer when the baby needs it the most!

We encourage parents to bring fresh milk daily and pump after holding their baby skin to skin. The remaining daily feeding volume comes from the most recently pumped fresh milk and any leftover fresh milk gets moved to the freezer – in the back of the parent's organized bin.

How is the Miris HMA™ used in your facility today?

Instead of a reactive "your milk has this, we are going to add this" approach, we are trying for a more proactive approach. With fresh milk, we can easily analyze milk at 7, 14, and 21 days before storing it in the freezer. This results in multiple benefits, the most important being "Targeted Lactation Support" to encourage and empower parents to optimize their milk for their baby.

First, we always have great news about the high protein content in their early milk. "Your milk is unique and important. Keep pumping!" Over time, we never say it is low in protein – because it's not! It's simply "normalizing" to mature levels that would be adequate for a term infant. Early milk has extra protein to help a baby that came early and has increased needs.

If we notice some variability in energy, we reassure the parent that it's normal and redirect our conversation to curiosity about pumping practices. With this

proactive, lactation-focused approach, the parent is in the driver's seat to optimize the nutritional content of their milk, and the medical team is armed with a wealth of information to make informed feeding and fortification decisions.

How has milk analysis impacted your fortification practices?

We base our feeding protocols on the normalized mature values in human milk. That way, all babies meet their minimum needs whether they are feeding on early or mature milk – or anything in between.

If milk has a higher protein content, we can avoid excessive fortification, which decreases the provision of the parent's own milk and increases the risk of feeding intolerance. Milk analysis allows us to pinpoint when the early frozen milk normalizes, usually around 3-4 weeks, so we can switch to all fresh milk. It also allows us to select specific dates of milk that are higher in energy.

If an infant has poor growth, we can rule out the milk as a cause and look for other interventions. As we gain a better understanding of the macronutrients in human milk, we are finding the need to supplement micronutrients to support growth. An analysis is rarely necessary for healthy, term infants, but we occasionally use it to help with clinical decisions and to empower parents in their breastfeeding journey.

I am excited about using the Miris HMA™ to better understand human milk and, most importantly, support families to meet their lactation and health goals.

"I am excited about using the Miris HMA™ to better understand human milk and, most importantly, support families to meet their lactation and health goals."

www.mirissolutions.com