The Effect of Physical Activity on Human Milk Macronutrient Content and Its Volume

Featuring :: Prof Ronit Lubetzky, MD

TRANSCRIPT

Maura: If you’re a parent, or you’re ready to become one, you already know having a baby can mean adjusting to many lifestyle changes. And if you’re a nursing mother who has just had a baby, part of those changes may include deciding how best to resume or start a workout regimen to help keep you healthy, strong and full of energy for your new little one.

Maura: Here’s what’s great: Breastfeeding moms, like everyone else, still get to enjoy the many benefits of exercise, including building physical strength, losing pregnancy weight, and improving your mental wellbeing. If your doctor says it’s fine, and you’re ready to get started, rest assured, you can hit the pavement without worrying about negatively affecting the nourishing components in your breastmilk or affecting your milk supply.

Maura: I’m Maura Bowen, podcasting for Abbott Nutrition Health Institute. And I’m here today with Prof Ronit Lubetzky (MD). Prof Lubetzky is the Director of the Pediatrics Department and head of the Pediatric Nutrition and Obesity Clinic at the Dana-Dwek Children’s Hospital, Tel Aviv Medical Center. She also serves as an associate Professor of Pediatrics at the Sackler faculty of Medicine at Tel Aviv University.

Maura: Prof Lubetzky is here today to discuss her co-authored publication, “The Effect of Physical Activity on Human Milk Macronutrient Content and Its Volume,” which focuses on new research reporting the effects of moderate- to high-intensity physical activity on human milk volume and macronutrient contents, as well as the implications of these findings on the field of infant nutrition.

Maura: So, Prof Lubetzky, welcome! We’re glad to have you here with us today.

Prof Lubetzky: Hi, Maura. Happy to be here with you today.

Maura: One thing to note for our listeners: This podcast recording may sound a little different than you’re used to hearing. I’m still social-distancing—although I have a new microphone today, I hope it shows!—and of course, Prof Lubetzky is in Tel Aviv, so we’re dialing in for today’s discussion rather than sitting in the studio. Prof Lubetzky, shall we begin?

Prof Lubetzky: Yes, sure.

Maura: Great. Before we start, can you tell us about yourself, your current role, and what brought you to this area of focus in your career?

Prof Lubetzky: Yes, absolutely. As you said, I’m a pediatrician first of all. I take care of hospitalized kids in the pediatric department. We do a lot of nutrition therapy in the department. And I’m also running an in-hospital nutrition clinic where we treat outpatients, and this is an interesting nutrition clinic. We treat obese kids or we treat infants who fail to gain weight or to thrive or are selective eaters.
Prof Lubetzky: I always believed in nutrition, and thought nutrition really mattered. And when I became a pediatrician and studied nutrition, even more. I got deeper into nutrition because nutrition for infants and kids is even more important because of this amazing window of opportunity regarding these ages of life.

Prof Lubetzky: My main field of research became infant nutrition and metabolism. So we have a research group in the hospital where we do a lot of research regarding preterm and term infants and lots of human milk studies trying to get more evidence to support the breastfeeding recommendations. So, we really believe in nutrition.

Maura: Thanks for sharing your background. You know, it’s funny. I’m a workout enthusiast, and I’ll admit that when my kids were infants, I never even thought to ask the question about how exercise could affect breastfeeding. Is this a new discussion between new mothers and physicians?

Prof Lubetzky: You know, some wouldn’t ask the question like you do. You know, you’re a runner, you do physical activity, that’s fine, you breastfeed—that goes together. But not for everyone. So, it’s not totally new, but since the interest around milk composition is growing, lots of people are being interested in what influences this amazing fluid that is breastmilk.

Prof Lubetzky: And on the other hand, we’re not talking only about the baby. The mother is also becoming important. We talked about the breastfeeding advantages for the mother. And we know that the mother’s health is also very important. In the area where obesity is a big problem, and overweight, and the wellness of the mother is regarding their behavior, their lifestyle of breastfeeding mothers in an issue, we start to put a light on the recommendation of those two healthy and important things, which is physical activity and breastfeeding.

Maura: And it seems like there are a handful of myths out there that exercise could be detrimental to the components of breastmilk and breastmilk supply. What has the research said up to this point?

Prof Lubetzky: What they did first of all, they compared two groups of mothers. They took groups of mothers that were practicing physical activity, that were active, and the other group was non-active mothers. And they checked a handful of things, like milk volume and the growth of the baby and minerals and macronutrients.

Prof Lubetzky: And even one myth was that for example that since the mothers that were active they could have if they’re physically active they could have lactic acid that would cause the milk to become sour when the baby tastes it, and then it won’t be that acceptable by the baby, or that the mother will be a little bit dehydrated and would have less volume of the milk.

Prof Lubetzky: So the results were conflicting. And the main issue that the most of the of the research is that they were comparing two groups of women. And the groups are different. Mothers who are sedentary are different than mothers who are working out so it’s hard to compare them as groups. The hints were that the physical activity does not harm in any way the milk. But we thought that wasn’t enough.

Maura: Well that’s interesting. And can you tell us about your study? First, what prompted your research?

Prof Lubetzky: We decided, we’re not going to compare. We’re going to do this interesting subject within a different methodology. We decided first of all to focus on the macronutrients—on fat, on sugar, on the lactose, which is the sugar of the milk, and the protein. And then the calories and the volume.

Prof Lubetzky: So what we did was we recruited 30-31 women who were active even before pregnancy. And they started physical activity after labor; the baby was 2-6 months old and they were exclusively breastfed. Then, we asked the women to check their milk within two consecutive days. On the first day, we told them to pump milk and hour before they were going to work out. So they pumped, and pumped again one hour after they ended their physical activity. And they were physically active moderately to high intensity. So they were running and swimming.
Prof Lubetzky: The next day, we told them to do just the same, and they gave us samples of milk from the same hours of the day, exactly like the day before, but the only difference is that they weren’t working out. They were resting in between.

Prof Lubetzky: So the same conditions. Each woman was her own control. Which makes it very strong, because this is the woman, this is how she manufactures milk. The only difference was physical activity. We told them to eat the same, behave the same, so the only difference would be the sport.

Prof Lubetzky: Then we took the milk and we analyzed it, volume wise. And the results were interesting.

Maura: You had some hypotheses going into this study. What did you expect to find?

Prof Lubetzky: The hypothesis was that physical activity is not supposed to cause any change to the macronutrient or the volume of the milk because we had those hints from the previous studies and also because we’re meant to move. We’re not meant to sit. And the body is very smart. The mother is meant to move while breastfeeding, and milk is supposed to be protected for the baby.

Maura: That’s a great point about being meant to move. Did the data bear out your hypothesis?

Prof Lubetzky: Yes. So we were very happy to find that as we speculated, we had no negative of the effects of exercise on the macronutrients the volume or the calories, the energy, that the milk supplies to the baby.

Maura: Did anything surprise you about what you found?

Prof Lubetzky: It’s interesting that you’re asking because the second time that they were pumping one hour after the physical activity we found that the volume was lower after the activity. We thought, “Uh oh, maybe that’s the difference. She’s dehydrated, there’s less milk, but this is the advantage of the methodology, because what we saw was exactly the same difference, the same delta, the next day when they rested. So, we figured out this was part of the daily variation, this is the mother’s pattern of the change—probably the first pump in the morning we have more milk and then the next one, after an hour or two hours or three hours we have less milk that in the first pumping. That doesn’t have to do with the physical activity.

Maura: What learnings from this research can or should clinicians apply to their practice?

Prof Lubetzky: I think for physicians, this gives strength to the recommendation. To calm mothers down, the mothers who are interested in, “Can I go back to physical activity? Can I do my regular physical activity? I’m running 10 km a day—will that be ok with my milk supply, with my lactic acid, with the macronutrients, with the calories? Will that harm the growth of my baby? And the physician can say, “No. In no way will your physical activity influence your milk, and you can go ahead and do the exercise you used to do safely.”

Maura: What makes you feel hopeful about these findings?

Prof Lubetzky: We hope more and more women will practice physical activities generally, and while breastfeeding especially. And we want women to breastfeed for a long time. We recommend at least a year of breastfeeding. Babies can be breastfed safely, they will grow very well, and mothers should keep on breastfeeding, being active both physically and mentally—which is very, very important for breastfeeding mothers.

Maura: Fantastic. Can you think of additional research that could help advance what we’re learning in this space?

Prof Lubetzky: I think the field is interesting. What we did was first research in a way that we can get much deeper to the subject. We can check all kinds of physical activities. I don’t really know, to tell you now, if all types kinds of
sports would do just the same. So we can check other types of sports—how’s the gym doing compared to spinning compared to swimming—and we can use more physiological parameters regarding the intensity of the physical activity. So you can take this much deeper if you want to get into this subject, which I think is very interesting.

Prof Lubetzky: And another thing is to check the influence of those results on mothers and to check whether they feel safer and it encourages them to do more physical activity once they know it’s totally safe and reassuring and that we encourage them to start working out and that their babies will be just great. So I think these will be two interesting arms to check after our research.

Maura: This was great, Prof Lubetzky. I feel like you helped to bust some myths today, so a very special thanks to you for that. And to all the breastfeeding moms out there: Great job, mamas! Take great care of yourselves while you’re caring for those little ones!

Maura: And for all our listeners, thank you for joining us today. Be sure to visit anhi.org for more nutrition science education and resources, including more podcasts, which you can find on anhi.org under RESOURCES, and the PODCASTS & VIDEOS...or, by clicking the “COMMUNITY” link on the ANHI.org homepage to find podcasts there, as well.

Maura: Thanks everyone.