Episode 62: Good Clean Dirt

with Jasmina Agonovic of Mother Dirt

Katie: Welcome to the Healthy Moms Podcast. I'm Katie from wellnessmama.com, and I'm so excited today to be here with Jasmina Aganovic, who is the president of Mother Dirt. This is a really cool company that I've recently found. Basically it's a line of a biome-friendly personal care products that their whole focus is to restore the balance of bacteria on the skin. And, I feel like this is a new area of research, which is why I'm so excited to delve into it. I feel like we know a ton about the gut biome, but not so much about the skin biome. So her company, basically this is the consumer division of a company called AOBiome, which is a biotech company that's focused on advancing and transforming human health by using products that restore a special bacteria called ammonia oxidizing bacteria, or AOB, which a lot of current hygiene products have stripped away. So not only are we not getting these bacteria, but all the hygiene products that we use are actually taking them away. So, Jasmina is a cosmetics and consumer goods entrepreneur who has a degree in chemical and biological engineering from MIT, which is certainly nothing to laugh at. And her path has led her to these companies, and I'm so excited to chat with her today, because a lot of you guys who have been listening for a while know that I'm a big fan of letting kids play in dirt, interacting with dirt, which obviously is a different focus, but I feel the bacterial aspect is really important. So Jasmina, welcome. Thank you so much for being here.

Jasmina: Ahh, thanks for having us, Katie. I'm excited to chat with you today.

Katie: Me too. I feel like this is one of those really important topics that we're about to see a whole lot about. I feel like most people are aware of there's gut bacteria and there's a gut biome, and so most people understand that the gut has trillions of bacteria, and that the microbiome in the gut affects health in a lot of different ways, including like the immune system, in so many ways we're just now finding. But, I feel like this is kind of the pioneering edge of microbiome research, about the diverse microbiome that exist in other parts of the body, like on the skin. So let's just jump in there. Can you talk about how that's the same or different from the microbiome in the gut, and how they interact, if at all?

Jasmina: Yeah, well actually you're bringing up this really interesting point that the whole medical and academic community is starting to realize, which is that, you know, creating these really separated silos of ecosystems, and thinking that the human body is not as interconnected as it is is kind of a profound way of looking at the human body. So, you

know, going back to the gut, just for a moment before we leap into the skin, just like you said, so much of the research that's going on in the gut has been tied to some research that'll potentially have some really serious implications to the treatment of diseases and the optimization of health, but really what we're realizing is that it isn't just about gut health anymore. We're certainly seeing research in the gut also affecting other things, like potentially mental health, sleep, and things that you wouldn't necessarily in a conventional way view as very connected. And, you know, when we look at the skin, the skin also has an ecosystem like the gut. There are some really similar parallels, where, you know, an imbalance in the gut can lead to issues in the gut, and potentially elsewhere. Same thing we're starting to realize in the skin. If there is an imbalance in the skin, the skin has a really difficult time being healthy and feeling good, and things along those lines. Diversity is also a big, factor so there's a lot of research for the gut, showing that potentially the more diverse the ecosystem in the gut is, the healthier the person tends to be. And, as we look at things for the skin, the same could be true. As we look at people from indigenous tribes, or people who typically have what we view as healthier skin, the relative diversity of bacteria on their skin seems to be much higher than what people who kind of struggle with their skin, or have diseased skin states have. So there are a lot of really similar parallels, but it's very different, because there are different microorganisms that exist in each. You don't have the same bacteria in the gut as you do on your skin, and so it is a little bit of a new frontier that requires a slightly different way of thinking and researching.

Katie: Yeah, absolutely. So, from what you're saying, too, the, obviously, since the body is so interconnected, the bacteria we have on our skin also do, obviously get inside of our body as well, through just our normal interaction with our skin, to our mouth, and eating and everything like that. And I find that especially fascinating when I'm watching my little kids, because I've thought of this for long time, like with toddlers especially, for years and years and years. Babies that age have crawled around on dirt, and they put sticks in their mouth, and now everything is sterile and we boil their toys to make sure they're sanitary, but I love actually that that makes sense now, that the reason that babies want to play outside and crawl in the dirt, they're actually developing both their skin and their internal biome. So, what do we understand about the specific mechanisms between how the skin biome affects the gut biome?

Jasmina: Well we do know that the research is really early on. There's some research being done by the group at UPenn that doesn't, you

know, relate directly to the gut, but I thought that the takeaway was pretty interesting, which is that they view the microbiome of the skin as kind of like the eyes and ears of the immune system. And by constantly cleaning and kind of sterilizing our skin, we're effectively kind of deafening and blinding this important link to our immune system. And eventually when you deafen and blind this link, what the immune system does to protect itself from potential danger, because that's all it really cares about, it goes into a proinflammatory state. And, because it doesn't know what's out there, so it would rather kind of fight preemptively than assume that everything is fine. And this is why we believe that there's been such a rapid increase in inflammatory skin diseases. Children in particular, one in six children struggle with eczema, and interestingly enough, it tracks with asthma. So about 90% of the children that have asthma also happen to have eczema, and that's a really interesting link, because conventional medicine separates those two in very different categories. So there certainly seems to be a link. Not much is understood about it, but there's a lot of work going on in the space for sure.

Katie: That's so fascinating. I'm really excited. I'm definitely a nerd at heart, and I love reading medical journals, so I'm excited to see more about this. Hopefully that'll be coming out. So, since I'm a mom, and I think a lot of the listeners are, I definitely have a focus on babies and children. And I know that from my research, at least with gut bacteria, that it develops typically like, very early in life. They think maybe even in utero, potentially that there could be seeding for that. But we know for sure during like the birthing process, is the skin microbiome the same, and how does that microbiome develop?

Jasmina: Yeah. What research is showing is that in the first two years of a child's life is when much of its immune system is built up. And the microbiome very likely plays a key role in that. And, you know, one of the things that you were talking about earlier about kids crawling on the dirt, and putting things in their mouth, you know, if you look at why they evolved that behavior I think is a really interesting question. It, you know, potentially is a mechanism for the immune system to start to build itself. So those first two years are pretty critical, and everything...That immune system and that microbiome is built effectively through the child's exposure to its environment. And certainly, it starts very early on, just like in the birthing process, like you were saying, and there are some people doing interesting work there, where if a child is born via C-section, they still are able to take a swab from the mother's birth canal, and kind of wipe it and put it on the child as a way to kind of seed the

child's microbiome, both the skin and the gut, but that's only the early, early process. Certainly the child being outdoors and interacting and immersing itself in an environment that has a very diverse ecosystem, a lot of researchers are saying that that's a critical thing to do. But our lifestyles have evolved so far away from that, if you think about how we live. You know, even 50 years ago, the generation before us, we played outside a whole lot more, and we interacted with the outdoors a whole lot more, but now, you know, a child wakes up, is put in a car, is driven to school, and then goes right back in the car, typically with very little exposure to the outdoors, comes home, and then is bathed with harsh surfactants, right, even though the child didn't theoretically get truly dirty in the way that it would kinda be defined by the medical community. So, you know, the lack of exposure to the environment, plus the constant sterility, which you were...the sterilizing or the cleanliness, which you were referring to before, has stunted and greatly impacted this evolution in the first few years of their life of their microbiome, and potentially we're seeing the effects on the immune system as well.

Katie: Yeah, it really is kinda wild, and I love that you mentioned about the birthing process, because I'm a doula, and I've actually done that, facilitated that at a couple of births that ended up being C-Sections, and the mom knew going in, in one of the cases, that it was gonna be a potential for a C-Section. And so she had pre-swabbed before getting antibiotics, so before being in the hospital, and was able to seed her baby that way. Which is funny, because you get a kind of...a mixed reaction from the medical community. A lot of doctors seem to think it's gross, which I always just laugh, because I'm like used to..you know how birth happens. How is that any grosser?

Jasmina: Yeah. Yeah.

Katie: But I love that, and I think that's a good reminder to all moms, like you said, of how much less a lot of kids are getting outside these days. And I remember my grandparents talk about it so much. They played outside in the dirt, they climbed trees, they came in filthy, they gardened. They did so many things which gave them exposure to a wider variety of bacteria. So with that understanding, and with the research that we have available, what does it actually mean to have a healthy skin microbiome? Like, what kind of bacteria are we talking about there, and how many different kinds, and how does that interact?

Jasmina: Yeah, you're asking a really good question, and one that a lot of people are trying to understand right now. A lot of microbiome

research is trying to answer the question of, you know, what does a healthy microbial profile look like? And because of just the sheer complexity of all of the different types of bacteria that we have, and the complexity of the human body, and how much this microbiome evolves over time, and how easily influenced it is by the environment, and also how disconnected we've become from...how much of an impact really modern living has had, it's really difficult for us to figure out what that baseline is. So we don't know, is the question. And the same goes for the skin as in the gut, it's actually one of the same commonalities, to kind of tie it back to what we were talking about earlier. In the gut, people wanna understand what that healthy profile looks like. Same thing as for the skin, and we're having a really difficult time doing it, just because of how far away...how many things have impacted it, how complex those systems are. But hopefully, one day we will.

AOBiome is approaching it in kind of a different direction. Instead of starting with kind of the big data perception of it, AOBiome is actually just starting with one type of bacteria, really focusing on understanding how this bacteria works, and the role that it plays in the skin's ecosystem, and then really measuring what its impact is. And you you talked about it earlier, the ammonia oxidizing bacteria is a soil bacteria, so it comes from the dirt. So if you were walking barefoot or kind playing outside, it is very likely that you would expose yourself to it naturally. Human beings likely had this bacteria and lost it in the last 50 to 100 years or so, because it is so sensitive to surfactants, and because we don't interact with dirt as much as we used to. So we're taking a little bit of a different approach, and we believe that by following this approach, we can kind of at least focus on the areas where we can make improvements or make an impact.

Katie: Yeah, I love that it gives a whole new meaning to the idea of good clean dirt, as...you hear that saying.

Jasmina: Right, right. Yeah, I mean this idea of clean, we talk about this internally, you know, we've confused clean with sterile, and we believed that by, you know, being quote-unquote clean, effectively killing 99.9% of bacteria, that we would be healthy. And I think the reason so many people are starting to look in a different direction, and people feel like the conversation you and I are having now is starting to grow and gain momentum, is because people feel like they have been doing the right things. They have been cleaning, they have been using, you know, the antibacterial hand sanitizers, they have been following what conventional wisdom has told them, and you know, we haven't ended up

where we've expected. So it's made people I think take a step back, and wonder what piece in all of this we've missed.

Katie: Yeah, absolutely. I think you hit the nail on the head with that one, and I think that this is gonna be a really big emerging area, especially because we have all these products in our society that do, they're said to kill 99.9% of bacteria, and there seems to be this pervasive attitude, at least in the last few decades, that bacteria is bad, and most people have a negative association when you say "bacteria." But really, like from what you're saying and from what I've read, if you're looking at the biome as a whole, whether it's the gut biome or the skin, we have trillions of bacteria, and a lot of them are actually very, very good and necessary, so I think that's an amazing and important conversation that's happening.

Jasmina: Yeah, and here's...this statistic when I found it out blew my mind, that as we started to understand the gut microbiome, that we realized how many bacteria there were, and that we didn't know what almost 80% of them did, and that we had still kind of culpritized them. We had still assumed that, you know, okay, we don't even know what they do, but we're gonna assume that they're bad. And the gut microbiome has really forced us to reevaluate that, and I think that that's astounding that, you know, we understand maybe what 15% of them do. Single-digit percentages we know are bad. The rest of them, we kind of understand, and they don't really seem to be good or bad, and then the rest of them, we don't know. So we really let you know these single-digit percentages form our entire assumption of what bacteria is. And not only that, but entire industries were built around this idea that bacteria is bad. And you know, this has now had a serious impact, and kind of being re-evaluated with the gut microbiome, and that certainly has opened the door for the work that we're doing, because people are starting to become much more intrigued, much more open to this idea. But the cosmetics industry, I mean every product that sits on a store shelf has to have a preservative in it, because the whole industry is built around this idea that bacteria is bad, and putting a preservative in there prevents any bacteria from growing. And thinking about slathering and lathering all of those products on our skin multiple times a day over the course of a lifetime certainly has an impact.

Katie: Yeah, absolutely. I think that's so important what you said about we're really basing our entire perception based on those single-digit cases. And certainly, there are bacteria that are very dangerous, but like, we're finding there are some that are really, really important as well, and

especially some of the research showing about how the interaction of bacteria even on your genes, like it can literally impact your body at such a base level. And I think we also are seeing the shift in society like you said, with, recently I've been reading about how triclosan is now banned, which is an antibacterial ingredient. And people are seeming to start to wake up to maybe we shouldn't be just washing our hands with antibacterial soap every time we wash our hands.

Jasmina: Yeah. Yeah, our chief medical officer Larry makes a really good point here, which is that, you know, many of these kind of ideas start off in the medical community. So antibacterial hand soaps started off really in hospitals, and for good reason, you know, that is certainly an environment where we still very much need that. But, you know, that ended up trickling over into the consumer space, and there was never a point in time where we stopped and asked whether or not it was necessary in the consumer space, and if it was, what the ramifications would be. So triclosan is a really interesting case, because there were also environmental implications, because literally our water treatment facilities weren't prepared for the buildup of triclosan that ended up happening, and that had an impact on things. And so, you know, if you look at the history of how these things end up happening, it's really interesting to observe, because the intentions are always good, they're just typically based off of not the full picture.

Katie: Yeah, exactly. So we've talked a lot about all the problems and the research. Let's shift focus a little bit. A lot of the people listening are moms, and are raising the next generation, so are there anything...practical steps that we can do that help create a healthy biome on our skin for ourselves and our families?

Jasmina: Yeah. For kids, I think particularly in the school setting, or in a group setting, I know that it's always really important for kids to wash their hands, and, you know, hand hygiene is still a really important part of this. Lots of studies show that plain soap and water is just as good as...is actually better than antibacterial products. So if you are able to just take out those antibacterial products completely, I think that there's a lot of benefit to be gained there alone in just using plain soap and water. There is convenience in like, antibacterial hand sanitizers, but, perhaps as a simple replacement for that, going to simple wet wipes that don't have any sort of antibacterial properties, those are really easy to use, and kind of quick and fast with kids and their hands, so that they can kind of be on their way, doing the next thing, and there isn't that much kind of effort that's needed in having them wash their hands and dry

their hands and things like that. So wet wipes I think is a really great tip. The other aspects revolve around bath time. Really evaluating when a kid is truly dirty and needs to be lathered up head to toe, or if there are times where plain water will do during bath time, and maybe just lathering up on key areas, you know, just evaluating this whole...the whole need for truly lathering up head to toe. Diluting any soaps that you're using, if and when you can. Really understanding preservatives or preservative-free products. All of our biome-friendly products don't contain preservatives, just because we know the effect that it has on the skin microbiome. So I think that that's an easy class of ingredients to look at, too.

Katie: Yeah, that's awesome. I think, actually you brought up a point that's kind of been a point of argument with my mother-in-law over the years, because she's a nurse, and she grew up in the idea of you bathe every single night, lots of soap, scrub everything, get super, super clean, and with our kids, like when they're dirty and they truly need it, we obviously do, but I don't think that like every single night is necessarily the...

Jasmina: Yeah.

Katie: ...the time for that, and she and I have butted heads more than once over how often the kids need to be scrubbed down with soap when she's babysat, so...

Jasmina: I understand.

Katie: So, the cool thing, the reason I wanted to have you on to talk about this, is besides the fact that you're obviously an expert with your background, is that you have this amazing company called Mother Dirt, and I've been trying out your products now for a few months, and the whole focus of this is supporting skin health and supporting the skin biome. So, can you talk about the different products you have, and how they interact with the skin biome and help to improve skin?

Jasmina: Sure, sure. Mother Dirt is the consumer-facing side of AOBiome, so we already talked about the work that they're doing and how it's based off of this one key bacteria called ammonia oxidizing bacteria. And the core product for us is the AO+ Mist, and this contains that live bacteria that you can spray on your skin. The reason we believe this bacteria is really important is because it is often called the peacekeeper for the skin, and also in nature, it plays a really crucial role

in nature, so much so that if you were to remove it from the soil, whatever ecosystem is there will start to struggle, and probably wilt away. So think about a potted plant. This bacteria exists in that soil in there. If you were to somehow magically remove it, your plant would eventually die. That's how critical this bacteria is to living ecosystems.

And as we study it, it also has a similar peacekeeper effect. And it does it by the following. When we sweat, and we've been taught that our sweat is a bad thing, that sweat contains what's called ammonia. And ammonia is actually the part that is irritating to our skin, and the whole reason sweat got a bad reputation. Ammonia is also what causes diaper rash for little babies. So their bums get sweaty under the diaper, and the buildup of that can cause the irritation that ends up becoming diaper rash. So ammonia is really what creates the bad rap for sweat.

This bacteria consumes that ammonia. So it removes it from the surface of your skin, and by doing that, it brings the pH of the skin down to a normal...typically associated with healthy skin. And it converts it into beneficial byproducts that your skin can then use. So it keeps the cycle going of taking the waste, converting it back into good things your skin can use, that your skin then turns back into waste, and it keeps that cycle going. And essentially what we see happening is that we're restoring the skin to a state where it is better able to take care of itself. So the idea is that many of these personal care products have kind of interfered with the natural process and system that our skin has evolved to have over time, and that by restoring this peacekeeper, that it's kind of building a bridge back to how our skin behaved and was able to function before.

And much of our premise is actually simplifying things, and really restoring balance in a way that is much simpler and much more aligned with how the body was really meant to function. So what people notice is that their skin not only looks better, feels better, but they also very quickly notice that they no longer need some of the products that they were using before. So that's the core product that we have. And then we have supporting products that don't contain the bacteria, but are meant to be easy swaps, so that people can have a biome-friendly routine. So in there, we have a cleanser that you can use on your face and on your body, a shampoo, and also a moisturizer. So that way you can kind of build out the daily essentials, and make sure that it's helping your skin's ecosystems stay nice and balanced.

Katie: Yeah, I love that. And to go back to one of the things you said, so you said that the ammonia oxidizing bacteria actually feeds off the ammonia in your sweat, which I know some people like, that have sweating that makes them itch, that's probably actually the ammonia, right?

Jasmina: Yeah, yeah.

Katie: ...that's causing that? So in that sense, is the ammonia in your sweat kind of almost like a prebiotic, that the probiotic, the bacteria feeds off of?

Jasmina: You can certainly call it that, based on how we've like defined what a prebiotic typically is. If the bacteria's feeding off it, definitely it is a prebiotic. If you have no bacteria to consume it, and the ammonia just sits on your skin, then, you know, your skin will probably not be too happy with that much buildup of ammonia. So yeah, looking at it as a prebiotic is an interesting way to look at it.

Katie: That's wonderful, and yet another reason why it's so good to sweat and work out and...

Jasmine: Totally.

Katie: ...I would assume that that would be from like exercise, or could a sauna generating sweat do the same thing?

Jasmina: Definitely. And we're actually sweating all day, every day, even if you don't feel it. The bacteria don't need much to activate, but anything that triggers sweating. We have a ton of people that put the mist in their gym bag, and they love it. Or, before bed. So people typically sweat more in the evenings, so that's a great time to spray head to toe. But yeah, definitely those are all fair game.

Katie: Very cool. So can you just briefly explain how, like the mist, and how the products work, so people can kinda get an idea of what a healthy skin routine would look like?

Jasmina: Sure. So, the cleanser and the shampoo and the moisturizer, you use just like any other cleanser or shampoo or moisturizer. They're really lovely products, really easy to use on their own. We do have some people that might feel that the bacteria is too much of a leap for them, but they still really love the biome-friendly products, and they notice a

difference on their own, but, to give you a basic sense of what a routine looks like, if you shower in the morning, you'll shower, use this cleanser as a basic soap. If you're washing your hair, you would use this shampoo as...to lather up. It does lather. It feels really great. If you use a conditioner, you can definitely use your own conditioner, just using it away from the roots. You get out of the shower, you dry off your skin, and then you just spray the mist. We recommend focusing on sweat-prone areas, for all the reasons that we talked about earlier. So your face, your underarms, your hands, your feet. Even great to use on the private area. And that's pretty much it. If you are...If you have other aspects of your routine, so the face can sometimes be tricky, particularly for women who are meticulous about an SPF or makeup, feel free to put any of those on, and then just use the mist as the very, very last step in the routine. And that's basically it. You can respray throughout the day if you want. In the evening, you can respray before you go to bed, but that's essentially how it would go.

Katie: Yeah, I was actually surprised, because I've been making my own beauty products and just household products for years, and so I would think probably the majority of them would be relatively biome-friendly, because I'm not using any harsh preservatives, or that kind of thing, but I was surprised just how easy it is now, like I just have to pack two products when I travel, and plus the mist, and it's very easy to do, and I also feel like I noticed differences in my skin tone pretty quickly after using it. What's kind of the average response that you guys see with people, and is it pretty quick like that?

Jasmina: Yeah, all the studies that we've done have had people noticing results within two weeks. So it's been pretty rapid, and the really cool thing is people also notice the changes with time. So, for example, people in the beginning might be using maybe a little bit more mist for example, and then they feel like their skin gets to a really good point, and then they find that they can just use a little bit less in order to maintain the results. And the reason for this is a little bit kinda crazy to talk about, because you never think of your personal care products this way, but this is literally the first living personal care brand. Once you get a culture growing on your skin, and it's kind of healthy and functioning and existing on its own, you're really good to go. All you're really focusing on is maintaining.

And it's really interesting to think about taking care of your body in that sort of a way, where it's much more symbiotic, versus kind of how we're typically told. And you know, I'll also say that the personal care industry

has had this natural products movement that has really dominated the last several years, and has come to a head over the last 10 years, and it's been such a tremendous step in the right direction. We've been having the conversation of how do we make healthier products for quite a while now. And what we like to talk about however, is, you know, why are we using so many products to begin with? You know, it's a slightly different conversation to be having, and making sure that our products are healthy and formulated ethically and in a way that we understand how it impacts our skin and our environment is really important. But also, really incorporating what is necessary versus excess.

Katie: Absolutely. I'm a hundred percent with you on that. One question I know some people may have, is there any kind of transition period when switching to these products? Because I know, I was already using home-made products, and like a lot of liquid castile soap, and things that had a transition period themselves when I switched from the really harsh detergent shampoo and that kind of thing. Have you guys, do you have people who have an experience with the transition period where their skin or their hair kind of doesn't like, it but then it passes if they keep using it?

Jasmina: I would say it depends, maybe. I know for me personally, I went cold turkey in dropping my very elaborate facial skin care routine, and I kind of just abandoned everything I did. Just the cleanser, and no moisturizer. And the no moisturizer aspect was the thing that freaked me out the most. But you know, maybe for three days, my skin felt like it was missing moisturizer, but then after those three days, I turned a corner, and I've never looked back. But even in those three days, my skin wasn't peeling, it wasn't flaky, so it was just something that I noticed but that no one else would have. On the deodorant side, about 60% of our users are able to stop using deodorant. Most of them have no transition period whatsoever. And there are easy ways that you can experiment with that, and if people are interested, they can certainly contact us for it. But I would say in most cases, no, because it is, with everyone's microbiome being unique, you'll have to pay attention to your body and experiment and tweak from there. But yeah, by and large, it's supposed to be a really easy transition, and an easy routine to get into.

Katie: That's great. And I love that you guys are kind of pioneering, like you said, this whole movement of not just different skincare products, but like rethinking the whole skincare process, and what we need and what we don't, and how that can be a very easy transition, like we've talked about before for some people. And for kids, that may be as simple

as just letting them play outside more and not scrubbing them down, but then for those of us who have gotten to this point in our life, and maybe have already kind of stifled our ammonia oxidizing bacteria, there's a way to help our skin recover, which is amazing.

Jasmina: Totally.

Katie: So I really love that you guys are doing all this research, and I'll make sure I link to both Mother Dirt, so people can check out the products, and also to the research side, which I personally find super fascinating.

Jasmina: Sure.

Katie: So I'll link to both.

Jasmina: Thanks, Katie.

Katie: So, based on...Before we end, I'd love to hear kind of what you see as the future of our understanding of the skin microbiome. Are there areas of research that you hope that we'll see more in the future, or that you think that we're already doing research, or what do you see as maybe the 10 years from now our understanding of the skin bacteria? What would your hopes be for that?

Jasmina: I hope that within 10 years' time, instead of having treatments like Accutane and topical corticosteroids for things like acne and eczema, I hope that we have living products for people to try that are being prescribed by their dermatologists, that have little to no side effects. That would be my dream, and I know that it's something that we are very passionate about here at AOBiome overall. I think that that's the direction that the field is going in. We need to make sure that we get to the point where the science and the clinical data is really validating that. But there's a lot of interesting work going on in the space by ourselves and other individuals, so that I think would be definitely our kind of mission and dream, and what we think will happen in 10 years.

On the more cosmetic side, you know, I would really like to see the skin microbiome introduced as a criteria for formulation. So what I mean by that is this whole, you know, wonderful, creative, fascinating, aggressive industry has been able to come so far with different formulation innovations. They've been able to formulate products based on texture, they've been able to formulate products for their efficacy, there's been all

sorts of amazing innovation that has really enabled natural products to become much more of a reality to introduce into people's lives. So there's innovation going in the right directions for these different types of criteria, but the skin microbiome has never existed as a criteria, simply asking the question of, "Okay, if we apply this to someone's skin, what impact will it have on that living ecosystem?" And hopefully, we can start introduce elements of that through our biome-friendly line of products, and continuing to expand the collective industry, understanding around what impacts the biome and how we can keep it as stable and hopefully healthy as possible.

Katie: That's amazing. I share your hope for that, absolutely. So, any parting words of encouragement that you would leave for listeners, especially moms, just kind of like practical things they can start doing today with their families to kind of nurture this bacteria and to stop killing it?

Jasmina: Yeah, I think we already covered some really great ones. So, you know, antibacterials in the household are not truly, truly necessary. So, plain soap and water is really plenty. I think just reevaluating how much soap, and how often the full body lather down happens with the children. Encouraging kids to spend time outside I think is a great one, and adults as well. It's really important to spend some time out in nature. It's really important for us, too. You know, wet wipes, when you need things on the go, instead of a hand sanitizer.

I think those are really basic ones, but, you know, thinking more powerfully, those things being implemented into our day-to-day, if they're useful tips, I think that's a great starting point. But also having this conversation. You know, this is why we started Mother Dirt. It wasn't really to build revenue for the business, it was because we believed it was such an important shift in public health, and we wanted this vehicle to have this conversation, just like you and I are having them now. And hopefully, some of your listeners can replicate that in their households or with their friends, because you get people talking about this, and it is really interesting. I've always found people are fascinated by it, separate from the products, just because it is...It starts to make a lot of logical sense, and there are a lot of natural questions that come up.

Katie: Absolutely. And for anyone listening, especially driving, I'll make sure I put links to all of that, so people can find it in the show notes. And also, if it's easier to remember, you can go to wellnessmama.com/go/dirt and you'll be taken to the website to find out more about all this. But

Jasmina, thank you so much for your time. I know that you're very busy, and you're building amazing things, and I appreciate your time and being here to share with us.

Jasmina: Thanks, Katie. This is really great. I really enjoyed chatting with you.

Katie: Thanks so much.

Announcer: Thank you so much for listening to this episode of the Healthy Moms Podcast. To get the bonus from the episode, as well as a content library of free health resources, join the community at wellnessmama.com/podcast.

