

Evaluating Abnormal Menstrual Patterns

Girls and adolescents with more than 3 months between periods or those that remain otherwise irregular 2 years after menarche, should be evaluated for underlying causes. Emily Paprocki, DO, pediatric endocrinologist at Children's Mercy Kansas City, discusses more on this topic and what to look for in the primary care setting. For more information, visit the [Common Endocrinology Conditions page \(https://www.childrensmercy.org/health-care-providers/pediatrician-guides/endocrinology/\)](https://www.childrensmercy.org/health-care-providers/pediatrician-guides/endocrinology/) on the Children's Mercy website.



Featured Speaker:

Emily Paprocki, DO

Emily Paprocki, DO is a Pediatric Endocrinologist at Children's Mercy Kansas City.

[Learn more about Emily Paprocki, DO](https://www.childrensmercy.org/profiles/emily-l-paprocki/)

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Transcription:

Andrew Wilner, MD (Host): Pediatricians carefully monitor childhood growth and development. Girls in adolescence with more than three months between periods or those that remain irregular two years after menarche, should be evaluated for underlying causes. This is Pediatrics in Practice with Children's Mercy, Kansas City.

I'm your host, Dr. Andrew Wilner, Associate Professor of Neurology at the University of Tennessee Health Science Center and Division Director of Neurology at Regional One Health in Memphis, Tennessee.

I invite you to listen in as Dr. Emily Paprocki, Pediatric Endocrinologist at Children's Mercy, Kansas City shares her expertise on this topic. She will discuss which questions pediatricians should ask to assess the endocrine health of girls in adolescence. Dr. Paprocki, thanks for joining us.

Emily Paprocki, DO (Guest): Thanks for having me. I'm excited to talk a little bit more about this today.

Host: To get started, how common is it for girls or adolescents to experience abnormal menstrual patterns?

Dr. Paprocki: Well, really in the first year post menarche, it is very common for girls to have irregular patterns. But typically we would say by about two years after menarche, 95% of girls have developed normal cycles. So pretty rare at that point.

Host: So, is that the point that a mother or a pediatrician should start to get concerned after two years and consider a referral?

Dr. Paprocki: Yeah, that's right. Definitely, within the first year, we kind of say that anything goes, in the second year, if periods are more than three months apart, that's when we would consider referral. And then after that we have some specific windows of time for a cycle irregularity that should prompt

referral as well.

So for example, two years after menarche, the cycle should be about 21 to 45 days apart. And then about three years after menarche, it should be the same as the adult cycles. So, that's about 21 to 35 days apart at that point. So, knowing what the normal cycle length at different time points after menarche is pretty important to decide when you should be evaluated further.

Host: Now say I'm a pediatrician instead of a neurologist, and I'm seeing a young woman and it's been about two years and things still aren't quite well-regulated, there's a period. And then there isn't and one's long. And one short. Is there more evaluation I should do myself before I do an endocrine referral or should I just say, well, I'll just send you and let them figure it out? What's the best approach?

Dr. Paprocki: I do think it's good for the primary care physicians to start some of that process ahead of time, prior to referral, and kind of even just starting with your basic history and physical exam. So, thinking about with regards to past medical history of that patient. You want to ask about any history of changes in their weight, changes in eating habits or exercise patterns, because those things we know can affect cycle regularity.

Also medications can affect it. So, we always go over that. You want to make sure there's no concerning symptoms that we due to another diagnosis like diabetes, for example, with polyuria, polydipsia, maybe changes in vision or headaches that could suggest something like a pituitary adenoma. So, I think going through basic history is really important before referral.

Family history is also important too. And can kind of give you some clues. So, asking about any women in the family who maybe had irregular periods or diagnoses of polycystic ovary syndrome, for example, which is a common cause of irregular menstrual patterns. Asking about family history of autoimmune diseases, such as thyroid conditions, and even diabetes can be helpful. On your exam, I think it's important to go ahead and screen for signs of hyperandrogenism, cause that can clue you into some underlying diagnoses. So, for example, that would be looking at male pattern hair growth. So, that's more common on the upper lip and chin and lower abdomen, upper back are places that maybe we see that. Looking for things like severe acne, looking for signs of insulin resistance on exams, such as acanthosis nigricans can be helpful.

And some primary care doctors do prefer to start some of the laboratory evaluations prior to referral, which is fine as well. So, if you are going to pursue a lab evaluation, we do recommend you rule out pregnancy. You screen the thyroid by getting a TSH, total and free testosterone levels to screen for PCOS are good, prolactin level to rule out hyperprolactinemia. We typically look at LH and FSH. We do a screen for diabetes with hemoglobin A1C. And then we look at adrenal hormones as well. So DHEAS, androstenedione and 17-hydroxyprogesterone are the common ones that we do on our initial screening. So, some primary care doctors do this workup before referring, others do not, it's not a requirement either way, but those are some of the things that we start off with.

Host: Wow. It sounds like it's a pretty wide differential. Can you tell me what would be the top three diagnoses that you've come up with?

Dr. Paprocki: I would say top three would be polycystic ovary syndrome is pretty common. It's seen in

about 15% of women of reproductive ages. So, that's definitely high on our list. Just with everything going on in rates of childhood obesity, obesity and insulin resistance is a very common cause of irregular periods as well. So, I would say that's a key one and then probably systemic illness. So, poorly controlled underlying diagnoses, such as diabetes or chronic kidney disease or inflammatory bowel disease, things like that can affect your hormone levels and cause irregular periods as well.

Host: You mentioned PCOS. Can you tell us a little bit more about that?

Dr. Paprocki: Yeah, so PCOS is higher in our differential. We consider a diagnosis of PCOS if we see the menstrual irregularity also with hyperandrogenism. And so that could be biochemical hyperandrogenism, which is why we do the screening labs of our total testosterone and our free testosterone. So, we look for levels of a total testosterone greater than 50 usually, with borderline levels being more in the 40s. And these levels are best interpreted by the reference range by the specific lab you're using. So, it can be kind of tricky. But there is some testosterone variability. So, using a lab that does high quality assays is definitely important when looking at these testosterone levels. And then the other way you assess for hyperandrogenism is by clinical signs. And so that's, again, like I mentioned, the signs of hirsutism on exam, looking for that male pattern hair. We use the modified Ferriman-Galloway score as well, as part of that evaluation.

Host: Is there a link between PCOS and obesity?

Dr. Paprocki: There is a connection between the two. There's kind of mixed opinions on what causes what, but there's definitely a relationship between specifically insulin resistance and then ovarian hyperandrogenism. So, they kind of are like a vicious cycle that feed into each other.

Host: Now, one thing you didn't mention that I'm curious about is, and I know it's fairly common in young women, are eating disorders. Can that affect the menstrual cycle?

Dr. Paprocki: Yeah, absolutely. And so kind of just broadly speaking with the weight changes, we know that weight, extreme weight loss or weight gain can cause oligomenorrhea. And so with that plays in the eating disorders. So, that is definitely something that we screen for.

Host: You also mentioned medications as a possible cause. What would be you know, the top three that I ought to be aware of?

Dr. Paprocki: So for medications, a lot of times it can be some of the medications used for mental health disorders that kind of play into that. So, one example could be if a kid was on risperidone, for example, that we know can cause problems specifically with prolactin levels. And so that can lead to hyperprolactinemia, which can cause periods to stop.

Host: What about substance abuse? Are there any substances that the adolescent might not readily admit to that would need to be considered?

Dr. Paprocki: Yeah, that is true. We do typically ask questions about marijuana use, that is one that comes up, I guess more commonly that can also cause elevated prolactin levels. So, that is something that I have seen several times in my clinic.

Host: So, as a pediatrician in general practice, how often am I going to see irregular periods in young women? What do you think is the percentage roughly?

Dr. Paprocki: So, after it's been about two years post menarche is when we expect them to be normal. So, at that point about 5% of girls may have irregular periods.

Host: That's pretty common. So five out of a hundred young women. That's probably one a week in a busy practice at least.

Dr. Paprocki: Yeah, definitely. And we really, we consider it as part of our routine questions in all of our kids that come to the endocrine clinic. So, if they're coming for a thyroid disorder, we're asking about period regularity. If they're coming for diabetes, we're asking about it too.

Host: Well, Dr. Paprocki, which important takeaways would you like to emphasize for pediatricians?

Dr. Paprocki: I would say that really to keep in mind again, I've said this a few times now, but in the first one to two years after starting periods, it is very normal for girls to have irregular cycles. And so at that point, we don't really recommend pursuing big evaluations or referrals. So, it's very reasonable to have patients keep track of their periods. Wait and see if they normalize over time before you pursue an evaluation and before starting treatment to normalize the periods as well. But really after that two year mark is when we say, okay, now the majority of girls should have normal cycles. So, if your patient is not, that's definitely time to start looking into some lab evaluation and considering referral to pediatric endocrinology.

Host: Well, that sounds like great information and should put a lot doctors and patients and their parents at ease. And things may just get better before they even need to see you.

Dr. Paprocki: That's right.

Host: Dr. Paprocki, thanks very much for this informative discussion about menstrual irregularity in girls and adolescents.

Dr. Paprocki: Thank you for having me.

Host: That concludes this episode of Pediatrics in Practice. For more information, please visit the common endocrinology conditions page on the children's mercy website. www.childrensmc.org. I'm your host, Dr. Andrew Wilner. Thanks for listening.