**Pelvic floor, continence and the overactive bladder**

**Dr Stephanie Muller:** We would like to introduce you to Klara, and she's our case study tonight. Klara is a 60-year-old woman. She works part-time and lives with her husband. Her past medical history includes hypertension, as well as having a hysterectomy in her late 40s for heavy menstrual bleeding. She's had two children. First, a vagina delivery, or both vaginal deliveries. One, however, with forceps, one spontaneous. Her current medication's amlodipine, which she takes 10 milligrams a day, and one vitamin D capsule per day. Socially, she's a non-smoker and drinks minimal alcohol. Next slide please. So some further history of presenting complaint for Klara. She has a 12-month at least history of urge incontinence. She has daytime frequency, often needing to go to the toilet between 12 to 14 times per day, and often has to wake up at least three times per night to use her bladder. She does not, however, complain of bothersome prolapse symptoms. She does, however, have an ongoing loss of sensation in her bladder following on from childbirth. She did some physiotherapy. On her physical examination she does have some vulvovaginal atrophy. She doesn't have stress urinary incontinence on a cough test with a full bladder. Her pelvic exam shows a grade 2 cystocele and rectocele, and the leading point of prolapse is visible at her introitus, in the supine position, with a Valsalva manoeuvre. Her full ward test is negative.

So now, the next slide pertains to some poll questions we'd like you to answer. So the first question is, how confident are you with the management of this case? So, confident, somewhat confident or not confident. And question 2 is, how confident are you to manage this case in your own personal practice? Again, confident, somewhat confident or not confident. We're actually watching these results come through, so thanks everyone for responding. So we're about three quarters of the way through. Okay, so from that perspective we've got, question 1, there's a degree of some confidence or somewhat confident amongst the majority of respondents, which is good to see, actually. And the ability to manage this case in your own practice, again, quite a lot of you express somewhat confident. So that's really good and hopefully we'll be able to build on that knowledge with their presentations from Payam and Amy. So thanks everyone for your responses. I'll hand over now to Dr Payam Nikpoor.

**Dr Payam Nikpoor:** Here we go. Okay, thank you so much, Steph, for the presentation, and thank you so much for RACGP and Jean Hailes organising this. And thank you all for attending tonight, giving up your Tuesday night, which you can be with your family and sitting and listening to overactive bladder. So it's my pleasure to talk about this topic for you, as I've got a keen interest in this also. So we went through the objectives that you would be taking home tonight after listening to the slides, but generally what we want to cover between myself and Amy is to give you an understanding of the epidemiology, what it is, how often, how common, types of incontinence, how you classify them, what are the key aspects in history and examination, how you investigate it, and what can you do, basically, after you've done all of your hard work in getting through an overactive bladder patient.

So moving on, it's quite a common condition, overactive bladder, and almost any GP who has ever practiced in any part of the world would've seen cases. And they just come, and some of them are sort of like, they come on the side, so they do not necessarily complain about that problem. On the way out when they're saying goodbye, they talk about their OAB, as Steph has pointed this out also. And it is a condition that comes with age. As we age, the frequency and the prevalence of this becomes quite common. So it doesn't matter how old your patient is, they can be affected, but as they get older they're most likely that will be affected. So the severity of the incontinence also increases with age, not only the prevalence. So you can actually become more likely to experience it, and as we get older it will become worse, basically.

So what's the definition of urinary incontinence, first and foremost. Any urinary incontinence is any loss of urine that is involuntary, basically. If you leak urine without any control, that's called. So we say 'involuntary loss of urine' as a definition, very simple, simplified. But there are different types of it that you need to know. The different types of urinary incontinence, and I want you to be, sort of like, taking this carefully, because for the patient, leaking urine, they don't differentiate between different types of leaking, they just 'leaked urine', that's the complaint. It's actually up to you to find out what type is it, because the treatment and management really relies on your investigation and finding out what it is. So we've got stress urinary incontinence is the involuntary loss of urine associated with any kind of exertion. Sneezing, coughing, laughing, lifting, pushing, pulling, all those kind of things that can happen that can lead to this, any increased intrabdominal pressure.

Whereas we do have urge urinary incontinence, which is the complaint of involuntary loss of urine associated with urgency. And you've got postural incontinence which is related to change in the position. People might say 'when I turn around in bed' or 'when I want to stand up' and 'I want to go from sitting position to standing position', all different kind of things, which can actually be a variation of either stress or urge, actually. Nocturnal enuresis is involuntary loss of urine during sleep. Mixed during incontinence is the presence of stress and urge together. So these are standardised universal terminology that is used all around the world, or encouraged to be used all around the world. We've got continuous urinary incontinence, a complaint of continuous involuntary loss of urine, most consistent with fistula patients.

And then we go through bladder storage symptoms. Bladder storage symptoms, this is mainly about the storage. So your bladder has got two functions, it stores urine, it empties urine, and that's it. So in terms of the storage problems, so it's the increased daytime urinary frequency, complaint of 'I'm going to toilet all the time', it's a complaint of no micturition, occurs more frequently than it's perceived to be normal, or previously perceived to be normal by the patient. Nocturia is a complaint of interruption of sleep more than once, or once or more than once, during the sleep. So each void needs to be preceded and be followed by sleep. So that's very important. If you go to bed at, say, 9:00PM, when you fall asleep, 1:00PM, from 9 to 1 that you're in bed but you go to toilet three times, that doesn't count towards your nocturia. It's very important, take that into consideration. Some, most of the textbooks they say that up to one is normal, but some references they just say 'one or more'.

Urgency, a complaint of a sudden compelling desire to void that is difficult to defer for the patient. They've got the fear of leaking urine. Overactive bladder is basically a syndrome. Is urinary urgency, frequency, it can be associated with urge incontinence, nocturia, and this should happen in the context in the absence of any urinary tract infection or any obvious pathology, like a neurological condition. Because, then in that case, we do have the term of 'neurogenic bladder' or 'neurogenic OAB'. Whereas most of your overactive bladder, if it's not related to neurological condition, it's idiopathic, and supposedly you don't have infection, of course. So one question that I always ask the medical students, I always ask them, you're in the middle of nowhere, and I tell them you're in Tennant Creek, which is somewhere really rural in Northern Territory. You've got a patient that you worked out that she's got overactive bladder. What's the only one test you're allowed to do that you would do? You can only do one test. And they all go about ultrasound urodynamics, and I say, you are like in rural area. So a urine test is, if you can do only one test for an overactive bladder, you need to rule out infection. That's how important and common it's actually. But again, making it a little bit tricky for med students.

What is normal? What's normal? So no incontinence is normal. So if people say, 'I'm getting older, I'll leak urine,' and stuff like that, that's their perception, but apparently that's not normal. Normal voiding and frequency, it's about seven to eight times in a day, or once every three to four hours. We say one or none per night is acceptable, but anything more than that is abnormal. So this kind of gives you a rough idea about where people sit, but of course, habits, drinking, exercises and all those kind of things, what kind of drink do we have and all those things affect it, actually, it's very important. The body habit, all those things play an important role.

This is a rough estimate on a average-built person. So overactive bladder, what is OAB? Again, it's characterised by urgency with or without urge incontinence, associated with frequency or nocturia in the absence of any UTI or an obvious pathology, as we described. So this is how you would say OAB. OAB can be classified, as I said, neurogenic or non-neurogenic. Neurogenic is in the presence of a neurological condition. You've got spinal cord injury, you've got spina bifida, you've got MS, you've got Parkinson's, all those conditions, or it's non-neurogenic, overactive bladder. And the other way of classifying is OAB 'dry' and 'wet'. OAB dry is that you've got OAB but you don't experience the urge incontinence. You know how with the definition we say with or without? OAB wet is that you experience the urge incontinence. That diagnosis is made by history. You don't need anything fancy, really. OAB dry or OAB wet. Okay. Moving on. Common condition, as I mentioned. It affects women more than men. Direct correlation with advancing age, significant burden on the community, and also economically, and in the amongst the most bothersome symptoms in the lower urinary tract.

Moving on. Key questions. You want to take a detailed history, you want to take history. Key questions. Establish the presence and the severity. You ask about details of it. Have you noticed any urinary loss? How often, for how long? What are the triggering factors? What have you found that make it worse? Do you need to use a pad? How many pads? Number of pads used in a day gives you an indication of the severity and how much it's a problem. Now having one liner in a day just for 'just in case', it's very different to a woman who changes like three pull-up nappy pads, that's very different. Daytime frequency and nocturia, so you find out where is the problem? Is it mainly at nighttime, during the day, or all through the day? Affects social, personal or professional life? So, quality of life involvements. You want to find about the type of incontinence, as we elaborated in the earlier slide. Overactive bladder, so we've talked about this again, more than eight, more than one at night, more than eight through the day, or with presence of nocturnal enuresis or not.

Voiding disorders. You want to ask about those questions, it's all specific bladder symptoms we're asking. Hesitancy, poor stream, intermittent flow. A patient who does not empty her bladder properly and there's always some left over, elevated or increased post-void residue, will be experiencing overactive bladder. It's a very common condition. Up until to a point that later in life there's a bit of a loss of the function and they might actually go into a partial retention, and not necessarily have much of a sensation of overactive bladder or bladder fullness, basically. You want to ask about prolapse symptoms, because a lump and heaviness or bulge might be actually related to their bladder, which I've got pictures of this up. You would see what it means, actually. And that actually can lead to an incomplete bladder emptying and lead to overactive bladder symptoms, which is pretty much 'going to toilet all the time', 'unable to empty', 'can't get there', 'wet all the time', 'it runs away from me', the different ways of vocalising it by the patients.

This is a table that I've put together, and the idea of these single slide information is for me, these slides would be made available to you, but it might be useful, actually. You have this in one screenshots, know you can use, okay, these are the important things that I need to go through and it's very important to have this covered in your history. So it talked about the voiding issues. Fluid intake is very important. You always want to find out how much drinking happens, how much do they drink, what kind of things do they drink. In Australia, we drink coffee a lot. In Australia there is no cups, we have only mugs, remember that. If someone says 'two cups of coffee', it's actually that big. Each mug, normal small takeaway coffee cup that you buy from the coffee shop, 250mls. You have four of that in a day, that's one litre of coffee a day, okay? As simple as it is. So we need to talk about those ones. Find out about what goes in, in terms of fluid intake.

Chronic raised intraabdominal pressure, constipation, chronic cough, abdominal mass, tumours. So these are the things that you need to find out which guides you through the examination. Urogenital atrophy, so that is also a direct correlation with the overactive bladder symptoms. Medical history, CHF, diabetes mellitus, lower leg lymphoedema, prolonged QT. Again, these goes back to your cardiac conditions. And as we go on, glaucoma, why do you want to know about glaucoma? Because certain medications have contraindications for prescribing glaucoma. So these are all targeted things that you need to take into consideration during a history and examination. Previous pelvic surgery, has she just had, two years ago, a year ago, she's had a sling and she can't empty her bladder properly because of the sling too tight, and therefore she's having OAB. Or if there is a sling eroding into the bladder, and that's causing her overactive bladder, that needs to be investigated.

Talk about the medications. One of your colleagues might have just started your patient on 40 milligram of Lasix just few days ago, and that just knocked everything over, and she's got a lot of overactive bladder symptoms because of that. How can I manage that? What should we do about that? All of those kinds of things that you need to take into consideration. Neurological conditions, we talked about it earlier. Obstetric history, you want to find out about those conditions, that our patient also has had a previous forceps delivery as you noted. So forceps delivery is associated with significant injury to your pelvic floor muscles, can affect the denervation pathway, as well as muscle injury and tear. So those ones can lead to prolapse and the denervation problem can lead to abnormal sensation in the bladder, and that basically may present, first and foremost with bladder problems, rather than only with prolapse.

Poor mobility is the other issue. Those of you, general practitioner, colleagues who work in nursing homes, you're very familiar that this is a very common condition. And unfortunately for some of them, really conservative management in the way of using continence aid products might be the only way to go, because there are so many other complicating factors that might just limit the treatment options available to them. So in the elderly, it is very important to take into consideration the acronym DIAPPERS, because these are the reversible causes, based on if you've got these conditions, and that's leading actually to overactive bladder symptoms, these are the things that you can actually treat them. So delirium, infection, atrophic vagina, and each of them you can actually, basically, address. So infection, you give antibiotics. Atrophic vagina, you give Ovestin. Pharmaceuticals is basically the medications that we mentioned, like diuretics, for example. Psychological conditions, fluid excess, restricted mobility, and stool constipation, it's just constipation. We made the DIAPPERS, we need to put that 'S' stool there to make it a perfect acronym.

Moving on, how you assess the severity. So there are different methods. You need to ask about the bother and degree of the compromised lifestyle. Use patient's own words, see what they say, what's the main problem, where is her issue, where is the concern? Pad usage. You can use a visual analogue scale or a Likert score, 'From 0 to 10, how much is a bother for you, Klara?' So she should be able to answer that, 'Oh, this is my main bother.' So that's actually something that you need to take into consideration. And of course in our practice as urogynaes, or Amy would be the same in the physio specialty, we use validated questions, which is basically something in the way of very formal way of assessment, and standardised way of assessment of the severity of this. And this would actually be used as a benchmark for the follow-up of your treatments to see that, how much difference in the points has been recorded in your questions.

The ones that I've got, these ICIQ-UI SF, those are things, just an example. So International Consultation on Incontinence Questionnaire, UI is 'urinary incontinence', SF is 'short form'. So this is a question that we use very common. And ICIQ again, International Consultation on Incontinence Questionnaire, OAB. There's IIQ-7 which is like incontinence impact score. and UDI-6 is Urogenital Distress Inventory. These are the shorter versions. Six questions here, seven questions there, the actual ones are much longer. And this is Incontinence Impact Questionnaire, that we ask, ability to do household chores. So this goes really about everyday problems, and then we just want to see how much of impact the incontinence have an impact on the patient everyday life and quality of life. So something that we use very regularly, pre and post treatment, just to see the effect of our intervention.

Moving on, this is a bladder diary that we use very frequently. I won't go into details of this, because Amy is going to cover this in much more detail than I'm going to say. The next step. So once you've done your history, you've gone through the history, you want to do an examination. You want to examine a woman who presents with the overactive bladder symptoms. So it's very important to talk about, also to consider, the general assessment for mobility, cognitive status, BMI, those normal, usual things that you would do. Abdominal and pelvic examination. You want to assess for masses, scars of previous surgeries. Specifically you want to look for any dermatitis in the vulval area. Usually if people have got this ongoing urinary incontinence, the vulval dermatitis is very obvious, it's usually red and inflamed, it might be related to lichen sclerosus, might be related to anything else, but if you're seeing that you can smell urine, you've got inflamed and erythematous vulva, you need to think about vulval dermatitis.

Again, you've got the atrophic vagina, you want to find that out. Fistula, may not be very easy and straightforward for you to see, but it's always worthwhile to have a good look in the vagina, under direct vision. If there is pooling of urine in the vagina when you start examining, that's a very important key factor for you to have a high level of suspicion about the fistula. The pooling in the vagina when the woman is lying down, and you're doing a speculum examination. It's very, very important. Pelvic organ prolapse, I'll show you a couple of pictures to see. Some of them might be a bit exaggerated. Pelvic floor muscle strength and levator trauma. So it's, again, might be a little bit beyond the level of you in the context of a GP, but by all means examination of the vagina is part of your assessment, and the more you do it, the more you learn it, actually.

And of course the more you do it, you will have a better idea about what you would then normally expect. A cough stress test or cough leak test is very simple. You just, when you want to do the pap smear, you can actually ask the woman in the lying position, 'Can you cough? Just give me a cough.' If you observe any leakage of the urine, you've made the diagnosis of stress urinary incontinence and that's it, that's really all you need to make the diagnosis of stress incontinence. Whether she would need any more complex investigations and things down the track, that's a separate story for you in your practice. If you want to make that diagnosis, that's how you would make it. If she didn't leak urine, of course it doesn't mean that she does not have stress incontinence, but observation of it is just equal to making the diagnosis.

Now of course you would like to find out about the neurological examination, about the sensation overally, and how she would be able to contract and relax her muscles, which Amy will cover far more in detail in her presentation. Vaginal pelvic examination. So, we want to do an inspection. We went through all of this, or not all of this, most of this. So you want to find, out is there an abnormality in the examination of her pelvis. And to do that you start with inspection, you do an speculum examination, you look for atrophy, discharge, blood, bleeding, lesions, ulcers. Foreign bodies, forgotten tampons, forgotten pessaries, can actually cause infection, can cause abnormal vaginal discharge but also can create bladder symptoms, also. Palpation, digital examination, you want to assess the prolapse tenderness or the trigger points, look for any adnexal masses. And pelvic muscle assessment which will be more in detail, again, later on. You want to assess the integrity of the muscles or defects, tone at rest and squeeze, et cetera.

These are real patients, okay, these are my own patients. So this picture, this is a cystocele, this is a bladder prolapse. With this level of prolapse, protruding beyond the vaginal hymen, of the introitus, this woman won't be able to empty her bladder. She either needs to digitate, or push it in, or hold it with a tissue paper to hold it in so that she would be able to empty. And because she's not able to do that all the time, she would be having an incomplete bladder emptying. An incomplete bladder emptying will lead to going more frequently to toilet. So as very simple as the relationship between these two, and the one on the right is very extreme, of course. These patients ignore these prolapse problems, and this is called procidentia. As you see, the uterus is completely outside. So what is being held on the outside with the forceps is the cervix.

So just above that, right here, is literally your bladder is completely outside, and that part is the rectum. So this happens usually in more elderly women. So to move on, this is the way of assessment, and what you would normally feel as you go inside, which muscles you're feeling. Sometimes you might say, 'I really don't know what I'm assessing.' This is actually, this gives, this slide gives you the direction the finger goes inside, which muscle you're palpating, is actually giving you an indication. You're assessing the obturator intermus, this is your levator muscles. But this is a picture from, sort of like a bird's eye view of the pelvis, as you, see coming inside, and the name of the muscles all illuminated here. So you can use this as a guide, later on, for your examinations, and just a bit of refresher before seeing the woman, and then having these slides, 'Okay, I'm going to check this, I'm going to go for this assessment, this one.' So little by little we do this. little by little we'll learn more. And then we go to investigations. I've put an asterisk beside some of this, and this is something that you should be able to do. Okay. We do a urine microscopy culture and sensitivity to rule out infection. Plus/minus cytology. I'm not a big fan of cytology for all of these patients, but if you've got risk factors for cancer, urothelial cancers, you need to take that into consideration. I guess there are four important things. If you've got the presence of, first of all, male patients, higher risk of bladder cancer compared to females. So again, for you because you're GP, you'll see women and men, so it's very important. Age is the other risk factor. Past history of smoking. Age, especially anything above 60, it's basically a risk factor, if you've got all these ongoing problems.

Past history of smoking, presence of persistent, microscopic haematuria, or gross haematuria, are the things that you should really think about, maybe I'm going to do a cytology on this one. So bladder diary, again, it's very useful, very, very useful. Not only for you, for the patient also. They just find out, 'Oh, I'm just taking all of these things in. I didn't really realise actually, this is all the impact that I have.' Sometimes it actually makes them a little bit more conscious about the problem, and in doing so they would actually be able to start doing things about it themselves. So it gives a bit of an understanding and information to the patient, but also yourself. And then you want to do an imaging. I think it's very useful as the first line of management, or first line of attack.

In the GP land, you see these women with ongoing problems with the lower urinary tract. Having a pelvic ultrasound, or if need be a renal tract ultrasound, is very useful. Because sometimes it might be actually a very large tumour in the abdomen or in the pelvis, pressing on the bladder and causing this, a very big fibroid uterus that's putting pressure on the bladder, restricting its capacity, and by restriction it causes ongoing need to go to toilet for voiding. So that's another important thing that you need to take into consideration. Post-void residual, again, you can assess this, this is not really that difficult. If you don't fancy putting an in-and-out catheter, that's okay. The renal tract ultrasound and requesting a post-void residue is also adequate. But we generally want to have a post-void residue on two occasions to be in the abnormal range to accept it.

Just one reading, we don't really want to put a label that this woman has got voiding dysfunction. It needs to be recorded on two separate occasions. Again, urodynamic testing. Again, this of course completely outside of the scope of your practice, but it's something that I would do, especially if someone has tried different modalities of treatment, has done conservative management, has done quite a while, riligent, diligent, all those kinds of things, but no improvement in the symptoms. I said 'riligent', sorry that was just a made up word. Religious, I meant to say, not riligent. Religious and diligent about doing pelvic floor muscle exercises, physiotherapy, conservative management, and if still symptoms continue, we want to find out, is there something else I'm missing? Is there something, another condition that we need to look for? So urodynamic studies comes handy.

So it's very useful to know if you've got those conditions, people have been through previous treatments, surgery, et cetera, lack of response to the standard therapy, you want to do that. Cystoscopy, again, those people who come with recurrent UTIs or micturia and all those kinds of things, it comes quite useful, and that's probably a little bit of a separate story or another topic, but cystoscopy comes quite handy in those people. Management. So here's the point that I'm going to hand over to my esteemed colleague, a great friend that I know since 2016. She is an absolutely amazing pelvic floor physiotherapist. You send someone to Amy, you won't get them back, because they all get better. I'm going to hand over to Amy, and I'm going to go on mute until I come back again a bit later in. Thank you, Amy.

**Amy Steventon:** Thank you, Payam, for your very generous introduction. That's very kind of you. I try my hardest, but certainly there are an awful lot of patients that benefit from your fantastic expertise as well. I want to thank you very much for your summary of urinary incontinence, was fantastic, and your medical assessment, and we'll look forward to your treatment a bit later. Before I begin, I would just like to say a big thank you to the RACGP and Jean Hailes for asking me to present tonight. I feel very honoured and privileged to be able to present in this forum, so thank you very much. Tonight I'd like to follow on from Payam in looking at urinary incontinence through the physiotherapy lens, broadly with urinary incontinence and then narrowing it down to more overactive bladder symptoms.

So what I'd like to cover tonight is, what is a pelvic health physio? What can both you and your patient expect when you refer them to see a pelvic health physio? A pelvic floor muscle assessment and treatment and what that involves. Pelvic floor physiotherapy, particularly, for overactive bladder symptoms. And then just some ideas of possibly some things that could be started in your practice before you send them to see us, to make our treatment more helpful. So, what is a pelvic floor physio? A pelvic floor physio is someone with a special interest in pelvic floor muscle rehabilitation. They're a physiotherapist with a postgraduate qualification in pelvic floor incontinence rehabilitation. And we treat men, women and children, hence the name recently was changed from women's health physio to pelvic health physio, to encompass men and children as well. We work in private practice, hospitals and continence clinics. We work as primary contact practitioners so no referral is needed. However, we do work very closely, and love working as part of a multidisciplinary team. And if we're thinking of bladder symptoms, we work closely with GPs, urogynaecologists, gynaecologists. and if we're thinking more bowels, gastroenterologists and colorectal surgeons. We also like to work and think more broadly about the patient and work with psychologists, dieticians, and other multidisciplinary team members as required.

What conditions do pelvic health physios manage? Urinary incontinence, voiding dysfunction, faecal incontinence and flatal incontinence, obstructed defecation, pelvic organ prolapse, dyspareunia, the musculoskeletal components of persistent pelvic pain, and anti- and postnatal pelvic floor rehabilitation, including obstetric anal sphincter injuries. We work in a very evidence-based model, and as you can see there's evidence behind all these conditions for physiotherapy treatment. All of these tend to have some degree of pelvic floor muscle dysfunction, and that's where we can come in and help. There are many risk factors for pelvic floor muscle dysfunction, and Payam has certainly alluded to a few of these. If we think purely about obstetrics, just being pregnant is enough for a risk of pelvic floor muscle dysfunction, with hormonal changes and the weight of a growing uterus. Vaginal delivery, parity, a high birth weight of greater than four kilograms. Instrumental deliveries, particularly forceps, as Payam mentioned, we know that forceps are 13 times more likely to cause pelvic floor muscle dysfunction than having a ventouse extraction, stage 2 of greater than two hours, and OASI.

If we think more broadly about the patient, high BMI, and chronic constipation, with the increase in weight and pressure on the pelvic floor muscles and supporting ligaments. Ageing, we know particularly as ladies go through menopause, they can undergo, or they do undergo, sarcopenia of their muscles. And also their muscles change in composition, where they become more so slower and more sluggish with more slow-twitch fibres and not as many fast-twitch fibres. So that can predispose to particularly stress incontinence. High-impact exercise, if pelvic floor muscles and supportive tissues are already compromised, high-impact exercise can make this worse, and we know that with female athletes, they're three times more likely to experience incontinence than their control groups.

Neurological conditions, lower back pain, respiratory disease, particularly with a chronic cough, again that increased intraabdominal pressure pushing down on pelvic floor muscles and supportive structures leads to stretching and weakening and dysfunction, and reduced mobility. So lots of reasons why those poor pelvic floor muscles can be under the pump. What do you and your patient expect when you come to see a pelvic health physio? So initially we'll take a thorough subjective assessment. We'll look at the four domains of bladder, bowel, pelvic organ prolapse and sexual function. Thinking about bladders, as Payam's mentioned, we'll look at urgency, frequency, the type of incontinence, any voiding dysfunction symptoms and any pain. With bowels, looking at stool consistency, is there anything we can optimise there to help with function. Urgency, incontinence, both faecal and flatal incontinence, any emptying issues and again, pain. Prolapse. Looking at all those symptoms Payam mentioned, and degree of bother.

Sexual function, any pain and where is that pain? Is it at the entrance or is it deep inside? Is there any incontinence? And when is that? Is that with movement? Is it with penetration? Is it with orgasm? Pelvic pain is a big area on its own, and if someone comes to us with pain we can look at the musculoskeletal components of that. General exercise we're really interested in. We absolutely want to keep these ladies exercising. We know it's so important for their cardiovascular health, their mental health, their bone health, but we also need to make sure that if they've got some degree of pelvic floor dysfunction, we are giving them exercises that aren't going to make that worse. Lifestyle is important. Sleep, stress, their occupation, because all of these things are modifiable, that we can perhaps help with some of their symptoms. After we've done a subjective assessment, we really love to feel, if we possibly can, those pelvic floor muscles, so that we can see how they're functioning.

With our pelvic floor muscles, as we know, they are a sling of muscles that sling from the pubic bone at the front to the coccyx the back, and they're multi-layered. They have many functions, they support our lower pelvic organs, bladder, uterus, and bowel, and they also have a control of bladder and bowel. And these lower muscles here have a sexual enjoyment role as well. If we look from below, this is, so this is from between a lady's legs, we can see the superficial layer of muscles which are quite complex, and then if we look from above we can see the deeper pelvic floor muscles. And we're certainly interested in them, as well as these pelvic sidewall muscles as well. With the assessment of pelvic floor muscles, we are looking, often we examine in a supine position, where we'll do a vaginal examination. If we need to do a rectal examination for bowel dysfunction, we'll do that in a left lateral position.

We just use digital examination. We can use biofeedback as well, which I'll get to in a little while, but usually we use one or two fingers depending on patient comfort. A speculum is usually only used for a prolapse assessment. If a patient does not want a digital vaginal examination, then we can use a transabdominal or transperineal ultrasound, and this can also give us a very valuable information without being nearly as invasive. A standing assessment can also be fantastic, to look at both pelvic floor muscle strength and function, but also prolapse, and gives us lots of information that we can't necessarily get in a lying position. This is using an ultrasound, this picture, but we certainly use it with our digital assessment as well. If a patient presents with obstructed defecation or faecal issues, we can assess perrectally with them sitting on a commode, and this gives us a fantastic idea of how those muscles are functioning in a really life environment.

Looking specifically at the pelvic floor muscles, we look first at the anatomy, and looking at the vaginal mucosa again for atrophy, as Payam mentioned. Looking at the levator muscle attachments, particularly on the pubic rami here, where we can see some avulsion, with childbirth deliveries, and we know that about a third of vaginal deliveries can result in either partial or complete avulsion, which can then affect muscle function and predispose to prolapse. We look at levator hiatus, again the width of the vaginal cavity, giving us an indication of muscle bulk. Sensation, neurological assessment, pelvic organ prolapse, pain, any tender points in the muscles or anywhere else throughout the vaginal cavity, and we look at both the superficial and deep muscle layers. Thinking more specifically about the pelvic floor muscles, we want to know, not just where they are, but how they're actually working. So we are looking again at both those superficial and deep muscles, looking for any spasm or vaginismus, and that can be noted if a patient's lying on the bed and you can see perineal indrawing before you've even touched them, it can be a reflex response to this examination.

We look at muscle bulk, tone of the muscles. The muscles can be either high toned, which is where they're switched on all the time and they become tight, taut bands, and don't relax very well and can't function well, or they can be at the other end of the spectrum where they're underactive and they don't function well either, or they can be normal. We look at strength, coordination, relaxation. It's really important for the muscles to be able to squeeze, but it's equally as important for those muscles to relax, and a lot of our patients, particularly our OAB patients, find this really difficult and need to be taught how to do this. Endurance is important. Isolation and specificity, we need to know, and the lady needs to know, that when she squeezes her muscles, she's actually squeezing her pelvic floor. She can't see these muscles so it's hard for her to know, and we need to make sure she's not squeezing her glutes, her upper tummy or her thighs when she thinks she's squeezing her pelvic floor. Coordination with deep abdominal muscles, the pelvic floor and deep lower abdominal muscles should work together, so it's ensuring they're working well in that capacity.

And then functional use. Can this lady squeeze her pelvic floor while she coughs to stay dry? Can she squeeze her pelvic floor as she stands up from her chair and walks to the toilet. Or can she squeeze her pelvic floor when she swings the golf club and needs to maintain continence? They're the things that are really important to her, so they are things we need to assess as well. And we look at all of these things on rest, cough, Valsalva, and with a pelvic floor muscle contraction. Once we've assessed all of that, then we can formulate a pelvic floor muscle training program that's specific for what we've found for that specific lady at that specific time. We know that pelvic floor muscle training has Level 1 evidence, Grade A recommendation as first line treatment for urinary incontinence, so it's very much worthwhile giving a go.

If we look particularly at the different types of incontinence, for stress incontinence, we find cure or significant improvement in symptoms in up to 80% of ladies. In OAB or urge incontinence, 50% of studies show improvements. In urinary incontinence as a whole, we see a reduced number of episodes and severity of incontinence, and an improved quality of life, with a meta-analysis of 66%. So again, there are some great results and it's really worthwhile these patients giving this a go as their first line of treatment. There are very rare adverse side effects. One that we sometimes, or not often see, is if ladies come back to us and say their muscles were a little bit sore after they started their exercises, and that's simply that these muscles haven't been worked in this way before. An effect that's good to be aware of for all of us, though, is that if someone comes to you and says, 'I've been doing my pelvic floor exercises and either I'm not getting better or in fact I'm getting worse,' that can be a flag for you to think that perhaps they're not doing their exercises correctly, and they may benefit from someone looking at them to make sure that their technique is correct.

With our pelvic floor muscle training program, we know that it needs to be regular, supervised, individualised for each particular lady. So the exercise training programs not set-and-forget. We need to make sure that we constantly are changing their program, constantly challenging their muscles, and making sure that their technique is correct so that their muscles continue to progress and strengthen and get better in the function that that lady needs them for. A training program needs to be intensive, it needs to be for four to six months. It's not just a few squeezes at the traffic lights, it's not 100 squeezes a day, and it's not stopping and starting their stream mid-urine. It's a consolidated, supervised program for four to six months, and I think both of those points are really important to set up both you and us for patients at the start of a training program. So they understand it's not forever, but for these next few months it is an intensive program to see results.

Long-term adherence can be tricky, and a systematic review over one to five years found that 10 to 70% of people tend to wane in their long-term adherence, so it's something that we need to be aware of. We know that these muscles require maintenance, training effects can last for up to a year, but after that we see a drop off. And I think it's a barrier, often, for women to come back and say, 'I've tried my exercises but I've actually forgotten how to do them,' or, 'I'm not doing them anymore,' and women become embarrassed by this and don't re-seek treatments. So I think it's a good conversation to have to ensure that ladies always know they're welcome to come back for treatment, to get back on that regularised training program and get the results back again.

There are some important considerations for pelvic floor muscle training. Pelvic floor muscle training doesn't always involve strengthening. We need to look at the other components of coordination. Yes, absolutely strengthening, but also relaxation of those muscles to get them working well. We need the importance, or we need to know that the technique that they're doing is correct. About a third of ladies do their exercises incorrectly when they're doing them on their own. We know a correct pelvic floor muscle contraction is a squeeze and lift of your pelvic floor, in-drawing of the lower abdominal muscles, and a co-contraction of the paraspinal muscles. An incorrect contraction is where we see bearing down of those muscles, and upper tummy working. So if you are looking at your patient and looking at their perineum, and you're seeing some bulging down towards you, that will be an incorrect contraction. We want a lifting up, And that's likewise if the patient comes to you and says, 'I'm actually getting worse,' it could be that they're bearing down rather than pushing up. So that correct technique is really important, to check to make sure.

We need a targeted pelvic floor exercises. These muscles are not trained by contracting other muscle groups, so again, if we're squeezing our upper tummy, our thighs or our bottom, we are not going to get pelvic floor muscle training results. These muscles need correct dosage for that particular point in time, which will change as they strengthen. They need to be overloaded so that they keep strengthening, and we need to make sure that there's that specificity of exercise there. We also need to consider what other exercises this lady's doing, and the effects that has on the core, the diaphragm and the pelvic floor. And we also need to be aware of pelvic floor muscle changes during the childbearing year and during menopause, because those morphological changes at that time in the muscle need to be considered when we're considering a muscle training program. So there are quite a lot of things that need to be considered when we give each lady her specific exercise program.

As well as pelvic floor muscle training, there are a few gadgets that can be used to make things a bit more interesting for these ladies. Biofeedback is fantastic for motivation and compliance for the right patient. This is one of the most common ones that's being sold on the market at the moment, and it's called an Elvie. It's a pressure sensor that goes into the vagina with a bit that comes out onto the outside onto the pubic synthesis. This gives messages by Bluetooth to your phone, and you get a readout in real time as to what those muscles are doing.

On a similar vein, this is called a Perifit, and this is a sensor that goes into the vagina. This is, again, gives Bluetooth to your phone. This has eight different pressure readings on it, so it gives eight different readings of intraabdominal pressure up here, right down to perineal or external pelvic floor muscles here, with four in the middle for your mid pelvic floor muscles. And that's then given in individual readouts on your phone, so it's a really great way of teaching ladies how to contract their inner pelvic floor muscles. It's something that's used in research at the moment, and we're using it at the mercy on an endometriosis and pelvic floor study, and it's just hit the market for women to be able to buy themselves. So I think that one will be something that we might see more of.

Neuro muscular electrical stimulation, again, is a fantastic piece of equipment. This one can be used for ladies with weaker pelvic floor muscles. It has an internal sensor here, and the stimulation comes from two metal bars, one on each side. This is great for stimulating muscles at the weaker end of the scale. If ladies have stronger muscles, they're better off squeezing on their own rather than using stimulation. So it needs to be individually assessed, but that can be a really effective tool. There are some apps that your patients might come to you, too, having said that they use. Squeezy and Tat are two of the most common ones at the moment. Both are fantastic for motivation and compliance again, but just making sure that patients have the right technique. Both of those can be individualised to the patient and their specific muscles. So again, it can be a really useful tool.

If we now think more specifically about OAB. I won't go through this slide again because Payam has already talked you through it, but needless to say we need to ask about bother and degree of compromised lifestyle. Validated questionnaires, as Payam pointed out, are fantastic, and in particular a bladder diary, we use all the time. It's a really important assessment tool. It's an essential part, I think, of any continence assessment, particularly for OAB. It's more detailed than a frequency volume chart. The gold standard is a three-day bladder diary. Now that doesn't need to be three days in a row, but it does need to be three 24-hour periods, so we're getting a snapshot of day and night, and that's particularly helpful with nocturnal symptoms. It's a great objective outcome measure. It can support diagnosis and also help us with differential diagnosis. And as Payam mentioned, it's great to reevaluate treatment effectively, and there are often lots of 'aha' moments when patients go through this with you.

So again, it can be a really effective teaching tool. What's important is to consider health literacy. Lower health literacy and non-English speaking background we know have more difficulty filling out this bladder diary. That's not to say not use it, because it can be so effective. With the bladder diary, what it records is the time of each micturition, and the volume voided, and also the time and type of fluid consumed. An urgency rating can be incredibly helpful. Incontinent episodes, the amount, the situation of leakage. Was that lady leaking when she put her key in the front door? Was it when she turned on a tap? Was it when she was walking to the toilet? Was it when she coughed or sneezed? All of these things really can help us narrow down what the diagnosis is, and also cue us in to how we can best support that lady with a really tailored program for her. And as Payam mentioned, pad usage is great for severity.

If nocturnal symptoms are a problem, something that can be really helpful for patients to comment on is there sleep and wait times, and also their FUST, which is their first uninterrupted sleep time. Both of those give us more idea of what's happening at night. Other symptoms to include are pain, any voiding dysfunction symptoms, and bowel actions. And if we look more closely at this bladder diary, this is one that we use at the Mercy and Jean Hailes. So you can see it has the time of either having a drink, or going to the toilet. With the drinking, what it was and how much it was. With your wee, how much it was. And measuring the mls is really important, not just that you've been to the toilet. Then any leakage, and breaking that down into the severity. An urgency rating of 0 to 3 is really helpful. And then any comments, as we've discussed before.

With conservative management for OAB, once you've assessed them using a bladder diary to determine the severity, we know that conservative treatment is recommended as a first line treatment approach for OAB symptoms. Conservative management includes for OAB symptoms, pelvic floor muscle training, fluid management, bladder training, lifestyle modifications, education, and can include electrical stimulation as well. With pelvic floor muscle training, there's Level 1 A evidence that pelvic floor muscle training is effective for treating urinary incontinence in women. It provides significant reduction in OAB symptoms. Ladies are twice as likely to report cure or significant improvement. It also has a significant improvement in quality of life, which is really important, considering that 48% of sufferers suffer from anxiety as well. With pelvic floor muscle training, as part of management, we are not 100% sure of the mechanism of OAV, so it's tricky to know exactly what pelvic floor muscle training does, but the proposed mechanisms for pelvic floor muscle training are broken down into those that happen immediately, and those that happen over time.

The immediate mechanisms for pelvic floor muscle training. If we have a look at the picture here, we can see that if there's a detrusor contraction, here are the pelvic floor muscles, just relaxed, and there's leakage with that contraction. If we can have our pelvic floor muscles contracting, it means that when there is that increase in detrusor pressure, a good pelvic floor muscle contraction, just by its mechanical effects, can close off the urethra, which can reduce incontinence. It can also inhibit the micturition reflex by stopping wee dropping down into the urethra, which then sends a feed-forward mechanism to keep that detrusor contracting. So it's a good way to, in the immediate time, to suppress the urge. As we go on with our training, and as the muscles get stronger, and we know that happens after six weeks of consolidated exercise, we see stabilising in the neurogenic activity and urethral pressure, and that improves as their strength improves.

With pelvic floor muscle training, we need to think, how are we training and what are we training our pelvic floor muscles to do? Are we up training, which is strengthening the muscles? Are we down training, which is teaching those muscles to relax? Or is it both? And often it's both, but often we need to start with down training. We see a lot of patients, because they're hanging on for so long because they don't want to leak, it means that their pelvic floor muscles are always switched on. So they become tight, they become sore, and they become shortened, which means that they can't relax, they don't have their full range of movement, so they don't contract well. So it sounds counterintuitive, and we need to often sell it to the patients, but often we need to relax those muscles before we can then strengthen them to help.

So once we've done our pelvic floor muscle training, or in conjunction, fluid management is really important as well, as Payam alluded to. We need to avoid any irritants that are going into the bladder, or at least reduce them. So reducing or eliminating any caffeinated drinks, any alcohol, any carbonated drinks, artificial sweeteners, and juices, all can ramp up OAB symptoms and cause increased urgency and irritation. We also need to look at quantity. 1.5 to 2 litres is the recommended amount, and as Payam said, depending on the individual, how hot it is, if they're exercising, can all change the quantity. Timing is also important. We recommend that patients don't guzzle their drinks, don't guzzle down a full water bottle and then need to go to the toilet very soon afterwards. To sip throughout the day is important, and to limit their drinks after 6:00PM if nocturnal issues are there as well.

Bladder training can be an incredibly empowering tool for patients. It gives them a ways of helping them to suppress their urgency. It's a behavioural intervention to help restore normal bladder function. It's more effective when combined with anticholinergic medication, but it's more effective as a single treatment than anticholinergic medication on its own. Reported cure rates are between 50 and 86%, with improvement rates of bladder training between 75 and 87%. So it can be very effective. With bladder training, it aims to restore normal voided intervals, increase the amount of urine held, if there's small volumes being passed all the time, suppress or reduce strong bladder urges, reduce or avoid urge incontinence. And it also provides education so that the patients can understand their urges, when it's okay to void, when they've got enough in their bladder, and when it's good to suppress that urge. There are two techniques and they're used in different situations, either timed voiding or urge suppression techniques.

Timed voiding techniques are used for individuals who do not get any urge to void, or those that get an inappropriate urge to void. And they can be patients with neurological issues, postpartum patients, and they're based on 2- to 4-hourly voiding schedules, so that it gives time enough for the bladder to fill, but not to overfill, and then have some over distension issues. Urge suppression techniques are used to suppress waves of urge, and to teach patients to hang on more. We use the mantra, 'stop, control the urge, and then move' to void. And there are some tricks that we can tell patients and teach patients to help them hang on. We explain to the patients that an urge will rise and get stronger, but given time, it will also fade away again. And it's important not to go when that urge is strong, but to wait til that urge has subsided, and then you are less likely to leak on the way to the toilet. So not go when it's strong, wait til it's subsided.

And there are some tricks that we can teach the patients for this. Mental distraction is one of them. Pelvic floor muscle contractions. These three all have the same premise and they're all really clever. Perineal or clitoral pressure, toe curling, calf stretching or scratching, and heel pressure. And all of those are on the premise that it increases the afferent input on the sacral nerves, which then counteracts the afferent input into the sacral nerves from the detrusor. Base-of-nose pressure is another one that can be really effective. Just popping your hand and pressing firmly into your top lip, that's an acupressure point and that can certainly help to reduce the intensity of an urge as well to help that lady get to the toilet. We need to just be aware that we wouldn't teach urge suppression techniques with a patient who presents with incomplete bladder emptying or high post-void residuals, because by reducing the urge, we can further exacerbate those symptoms.

Other lifestyle changes that are great for OAB are weight loss and ceasing smoking, bowel management. Teaching the patient the correct positioning and techniques, so leaning forwards, feet up on a stool, and gently bloating their lower abdomen to help relax their pelvic floor to empty well. Avoiding constipation, exercise, and adequate dietary fibre and fluid. If we're thinking about nocturia, we need to manage daytime mobilisation of fluid and reduce lower limb peripheral oedema, by suggesting perhaps support stockings, elevating legs in the afternoon, limiting their fluid intake after 6 o'clock, and adjusting their diuretic dose and timing to ensure that that micturition takes place before they go to bed. The TANGO screening tool is a fantastic tool that can be used in your clinics, which identifies non-lower urinary tract comorbidities, pertinent to multidisciplinary assessment of nocturia. So it means we're looking a bit more broadly than just the urologic, perhaps, causes of nocturia, and it means we're not treating in a siloed approach of just treating specific symptoms.

This is the screening tool which is easily downloadable, and there are four domains. There's cardio/metabolic sleep, urinary tract and wellbeing, and the patient simply ticks the boxes of what's pertinent to them, which then can clue you into which systems may be good to look at, to further investigate that nocturia. Our last potential type of conservative management for OAB symptoms is electrical stimulation, and one of those types is transcutaneous tibial nerve stimulation. This is delivered by a handheld TENS unit, which is connected to two electrodes that sit above and below the medial malleolus, to stimulate the tibial nerve, and it can also be used on the sacral nerve roots on the spine. It provides retrograde stimulation of the sacral nerve plexus by stimulating the tibial nerve, and sacral nerve roots if we're using sacral electrodes. It modulates the afferent neural pathways between the spinal cord and the pons, improving micturition and storage symptoms. And there's emerging evidence that it is very effective. It's a home-based treatment of six days a week for 12 weeks, and then it's individualised after that. And we're seeing some really good results with this, both in refractory patients as well as non-refractory OAB patients.

So there's a lot that we can do in our treatment rooms, but there's also an awful lot that you can do before these patients present to either Payam or myself, to get them started on the way. There are two great screening tools. We've talked about the TANGO, but the Australian Pelvic Floor Questionnaire is a fabulous screening tool which goes through the four domains of bladder, bowel, prolapse and sexual dysfunction, and it can just guide you as to what is going wrong and the severity of it. It isn't anything to do with pelvic floor muscles, it's just symptoms of pelvic floor dysfunction. Bladder diaries, as we've talked about, managing constipation, urinalysis, fluid modification, weight loss, and optimising respiratory function and encouraging them to quit smoking. The other area that can be really helpful is to bust some very common myths that we often see patients come in and try and discuss with us, and if these can be busted as soon as possible, it gets them on a good road to recovery with good education.

So some of the things that we often hear are, 'Hovering over the toilet seat is okay.' In fact, no it's not. We need to sit down so we can relax our pelvic floor muscles to empty well. 'You need to completely empty your bladder, so just strain to get the last few drops out.' 'It's bad to hold on.' 'I can drink green tea as a caffeine-free substitute.' 'You should go to the toilet just in case when you leave the house.' 'I've never had a baby,' or, 'I've had a caesarean, so I don't need to worry about incontinence.' 'My mother had incontinence or a prolapse so I will too.' 'I don't have incontinence, I just leak a little bit.' 'A few squeezes at the traffic lights or in my Pilates class is enough for my pelvic floor exercises.' So there are lots of common things that we see in here, and it's great if we can change the way people are perceiving continence.

My last slide is, there are some fantastic resources out there for us as health professionals. If physio is something that you feel would benefit your patients, the CFA have a great website called .CFA physios. where by physio name, by location and by area of interest and expertise, there are lists which you can use. And for the patient, the IUGA, the International UroGynecological Association, and the Continence Foundation of Australia have fantastic multilingual pamphlets that can be printed out, and they're really easily accessible online. Jean Hailes has a fantastic pelvic floor podcast that our other physio Janetta Webb has done, which is sensational on teaching patients how to correctly squeeze their pelvic floor muscles.

And there are also some other great information sources there too. And Pelvic Floor First is a great initiative, again, of the Continence Foundation. It describes and lists pelvic floor safe exercises. So it's a great resource for your patients to look at, or for you to look at, or for exercise physiologists or personal trainers to suggest to look at, or if they're going to the gym and they want to know what exercises to do, that can be okay if they have some pelvic floor dysfunction. So they're all great resources.

So that's the end of conservative management. There's lots that can be done, but if that doesn't go far enough, then Payam is a wiz and can come back in and help these patients to continue on their treatment. So I'll just hand you back to Payam.

**Dr Payam Nikpoor:** Thank you. Alright, so I'm going to share my slides now. There you go. Okay. Seriously, could you ever even think that one person can know so much about pelvic floor? It's just mind boggling, okay. Every time that I think, just listen or hear these things, it's just fabulous. A urogynaecologist, I think, cannot practice without a good physio friend. That's how I see it, basically. As you see, the amount of things that they know and they can do is probably beyond most people's imagination. Anyway, back to the talk. So Amy has covered all of this conservative management. So again, in one slide, modify the risk factors, find out about where problems are, what can be reversed. So if someone is ageing, is ageing, date of birth is always goes away from you, never comes close to you, so you get older. Or what has happened with your childbirth, you can't do anything about it, it has happened.

But there are things that can be done now, and that's basically where you, a good physio and a good promotional educational topics and things would be able to get the patient on the right track. So it's very, very important to use these, and to promote good bowel and bladder habits, which again, there is a specific document on good bowel and bladder habit on the CFA website, as Amy mentioned. So those are the things that we really need to take into consideration for people with OAB. Education is very important, for them to understand what is right, what is wrong and what can be done. And, further on we talked about all of that. I will just whiz through. So one thing I wanted to mention here is about the pessaries. Most of you have not seen all of these things that I've put on the picture, but these are the pessaries that we use, the different types of it.

Mostly pessaries are used for the management of prolapse, okay. Very specifically, we've got pessaries with a knob, so it's a ring with a knob, it's a ring again with support on a knob, and the knob here. So this knob is placed in a way that you put it in the vagina, it goes in the, so the anterior part of the vagina, so creates support right under the bladder neck, for example, and that would help with stress urinary continence. So we don't use a pessary necessarily to treat OAB. We use a pessary to treat prolapse to reduce the prolapse, enhanced ladder emptying and hopefully help with the OAB symptoms as a conservative management. Okay. So that's an option that can be entertained. It's like hitting two birds with one stone, so you fix the prolapse by the pessary and also help ladder empty, if your OAB is related to voiding dysfunction.

So that's very important to take it into consideration. Not everyone who walks in with an OAB will get one of these, basically. You use it in the context. So you need to consider of course sexual activity. Some of these rings, you can teach the patients to remove and insert. Dexterity is very important. Age is very important. But some of these ones like a Gellhorn, which is a space-occupying one, the common ones that we use, patients can't remove it. It needs to be done by someone who is trained to do that. But this is to give you an idea also what another conservative management could be. Again, all these fancy pictures that I've put on here, I've never used any of these, okay, I've never used it. This is a urethral insert, and it goes and blocks the urethra inside and outside. Fancy, but I don't use any of these. Generally if I use, it, is a ring, a ring with support, or a Shaatz or a dish, that are used for the management, or Gellhorn for the larger prolapses.

There are some issues that can arise with pessary. So you need to first explain there is need for regular follow-up. They need to come back regularly. Have the pessary—

**Siri:** "Sorry, I couldn't quite hear you. Can you please repeat what you said?"

**Dr Payam Nikpoor:** That's my mobile. When I say 'pessary', it actually thinks that I'm calling Siri, I'm sorry. It's a urogynaecologist mobile. Explain the need for regular follow-up, four to six months. Need for use of vaginal oestrogen, especially in postmenopausal women. And ring pessaries can be removed and inserted by women. You need to have good diet, good bowel habits, avoid constipation, because with a great effort you can actually push it out. Risks associated with pessary, vaginal erosion, vaginal bleeding, secondary to the erosion, infection, expulsion, and very rarely the wrong size and shape causes obstructed voiding or bowel, basically.

Okay, this is an algorithm that I've made, and I've used this on some talks and some of you might have seen it if I have given this talk in different places, I have. So this is like a step, see like a step 1, step 2, step 3. So you're going up a step. Step 1 is your conservative management, your lifestyle, bladder training, pelvic floor exercises, and all of that goes in there. So if you did that and there was no improvement in your symptoms, is not enough or there is no improvement or some improvement, you need to think about, do I need to do more? So up until here is basically in the community, general practitioners, physiotherapists, continence nurses, all those people who would come here and can manage most of this. Nurse practitioners can prescribe medication, some of them, and they do. So using these kind of treatments, also, is basically your second line of management.

So conservative management didn't work, your pharmacotherapy is your next line. Pharmacotherapy needs to be along with your conservative management. It's not that you ditch the physio all apart and just take medications. All of the good things that we talked about needs to continue. You put pharmacotherapy on top of it. So you can use anticholinergics, which we'll talk about, beta 3 adrenergics, vaginal oestrogen. There's desmopressin, specifically if you've got nocturia and nocturnal polyuria, it can be used. And tricyclic antidepressants, are the ones. If that didn't work, we call it 'refractory'. So you have used two separate kind of classes of medications, and they didn't work for the woman, that becomes a refractory one, which goes to more advanced therapies including Botox, SNM, or PTNS which is the posterior tibial nerve stimulation.

Now the one that Amy showed you was the TTNS, is a transcutaneous where you place a pad, basically, whereas in the PTNS we insert an electrode, it's exactly identical to the electrodes or the needles that they use in acupuncture, which we'll talk about it a bit later. And then we've got more advanced therapies, very rare indeed, we know with the advent of the Botox and SNM, very rarely that salvage operations are being done. There are really morbid operations, they're really long list of complications and issues and problems. So very rarely. In my years of training and practice, I've only seen one patient going through the diversion, basically, urinary diversion. So moving on, and the salvage options usually ends up for the neurogenic ones, not necessarily for the idiopathic ones.

Okay, medications, again, one slide, easy to use, doses, nitty-gritty, GP land kind of stuff. Oxybutynin tablets, on PBS, cheap, affordable, brand name Ditropan, 5 milligram. You can use 2.5 milligram BD. My starting dose is always 2.5 BD and I slowly build up. Oxybutynin comes in the form of a patch. It is said on the PBS system that you should have tried the oral tablets first, and if it was not tolerated, you go to the patch. Patch avoids the first liver pass, therefore reduces the risk of side effects because your level of active metabolite is slightly lower compared to the oral ones, so that makes it easier. The patch, you just prescribed 3.9 milligram per 24 hours, apply topically twice a week, basically. So you just put it on there, either the flanks or on the top of the buttock. And then every third day you take it off from one side, you put it on the other side, and then you alternate. 15% of your patients will come and complain of local reaction, as in like itch, sensitivity, rash, et cetera, which stops them from using it.

These two medications are your routine anticholinergics that are available on the PBS system. There are the two options, solifenacin and darifenacin, which are both anticholinergics under the brand name of Vesicare and Enablex, respectively, that are not on PBS. Cost is an issue. Cost about 40 to $50 depending on where patients go to buy these things, and that is an issue, basically, for people to buy them. The good thing about these ones is slow release and we take one tablet only, and there are two doses available for Vesicare and Enablex. Vesicare 5 milligram or 10 milligram. Always start with your low dose, especially anticholinergics. You've got side effects that you need to mention, and that's very important. I'm sure you've seen from your medical indemnity letters coming in, such-and-such doctor got sued because they didn't discuss complications or side effects of medications prescribed to such-and-such patient, especially elderly.

There's always a significant risk of confusion or worsening of the dementia. So we generally avoid using these in nursing home patients because significantly higher risk of that. Darifenacin has got lower risk of interfering with your cognition, because it does not cross the blood-brain barrier as much as the solifenacin or the Ditropan does. Ditropan is an immediate release medication, so as you see there a very high risk of side effects. Most common one is dry mouth, followed by constipation, and then the other issues, dry eyes, dry mouth, excuse me, and goes on from that. Sometimes people might experience dizziness, confusion, altered mental status, palpitations have been reported, also. The most important thing about Ditropan that you need to be avoiding is glaucoma. Glaucoma is the most important side effects. So that's why in your history taking you ask about glaucoma, because there've been cases of blindness described with that. Solifenacin tablets come in the 5 and 10 milligram, again nitty gritty stuff or GP land, some people go and buy the 10 milligram and they want to chip it and use the 5 milligram, it becomes cheaper, you get double the supply.

There has been case reports of blindness of these little chips of solifenacin going into the eye and causing blindness. So advise your patients against that if they want to do that. Mirabegron tablet, 25 and 50 milligram, so it's a beta 3 adrenergic. Works on a bit of a different receptor level in your bladder, and by the way of the function, it's still effective in managing your OAB and actually the mechanism of action is by stimulating your beta 3 receptors in your bladder will increase the voided volume, reduces the urgency and leads to less urge urinary incontinence. And of course the vaginal oestrogen, which is basically useful for post-menopausal women. For a 42-year-old who is sort of like premenopausal and OAB, there's no point in prescribing that. It's only used for those women with urogenital atrophy, and I think if any woman that you identify that has got urogenital atrophy, I think it's worthwhile putting them on the Ovestin cream. It's very useful.

Can use Vagifem Low also, I just personally prefer Ovestin over Vagifem. If you've got significantly dry vagina, I have seen myself Vagifem not absorbed, only because it's not gone deep enough and has not been sitting there, and it's just sitting on the introitus and never been absorbed. So that's the other issue that we need to take into consideration. Snapshot of the medications that you can normally, most commonly, use but the management of OAP. Again, a little bit of the sort of basic sciencey stuff if you're interested. So you've got your different kind of muscarinic receptors where your anticholinergic stuff come and work. So basically at the end of your axonal layers you've got vesicles of the acetylcholine where they release and stimulate your receptors, and then you get a detrusor contraction. These medications will come and block them, and basically reduce the risk of this spontaneous uninhibited detrusor contraction.

So we'll move on a little bit quicker in the interest of time, and I would love to cover more questions. So antimuscarinics, Grade A evidence, grade of recommendation, A for the full management of OAB. It is true that they've got side effects, but they come handy, and many people might be actually be doing well on them. So you really need to discuss the side effects. Contraindications. Untreated narrow angle glaucoma, myasthenia gravis, severe ulcerative colitis, GI obstruction, urinary retention or outflow obstruction. If your OAB is because of a very severe prolapse due to that cystocele that I showed you, there's no point in putting them on Ditropan. The prolapse needs to be fixed first. Okay. Moving on again, side effects. Dry mouth, dry eyes, constipation, blurred vision, nausea, dyspepsia, flatulence, all those issues that we need to discuss with patients. Pharmacotherapy of the mirabegron, as I explained to you, you've got your parasympathetic system, which it goes with your cholinergic system, and then you've got your sympathic system, it's your adrenergic controls, and the receptors that are at the level of the bladder, and by the way of releasing these adrenergic neurostimulators, then you would get stimulation on these ones.

And by way of using your beta 3 adrenergics, it comes and blocks this. By blocking this you enhance your storage and capacity of the bladder and reduce the OAB symptoms. Beta 3 adrenergic. We've got only one option available on the market at the moment in Australia that you can prescribe. It's got mirabegron, or Betmiga is the generic name. Doses of 25 and 50. I always use 50 in the patients. I do not think necessarily there is a great difference, but some of my colleagues start with a lower dose. This one I do not necessarily adhere to the lower dose ones. Most often I have had to increase to 50 within a short span of time, but there is nothing wrong whatsoever if you wanted to start in 25, once a day only. Once a day only. Significantly lower rate of dry mouth. Precautions. This medication because it's a beta 3 adrenergic, hypertension is very important, so really need to be careful about that.

Whoever I start them on Betmiga, I ask them to check their blood pressure day 3, and then day 7, and then following that every month basically to have a blood pressure check. If there is any significant elevation in the blood pressure, then I would be asking them to stop the medication. With the Betmiga, if I've got the patient who is only on one anti-hypertensive and is well controlled for a while, I'm happy to try Betmiga. More than two, sorry more than one, or two or more anti-hypertensives, a patient is on them, I'm not game enough really to go and try them on this medication. I would stick to my anticholinergics. And if that didn't work then we might need to move on to the next options. Side effects. I've mentioned hypertension, but it's all listed in the consumer information, when you have a look at that pamphlet, all these have been mentioned.

Apart from the headache, I haven't seen any of them, actually, in my practice, ever, and I've used this quite a lot, actually. Vaginal oestrogen, as I mentioned, for the postmenopausal women, it's quite a useful treatment for postmenopausal. I think it's really worthwhile to offer them this medication. And it's probably something that would be most useful in combination to your standard therapy, rather than being the only treatment that they need to be on that. TCAs, we rarely use these these days. These medications were to be used previously when we didn't have many options in the anticholinergic, or beta 3 adrenergics. And TCAs are not really being used these days for management of OAB as much. So it's kind of the medications of the past, but still some people might prescribe them. I generally don't use any TCAs for managing OAB in any of my patients.

This slide I've got here, and we will put a link of this, this is the Australian Commission on Safety and Quality in Healthcare. Very useful slide, a summary of everything that we've told you tonight. You could have gone and read this slide and you would've had all these information. But no, thank you so much for sticking on. So this is basically a good summary of a flow chart of approaching the patient, managing an investigation. So it's really useful, and I ask you if you could download this, put it on a wall somewhere in your office. It's a quick cheat sheet, basically. And here it's got the complicated things that you need to be aware of. Next slide. Red flags. When to refer to specialist. You see anything on that column, consider asking a specialist colleague to see your patient. I think it worthwhile. Without really missing time on major issues or problems.

Haematuria, recurrent UTIs, sterile polyuria, nocturnal incontinence. It's very important if someone has got enuresis, nocturnal enuresis, you really need to be thinking about that one, actually. Why is that older woman has got this issue or problem, unless it's been an ongoing problem. Ove-distended bladder, voiding dysfunction, we don't have medications to treat that, you really need to get into the nitty-gritty bits of it to find out what's going on. And past history of incontinence, radiotherapy, pelvic malignancy, those things need to be investigated, might be a recurrence of a problem or a new onset cancer, et cetera. Now next slide that I've got, which specialist? So it's highly dependent on the case. Again, this is quite a common question. Who do I refer this? Who's the best person to see my patients? So put this here as a guide for you to use.

Any condition involving the upper renal tract, urology. Your urology colleagues are the ones who should see your patient. Anything in the kidneys and ureters. Urogynaecologists do not manage upper renal tract. All malignancies of the renal tract, urologists. Stone of the renal tract, urologist. Okay. Vesico-vaginal or urethrovaginal fistulas, either a urogynaecologist or a urologist, whoever has got experience in this. SUI, UUI, MUI, mainly urogynaecologists, some of the urologists do this, some don't. Recurrent urinary incontinence, like failed previous surgery, either a urogynaecologist or urologist. Concurrent prolapse and urinary incontinence, urogynaecologists, experienced gynaecologists also can manage this without any issues or problems. Bladder pain syndrome, again, urogynaecologist or urologist. Rectovaginal fistula, colorectal surgeon, my very dear friends. Mesh complications, urogynaecologist, this needs to go to an MDT. So generally the major hospitals in Melbourne have, but also in private practice, people do manage these cases also.

Now quickly on the refractory OAB, now you are on that third step. You've tried all your things, didn't work. So I'm going to go and cover these three ones, and I'll try to go a little bit quicker on these ones. Okay. Botox. Botox blocks your calcium-mediated release of the acetylcholine vesicles at the neuromuscular junction. It's got Medicare rebate for refractory OAB or detrusor overactivity, and also neurogenic bladder. Injection happens in the detrusor muscle. We use 100 units. This is based on those finding studies, international studies, RCTs that's been done. We've diluted in about 20 or 30 mls of saline, different people have got different protocols. We need a cystoscope to do this. So it's either done under GA, local sedation, et cetera. It's a day procedure, you go home the same day. You need a follow-up in about one to two weeks, and in the about six weeks time, and some ongoing follow-up.

There's some risks of bleeding, risk of UTI, clean intermittent self-catheterisation. There's about 5% risk of urinary retention associated with this. Can be partial or complete. For that reason, they might need to self-catheterise. It's also in the MBS item number eligibility that says that the patient needs to be able and willing to catheterise themselves. So that goes actually in the eligibility criteria. So for a woman who's got arthritis, can't move the hands, you can't do this, unless someone is going to come and do it for her, or you elect to put an IDC. So you need to cut the deal and then have a good discussion with them before going ahead with these one. So that's basically your Botox. Same thing that people use to make themselves look a little different in the cosmetic land, but also it's done as a cystoscopy injection. So a cystoscopy goes in there. This is the view that you, the tip of the needle, and then you insert and you inject little bit, small 1ml of your solution, diluted solution, into the detrusor muscle.

Botox. According to the USANZ and UGSA recommendation, patients with OAB have failed to respond to supervised pelvic floor muscle training and lifestyle modifications, and are refractory to or intolerant of two or more pharmacological therapies, may be offered a bladder or injection of the botulinum toxin. It's very important, and as I said, clean intermittent self-catheterisation as necessary. Posterior tibial nerve stimulation. So the difference between this and what Amy showed, the pedal pad, which is one of your surface electrodes, is the same. But here you insert a needle actually on the posterior, so slightly above the posterior malleolus, where the posterior tibial nerve is going. You use an acupuncture needle. The difference between the PTNS and acupuncture is that acupuncture, you insert the needle and you sit there and then you have your therapy, whereas this one is actually an electrical stimulation of your posterior tibial nerve.

So it's probably acupuncture plus electrical stimulation. So these two are two different things, and they work by different mechanism. So it involves electrical stimulation of your posterior tibial nerve. So don't confuse it. But still the same needle is used. So mechanism of action, we talked about this, so Amy discussed, so it's a retrograde stimulation of the sacral nerve plexus by that. So it modulates afferent neural pathways. So the initial phase, again, there's MBS item numbers available for this, and it has to be done by the doctor or the trained nurse. So 12 weekly sessions for three months, and then you were tapering sessions, so you do five sessions over three months, and then after that your maintenance therapy. May be useful in a moderately severe baseline group who are unsuitable for Botox or SNM, sacro neuralmodulation.

So RCTs. SUMIT trial was actually comparing your PTNS versus sham. Sham means that they only had that electrode. So actually wasn't really sham, it was acupuncture. Okay. But they call it 'sham', it's in the journals. That's how it's published. They had 54% in the active group versus 20% in the sham group. So you think that sham cannot have 21% improvements. So it's probably the acupuncture effect of this, versus the electrical stimulation of the posterior tibial nerve, which is about 54%. Statistically significantly different, between these two things. And then there was good improvement in number of voids per day. And then the number of incontinences as well. ORBIT trial was when they compared the PTNS to a medication called tolterodine. Tolterodine is an anticholinergic, it is available but not widely in Australia. It used to be available quite widely, but it's kind of coming off the market. The main competition is between the Vesicare and the Betmiga of the non-PBS items. Tolterodine is not available on the PBS.

And in that study it was shown that they were both equally effective, but of course lowers rate of side effects for the PTNS, as you've seen, is really minimally invasive. Sacral neuromodulation. I just did one of these today, actually, on one of my patients today. So this is also an advanced therapy where you place one of these, this is like a pacemaker but made for the bladder. So the way that you insert it, the patient comes in, you insert an electrode on their fluoroscopic guidance, so you need X-rays, so you insert it, you place the electrode beside sacral third nerve root, the third nerve root. And by doing that you adjust the electrode location, you adjust the response baseline, the amount of voltage that is delivered. It works basically in the same principle of sacral nerve stimulation.

We were doing a retrograde sacral nerve stimulation with your PTNS. This is actually stimulating your sacral nerve, which again increases the afferent signals going to the sacral nutation reflex. So this is another option for the refractory OAB. And it's something that's done in two phases. So like the patient that I did for today, she has a bladder diary that shows how severe is her incontinence, she comes and gets this. First they wear the external stimulator for two weeks. We collect information on a good collected bladder diary. If we see 50% improvement in the symptoms, then we go and change from the external stimulator to this one, which goes inside under the buttock, same as how you would feel your pacemaker. Same thing, under the buttock. Of course it's a bit better tolerated than on the chest, because it's kind of deeper on the buttock, it goes under the skin and the fat pad. So it is, it's a treatment that we offer to the more advanced therapies for those women who've got refractory OAB.

SNM. Again, the mechanism of action, as I mentioned, the success is defined, this is internationally agreed upon definition, by minimum of 50% improvement in your symptoms on a daily basis, based on a three-day bladder diary, which we generally use on almost every occasion, to decide whether we should go on with actually the long-term treatment of this. We've got the test phase for two weeks to assess response, and if it's effective then we go and put the permanent pacemaker inside, just underneath the buttock skin. So indications. It's been TGA approved for refractory urge and frequency, refractory urge urinary incontinence, chronic non-obstructive urinary tract retention and faecal incontinence. Also, I've got TGA approved for chronic pelvic pain syndrome related to bladder pain syndrome also. So some of the pain physicians do this kind of thing for the management of chronic pain also.

So this is a bit of a summary about what's been done around the world. So SNS is superior to no treatment at six months with significant improvement in the outcome measures. Limited evidence for the long-term efficacy for the SNS. We've just recently had the four-year and the five-year data coming in, showing ongoing maintenance of the initial symptoms. But the SNS, the way that was investigated in the Insite trial in 2015, was superior to the medical therapy for refractory or mild to moderate urge incontinence, 62% versus 42%. Complete continence, completely dry, at about 40% versus 20%.

And then there was another study that came and compared to 200 units of Botox versus the SNM. This is another RCT. And they looked at, it's called ROSETTA trial. I don't know why they use the 200, because the standard dose, that uses 100. And then they ended up coming that there was small clinical difference in the urge incontinence symptoms between the two, in the favour of Botox. But then clinical significance, probably not really significant, clinically. And no significant difference in the quality-of-life measures. Botox had a higher rate of UTIs, about 35% versus 11% in the SNS group, and the higher rate of needing self-catheterisation.

Take home messages. This means that we're getting to the end of the talk. So be meticulous, take a good history, invest time in the history. Okay. Once I made this example in one of my talks, you know how in real estate they say there are three rules in buying a house? Location, location, location. In this case, history, history, history. Most of the diagnosis can be made with history, and the amount of information that will guide you through the management is in history. You don't take time, you don't get enough information, you will be basically beating around the bush, basically. It pays off in the management.

Be systematic, don't cut corners, be patient. Try to involve the patient in decision making. Get them to educate themselves, or you educate them by offering them all those pamphlets and patient education et cetera. Bladder diaries is really useful, increases the awareness of the bladder function. So examine, document, investigate. Examine, document and investigate. Don't underestimate the value of the conservative management. You just saw what Amy can do, and there are so many good physios out there, there are so many good ones. Identify them, make a good rapport and relationship with them, send your patients to them, and urge your patients to make appointments with them and have their follow-ups and their visits. It's really important. You don't really want to put people on pharmacotherapy or all those surgeries before having done any conservative management. So look for complex features. If you see something not right, something doesn't sound right, or you actually see one of those red flags, don't waste time. Don't waste time. If someone has got haematuria and OAB, there is no point in physio, that needs to be assessed. That's an urgency. So that's very important. Pick up the red flags, that red box on the Australian Commission flow chart that I mentioned, but that's very important. That's your red flags. Good. So I think here, Steph comes in. Thank you, Steph.

**Dr Stephanie Muller:** Hi Payam, that was absolutely fantastic.

**Dr Payam Nikpoor:** Thank you.

**Dr Stephanie Muller:** We'll come back to thanking Payam and Amy in a bit, but I just wanted to draw everything to a conclusion by returning to our case study, Klara. So Klara and her very friendly, good GP discussed her symptoms and explored the possible causes. The initial treatment and investigations they looked at was a urine study and a pelvic ultrasound to exclude pathology. They commenced a bladder diary, and they referred her to a women's physiotherapist. Klara completed about three months of pelvic physio exercises, some bladder training, and obviously in detail lifestyle modifications as Payam and Amy have mentioned. And three months later she came back to see us, the GP. At that point in time, she felt a lot better. She had reduced daytime frequency, however her nocturia and coital incontinence continued. So at that point in time the GP imagined that, the GP planned actually to start some vaginal oestrogen trial cream, and referred her on to the urogynaecologist, and that's kind of where we concluded.

And obviously this is just a really brief summary because there's so much more that the GP could have done. And I think this GP, if they'd have known what a physio could do, may have given the physio a bit more time or sort of mentioned to the patient, 'Did you go back to your physio and are you doing your exercises properly?' 'Where are we at with that kind of thing?' So there's so much more information that we can fit in, this is by no means a reflection of what possible options are open for Klara, which I've obviously learned so much about tonight. So really the first and most important thing I'd like to say, on behalf of all of us GPs is really, thanks so much to our presenters, Payam and Amy. That information was fantastic, and I think the interest that everyone has is shown by the fact that we still have so many people here, and we're a little over time, which is a demonstration of how great it's been.

And thanks everyone for your questions. There's been stacks of questions. And obviously because we've run over time, we'll only be able to answer a few, but us as presenters, we'll endeavour to answer all the questions and those answers will be delivered to you later. Rest assured, no question will be left unanswered. So everyone had a chance to upvote questions, so I'd like to start by asking the question that got the most votes, which was, and from one of the anonymous attendees, but I think this probably might be for you Amy, could you comment on whether Pilates has a role or is of any benefit in pelvic floor muscle training? Which is quite a good question, because I guess we do have a lot of patients who do Pilates.

**Amy Steventon:** Yeah, thanks Steph, it's a great question and it's a question that we get asked a lot, and it's a question that I discuss with a lot of my patients. The answer is 'yes' and 'no', depending on the patient presentation. We know that with Pilates we're trying to activate the core muscles, the lower abdominal muscles, and we know that the core muscles and pelvic floor muscles should work together. However, when there's pelvic floor muscle dysfunction, or there's stretching of the connective tissue, often those muscles don't work together. So you should squeeze your core and your pelvic floor should raise, but that doesn't happen with pelvic floor dysfunction, often. So I guess what we need to consider is, it's worth a try with some people, and if they're finding improvements, absolutely, it can strengthen their pelvic floor. If their fascia is working well and their pelvic floor are working well, a squeeze of their core will get their pelvic floor squeezing. So that's a really good thing.

But in some people it will cause bearing down of their pelvic floor muscles, so potentially their symptoms will get worse. There's also another group of patients that I mentioned with overactive pelvic floor muscles, and these ones often present with OAB, often present with our pain patients, where their muscles are really tight. If we then add a core Pilates strengthening program, that further exacerbates the tightness of their pelvic floor muscles and can make their symptoms worse. So it's not a blanket 'do Pilates and your pelvic floor will get better'. It's a matter of negotiating, I guess, through the minefield of what their pelvic floor is doing when they pull their core in. And if you're examining them, you can see that, ask them to pull their lower tummy in, have a look at their perineum and see what's happening. If it's pulling up, fantastic. If it's bearing down then perhaps you need to reconsider that suggestion of Pilates.

**Dr Stephanie Muller:** Excellent, thank you so much, Amy. Another question that had quite a few, it's been there since the beginning of the presentation actually, and it got some thumbs up. Sujeewa asked a question, I think, Payam, maybe for yourself, is there any evidence for laser treatment for stress incontinence? Was the question.

**Dr Payam Nikpoor:** Yes, 'no'. So far we do not have a conclusive evidence in the role of laser therapy for the management of stress urinary incontinence. If, as long as you can offer it to a woman who can participate in a double blind RCT, or in a study, controlled study, that will be fine. But if, as a blanket rule, you're just like, 'Come and have laser, we've got this new device that we thought it would fix your incontinence,' you're actually non-evidence based. And in Monash Health, Professor Rosamilia, who is a great mentor to almost all of us, I guess Professor Peter Dwyer, I have to mention these two big mentors of mine. Anne Rosamilia, she, I think she's still conducting a study on the use of laser in SUI, and it is something that you can actually enrol in it, and you might be allocated to sham or laser, but it is something is being offered at the moment. Probably in the next five years or so we might have more conclusive evidence coming out of these studies, so we can make a proper evidence-based answer to that. But as it stands today, the answer is 'no'.

**Dr Stephanie Muller:** Thank you. Thanks Payam. And then maybe one final question just before we tie things up, and this is probably for both of you. Another one of our attendees posted this quite early, just to clarify, they're interested to know, I guess, just a summary point of how to distinguish between overactive bladder and pelvic floor hypertonicity. I know that's probably been spread out amongst the slides, but any specific take home message, I guess, in regards to that?

**Dr Payam Nikpoor:** Go for it, Amy.

**Amy Steventon:** Thank you, Payam. I guess OAB is a selection of symptoms, so frequency, urgency, nocturia, whereas overactive pelvic floor muscles is specific to those muscles. When you palpate the pelvic floor muscles, or when you're palpating in the vagina, you'll feel some, normally, some sponginess of the pelvic floor muscles, and if you ask a patient to squeeze, you'll hopefully feel that tightening a bit around your finger. But if the muscles are overactive, they can feel like, perhaps, guitar strings. They're tight, they can be sore, they're like a real ridge in the middle of the vagina. So while OAB symptoms, pelvic floor muscle overactivity is more something that you can palpate, it's something that we see a lot in bladders, so your patients will often have tight pelvic floor muscles, but they're separate in that OAB is pertaining to the bladder, whereas overactive pelvic floor muscles is a specific palpation finding.

**Dr Stephanie Muller:** Yep. Great. Thank you. Amy, did you have anything to add to that one, Payam?

**Dr Payam Nikpoor:** All of the above.

**Dr Stephanie Muller:** Well I know we only got to answer three questions, but thanks again everyone for submitting all the other questions and, as I said, we will endeavour to respond to all of those in detail later, but I am afraid that's all we've got time for this evening. So on behalf of our webinar partner, Jean Hailes for Women's Health, thank you very much to everyone for attending. We've been really honoured to bring you this webinar series in support of Women's Health Week, and also an amazing big thank you to our presenters, Payam and Amy. Absolutely fantastic. Thank you so much for sharing your knowledge and your passion and your enthusiasm this evening. So thank you so much, it was terrific. And goodnight, everyone. Thank you.

**Dr Payam Nikpoor:** Thank you.

**End of transcript**

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This podcast series has been made possible by the NSW Government's Menopause Awareness Campaign. For help talking about menopause, download the [Perimenopause and Menopause Symptom Checklist](https://www.jeanhailes.org.au/resources/perimenopause-and-menopause-symptom-checklist) and take it with you to your next medical appointment. For more information visit: <https://www.nsw.gov.au/women-nsw/toolkits-and-resources/perimenopause-and-menopause-toolkit>

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