Bladder, bowel, and sexual dysfunction

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[00:00:04] **Dr. Carlos A. Pardo:** It is a great pleasure to introduce my colleague, Pines Cabahug. On the paper it's Dr. Philippines Cabahug. I call her Pines. Dr. Cabahug is at the Kennedy Krieger Institute in Baltimore. She is a rehabilitation specialist. And one thing that is extremely important in myelitis and myelopathies and all of the neurobiological problems is to have not only a good diagnosis and a good neurological care, it's extremely, extremely, extremely important to have a very good rehabilitation care. And here is where our colleagues in rehabilitation come to play an important role in the healthcare of patients with myelitis and myelopathy.

[00:00:52] And that's the reason I am very excited to introduce my colleague, Dr. Cabahug, because she's going to talk about a very important aspect of management and rehabilitation. But most importantly, an aspect about our lives is bladder control, sexuality, and things that we hate to think about and talk about. But the reality is, we need to talk about. And with that introduction, I welcome Pines. And thank you so much for taking the long trip from Baltimore to LA. But again, we appreciate all your dedication to our patients with myelitis and myelopathy. By the way, I have a red phone line with Dr. Cabahug, because every Wednesday when I see patients, I send her an email or call her and say, "I need that you please help me tomorrow seeing one of my patients." So, she's always said yes. Thank you so much.

[00:01:57] **Dr. Philippines Cabahug:** Hello, everyone. Good morning. I'm just gonna set my timer because I am known to go overboard a lot of times, 99%. So today we're going to talk about what I call in my regular clinic, the BBS topics. And no, it is not the Korean boy band. BBS, as you know, it stands for your bladder, your bowel, and sexual dysfunction. All right. Okay. Now, in 2019, the National Consortium for Spinal Cord Injuries, they made a survey for the people-- they surveyed the people in the community living with paralysis about the top problems that they were encountering in their day-to-day lives. So, I think based on your experiences, you would agree pain is a big issue. But importantly for this talk, it is your bowel control, your bladder control. Now, if you see at the very end, sex seems to be not that important, but for all of you who are here today, you know that that is an important and integral part of us being human beings. And it is often overlooked. Now, before I continue, I'm going to do some little housekeeping.

[00:03:10] First of all, this is not exactly GP, general patronage talk today. I'm assuming everybody here is at least 18 years old and online. Okay? I'm going to be toeing the line somewhat. It's not exactly NC-17, but for those who are a little bit uncomfortable, you have been warned. Okay? All right. Now, let's talk about

your bowels and your bladders. So, for both systems, what do they do? They store your waste and then the waste gets released at the appropriate times. Each system has a muscular storage area and each has an outlet valve or sphincter. And control could be either voluntary or involuntary. I mean, as babies, you have no control. But once potty training is over, then you have that voluntary control wherein you go to the bathroom at socially acceptable times.

[00:04:08] Now, when you've had something that has affected your brain or your spinal cord, like with your respective diseases, there will be changes in your bladder and bowel functioning. The sensation gets either disrupted and you have problems with urinating or defecating. And the coordination between your brain and your bladder or your bowel will be affected. So, it's like a free for all. They're not talking to each other. The voluntary control of your sphincters is lost, and this will change how you go to the bathroom. So, bowel and bladder dysfunction can either present as increase in urinary urgency or bladder urgency, or bowel urgency and frequency, inability to either completely empty your bowel or bladder, or you have bowel or bladder retention. Such as which you will need to explore other methods to empty your bowel or your bladder. Or you might need to take in medications to help you urinate or defecate. Now, whenever I talk with my patients, I tell them, imagine that your bladder is this nice thin balloon. This balloon is made out of thin and powerful muscle. Now, like a balloon, when your bladder fills up with urine, it expands. And then when it is time for you to empty-- And if this will work, it will go back to its normal size. Okay? So that is how your bladder normally functions. So, in this illustration you see here that the bladder is being filled with urine, and then once it's full and you sense that it's full, you go to the bathroom, your bladder will contract and the sphincter will open. That will allow you to empty your bladder. Now, when we talk about bowel and bladder dysfunction in general, we talk about or we classify it. Human beings love to classify things, put things into boxes by the way. But we classify it as either a spastic or reflexic bladder or bowel, or a flaccid or lower motor neuron or areflexive bladder or bowel. Basically, what it means is that--and I don't know if my pointer is--okay. All right.

[00:06:27] Anything from the brain all the way above your sacral area, that's going to be spastic or reflexive, and then anything around your sacral area, that's going to be lower motor neuron or flaccid or areflexive. Now, what's the difference? Okay. When you have a spastic bladder or a bowel, the bladder is very spastic and irritable. The urinary sphincter is so, so, so tight and it does not relax voluntarily. And there is difficulty in storing and releasing the urine. Now, to contrast it, with a flaccid bladder, the bladder will not contract when it becomes full. So, you can imagine, it just goes bigger and bigger and bigger. But do not worry, your bladder will not pop, I promise you that. Okay? It will just get bigger and more uncomfortable. The urinary sphincter is loose and it will fail to contract. And the problem with a flaccid bladder is that when it reaches a certain volume, you're going to leak. So, you'll have difficulty in storing urine. So, think of it like two different types of personalities. The one that is so, so uptight that it will never let things go. Well, the other person is like you're loose hippy person. No offense to hippies in general. Sorry about that. Yeah, that's easy to remember, right? Now, when you see specialists like me, because I'm a spinal cord doctor, a big chunk of my time goes to talking about the bladder program. The importance of the bladder program is we don't want our patients to be tied to the toilet. And this is a cause of a lot of anxiety and depression because people just like, I can't go out or I can't go to therapy, I'm afraid because I might have an accident. And when they travel, the first thing that they do is they research, where's the nearest toilet? Now, having a good bladder and bowel program, our goal is that we want to prevent our patients from getting or having incontinence and accidents. We want you to be able to empty bladder at predictable times. Basically, we want you to have that control as much as possible.

[00:08:34] We want to help maintain health and prevent complications. If you could see here. So, if you're not emptying your bladder in appropriate times, you could get a lot of urinary tract infections, your bladder can become thickened over time and will become inelastic. So, remember the analogy of the balloon. If it fails it go it, enlarges and then it goes back to its normal size. The bladder, which is a muscle, if it's always contracting inappropriately, it can thicken over time. And that's going to be a problem because if it thickens

over time, this is what happens, there is less space for you to store urine, the pressures will increase and you could have kidney damage down the line. And that's what we're trying to avoid. All right. So, this is a sample of a cystoscopy. Here is a normal bladder. So, you have a special camera looking inside the lining of your bladder. It is very smooth, no tears or everything. On the other hand, this is a neurogenic bladder. And you can see there's like thickening. We call this trabeculations. Sometimes people will have also tears in that lining. And that's not good because these little nooks and crannies, you can have lots of the not-so-good bacteria living in it, or you could also have bladder stones. So that is not good. Now, how to manage your bladder. And this is in summary. Everything in life, moderation is key. Healthy habits, meaning healthy diet. Drink, drink, drink, and spread your fluids out throughout the day. I have patients who are so afraid of wetting themselves that they limit how much water fluids they take. And that is not good for your overall health. Over time, you're going to do yourself more harm than good. I'm sorry, this is a typo, but fiber will help with stool consistently. That's for the bowel talk later. Activity is important. Good hygiene is very important because you want to risk the incidence of you getting urinary tract infections. As much as possible, depending on how much your function has been affected, we want our patients to be able to do their bladder program or emptying their bladder independently with or without assistive devices, positioning equipment. And if they are that impaired, at the very least, they should know how to direct their own care.

[00:11:10] We want to have our patients have that agency, that control of directing their healthcare aids, what to do to empty their bladder properly. And lastly, establish a good routine. This is something that you cannot do on an as needed basis. Now, for bladder management, it differs whether you have a spastic or a flaccid bladder. So, if you have a spastic or hyperreactive bladder, people often will get frequent and urgent urination. And aside from ensuring that they empty themselves properly, they may need some medications to relax the bladder. Oxybutynin is one of them. For those who are not able to empty their bladder, some of them will need to catheterize intermittently. And we recommend doing that intermittent catheterization approximately every four hours or around four to six times a day. Now, if you have that loosey-goosey flaccid or lower motor neuron bladder, tendencies are going to leak urine and medications are not going to be effective. Okay? The bladder relaxants-- You don't want to relax something that's already relaxed, okay? So, you have to spread your fluids out throughout the day. And still, if you're not able to empty on your own, again, you'll have to do intermittent catheterization every three to four hours. And for those who are doing something like they're doing therapy or they're going to do something that will make them do a Valsalva maneuver... And I'm not sure if you're familiar with the Valsalva maneuver is. So that's when you sort of hold your breath and bend down. So, some people do that unthinkingly when they do a transfer, when they do something stressful. Anyway, we recommend that if you're going to go anywhere or if you're going to do some physical activity or sports, you should catheterize yourself to make sure that your bladder is empty. Now, bladder emptying methods. So, they can range from having an external condom catheter, okay? Or you could have an indwelling Foley catheter. Okay? Or you could have a suprapubic tube. So, it's not going-- The catheter is not through your urethra, it's going to be through the skin directly to your bladder. We see this commonly in children. So, they have surgeries that they could have a catheterizable stoma that will allow them to catheterize and empty their bladder. Now, there are different types of catheters in the market. Everything from your regular catheter to hydrophilic catheters and to those that come in with the gel already inside a packet to make things as sterile as possible.

[00:13:58] My experience is there is no one best type of catheter, it really depends on what is available for you, what your insurance will pay for. The important thing is that if you have a cath program that you do it regularly. There are some types of catheters that have a... we call it a coud é tip or a curved tip. This usually we recommend in patients who have frequent urinary tract infections or in males who it's a little bit tight to get the catheter in. All right. Now, external female catheters, there exactly is not one really. However, there are systems that uses a vacuum that will absorb the urine at night. And I forgot to mention moving forward, whatever medications or devices that I mention, I do not have any financial ties with these companies. All

right. Just a reminder. So, the PureWick System. So, it has, this is a vacuum. And as you can see... And I do apologize it's a little bit detailed. But this little tube over here is placed over the female vulva, and then the vacuum is turned on and it will basically suck or absorb the urine. So, for some of my patients, they find it very helpful at night with night-time incontinence. It helps them get a good night's rest. Mind you, this will not work for all individuals, but this is something that is available out there. Right. Now, for bladder medications, you can see there are a ton of bladder medications acting in different parts of the bladder to relax the bladder from being overactive. Okay. Now, these medications in this square box, they're your typical anticholinergic medications and they come with a lot of side effects. You cannot pee. Well, can't pee because you relax the bladder too much, you retain urine. You can't see, you can't spit. And please use your imagination for the last one. Okay? All right. So, these medications have been traditionally quite good, but then they do have a lot of side effects. Constipation, dry mouth, those have been very limiting for a lot of my patients. But lately, as we've been seeing individuals who are on these medications for a long time, they can affect your cognition, partly your working memory. And that has been a concern especially since we have a lot of young individuals and a lot of older individuals on these medications.

[00:17:02] There's been a recommendation to try to shift from medications like the anticholinergics. Usually, it's the oxybutynin, the Ditropan. We try to shift it to other non-cholinergic medications such as mirabegron or Myrbetriq, which acts on a different receptor on your bladder. The limitation for me so far is that even if Myrbetriq has been on the market for more than five years, not all insurances will cover this completely, or the co-pays may be high. This is the newest kid on the block, that's Vibegron, which is like Myrbetriq or Mirabegron, but with less side effects. Okay. So, if medications don't work and even in spite of adhering to a good bladder program, you still have problems. One treatment option would be a bladder Botox. Oops. I am so sorry. So, Botox is the miracle drug of this century. We use it for wrinkles, we use it for hyperactive sweat glands, sweaty pits, sweaty hands. We use it for spasticity and we can also use it for spastic bladder muscle. My experience is like... So usually, for these patients, I order for urodynamic study, which is a special type of test which measures how hyperactive the bladder is and what are the pressures generated inside the bladder. So, if they have a very hyperactive bladder and sphincter, I would recommend them to my friendly urologist to get a bladder Botox injection. This is usually lasts around every six-- It can last up to six to nine months. So, the chance of you repeating this is every six to nine months.

[00:18:58] Side effects usually are bleeding infections and there's always a chance of the distal spread of Botox to muscles that weren't injected. We always have to say that. Yeah. So, one thing I like about this treatment option is, I've found that once my patient start getting the bladder Botox, a lot of them are able to cut down under oral medications. And usually, by the time that the bladder Botox wears off, that's the only time that they go back on their meds until they get their next round of shots. All right. So other treatment options is called... One of them is posterior tibial nerve stimulation. This will not work in those who are severely impaired, but for those who have an overactive bladder, this may be of use. So, what happens is they take a needle, they insert it in the inside of your ankle where the tibial nerve is, they will give you some stimulation for 30 minutes, and this is going to be for a period of 12 sessions. So, what happens is that, when you stimulate the tibial nerve, impulses will go up to your sacral area and that will help calm down and modulate your bladder. Again, it depends on how severely impaired you are. For those who have incomplete injuries, it's something that we can't consider doing. All right. Now, another one is your InterStim device. So, this is a little bit more invasive. Basically, it's stimulating, but instead of stimulating at the distal nerve, we go up more proximally. We go up to your back where your sacral nerves go. This is going to be done by the urologist in his office or in his clinic. There's usually a trial period to see if it will work. It's basically the same mechanism. You stimulate those set of nerves and see if it will help modulate the hyperactivity of your bladder.

[00:20:50] All right. So, for surgical procedures, there is a Mitrofanoff procedure, where you take a bit of your appendix, you make a channel, basically a tube. And this is at the skin level. So, this is looking at it from the

side. And this is where you can catheterize. So, a surgical procedure. Another one is bladder augmentation. This is usually done in those who have really severe neurogenic bladder, that the bladder is so thick and has shrunk. They take a bit of your intestines and then they basically patch up or open up your bladder. It's like when you try to fit new clothes and put extra strips of cloth to make it bigger. Like that. There is artificial urinary sphincters. This is example for in a male. So, they have a sphincter that's applied here and then it's connected to a pump. So, the sphincter is normally closed. And when the person wants to urinate, the pump, which is embedded inside the scrotum, they will pump on that and then it will make the valve open, and then this will give you around two minutes or three minutes or so to empty your bladder.

[00:22:12] Now, most important thing, bladder checklist. If there's anything you're going to take home today, hopefully it's this. What you need to do or how you need to advocate for yourself. So, I would recommend, when you go see your regular physicians back home, review your bladder management at least yearly. Is it working for you? Are your meds working? Are you still having issues? You're getting a lot of urinary tract infections. In my clinic, I would recommend my patients to get labs, your basic chemistry every year. Now, with ultrasound, so it's your kidney. And I order a kidney and bladder ultrasound every one to two years depending on how bad your bladder function is. And the reason is, I want to check for any evidence of kidney swelling or hydronephrosis or any evidence of kidney stones or bladder stones. Keep track of your urinary tract infections. And then is it a true urinary tract infection? That's going to be a discussion hopefully at the end. Consider establishing a care with a urologist if you have not done so already. It's going to be challenging to find a urologist if you're going to ask for a specialist who knows about your specific disease, NMO, TM, MOG antibodies disease. It's going to be challenging.

[00:23:28] What I would recommend people to ask when they look for a urologist is, have you treated patients with spinal cord injuries? Because that is the easiest way to find one. You'll have more success with finding a urologist who deals with spinal cord injuries because they will know how to treat your neurogenic bladder. Okay? You may need a cystoscopy, but then again, it depends on what your method of emptying your bladder is, if you have other risk factors for bladder cancer. So, these are the things we monitor over time. And for males, and this is going to be true for everyone. Even if you are living with a rare neuro-immune disease, that does not preclude you from getting everything else. So, all of the preventative measures that we recommend for people without diseases, you still have to do it. So, for males, consider PSA testing after age of 50. All right. Now, for bowel management. Let's move on. So, you have to manage your stool consistency. And there are many ways to manage your stool consistency. Again, with diet, you could take fiber or supplement. I have a pet peeve about fiber because people think all fiber supplements are made equal and they just load themselves on fiber. The problem is, if you're not used to taking fiber, what happens is that a lot of the times people can get bloated and gassy and more constipated.

[00:24:56] So, if you are going to take some fiber in your diet, I would recommend as much as possible, get it from natural sources, grains, vegetables are better than fiber from fruit. If you're going to do it via the supplement or the Celia, Metamucil, Benefiber, whatever you like, I would recommend, if you are not used to taking those medications, look at the label and whatever is the recommended dose go half because you're not used to it. You want to get your body to get used to it. And if you are going to take or going to increase your fiber, make sure that you also increase your water intake. Because that's the whole reason of getting the fiber. The fiber will absorb water, will bulk up your stool, it will help your stool to go out more efficiently. But if you left the fluid, your fiber's just going to just stay there and it's dry and yeah. Not pretty when you're gassy and bloated. Okay. All right. You could also do medications to soften stool like Colace, lower doses of MiraLAX or PEG. And there are some laxatives that you can take to promote gastrointestinal motility. I like using Senna. The one important thing with the timing of Senna or Senokot or these strong laxatives, if you plan to go to the toilet in the morning, for example, I would recommend you take your Senna at night, because it usually takes around 6 to 12 hours for this to take its peak effect.

[00:26:30] For those of you who have taken over-the-counter Senna teas, you know what I'm talking about. You have a Senna tea after lunch and then you need to go to the bathroom at the end of the day. So just be aware of the timing. Now, I said earlier, human beings like to classify things, and stool is no exception. There is called a Bristol Stool Chart. I know, my patients look at me weirdly when I ask, can you tell me what your stool looks like? Is it soft and formed like a banana? There is a reason to these weird questions. Okay? The types of stool tells us how constipated you are. And depending on if you have a hyperactive or spastic bowel or a flaccid bowel, the type of stool will help us in terms of managing your bowel. Let me. I have highlighted type three and type four. So, if you have a spastic tight bladder, you don't want to be too constipated, right? Because it's going to be hard for your poop to go out. So, we would like the type three and four. So, this is like the sausage or banana shape. You can have little cracks here and there. It's going to be jackpot if you get the soft smooth sausage. That's going to be a jackpot for me. It's working? Okay, sorry. I got too excited. Sorry.

[00:28:10] All right. Now, if you have the flaccid bowel, so the flaccid bowel, the problem is, you want the poop to be a little bit on the hard side, okay? So, it's going to be between type two and type three. Because if you have a flaccid bowel and your poop is too soft, the moment you do a Valsalva or you do extra pressure, it's going to go out like a waterfall. You do not want that. Okay? Sorry. This is the whole reason. So, bear with me or bear with your doctors if they're going to ask you about this. There is a method to why. All right. Now, positioning. For those of you can get to a toilet or a bedside commode, positioning is important. Some of you may have heard of the squatty potty. The squatty potty actually helps angle your pelvic floor, so that's going to be easier for your stool to come out. Here. Okay. And again, I have no ties to this company. And then, if you're not able to go get to a toilet, lie on your left side, it's going to be easier for your stool to come out. Now, for the bowel program, again, so I have alluded earlier, it will depend whether you have a spastic or a flaccid bowel. Now, for a spastic bowel, how often do we need to poop? There's a range, one to three days. If you do go every two days, God bless you, that's great, okay? But don't be upset if you initially don't get it to that every two days. It's going to be a process. And the goal is your Bristol type three, four. So that's the sausage-- either smooth or sausage with cracks.

[00:30:09] In order to help you move your bowels, you could do what we call a reflex evacuation. Again, it's a spastic reflexive bladder. And I apologize, I'm going to be graphic. So, you could trigger evacuation through putting in a suppository or doing digital stimulation. So digital stimulation, my apologies again, if this is the anus, this is your finger, gloved, lubricated, you do not have to put the thing all the way up. No, that's not the point. That's something different that you're doing. Okay? All right. This is my regular clinic. All right. So, you don't have to put all of the finger all the way up, just a little bit, and then gently stimulate that rectal wall, 15 to 20 seconds. And then that should trigger a reflex contraction of your rectum and that will help propel the stool out. All right? So best time to do your bowel programs usually is within an hour after you eat because you want to take advantage of your gastrocolic reflex. For those of you who like-- whenever you have a good meal, you want to go to the bathroom within an hour or so afterwards because you need to do number two, right? So that's your gastrocolic reflex in action.

[00:31:28] Now, if you have the flaccid bowel, the goal is really going to be different. You want to make sure that you empty your bowels not once a day, one to two times a day, because you really need to make sure that you empty that rectal vault, so that you won't have a bowel accident. The goal is a firm formed stool more and a little bit on the hard side because you don't want it to be too soft. Suppositories generally do not work because it won't respond to a reflex, it's flaccid. And then, some people will need extra help. They'll have to do manual disimpaction. So again, my apologies. Anus, finger, glove lubricated, gently put in and try to bring this poop out, okay? Okay. All right. Now, there is a hierarchy for interventions for your bowel management. As much as possible, we work on one and two. It's not going to work immediately. I have to warn you, it will take a couple.

[00:32:35] If you're going to make a change in how you do your bowel program, if your doctor tells you add this, it's not going to work immediately. Give like a week for it, so that we see if it's working or not. If one and two doesn't work, there's transanal irrigation system. I think I might have to have a slide later on this. So, what happens is, when you do transanal irrigation system, you're going to have a catheter. And you're basically giving yourself an enema, but it's under your control. What happens is that you will fill the left side of your colon with fluid, and then when you take the catheter out, whatever poop is in that left side of your colon is going to come out with it. I know it sounds gross. I am so sorry. But it has been quite effective in emptying the left side of your colon. All right. If that doesn't work, then we'll have to venture on to surgery. The nerve stimulators. There are more research at this point, but the existing research shows that they've been very helpful in those with severe constipation. And lastly is having a stoma colostomy placed in. All right. So, this is the transanal irrigation I mentioned earlier. Again, this has been effective in some of my patients. For me, the biggest barrier for this is cost. It's not covered by Medicaid, Medicare, and what's expensive are the supplies or the catheters. But if you know you can get them or if you and your doctor able to appeal, I think this would be a good option if your conservative measures do not work. This is an antegrade continence enema against surgery.

[00:34:25] So, what happens is they take a bit of your appendix, make a stoma or a catheter. And then what patients can do is that they can insert the catheter, and they're going to be flushed the whole way from left to right. So, you can do this in the toilet. Usually, I have patients who have spina bifida and they have their ACE or antegrade continence enema. Okay. Another option is a cecostomy. So, the only difference between the ACE and the cecostomy is that, when you have your channel... No, your appendix is still there. It's sits directly to your colon. That's where you insert your C-tube. This I alluded to earlier. So sacral root anterior stimulator. If you remember earlier, talked about the bladder stimulating the sacral nerves. It's pretty much the same thing. It's an invasive surgery. They're going to put stimulators over your sacral plexus, try to modulate the activity of your colon. Again, more research to come. In my neck of the woods, I don't know of anybody who does this. So perhaps this is something that you could explore in your certain region or locality. Now, checklist, bowel checklist. Every year, review your bowel management. Is it adequate? Are your meds working? Are you taking too long in the toilet? And what's the definition of too long? If you're taking more than 30 minutes to have a bowel movement, that's already quite too long. I mean, just 30 minutes, that does not include the time you take to go transfer to the toilet or have somebody help you clean up. Okay. Schedule your bowel emptying. So again, timing will matter. And then, you have your colon cancer screening yearly.

[00:36:19] Now, for sexual health. And I'm so sorry. I'm just going to go run through this just a little bit. So, the funny thing about human beings is that sex is such an integral part of your day-to-day life. You, me, I, we would not be here if it weren't for sex. Right? But it is one of the most difficult things to discuss. Your sexual health is often overlooked. So, when we refer to sexual health is that you are healthy in terms of the emotional, mental, and social aspects of your health when it relates to sex. And sex is just more than intercourse. Sex is the whole shebang, the intimacy, the time spent with a person, the time getting excited with a person. That unfortunately, when you have something that has left you paralyzed or impaired, it has affected how you see yourself. I've had patients who have been depressed because they don't feel like they're the same person anymore. And hopefully by the end of this talk, I would like to empower you all to be comfortable in asking these questions. Because a lot of the times, not a lot of doctors are comfortable going or asking about this because they're afraid their patients don't want to know. Okay. All right. So, physiology of sex. As I mentioned earlier, sex is more than intercourse. I usually like including this slide because for me, as a doctor, it's beautiful. All right. And it's not working. No, don't worry. It's not a video. Oh, anyway, hold on. There you go. So that is just for an orientation. So, this is an MRI of intercourse. But I just want to remind you, so this is like the ultimate expression of being one with somebody. It's labelled for your orientation, folks. Yeah. But again, sexual health is more than this. All right. So, let's talk about arousal. It's going to go to the sex talk

now. So, what is sexual arousal? So, it is what happens to your mind. And remember, mind and body. You get sexually excited and this will help you prepare for the actual intercourse or sex. Now, in males, they have erections. In females, we have lubrication. And there are two pathways for the arousal to occur. You have psychogenic arousal. So, this is the mind part. For ladies who have dreamed of George Clooney, you know what I am talking about, right? So psychogenic arousal. Or thoughts, looking at stuff. But reflex arousal is different, because with reflex arousal, you have to physically stimulate in order to start the arousal process. Okay. I'm sorry. This is the medical part of this. I'm just going to breeze through this.

[00:40:00] So, for psychogenic arousal, you have flow of information between your brain and going down to this area. Okay? So that's why I was pointing out mind, brain, very important. This would then transport stimulus impulses to your respective organs for your arousal. Now, with reflex arousal, it starts from here. It doesn't have to go all the way up there. Yeah, they're their own like contractors. They don't need to ask permission from the boss up there. So, your reflexes, they just go directly either to your male or female genitalia to get that process started. Now, for example, if your lesion is in this middle area between L3 and S1, you're still able to get psychogenic arousal. Because hey, this branch is intact. You're still able to get the reflex arousal because this is still like they're all connected, right? The problem is, in males, if you have a lesion in this area, the L3, S1 area, you may have both psychogenic and reflex arousal, but the coordination is wonky. All right? For females, you can have psychogenic and reflex arousal, but it might not be as intense or it might feel a little different. So, what happens if you have a lesion anywhere above that T10 area? You lose connection to the mind. So, your psychogenic arousal is lost, okay? You will have the reflex. As I said, they're independent contractors, they do their own thing. Now, if you have a lesion here, then you will lose your reflexes, right? Okay. All right. And at that, you won't have that, so you lose your reflex arousal. You'll have psychogenic though, okay? You'll still have the brain. Oops. Now, orgasm.

[00:42:26] As you can see, it's the peak of sexual excitement. Pop the champagne bottle, right? So, it's the release of that sexual tension accompanied by rhythmic pelvic muscles and pleasure. So, let's see, “Mambo No. 5.” That's a lovely song. All right. So, for men, when you have an orgasm, it's usually accompanied by ejaculation. And for women, it's the rhythmic muscle tensing in vagina and uterus. I have no idea what to be a good analogy for that. Think of it like crescendo waves. All right. Now, when you have something that affects your spinal cord, in males, the orgasm changes. It's either you don't have an ejaculation, ejaculation may be unpredictable, or you have retrograde ejaculation. So basically, you have retrograde ejaculation because of that loss of the coordination that you have. You don't ejaculate out through urethra, it goes to your bladder. Now, for females, orgasm will change in a sense that it'll be more difficult, it'll take a longer time to get to orgasm. But then again, ladies, sometimes that's not that uncommon. It feels different, it is altered, or they don't have orgasm at all. So, what can you do? Oh, before I go to the what you can do.

[00:43:55] One last thing before I forget. When you have a spinal cord injury or anything that affects your spinal cord, your fertility, in males, it may be affected. The sperm motility will slow. And because you have problems of ejaculation, then it'll be harder for you to get someone pregnant. For females, we are less complicated in that sense. We are not always complicated. We're less complicated in the sense. Normal menstruation is restored 6 to 12 months after, and fertility is normal. So, the whole point of this is saying that pregnancy is still possible. Okay? All right. Secondary challenges. I've alluded to this earlier because you have the problems with your sexual function, it just adds to depression, you have to consider fatigue. You already have loss of self-esteem.

[00:44:52] For some individuals who have really bad spasticity of their legs, I mean, even just starting sex is a problem because they... For ladies who have very spastic legs that go shut, you can't open them up, right? So, you need to talk to your doctor. I mean, if you have spastic leg, it's not just sex that's going to be affected. If you need to do perineal care, that's going to be a challenge. Loss of mobility is another thing. I mean,

missionary position is not going to be possible for individuals. You might have to explore and be creative. There's decreased sensitivity or it could be too hypersensitive. Stimulation could be too hypersensitive that it can be painful. What I tell my patients is, this is where foreplay is going to be your friend because you have to learn how to explore and be unafraid to explore other new erogenous or sensitive areas that can help you with arousal and pleasure. And also, lasting bowel and bladder issues. I tell my patients that, unfortunately sex is not spontaneous. You can't just throw somebody over the kitchen table anymore. You have to plan these things. I'm so sorry. I'm so bad. So, you have to take time. And you want to be able to enjoy it, right? So, if you need to go and make sure that your bowel and bladder is empty, please do. That's very important. Because the last thing on your mind is having a bowel or bladder or accident when you're in the throes of enjoying life.

[00:46:35] All right. So practical considerations. I mentioned some of these earlier. For those who have insensate skin or difficulty in sensation, you have to make sure you check before and after, because if you're too excited, you might get a scratch or injury or a pressure. You want to make sure that you didn't hurt your skin afterwards. There's always going to be a risk of sexually transmitted diseases, so please practice safe sex, and a risk of pregnancy. I didn't talk about autonomic dysreflexia over here. So basically, for those who have really high involvement of their cord, their blood pressure can shoot up with something that's... Something can trigger it like pain, if you're too backed up, if you need to cath and you didn't cath. Normally, if we find something that's uncomfortable or painful, the blood pressure should go down. But because if you have an injury from the chest up, that normal control may be lost and there's a danger of your blood pressure just going up and up and up. And it will not go down until you take out the offending or triggering factor. So, sex might trigger that. So just be conscious about that one. So, sex will health assessment. A few more slides. When you see your doctor, this is what I normally ask my patients. What's their general health, do they have any other conditions? For example, diabetes can affect with men's erection. Need to find out about that. What's their functional history? What are they able to do? Are they able to transfer? Do they have problems using their hands? What other health conditions do they have? Like spasticity. Need to do a bowel or bladder program.

[00:48:32] Some medications can affect your libido. So, think about that. And then mental health concerns. What are their medications? Do they have any other problems with sexual history before they got ill or before they got sick? And then for physical examination, that will involve doing a rectal exam, checking for sensation, checking for contraction, and checking for genital reflexes. I'm going to apologize again just to describe. And this is just for the ladies to be aware, so that they know that this is part of the exam. When we check for genital reflexes, so it might involve pinching parts of the vulva, the clitoris, or for the males, the penis. But remember, your physicians have to talk you through this when they do it, and they have to tell you what to expect. Okay? So yeah, just a little information. For treatment options for males. So, you could have medications like Viagra, you could have penile injections. There is a vacuum pump, which will help facilitate-- you pump on the vacuum, negative pressure, blood flows through, you're going to have an erection and they put a ring there. They have to be just very careful because you're not supposed to leave the ring for a long period of time, because that's going to be very bad for the penis.

[00:49:59] There's instillation of Alprostadil, which will help with the erection. Now, this is a penile prosthesis. So, this is implanted. There are two types. One is a pump, an inflatable pump, and the other one is a malleable one where you don't have a pump, but you just have to like... Like this, up, down, up, down. Okay, sorry. Oh, I'm so sorry. Then you'll have pelvic floor therapy. It doesn't work for all. What I find is that if you have some pelvic floor control, this is where it's going to help best. So, it's not going to be good for all people. Vibration and electro ejaculation. These are treatment options for males who want to pursue fertility, they want to have a child. So, this morning I was curling my hair and I swear I'm never going to look at my hair straightener the same way again. So, there are several models out in the market for to care, Viberect. The vibration will help simulate ejaculation. All right. So, this is can be done at home. Now, this is done in the clinic setting where

they have to put a rectal probe. Okay? All right. There. And then this is just to stimulate the ejaculation. But this is done in your doctor's office. All right. For treatment options for female. Okay. Self-stimulation. Okay? That's one. Number two, some vacuum devices.

[00:51:40] Unfortunately, I wasn't able to find a picture of a vacuum device because my laptop keeps on blocking it. Sorry, it's a work laptop. Vibrations. We live in a country where sex shops abound. So, vibrators are basically much mainstream right now. So different types of vibrators. There are like some vibrators that can be attached to the tongue. Medications. There has been one study on Viagra for females, but wasn't really that good. And then, again, pelvic floor exercises. So, women, your Kegels, remember Kegels? Okay. So, this will not work for everyone. It will work for those who have some pelvic floor muscle control. Oh, all right. And these are some of the resources. And I'll work with GG and the rest of the SRNA group for you guys to be able to get a copy of this slide with the resources. And I just wanted to bring this up, because you went through a whole lot of training and learning these past few days.

[00:52:54] You probably know more than a lot of your primary care physicians at this point with regards to your own health issues. And I just wanted to put it out there. So, this was a project that we did for the American Spinal Injury Association. And we have this webpage. It was meant for people who are not spinal cord injury specialists or neurologists dealing with RNDS. It gives information about how to care for people like you with problems with bowel, bladder, bone health, spasticity, pain. The articles here are free. And I put the link there. Please feel free to explore it because I think you're going to learn a lot from it. The articles are free. It's a set of 19 articles. And what is great about these articles is that they were written by a team. Yeah, I'm a rehab doctor, I love teams. So, it was written by a physiatrist, a person either physiatrist or a practitioner dealing with spinal cord injury or a neurologist, and a person living with a spinal cord injury, because we needed that input. What is so important to you that we need to get it across to your primary care provider? Yeah. That's a little plug. And that's it. This is the last. Thank you so much, and I hope you guys learned something today.