

Treating Long COVID - Breathing Techniques and Treatment

With Kelly Mitchell

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Steven Bruce

I am joined today by Kelly Mitchell, who is a respiratory specialist physiotherapist who's been in the NHS for 12 years doing just that, and is now working in private practice. Kelly, great to have you with us.

Kelly Mitchell

Hi, thanks for having me.

Steven Bruce

Kelly, one of the things that I've read about you on your website is that not only are you an over breather yourself, hence a lot of your interest presumably in respiratory stuff, but you also reckon that women suffer from this problem more than men. And I'm going to challenge you on that because you seem to think that women work harder than men.

Kelly Mitchell

I mean, clinically, we certainly see that more women present to us than men.

Steven Bruce

Are women weaker than men is what we're saying?

Kelly Mitchell

Oh, I don't know if that's the case. I think, one of the things that's been put forward as to why that's the case is that women's monthly cycles are obviously dominated by changing in hormone levels. And one of those hormones which changes is progesterone. And around day 21 of your cycle, your progesterone levels tend to peak. And what progesterone does, is it actually stimulates your respiratory system, so you end up breathing more. So once a month, women are exposed to a hormone, which actually makes them over breathe. And that happens during pregnancy as well. So as pregnancy continues, progesterone rises. So they certainly are exposed to something physiologically, which alters their breathing, which they have no control over. Does that mean every single woman has a breathing

pattern? No, absolutely not. But there is that monthly exposure to that, which does make you more prone to over breathing?

Steven Bruce

So two questions spring to my mind from there, how long does that extra exposure to progesterone last?

Kelly Mitchell

A few days, it slowly rises up and then tails off. So it does happen in a *audio problems* form. But the response that you have from that can go on for many days.

Steven Bruce

That was my next follow up was, you know, how long is the response to it? So again, the next part, the follow on to that is that, unless people are respiratory specialists, like yourself, or perhaps have followed the work of Leon Chaitow and others of that nature, they might not be quite clear what the meaning of the term over breathing is. Can you explain?

Kelly Mitchell

Yeah, I'm just going to put back a little bit. So breathing pattern disorders, is now what we're calling people who have altered patterns of breathing in some way, there isn't really like a definite definition that everyone's really happy with. But from my perspective, I believe that you have changes in your breathing, which create a set of symptoms, and those symptoms will vary from person to person. So it's a change in your breathing away from the norm, which will create a symptom set. When we talk about over breathing, I guess you're talking more along the lines of hyperventilation syndrome, which could be seen as more of an extreme version for breathing pattern disorder. So that would be that you are breathing in excess of your metabolic demands. So you're breathing more than your body actually needs you to breathe. And as a result of that, you can have physiological and biomechanical changes. And that is what creates the symptoms, which are from the breathing pattern disorder.

Steven Bruce

Okay, I think when we discussed this with Leon Chaitow, he talked about hypercapnia. And the effect on acidity, I think, within the blood, and on the production of nitric oxide. Are those all problems that you see in some of the people that come to you? Do you measure these things?

Kelly Mitchell

In my clinic, I don't, I do measure them in a clinical way. So I'll use things like breath holds to assess whether someone is sensitive to CO₂. But you can use things like end tidal CO₂ in clinics to assess what's happening to somebody carbon dioxide limits in real time. And also you can see how their breathing, so what their pattern of breath actually looks like. You can use arterial blood gases as well, but that's one moment in time. So actually, it's not always accurate because with breathing pattern disorders you do get fluctuations. So just because you have a normal CO₂ at one point, that doesn't mean that you always do have a normal CO₂ because you do change breath to breath. So yes, looking at things like hypercapnia, I personally think that that is only just one part of a breathing pattern disorder, though, you can have people who biomechanically are altered and they also have symptoms.

So people who tend to breath stack, or they have a higher residual volume in their chest. So they're what we call dynamically hyper inflated. So they tend to sit more with extra air in their chest, and they breathe on top of that, that also can result in a breathing pattern disorder and their CO2 levels may well be normal. So I think it's a bit more complex than just saying it's definitely a hypercapnia. In every single case, I don't think that's true.

Steven Bruce

So you talked about a number of things there, you talked about breath stacking, and you talked about high residual volume. But then you went on to say that can lead to a breathing pattern disorder, so they are not the breathing pattern disorder themselves.

Kelly Mitchell

Yes, they are. Yeah, they are. So the way that you're not having a full exhalation, that is part of the breathing dysfunction. So you aren't actually fully exhaling in a in an efficient way and then taking breath in on top. So then you have that dynamic hyperinflation as a result of that. And that's where our symptoms there come from, so people tend to talk in that situation, they talk a lot about not being able to get enough air in. So that's when you tend to hear that term air hunger.

Steven Bruce

Right. And I'm not quite clear what breath stacking is. But let's look at that one. What is breath stacking and what then symptomatically will a patient experience?

Kelly Mitchell

So breath stacking is when you have an incomplete exhalation. So what tends to happen is you breathe in and out, but you're not fully exhaling down into the residual volumes that you should be and then you take a breath in on top. So effectively, what you almost get is a stacking of breath on top of each other. And that's where that dynamic hyperinflation comes from. Sometimes it's called air trapping, or gas trapping. And you have people who tend to just hold extra air in their chest, and then they breathe on top of that.

Steven Bruce

Okay, then, what's the symptom? What are the symptoms which go with that?

Kelly Mitchell

Feelings of breathlessness. So people talk about dyspnoea at rest and on exertion. And sometimes with breath stacking, it might not actually appear until they're exercising, and then other people they may will have it at rest. So it's, you know, you can have it at different time. And when people talk about breathlessness in that situation, it's always really important to dig down and say, explain that breathlessness to me. So, how does it manifest itself? And what you tend to find is, it's not true breathlessness in each breath, you feel very short, you have an increased respiratory rate, it's that feeling of being unable to take a satisfying deep breath in. So what people tend to do is, keep trying to take a breath in to reach that point of satisfaction, and it doesn't always happen. And that's how they tend to describe those feelings of breathlessness.

Steven Bruce

Going back to the one you started on, the business of progesterone. What is that going to do to a woman? I mean, is it going to lead to breath stacking? Or is it going to lead to some other dysfunction?

Kelly Mitchell

So that will increase your respiratory rate and depth potentially. So it can lead to any of the dysfunction really, but what you might see more commonly would be your classic increased respiratory rate or hyperventilation syndrome. But just because of whatever the trigger is, that doesn't necessarily mean this trigger will lead to this dysfunction. It just means that you are open to have a change in your breathing. And how that manifests itself will vary from person to person.

Steven Bruce

Yeah. So let's take a case then, let's say a woman comes to you, she is at some stage in her pregnancy. And what would be your examination process in order to make sure you had considered a breathing pattern disorder with her or do you do that with everybody anyway?

Kelly Mitchell

All of my assessments would be the same for each person, regardless of what they're coming to meet with, I think pregnancy, you know that they're going to have the changes in their breathing because of their progesterone, but also because of how their diaphragm sitting with a baby underneath, they have less space. So would I be willing to jump in and start treating the breathing pattern disorder with somebody who's pregnant? Possibly not. And so I wouldn't necessarily assess and treat those people in the normal way because I'm not actually looking to really fix that dysfunction. It could be something transient. They're going through pregnancy as opposed to a long standing, breathing pattern dysfunction.

Steven Bruce

But imagine if, whatever the cause, if someone is suffering from a breathing pattern disorder, let's say that they are suffering from hunger or whatever, that could be very distressing emotionally, psychologically. Let's say that's happening in a pregnant patient who you don't particularly want to intervene physically with? Do you have advice you can give them? Or is it simply reassurance that this is perfectly normal, it's the pregnancy?

Kelly Mitchell

Oh, absolutely. I mean, I would do a full assessment of their breathing. If they were having symptoms that are causing distress. So the main things that we look at are rate and depth of breathing, so then we start to look at pattern and how they're breathing. So are they breathing up into their chest or diaphragmatically. As I said, we may not be able to get them to breathe well diaphragmatically, as perfectly as we'd like to if they were not pregnant, but it's something we could certainly look at. So getting them to relax certain areas or be involved in relaxation to improve their breathing, but also give them the techniques to manage the air hunger. So if they were having true air hunger during that period that they found distressing, there are certainly ways that we could help them to manage those symptoms.

Steven Bruce

Okay. Is that something you've got to be a specialist for or is that something that any physio or osteopath or chiropractor could learn relatively simply straightforward?

Kelly Mitchell

To learn to manage breathing pattern work?

Steven Bruce

Yeah.

Kelly Mitchell

Yeah, I think anybody who's got a good anatomical and physiological knowledge of the human body is well placed to treat breathing pattern work. The thing that I tend to like about it is that you've got that musculoskeletal element and the respiratory side of it. So I feel like it lends itself very well to those two disciplines best. So if you've got a musculoskeletal background, with an interest in respiratory, there's absolutely no reason why you can't learn how to manage the respiratory side of it and vice versa. So if I was to pitch myself, I would say I'm respiratory by background as my strength but my musculoskeletal knowledge is good as a physio you expect it to be, but my musculoskeletal is not expert as some of your, you know, chiropractic and osteopathic colleagues, you know, I would expect them to have a much greater knowledge than me, but my respiratory knowledge is greater. And there are different ways of learning breathing pattern work. So I choose to use the BradCliff method, which is a method designed by physio therapists in New Zealand. And their technique very much looks at breathing, musculoskeletal relaxation, it looks at the whole person. Whereas you have other techniques, such as Buteyko, which you could learn, and their focus tends to be a little bit narrower, a lot more focused on nose breathing, looking at carbon dioxide, and it doesn't tend to take in that whole musculoskeletal side of it. So there are different ways of approaching it. And there are different courses available for people to upskill in that area. But I think if you do have a good basis of knowledge, there is no reason why you shouldn't be able to go and...

Steven Bruce

I'm just waiting for the questions or the comments to start coming in now because I bet there are some people watching who are fans of Buteyko method, and they'll be saying, hang on, it's not any narrower than any other particular method of breathing pattern of disorder training. We can't do anything these days without considering the effect of COVID-19 on our patients. And we know it's a respiratory problem for so many people. How is it affecting your practice? And how are you dealing with it?

Kelly Mitchell

Yeah, so I started treating long COVID patients in August, so long COVID is everywhere now. And it's been accepted that after initial COVID-19 infection, people are left with symptoms, weeks, months, and now over a year after the initial infection. What I was noticing was actually a lot of the symptoms that were coming out with long COVID were very similar to those who experienced breathing pattern problems. So I started to look to see if I can help those people, particularly with breathing issues. So those who are talking about breathlessness, and all of the classic stuff that we tend to see. And what I've seen over nearly a year now is that actually the majority of these people are experiencing

significant disturbances in their breathing pattern. And once we start to rehabilitate them through that, their progress and forward to get themselves out of long COVID it's actually pretty good. I mean, I've had some really, really good results. Varied results, certainly varied. You know, I couldn't say somebody, oh, once we rehabilitate your breathing, you're going to be fine in six weeks. That's not necessarily the case. But for some people, they have just had a breathing pattern disorder left. And once we treat that they get better very, very quickly. Whereas others are much slower, but their progress with breathing rehabilitation has been that of a positive trajectory, which has been really interesting.

Steven Bruce

Was it What's your feel? On this, then it is, is the problem with with long COVID. And we've had this described by consultant some some weeks ago as being actually pretty similar to any other post viral disease disorder. But it's the problem with it that they have got into bad habits because of the problems of their respiratory system during COVID. What has it left them with physical physiological damage, which is preventing them from breathing normally.

Kelly Mitchell

And I would say I think the Harry's again from person to person. And my thoughts and theories are every single person who I've seen with long COVID was not with the sounds funny but was not in a good place to have got COVID in the first place, they were either stretched emotionally, physically, they were running on being nearly burnt out their bodies, whether that be the psychological effects, or the physical effects were not in a good place, or they were overtraining, they really were stretching themselves. And it almost seems to me that COVID was the straw that broke the camel's back in terms of how their body responded to it. And many of them are in sympathetically. All of them actually are in a sympathetically dominated state, they all seem very fight or flight, increased heart rates, they have autonomic dysfunction, and to varying degrees, whether that's full on dysautonomia, such as Potts or inappropriate tachycardia syndrome, or they're just struggling with things like anxiety. And those things that happen when you are in fight or flight and want to start to rehabilitate them, through breath, breath work, that helps to bring them into that parasympathetic state. And I think that that's what a lot of those those people do need, they need to learn how to call down that autonomic nervous system.

Steven Bruce

So how do you do it?

Kelly Mitchell

Again, it depends on how they're presenting. But it's all about restoration of breathing back to normal. And that doesn't sound that amazing, really, but actually, when you start to deviate from normal, you have significant physical changes as a result of it. So it is just bringing back people to normal rates of breath. And, you know, when you read textbooks, a normal breathing rate will go up to 20. And that's acceptable as a normal Actually, that's hyperventilation, a normal respiratory rate is around eight to 12. So it's making sure that we're bringing those people back down to normal rates. The next thing is depth what, when they had COVID, many people experienced terrifying situations, they were alone, they had significant respiratory symptoms, many felt like they couldn't breathe, and they were told not to come to hospital. Unless they were blue, they were told that and that was what many of them say to me. So it

was it was quite a scary time for them. So what they did during that time was start to take big breaths in. So then you end up with people who have continued in that pattern of taking huge breaths in very quickly or very deep. So we're looking at rate and volume and rehabilitating those things. And we always start in lying, because we need to just remove the postural effects that happens when you're up in lying. And then we rehabilitate them through static posture. So first lying, then sitting and standing. And then we look at things like movement and breathing thing and speaking and breathing. So I take them through all of those different steps to protect their breath.

Steven Bruce

So what progress Are you seeing at the moment? I mean, are you seeing more people coming in with long COVID? Or is are fewer now that we're getting more vaccinations done?

Kelly Mitchell

No, I'm seeing a lot of people still and we're going back to march 2020. So a lot of people that I'm seeing are still from very much that first wave coming through. Because many people don't get in touch with you until they've had symptoms for many weeks. And long over it is, you know, many weeks after the initial infection. And some people recovered actually okay, but then got a symptom set afterwards. So I think we'll be seeing this for a very, very long time going forward.

Steven Bruce

was an interesting thought, isn't it? We know from lots of experience in the past that 40 to take an unconnected example, if somebody if the press widely publicizes the suicide of somebody, then you will suddenly find there are lots of more suicides happening after that. I just wonder whether, similarly here, long COVID has been brought up in the press a lot. And I'm not suggesting people are making up the long COVID or deliberately getting it like they might commit suicide. But might it be the case that actually there's just as much of a problem from other viruses happen, whether it's flu or something else, but in the past, people haven't thought to go and get it treated months after the infection itself. Yeah,

Kelly Mitchell

I agree with that. To a certain extent, I think that people post virally always would have. And that stands out with the post viral illness. I also think the unique thing about COVID was, and I'm just COVID-19 are long COVID, we were bombarded with very, very negative messages. And that, you know, COVID is killing people in very, very large numbers. And it, it was a very scary time, it was unsettling, our whole lives socially, from a work perspective, were completely, you know, altered. And I do think that there is a psychological element to how people are recovering with it. And I'm seeing that quite a lot. I've had a couple of clients of mine, who've gone through the lightening process, and then their physical symptoms have alleviated. And we're

Steven Bruce

the lightening process.

Kelly Mitchell

So NLP, the neural neuro linguistic programming, and it's, and it's a way of challenging their thoughts and beliefs about what's what's happening. I mean, I've not been through it myself. So I don't know,

know about it in great detail. But actually, once they started to challenge their own beliefs about it, then physically, they did start to see improvements. And I don't think that saying that it's in their head, and it's made up, it certainly isn't. But I do think that when you're telling yourself long COVID is relapsing and remitting, I'm going to relapse and remission. Or if I do too much, I'm going to have these symptoms. And I do think that, you know, that may pay a part of it. So actually, in terms of our rehabilitation, I think it's really important that we're looking at that aspect and not just thinking this is all a physical response. It's very much intertwined.

Steven Bruce

Right? Okay. Yeah. I'm just reminded the reason I asked you about the lightning system is because I can't remember the name of the chapter, we have an osteopath on the show who was behind that lightning system. And if you can't remember the name either yesterday, as well as two or three years ago, so it's slipped my mind, I can still see his face. But yeah, but yeah, but that system is proving to have some effects. So it's been so effective.

Kelly Mitchell

Yeah, I've only had I've only had two clients that have gone through it. But I've certainly seen that they've improved that way. And also, I've had some clients who were very, very unable to move forward from what they went through, as I said, it was a very traumatic experience. And

Steven Bruce

and then we're looking for Yes, yeah.

Kelly Mitchell

And yes, they went through really, really traumatic experiences. And I've said to some people, learning to breathe again, and getting your systems calm down is very much part of it. But you won't ever manage to keep your system in a nice calm place, if you always have these negative thoughts. And you haven't quite worked through the traumatic process. So for some people, I am sending them down that route for psychological intervention to try and improve their physical symptoms that I'm you know, we all know mind and body is very, very linked. And I don't think Lancome is any different. Actually.

Steven Bruce

We've had a question of and finally getting the questions coming in now. So a Lawrence has sent in a question saying, as an asthmatic himself and someone who experiences breathing pattern disorders, is it representative of a brainstem disorder via the respiratory centers Do you think

Kelly Mitchell

I don't think is necessarily a, like a brainstem disorder, I think that what happens is you have altered breathing, and it is actually changed from a central perspective. So your, your breathing recenter is almost reset. And so rather than accepting a co2 of this initial body says, Well, you've been breathing like this for long enough now. So now we're going to keep you at this level, and we're going to make you breathe in this way. So you do have an element of it being reset centrally in some people, but I don't necessarily think that it comes from them. And then you have the cascading symptoms.

Steven Bruce

One of the questions that did come in on that on the back of that is what you just said was, is it your supposition, then that people you're seeing with long COVID already have some form of breathing pattern disorder?

Kelly Mitchell

Yes, it is. So most people when we actually start to dig back, and part of my physio therapy assessment is to look back because I want to try and find is not always possible, but try to have a look at common triggers in people's lives previously. As to why they may be experiencing these symptoms. It's almost a bit like detective work as it's all therapy. And one of the things that I've noticed when I dig back is actually they say, funnily enough, I had noticed that I was seeing a lot of You're learning a lot, or I really just didn't feel right. I just didn't think anything of it because most people don't think anything of their breathing. Or they had changes to their breathing, but it was almost subclinical. So they weren't having physical manifestations of the problem until now. I do actually think a lot of people with long COVID were poor breeders before.

Steven Bruce

So it's a sort of almost is parallels perhaps of a central central sensitization effect where you know, you get to a threshold where, where you don't have any symptoms and suddenly add in an extra problem and the symptoms actually manifest themselves. And you go POW has sent in a question, Angie, lovely to have you watching. And looking forward to talking to you in the near future on this show. Angie is an osteopath, who also teaches yoga and I'm reading your bio, it says that you got fed up with people telling you just to go and practice yoga. That's not that's not in any way to dismiss what Angie does. That is presumably to dismiss those people who give you poor advice, which is just go and practice yoga rather than do something specific. But Angie says that working with the breath, breath affects the nervous system. And it's a good there's a good evidence base for yoga, breathing practices for sleep, relaxation, anxiety, and so on. And also lots of research and lots of different breathing techniques. I'm sure we'll be seeing more of those. When we speak to Angie, I'm guessing it's on the 22nd at lunchtime, so it's next week. Corrine says have you found that your techniques can help people with long COVID who've lost this their sense of smell or taste.

Kelly Mitchell

By the time that people come to me actually a lot of people have passed that stage. So I've only had a couple of people who had residual issues with their teeth, their smell and taste. And yes, is the answer. They did start to get improvements with that. And they will chronically mouth breathing. So actually their nose was quite blocked. And it had all of you know that side of it as well. So once we start reestablished nose breathing and open up, they did have improvements. But yeah, usually with the long COVID group and at home, I get them. They are quite a long wait and done the way in. And that has usually resolved.

Steven Bruce

Right. Okay. How would you? How do you physically unblocked someone's nose? And I'm thinking lateral flow testing probably helps poke sticks into it often enough, but what do you do? What's your technique?

Kelly Mitchell

Okay, there's loads of different ways of doing it. I mean, number one, you have to do a good nasal assessment and try and work out what is actually causing the issue. So some people do have anatomical deviations that need to be changed surgically. Obviously, that's well out of my scope of practice. But if you don't use your nose, you lose it. And it is that classic, you don't use it, you lose it. So actually, what tends to happen is when you mouth breathe, your nose becomes chronically blocked. We also found that when you have a low co2, your nose is more likely to be blocked. So actually, once you start to reverse that your nasal passages become more open. But when you're using your nose, nitric oxide helps to open everything up to just using it will restore normality. Now if you're somebody who's got chronic sinusitis, or anything, which is causing those sorts of blockages that needs to be treated, whether that be through anti bio antibiotics, or sometimes we just use the sinus rinsing. And it's a really nice way to keep nasal passages quite clear.

Steven Bruce

Once you take issue with that, it's not a nice way to do anything, but it might be effective. Like squirting water up my nose, but I've done it just to see what it was like.

Kelly Mitchell

Yeah, it's not pleasant, I must say I do tend to warn people. And but that works really well. Or even just steam inhalation. Some people find that that's quite effective. Just to get on top of it. What we tend to find is that most people need to use those adjuncts at the beginning of breathing reeducation. But once they start to use their nose and they reestablish normal nose breathing, that they no longer need to use it. And there's a potato nose clearing method, which is also effective that some people so

Steven Bruce

yeah, and just to make clear what we're talking about there is actually one of those devices is called sinus rinse, I think isn't it and it's just a plastic bottle with a tube in it. You fill it with tap water and squatted up your nose and let it fall out the other side and then reverse the procedure. Yeah,

Kelly Mitchell

I mean it's it's got rock salt and bicarbonate

Steven Bruce

stuff in it. Yeah, yeah.

Kelly Mitchell

And you just pop that in I mean you can make your own if you were really excited about it so you can make your home home recipes of rock salt and bicarbonate of soda but yet it's the same thing.

Steven Bruce

And yeah, I know it's worth a try. I guess I'd lots of people talking about it. And there's the I want to say teapots, but there is a sort of a more traditional version of the same thing isn't there which has been recommended by a number of people in the past but basically it's the same principle just irrigate the

notes. What do we have? We have she towel has asked if you know if there's a link between cold and flu symptoms with that progesterone change During the menstrual cycle, oh, no, I, I don't know,

Kelly Mitchell

in what contexts, so it makes it worse. So makes you more likely to be prone to it.

Steven Bruce

There's no contact she still has on that question. But I'm, as you say, I'm guessing that if there is that change in progesterone, which changes your breathing, then it's going to affect whatever's going on. If you have a virus, I imagine it will have, you know, there will be a more significant effect, then,

Kelly Mitchell

as a result of too cold me, you won't be able to be through your nose, and then that's going to make you breathe more dysfunctioning. So, I mean, you could layer upon layer effective something, but it's not something that Yeah, considered?

Steven Bruce

No. Okay. Well, we've had a couple of comments about, you know, several things you've been saying Alexander, saying that he seems so many people generally with breathing patterns, due to lockdown, mostly presenting with upper back and neck issues, along with the resultant systemic symptoms like company tapit, like flu, like gi, sorry, like gi. So, with my eyesight, those comments over there are quite a long way from me, and I'm reading them at an angle. So if I have to struggle a bit to get the comments out, then excuse me for that. So that's, that's a Alexander's experience. And Rachel has said that she is really pleased to hear the psychological trauma element being discussed the way we were earlier on, because can we so often, maybe, maybe, let's say these days, but the psychological the emotional side of things has been dismissed, hasn't that's a sort of pull yourself together. And let's give you a drug for the physical symptoms. Absolutely. And

Kelly Mitchell

we must acknowledge that how we feel emotionally affects us physically. And, you know, I do look at things from a breathing perspective. But how we feel and how we breathe are interlinked. And they affect each other both ways. So it's really, really important that we address both of them. And I think that we've had brilliant leaps forward in terms of how we manage mental health and the mental health and the awareness. And it's all been very, very good. But I almost feel like what's happened is we've now gone physical health, mental health, and now they're two separate things. Actually, there's a space in the middle. And I think that we need to almost come back there. And from my perspective, breathing does that really, really nicely. And but it isn't, you know, when you have anxiety, especially with the breathing pattern disorder, isn't always due to a mental, you know, stimulus, trauma, etc, is because you've just moved yourself so physiologically, that you are now having those feelings of anxiety they are feelings of. And, yeah, so it

Steven Bruce

didn't it was probably the lightening process appears to have been successful. And I don't know any I don't know any hard statistics for its success rate or not. But but it does seem to bring together a psychological approach with a physical approach.

Kelly Mitchell

Yeah, Yes, I do. I think that that is part of it. And I do, you know, the way that we think and feel and the beliefs that we have all come from our thought processes, so if you are going to engage in a process, which helps you to interrogate them and analyze them, I do think that that's going to,

Steven Bruce

you know, help. So getting back to specifics, kay wants to know, if you recognize any, if you recommend any particular breathing exercises,

Kelly Mitchell

or pattern disorder, yeah.

And

Kelly Mitchell

it's very difficult to say about specific so what the, what I would say is that every single person has a unique and individual respiratory pattern. And our role as therapists is about trying to find that and then re establish it. So for example, some persons no more respiratory rate might be 12 breaths per minute, they may breathe, you know, in for x out for x, which is always longer, and they have a one second pause, and that may be their normal, other people may breathe in for less out for less than have a four second pause, I just think that it's really impossible to say, what you want to do is you want to make that 10 breaths per minute, you want them to do this, and this and this, because what works for one person won't necessarily work for another. So the way that I tend to like to do it is work within certain parameters. And when a person feels comfortable, and they're starting to get symptom improvement, that we're happy with that respiratory pattern. But yeah, that's how I tend to work but it is all about breathing through your nose and diagrammatically. So what type of things do I do, I really do just get people to breathe normally in lying to start with and show them what that is and get them to feel it and understand it, move it to sitting and standing. But then, in terms of exercises, I include other things to help initiate diaphragm strengthen patterns where I might use things like a straw to to encourage straw breathing. And that's really, really helpful especially at trying to keep that upper chest area still. And then a step further. I tend to use inspiratory muscle training devices to really get some strength and power into that into the inspiratory muscles. So we use lots of different techniques.

Steven Bruce

I'm sorry, I'm not in my studio, because in my studio, I've got one of those devices which we could demonstrate to people. But on the other hand that I'm quite pleased, I'm not having to demonstrate it to people live on air, because I find them actually, those some inspiratory training device and I find them not distressing. But they certainly get you quite concerned because you're struggling to breathe in, which is not an experience many of us have, are familiar with.

Kelly Mitchell

So what I would say is that I've been I've got another device right next to me, and there are different, there are different levels. So this is the power breathe, plot, which I tend to use. And this is a light resistance. But what I tend to use with my most of my patients, is the medic plus, which is the light, the really, really light version. So actually, it starts at nine centimeters of water, what I would say is, when you find it hard as

Steven Bruce

a resistance level, you're not asking people to breathe that in.

Kelly Mitchell

So that's pressure measured in terms of water. But if you're finding it very, very difficult, what I would say is you started to higher level and actually are you then breathing in a dysfunctional pattern. So the whole thing about respiratory muscle training is that you start people off at a level where they're able to breathe in a good pattern that has got to be because you will strengthen into the pattern that you're breathing. So if it's poor, and I can demonstrate good technique and bad technique,

Steven Bruce

if that would be helpful. We'd love to see that.

Kelly Mitchell

Okay, so good technique is obviously using your diaphragm to initiate the breath, I'm just going to move so you can see me a little better. So we put the device in our mouth, we have the resistance level up the sides, so you just set it to the right, right resistance. So a good pattern would be diagrammatically LED. So your diaphragm is starting the movement, whereas a poor pattern. And if I really put the pressures up, you have an accessory muscle pattern. So people tend to do this. They get the shoulder raise nothing diagrammatically. And it's just a big accessory movement and motion. And that's your strengthening into that pattern. So yeah, you've gone, you've probably gone too far into the pressures or your training with

Steven Bruce

Claire will tell you, she won't be surprised to hear that. But with my background, I just determined not to let the machine beat me back it up to its highest level and see what happens. The machine beat me Of course, which is even worse. That's the question Ron says can some breathing pattern disorders cause a swallowing of air giving some digestive systems symptoms, as well as burping and bloating?

Kelly Mitchell

Yes, absolutely. So you tend to see that quite a lot. So we talk about bloating, at your birth and gas, it can happen a lot, especially when you're breathing very, very quickly. When you have written patents or when you eat and drink if you're doing it, you're breathing really quickly, you are actually quite likely to swallow. So yes, it's really really common, we also see a lot of reflux, with breathing disorders, going back to inspiratory muscle training, there's now a lot of evidence to say that inspiratory muscle training, so strengthen up that diaphragm. Because your esophagus obviously runs through it, it works as a

lower sphincter. And if your diaphragm is weak, you are actually more prone to reflux. So we're finding that people who use inspiratory muscle training can get on top of that reflux symptoms. So it's

Steven Bruce

a really good person. And that's not not an avenue, which I imagine many would instinctively thought of either. Johnny has. Well, I want to know what you think about taping because Johnny has asked whether he knows where he knows where he is perfectly well during the day, even when exercising. But at night when he sleeps, he mouth spreads. And so he wants to know whether you've got any advice on that. And I remember some time ago, we have somebody who suggested taping.

Kelly Mitchell

Yeah, taping spine. So you take our big on tape, and you can certainly tape at night. And obviously the way that you tape is key, you don't want to really take your mouth shut. So if your body wants to flip into mouth breathing, you should be able to do it. And so one of the products on the market is Myo tape, which is recommended by Taiko and you have the tape that goes around the mouth but there's a slit in the middle. So actually, it's more about it, making your lips come together. So origin lip closure as opposed to tape across the mouth where you can't. Or you can just get some micropore and just pop it just in the center. And that was cool.

Steven Bruce

I was thinking this was another great opportunity for Tiger strike kinesiotape broad section of it right across the whole month. But we're not there is no The design is I close the mouth? It's to minimize the opportunity to mouth brief.

Kelly Mitchell

It's almost a bit like biofeedback, isn't it? You're just having a little bit of feedback there to say, well close it, close your mouth.

Steven Bruce

So answer the question about taping was mine, Johnny said, do you have any advice for mouth breathers at night? Is there any other thing anything else you think they can do other than tape?

Kelly Mitchell

is just about establishing normal breathing? And then it's looking at why are you mouth breathing? So is it positional, some people might need pillows to stop them rolling onto their back, because you do tend to drop into a mouth open position, and so side lying or prone if you're comfortable lying in that way. So try to avoid lying on your back if you can. And then I'm sure this isn't the case with Johnny. But people who are overweight and experiencing things like sleep apnea as a result of that they are going to be more prone to do that. So longer term looking at those sorts of things, which may or may be triggering you into that.

Steven Bruce

Here's a good predictable one for you. Christina wants to know whether wearing masks is making things worse.

Kelly Mitchell

She know I've heard so many different theories about why people are experiencing worsening symptoms with Marsan. So what I would say is yes, people definitely are. But why that's happening really, really difficult. So one theory is that wearing masks will trap a bit of co2 and it will it's not massive, but is re breathing that enough if you're already sensitive to carbon dioxide enough to give you symptoms, potentially, one of my physio, colleagues in Canada actually did an end tidal co2 with a mask on and didn't find any difference. So, you know, does that say No, that isn't the case. heat and humidity are actually triggers to increase your breathing. So when you have a mask on, it's hot and wet. So is that just triggering you to breathe more? So then you have symptoms? And then another one of the Briarcliff guys, he read somewhere that when you have a mask, you've covered the trigeminal nerve. So when you normally have that feeling of airflow in your face, you no longer have that. So actually, things that go alongside it. So I couldn't, what I would say is yes, I'm definitely seeing people having issues wearing face masks and seeing more symptoms. But the reason that this is happening, I don't know, is it a combination of all three? Who knows? or four or over?

Steven Bruce

Yeah, and and of course, there's a certain amount of hype on social media and elsewhere, isn't there to try to convince everyone that wearing a mask is a problem? And yet, you know, I remember at the start of the crisis last year, there were lots and lots of surgeons who were saying, hey, look, come on, we wear these things all day long, and we operate successfully. And so it's not it's not a problem for everybody. Else, the great question, I like this camillia, where does the straw go when you're breathing through that up the nose and the mouth.

Kelly Mitchell

So I always say this to people, I'm like, it goes in your mouth. And I know I've talked to need you to do it. But yeah, you do breathe in through your mouth, and it is just a normal straw, it's really helpful for helping people pull back on their volumes as well. So people that are really struggling with the big breath. But what it tends to do is the little bit of resistance that happens because of the small aperture is enough for you to have a little bit more feedback of that diaphragm and just helps you just engage a little bit more. So I don't get people to breathe through the straw for many, many minutes, it's more of just do three sets of 10. And just try and get a little bit of strength into that diaphragm. So you really are getting the brain muscle pattern going.

Steven Bruce

Brilliant. So, Kelly, thank you we are at the end of our time. Now look at this, if there's any takeaway messages from this, I think there's two one, make sure there's a slit in the middle of the tape if you stick it across your mouth and to demonstrate the straw up your nose. So hopefully that's been really useful to you. And Kelly, thank you so much for your time. And yeah, massive amounts of experience and knowledge that you've got to share there. I suspect that I might get questions about where people can do some respiratory type training courses. I know one came in earlier on and protocol pick that out of you after the show so that I can put it on the website so to refer people to the right sources. But that's it for today for you. So thank you for your contribution there. Thank you for watching.