

# Babies: Vestibular Development

*with Louise Bashall*

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## TRANSCRIPT

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**Steven Bruce**

I'm joined by Louise Bashall from The Body Compass in Bristol. She's a chiropractor and she specialises in vestibular rehab, but also in safe positioning for babies. Lou, fantastic to have you with us. How are things down there?

**Louise Bashall**

Yep, very well, thank you. Nice to see you, Steven, thank you for having me on.

**Steven Bruce**

Thank you. Just before we go on with this, you mentioned something while we were off air earlier on, you said that you've got a separate project to do with concussion going on? Can you just tell us a bit about that?

**Louise Bashall**

It's a project I've got with a colleague of mine. And we're looking at how do you know, essentially, there's lots of work currently on diagnosing concussion, which is fantastic. In terms of removing players from the field.

**Steven Bruce**

Are we talking football and rugby or other sports?

**Louise Bashall**

Any sport. Rugby is the big one. It's equally prevalent in football and hockey, individual sports as well, gymnastics, diving, skiing, as well as martial arts, there's a lot of concussion in martial arts as well. But we're particularly looking at working with adolescents. And what we don't know at the moment is, how do you know actually, when someone's recovered from a concussion? How do you know when it's safe for them to return to play? Because the adolescent brain is so different from the adult brain, it's very hard to compare one say 15-year-old with another 15-year-old, because the development is so different. Currently, there's a three-week blanket rest and recovery period. And at the end of the three weeks usually they'll say how are you feeling, do you want to go back? And if you're a sports keen adolescent, you're gonna go, yeah, I'm ready to go. So, we're looking at working out some objective measures to be able to provide whoever has to make that clinical decision with some objective data to be able to assist them in the bigger picture of how well they're actually recovering.

**Steven Bruce**

Well, interesting. If you're up for it, maybe we could talk about that separately on another occasion?

**Louise Bashall**

Yeah, that'd be lovely.

**Steven Bruce**

But we're going to talk about, we're not going to talk about vestibular rehab, we're going to talk about putting babies in safe positions, apparently. Your expertise in this stems from obviously, your chiropractic training.

**Louise Bashall**

Yeah, this is something which I became very interested in. So, I had a practice, I started back in 2000 and we did a lot of work with pregnancy and with babies, and it's just, I don't know what other people's experiences are in practice, but through the years you were in practice, we very often go off and learn all sorts of different things and you don't necessarily quite know why you do them. But they make sense to you at the time that you do them. And then over time, for me, what's happened is they've all sort of come together and everything finally made sense, which is why I'm interested in the vestibular rehabilitation side of things. But this is some work I did about five years ago, which was looking at babies and positioning for babies. So, one of the common problems we had with parents bringing their children in was that they have plagiocephaly, which is the flattening of the head, that goes on. And so, what I found in practice was that parents were very anxious about putting their children on their front. So, you know, back in 1991, Peter Fleming, who's a pediatrician, brought in this Back to Sleep program, which is a brilliant program it cut down SIDS by about 40%, very profound effect on that.

**Steven Bruce**

That's Sudden Infant Death Syndrome?

**Louise Bashall**

Yes, Sudden Infant Death Syndrome. So that was radically decreased, which was great. But what was missed in that message, and it is in there, if you look at the original paperwork, it says back to sleep, front to play. But because of its association with SIDS I think the message got lost, that actually your baby needs to go on their front, but parents, particularly new parents, first child, just associated putting their child on their front with there's a high risk that actually they're going to die, which is a great shame. And also, a newborn baby doesn't play, so back to sleep, front to play, your newborn baby isn't gonna play for a little while. But when you're looking at the development of the vestibular system, it's really important that you do put a baby on their front.

**Steven Bruce**

I know there's a big difference between sleep and unconsciousness. But of course, being on your back and unconscious is a very dangerous position to be in for an adult. And it just makes me wonder whether there's any risk to a baby being on their back either from tongue falling backwards or through choking on saliva or whatever?

**Louise Bashall**

Yeah, not that I know of at all. I think most babies do sleep on their back and I don't think they suffer with choking.

**Steven Bruce**

I don't know why that suddenly occurred to me.

**Louise Bashall**

It's something which has come up when they talked about babies vomiting. Is it safe for them to be on their back? But I think as far as I know that hasn't been an issue at all. So, this is a series of photographs I've put together to try and give parents some more tools basically to be able to move their baby around. And what happens very often is that by the time a baby is about three months, you get a lot more interaction with the child at that time. But in that first month, it's incredibly important to start to get some development going on with the vestibular system, so the whole of the extensor chain. And you're not going to actually see that manifest until much later. So normally, from a developmental point of view, when you look at- so going back to all the stuff you learn and you don't know why you learn it, one of the subjects I loved at college was embryology and I'm probably a little bit out there, most people don't enjoy embryology. I loved it, it was totally fascinating. So, when you look at the embryological development of the vestibular system, it's actually developed in utero by day 18. And once the baby's born, the vestibular system is comparable to an adult 10 days postnatally. And then it's fully developed by four weeks. And what happens between that 10 days and four weeks is actually there's a lot of development of the utricular and the saccular portion of the vestibular system. Which I thought was fascinating, because a lot of people will say that, my kid won't sleep unless I put them in a car. And the utricle and the saccule are very much dealing with translation, as opposed to rotary type movements. Up until four weeks, that's what's happening there.

**Steven Bruce**

Have you formed an opinion on why that would affect their ability to sleep? Why lateral movement, rather than rotational?

**Louise Bashall**

Up to four weeks, I think you're just stimulating that part of the vestibular system by driving them, by getting that translation movement through there. Actually, last night, I was just doing some reading around this. And I came across a very interesting research paper, which was looking at the effect of gravity on the development of the vestibular system. So, when we think about the vestibular system, as an adult, which, as we now know, with babies is developed by four weeks, just to sit and do nothing, each of the vestibular apparatus are firing off a million and a half action potentials a second to do nothing. As soon as you start to move, then you start to get a change in the balance and an increase in the output there. But this research was looking at the effect of hypergravity, so development in an increased g force environment, and the effect of hypogravity, so this is studies they've done on rats on the space station. So, we're going off on a little tangent here. I hope that's alright. But that was really, really fascinating. And one of the hypothetical overlaps of that is the hypostimulation of, if you're not putting a baby on their front, they're not developing the extensor part of their vestibular system. And what effect that then has on all of the extensor chain, the extensor musculature, which isn't just musculoskeletal, that then carries on up. And if you look at what's happening neurologically up, further up into the brainstem, and looking at how the eyes are moving as well,

because they're all part of the same homologous columns and linkage that's going on through the brain in the spinal cord.

**Steven Bruce**

Do you reckon there's a long-term implication of that? Or is it something that can be caught up later on as the baby develops?

**Louise Bashall**

Well, it's interesting, again, actually I was just thinking about normal milestones. And I've noticed that and again, I'll be interested to know what the people's thoughts are on this, but I have noticed that it used to be you walk at one, so if we just take walking at one. I think that a lot of kids now are walking much later, it's normal, 11 months, 12 months, a little bit later. Those developmental windows have knocked on. I think anyone who's been involved in working with kids with delayed development, you're always looking at what happened. Did you hit those milestones in the first year? And the learning that we have under one year, so all of this musculoskeletal, neurodevelopmental learning that we have that goes on through there. Those learning patterns do affect you physically but there is, again, just reading through different pieces of research, there is an association with cognitive learning as well. So, if you're not learning those physical skills, yes, I think it is going to affect the cognitive development.

**Steven Bruce**

We've had a question from someone who's anonymous. Well, I suspect they're not anonymous, but they've asked what you mean by the extensor part of the vestibular system? Could you run through the anatomy a little bit more slowly?

**Louise Bashall**

Okay, sure. So, if we look at the balance, when I talk about the vestibular system, what I'm describing is the vestibular apparatus in the inner ear. So, within the inner area, you've got the three semicircular canals and then you've got the utricle and the saccule, which does translation. So, the canals do pitch, roll and yaw, and the utricle and the saccule will do translation in these planes here. And it's the equivalence of how all the information from there is interpreted by your brain that tells you where you're moving. So, all of that information comes into your brainstem into the vestibular nucleus, which is a big integrator, the vestibular nucleus. And it doesn't just process information from the vestibular apparatus, although the vestibular apparatus gives you about 70% of information within that bigger picture, the other two parts that feed into there come from your visual system and the rest of it comes from your body. So very often when we think about balance, as a therapist, you might say, Okay, well, someone's balance isn't very good, I need to give them more exercises, more balance exercises and do some work on their feet and so on. But actually, information that's coming from your body, in terms of its impact on your balance, isn't that great. If you want to change someone's balance, you need to look at all three systems and work out which system to work with. And from the body, the biggest input comes from the neck. It's got rich, rich, rich innovation, straight up into the vestibular nucleus. And actually, your feet, I think your feet are huge in terms of your balance.

**Steven Bruce**

That's very personal of you, commenting on my feet,

**Louise Bashall**

Yeah, feet are a big part of it, very important.

**Steven Bruce**

Lou, just for the non-pilots in the audience: pitch is flexion and extension, roll is lateral bending and yaw is rotation.

**Louise Bashall**

Yeah. So, pitch, roll and yaw. So that's the vestibular system. So, when we talk about the extensor system, it means that, if you imagine lying on your front and lifting your head up, what will happen is you'll stimulate the extensor canals, the posterior canals, taking your head back and associated with that, you'll then start to stimulate all of the paraspinal muscles all the way down through the spine and down through the legs. And there's a pattern of firing that happens reflexively as you move your head. So that's, that's what I mean by that. And that's interesting, because that also comes into when we look at primitive reflexes as well. So, a lot of primitive reflexes relate to head movement and vestibular function.

**Steven Bruce**

How old does a baby have to be to hold his or her head up, to actually extend the neck?

**Louise Bashall**

How old they have to be? Well, that's really interesting again. So, the work that I do is, as I said at the beginning, is an integration of lots of different things that I've learned and the courses which have probably most profoundly influenced the way that I work is what the work of the Carrick Institute in America. So, the ACNB, the American Chiropractic Neurology Board, they do a huge amount of work on this. So, a lot of what I'm saying is stuff that I've learned from there. The other place, which has been very interesting in terms of child development has been the Prague School, who do dynamic neuromuscular stabilisation. So, going back years ago, Vojta, Janda and Lewit, particularly Vojta and more recently, there's a guy called Pavel Kolar who does dynamic neuromuscular stabilisation. And one of the things that I learned from them was that we're born with these primitive reflexes, but we also have these postural responses as well, some of which are driven by gravity. But I do remember working with them and they had a newborn baby which had their head turned to one side, and they just covered the face on this side to cover away the light, and the baby will actually lift and turn its head and turn towards the light. And this is a newborn baby so we are born with these amazing reflexes. So, a baby can actually lift and turn its head in the same way that if you're breastfeeding a baby, a baby will actually be able to turn its head to find a nipple without there being just the suck reflex.

**Steven Bruce**

Do you think we get a little bit too concerned about the fragility of babies necks then.

### **Louise Bashall**

And I think that, again, anyone that's worked with babies in practice will know that parents will quite often remark, you pick a baby up and you're working with them, the baby will very often just relax and feel very comfortable. And I think a lot of that is to do with the quality of touch or quality of pressure. So, I think understandably, new parents with a first newborn baby, they can be a little bit tight with the way that they hold and touch the baby. So, a lot of it is to do with how you actually hold and touch the baby. In terms of fragility and worrying about the neck, again, that's where some of these photos that I've done will help there, in terms of just different ways to actually be able to support the head and the neck as you're lifting a baby and turning a baby and moving a baby around. You can't just kind of let it lag behind, you do need to look after it, for sure.

### **Steven Bruce**

Yeah, I was reminded by somebody recently, I think was one of our shows it and they were saying that, we, we perhaps are a little over sensitive to it. Because when you think about the forces that go through a baby's neck, when it goes through a forceps extraction, for example, there's a lot of force being put through the neck. And I'm not suggesting we would choose to do that if we had to, it just emphasises the neck can put up with quite a bit.

### **Louise Bashall**

It can do but I think in an ideal model, in a kind of a perfect world model, if the baby is presenting correctly down through the pelvis, the way the head and the neck is stacked actually the neck is very well protected. And again, if you've done a lot of work with babies and children in practice, you'll probably have quite a few babies coming in who have had a forceps delivery and benefit from having some work done on their neck or some cranial work.

### **Steven Bruce**

That neuro muscular development work you were talking about a moment ago, is that being conducted specifically on babies or is it across a whole spectrum?

### **Louise Bashall**

The work that Kolar is doing now is, it was looking at taking developmental movement patterns in babies and then translating those into adults. So, they use it as rehab. So, again, one of the reasons I got into doing the vestibular work was that, you can have someone on your on the bench and you can work your magic on the bench., but if they stand up and they still don't know where they are in space, it doesn't make sense to me. So, I always start with, let's get your balance system sorted out and then we can build on a really stable platform underneath. And so, they were working from the point of view of rehab, and saying, Well, if you can't breathe properly, so breathing, if you look at the way babies breathe, if you can't access your core in the movement patterns. So, the developmental movement patterns usually fire up deep core stabilising systems. So, they take people right back to very early movement patterns and just build them back up. And he works with lots of very high-class athletes as well, as much as people who have just got acute low back pain.

**Steven Bruce**

Yeah. We have another question this one from Nita. Nita says, how does the vestibular function adapt in babies with torticollis?

**Louise Bashall**

Oh, that's a really good question. Well, I think you'd have to think about why they have the torticollis. So quite often, I think about chicken and egg, in terms of what's causing what. I know that there's a lot of torticollis, which can be to do with sort of fibroids or lumps that actually occur within the SCM. A baby came into me with that, I'd go through the usual musculoskeletal side of things. I don't know, to be honest, I don't think I could say definitively that it's because there's a mismatch of what's happening with one part of the vestibular system rather than another. But it would certainly be something you could look at using, to rehab you could start using some head and eye type movements and tracking, you could you could bring in eye tracking type exercise. Depends how old the baby is in terms of whether they can actually track.

**Steven Bruce**

Obviously, it wouldn't be, I'm just thinking off the hoof here, it wouldn't develop in the same way as a baby who didn't have to go to college, but I just wonder whether those elements of the inner ear, they aren't dependent on the neck necessarily, the baby being held and moved by its parents is going to stimulate all three elements of pitch, yaw and roll, isn't it?

**Louise Bashall**

It is. But I'd really like to think on that a little bit more. I think it's a really interesting question. But I think there are different reasons, different causes of torticollis, there are different types of torticollis. So as that recovers, it would definitely be worth doing a lot more work on there. But I think, as a therapist, you'll be doing that anyway, in terms of just getting the child to be able to move their head the other way, the way the child is held, to encourage them to be turning, turning the head the other way, as well. So I think that rehab side of the vestibular system there would be happening intuitively, rather than, right, we really need to work on the horizontal canal on the opposite side to encourage movement there. But I have done work with babies like that before, in terms of holding them and actually just doing some rotation work, but more to get them to try and actively move their head as well.

**Steven Bruce**

I've just been reminded, actually, that if anyone is interested in primitive reflexes, we've got Charles Beck from the US coming over for one of our evening shows on the fourth of next month. And that will be free to anyone who lost money on his courses when the ones in Ireland were cancelled. So we're trying to make up for the money that they lost as well. I don't know if you know Charles Beck?

**Louise Bashall**

I've not come across him. No, but it sounds very interesting. I'll have listen in, for sure.

**Steven Bruce**

I gather he's a big name in primitive reflexes Tamsin has asked how you assist a baby whose neck is stuck in extension?

**Louise Bashall**

Well, it's I think it's hard to say in isolation. I tend to look at the whole body in terms of what's going on. What's the best way to describe that? So, I had, where I work, I work with a number of different practitioners here. And one of the practitioners here is an orthotist and he works with babies with plagiocephaly. So, they produce these helmets for kids, which when I first came here, I was like, ooo, I'm not quite sure about that. But the more I've learned about, it is absolutely fascinating. And I think that it has a role for it. So, he had a baby with plagiocephaly, he wanted me to look at because it wasn't quite what he would work with the helmets. So rather than just looking at the neck in extension, it's looking at what's happening elsewhere within the body. So, with this baby, for instance, he was incredibly tight down through the pelvis and the sacrum and that region down through there. So, if you have a baby stuck in extension, yes, you're going to check through to see what's happening suboccipitally with the upper cervical complex, but also there needs to be in context with what's happening elsewhere through the body. So, I'll always unwind what's going on physically within the fascial system as much as mobilising things actively and passively as much as I can.

**Steven Bruce**

Okay. Michael's asked, in fact, I'll bring up that picture again, which is the first of your little series. He says, if you're encouraging babies to lay on their front, get some tummy time as it were, how long do you recommend that people do that for with their babies?

**Louise Bashall**

Well, it's going to depend on age and it's going to depend on tolerance as well. In my experience, the more you put a baby on the front, the more they're used to it and the more they're then able to engage with being on their front - you can't see me, I'm waving my hands around - because as they develop, it's easier for them to. So, a newborn baby got shoulders up here, basically. And in the first few weeks that then comes down. And in the first sort of 4 to 6 or 8 weeks, these come down and the arms will come forwards which will then enable them, if they're on their front, it'll enable them then to push up and to be able to have a look around and see what's happening. Usually, the best way of doing it is to build it in as a regular routine through the day. So quite often, you would usually get people to do it once they've changed the nappy, put them down on the floor, on something comfortable, something soft, not too soft but just so they're not on a hard floor. So, put them on a on a blanket or a towel or something whilst you go and tidy up, wash up do those various different things. And I think the guideline is usually around to try and get up to sort of an hour, an hour and a half a day. That would be great. If you can get it up to that. That'd be fantastic.

**Steven Bruce**

So, an hour and a half in one go?

**Louise Bashall**

No, no, no, no, just segmentally through the day. So little sound bites here and there, just to gradually build that up and what I was hoping to do with these photographs, again there are different photographs of different ways you can carry the baby so rather than always holding a baby up over the shoulder, you can carry the baby on their front, which again gives them the opportunity to experience that sort of prone time and just holding themselves up in that position as well.

**Steven Bruce**

So, we've had a comment coming from somebody saying that they like the idea that we're going back to that business of vestibular encouragement, if that's the right expression. They like the idea of the parents being involved in that in some way trying to sort of help those things develop. It's just a comment that they've sent in.

**Louise Bashall**

Yeah, well, actually one of the things, one of the other pictures there, there's one on play and I think firstly, carrying a baby on their front is a great way of getting more stimulation. But looking at the play section there, just putting babies on your knees, across your knees, so that they're able to look up is great. And quite often, again with the back to front picture up there, if you're able to put a baby on a level where you're then able to meet their eye contact, then that's actually really stimulating for them. So, eye contact with you. You are, if you're the parent, you are the most interesting thing to your baby and they just will love being able to look at you and engage in, I call it conversation, it is conversation, engage in conversation with you, or a toy would be absolutely fantastic. So usually build it up to about an hour and a half a day, but try and get little sound bites when you can. Changing the nappy's a great one because that happens fairly regularly.

**Steven Bruce**

Ruth has just sent in something telling me that the tiger in the tree position is great for babies and I haven't the faintest idea what she's talking about.

**Louise Bashall**

Tiger in the tree, I think I'm right, tiger in the tree position is when you hold the baby like that and you've got their legs down here and just holding on to their tummy just here. Didn't you do that when you were a kid climbing trees?

**Steven Bruce**

Well, you know, it was a long time ago when I was a kid. The photographs that we showed, this series, they're all on your website, aren't they?

**Louise Bashall**

Yes. I don't currently do very much work with babies at all. But I really wanted to try and find a way of making these photographs more available to other people, because I think, they're not a perfect resource,

but I think they're a great resource to be able to give to parents. I've got two different aged babies there. Just to give parents some confidence in terms of being able to put a baby down, how to support the head as you carry them and bring them up, and different holding positions, and then also some different options there for different playing positions as well.

**Steven Bruce**

Okay, so the first one we've talked about is giving them some time on their tummies. This one, I can't quite see what's going on in this down up position.

**Louise Bashall**

What happens is on the website, if you go into that picture, what happens then is it's how you pick a baby up when it's lying on its back. and then and then bringing it all the way up. So, there are different ways of, if a baby's lying down, we talked earlier about protecting the head and the neck with lifting a baby up. So, you can either just put both your hands up underneath the skull and just bring the baby up this way. Or often it's easier just to roll the baby on to the side and just put one hand underneath their head and then bring them up that way. So always supporting the neck.

**Steven Bruce**

And then we've got this up down one. What does that one mean?

**Louise Bashall**

So that's going the other way. So, if you've got a baby up, you're holding up through here, how do you put them down without the head extending as you come down? So again, just maintaining support of the head and the neck through that movement and bringing them down. And there are just different ways of doing that.

**Steven Bruce**

Okay, and what's the importance of wrapping them up, swaddling?

**Louise Bashall**

Some babies love being swaddled and some babies don't. So, it's just finding what works for your baby. So this is just a series of photographs of how you fold the whatever you're swaddling them in, the blanket, how you fold the blanket in, where the arms are, where the blanket comes around to hold them in that position. It can be really good for babies who have a very prominent sort of Moro type reflex, who are very jumpy, and they just love just being held and contained. And it can make them just feel very secure and very settled. So that's a series of photographs there of how to wrap them up into a little bundle.

**Steven Bruce**

Are these things not taught by midwives or other normal health, I say normal, you know, the conventional pathway?

**Louise Bashall**

Possibly. I think it varies, I think it midwives these days, don't get a lot of time with mothers once they've had the baby. I can't remember exactly what happens but usually once, you know most babies are now born in hospitals, there are very few or fewer home births. And so, the midwives tend to hand over fairly quickly to the health visitors. And they're just very busy. I don't know that they necessarily have a huge amount of time. If you're well, if the mother is well and the family is well and the baby is well, then they're not going to spend a lot of time there. I guess the NCT might do some work with it, I'm not sure.

**Steven Bruce**

It does seem surprising to me that all these things are not being taught immediately after delivery to new mums. But obviously, you've been seeing people in practice, who clearly are not confident or familiar with these techniques.

**Louise Bashall**

Yeah, absolutely. But I think just going back to the tummy time side of things and why that's important is that what happened with the Back to Sleep program was the incidence of SIDS went right down. But what's happened is we've got a huge increase in the incidence of plagiocephaly. So plagiocephaly, being the change in the shape of head, because babies spend time lying on their back, and all newborn babies will have a preference to lie the head, one side or another. But if they're only on their back, then what can happen is they start to get deformation of the skull. And that can, if it's mild, it can resolve and in practice, if you've worked with babies and children, and done cranial work, you'll have seen babies with that, but sometimes you'll get babies in and they've got quite moderate to severe plagiocephaly. And that doesn't go away, easily. And you were talking before about the vestibular system and learning. I'm just going to look at my notes, I looked at this the other day, but the research that came out with plagiocephaly was, particularly with moderate to severe plagiocephaly, is they did a long-term study up to school age. And so, the children who had moderate to severe plagiocephaly, all scored lower in the cognitive and physical tests. And I remember ages ago I was putting out some emails to try and get the reference for another piece of research, which was that no child with plagiocephaly scored higher than average on cognitive function, whether that's probably moderate to severe. So, it does have an effect on the child's physical and cognitive development. Which is a hard conversation to have with parents who've got a newborn child as to why it's important to put them on their front. But I think there is a huge need for that to happen.

**Steven Bruce**

There's obviously a well-established causal relationship between sleeping on the front and SIDS, do we know what causes sudden infant death?

**Louise Bashall**

No, it's still not definitively known. There was an association with bedsharing, alcohol consumption, smoking was a very high one. And so those were big associations, which is still, parents now are always still advised, don't bed share, don't bed share if you've been drinking, don't smoke with the children. But other

than that, no, I don't know the details beyond that. But it did make a profound difference, the Back to Sleep program.

**Steven Bruce**

So, more questions for you. Rebecca says, what if you let the baby sleep on their tummy? What effect will it have on the vestibular system?

**Louise Bashall**

Well, for me, it's not so much whether they sleep on their tummy, because when you're asleep, your muscles are relaxed, so your vestibular system isn't actually doing very much. So, I don't think that's necessarily going to have much of an effect on it. It's more important that a child is on their front during the day when they're actually awake.

**Steven Bruce**

Right. And obviously, as we've just discussed, being on their front is not good for incidence of SIDS.

**Louise Bashall**

Well, that's when they sleep. It's fine for a child to be on the front when they're awake, in terms of SIDS.

**Steven Bruce**

No, no, I only mentioned it because Rebecca was asking about babies sleeping on their front. Ruth says she remembers that her baby loved sleeping in a soft sling and would often end up with his head quite far back, even with the sling supporting his neck. Is that bad?

**Louise Bashall**

Yeah, I'd say it's not ideal. But there are always times when children will have will be carried in a sling or something will happen. I think if it happened all the time. It wouldn't be an ideal position that I'd recommend, but it's going to happen from time to time. But usually, you want the head and the neck supported. Our heads are very heavy, a baby's head is very heavy. And I think if you imagine what it'd be like for yourself to sleep with your head hanging backwards, it's not ideal.

**Steven Bruce**

Yeah, and there's another problem with babies isn't there? And again, I'm thinking to my first aid skills here, that actually if you want to open a baby's airway, you don't extend the neck like you do in an adult, because actually, that compresses the windpipe and actually obstructs the airway. Obviously if they're conscious, then it's less of a problem, but they have less control, so they might not be able to overcome it. Somebody's had a fascinating observation here. I don't know who sent this in but they say that it appears if you want any information from your midwife or health visitor, you actually have to ask for it. But when you're a new parent, you don't know what to ask about.

**Louise Bashall**

That's interesting. I think it'd be interesting to see what the NCT do. They're still a very big, big organisation, and putting out a lot of information there. But again, in terms of being able to access all different levels of society, it would be nice if there was more general information out there.

**Steven Bruce**

Nita has said, is it true, if newborn babies are put in water, they are able to float because the primitive reflexes are not dominated? Parents like to take children to the swimming pool to teach them to swim. Sorry, that didn't come out very eloquently.

**Louise Bashall**

No, that's fine. It is interesting. And my son's 20, so it's a little while since I've been through all of this, but there is an aquatic reflex isn't there? So, if you put a baby underwater, it's not going to breathe in, so it's not going to drown. Whilst it's still got air in its lungs.

**Steven Bruce**

I find you have to hold them down for quite a long time.

**Louise Bashall**

So, they're safe from that point of view. I do remember the Prague school did the DNS, the dynamic neuromuscular stabilisation, team weren't that keen, it was interesting, they weren't very keen on the baby swimming type thing. And actually, in practice, I always find it interesting when people say, Oh, can I go swimming? Just normal patients to get fit or to get strong and quite often I'll say to people, the problem with being in water is you've got no firm surface to generate stability from so if you put your feet on the floor and you push your feet into the floor, you have a firm surface on which you can then generate stability from. When you're in water, there's nothing, it's a slippery surface. So, it's quite hard to generate core stability there. And their argument was exactly that with babies, is that when a baby's lying on the floor, it's got points of contact with the floor and with that it's going to start to generate stability. And if you're interested in reflexes, a lot of their work is really based on reflex locomotion. So, the various points on the body, which, as a baby develops, that it has contact with on the face and all the way through and that's what, it's pressure on those specific points, that then creates the reflex movement patterns that we see in babies as they develop. So, going back to the water, they've got no point of contact there. So, but it's probably a small thing, a small detail, I wouldn't say don't do it, but if you wanted kind of the perfect developmental scenario, it probably isn't the perfect one.

**Steven Bruce**

As long as you mix it with normal surroundings, you'd probably be fine. Lou, what's that, you mentioned it's a great resource. Is it a resource accessible to parents or only to healthcare practitioners?

**Louise Bashall**

And sorry, which, which resource was that?

**Steven Bruce**

The dynamic neuromuscular?

**Louise Bashall**

It's not, it's purely for, as far as I know, it's purely for practitioners, in fact the series of photographs that I took, are extended an extended version of a one-page handout that I got from them. I thought it was a really useful resource, but it was very poorly shot. And it wasn't a very rich visual material to be able to give to people. So that's why we put together this series of photographs. To make it more accessible.

**Steven Bruce**

I was trying to call up them, but I went the wrong way in my slide deck. That's that series of photographs here?

**Louise Bashall**

Yeah, exactly. So, within each of those different ones, there's a whole series of photographs based on the headings,

**Steven Bruce**

If that's a resource for practitioners, where do they go?

**Louise Bashall**

Oh, so if you just go to my website, and I think under what I do, it says Babies and Balance, there's a little spiel on babies and balance and then the link at the bottom says "can I put my babies on my front" so that is a resource for practitioners but equally, you're really welcome to share it with parents, definitely share it with parents, so they've got access to it. But it's one of those things where they do need to click into it to find the details.

**Steven Bruce**

And your website is as thebodycompass.com. To be honest, if you google Lou's name, Louise Bashall, and put in body compass, it will come up top of the search. Probably if you put in body compass, it'll come pretty close to the top of the search as well.

**Louise Bashall**

Yeah, if you put my name in, there are a few body compass things out there. So, if you put my name in as well, it'll definitely come up.

**Steven Bruce**

Nothing you've said sounds particularly controversial to me. But I am reminded, as we talk, I've been reminded as we talk, that you have to be very careful about giving advice to mothers, if it looks like you might be saying something that a midwife or other health care visitor wouldn't have said or if you're perhaps operating outside your area of therapeutic expertise. Is that a concern here?

**Louise Bashall**

The only piece of advice which I wouldn't be saying, the only the only grey area there, is putting babies to sleep on their front, which we're absolutely not saying at all. Because that will be completely contrary to any advice that any healthcare practitioner will be giving you. And all we're saying is make the most of ensuring your baby does have time on their front because it's incredibly important for their development.

**Steven Bruce**

Ruth's back in with another observation. Ruth has said that the NCT is a fabulous organisation and gives you so much of this type of information, but you have to pay to join the classes, apparently.

**Louise Bashall**

Yeah. And that's what I was saying a minute ago, it'd be lovely to make this information available to all socio-economic levels, rather than just those who can afford it. But how we do that? I don't know. I mean, obviously, we could talk to the health visitors. And I used to work quite closely with health visitors, but they're incredibly busy people, they're not just dealing with newborns, they're dealing with, I can't remember what age they go up to. But they've got a lot on their plate. So, I'd be interested to hear if anyone's got any ideas as to how can we as physical therapists interested in working with babies and looking at optimising their neuro development, how can we get this information out? Is there is there a kind of another avenue, which we could perhaps look at using collaboratively?

**Steven Bruce**

Interesting. And I guess, as many people have said, on previous shows, that actually building that relationship with the midwives and the health visitors, is actually quite important, because they haven't got the time to run through a lot of this, but they probably welcome some sort of participation with practitioners who have got the expertise.

**Louise Bashall**

Yeah, definitely. I mean, if you're interested in working with babies and pregnancy, then definitely build a relationship with your local midwives and health visitors, because it's really, really worth it. And they're a very, very interesting and good bunch of people.

**Steven Bruce**

Speaking as a practitioner, who's tried to avoid any contact with babies and very small kids. I think actually, my wife would probably say, I tried to avoid all contact with them, even when my own were quite small. But speaking as somebody who doesn't treat babies, how much training do you think one needs in order to offer advice of the sort that you've been covering here?

**Louise Bashall**

Well, obviously, from your experience as well, you need to want to work with babies, there's more going on than just seeing an adult because you're treating the whole family. It's not just the baby, you need to build a relationship with the whole family. When I first started, one of the things you could do when I first started

was, I just ran a colic clinic with three of the health visitors. So, I just had a separate clinic on a Friday afternoon and I didn't charge very much money, but it just gave me the opportunity to spend a lot of time with babies and spend a lot of time with parents that otherwise I wouldn't have been able to have easily. In terms of training, yeah, there is some within the chiropractic profession. I know what courses there are available there. But I don't know what else there is for other practitioners. But most organisations do have professional paediatric societies. So, I'd definitely contact them and definitely do some courses.

**Steven Bruce**

Lou, that's been brilliant. Thank you very much. Kind of you to give up your time. I think you've also now volunteered for two further sessions because we will have to talk about vestibular rehab and we're going to talk about concussion at some point. We'd love to have you back, if you'd be prepared to give up your time.

**Louise Bashall**

Yeah, it's been a pleasure, thank you very much.

**Steven Bruce**

You're very welcome. It's been a great pleasure for us as well.