Appendix: Factors influencing decision making of physical therapists regarding intervention needs

Factor identified	ICF-CY code and description	Quotes	% of therapists[1]
BODY FUNCTIONS (BF)			
ROM of the neck	B7101: Mobility of several joints	Often we can see infants who will just have a lack of strength or of active range only, but there are infants who will have a difference in passive range and this will have an influence. You will want to see them more quickly [...] but there is a huge difference between active and passive. If an infant has passive limitations versus active limitations, it is really rare that we will interspace follow-up as much.	Rot-100% LF-98% Flex-26% Ext- 23%
Reflexes	B7502 : Reflexes generated by exteroceptive stimuli	Depending on the age, you want to know if there are some persisting reflexes. If you have your protective reactions, postural reactions and righting reactions.	38%
Alertness	B1103 : Regulation of states of wakefulness	If you have a good vigilance state. The alertness of the child.	56%
Sensory problems	B260-265 : Proprioceptive and touch function	For infants that have sensory problems, [...], that is part of our neuro exam as well.	Not assessed
Strength	B7300 : Power of isolated muscles and muscle groups	Muscle imbalance. Then *(after ROM)* I guess the next big thing is that we also try to look at the strength. General strength of the neck muscles.	Rot-98% LF-93% Flex-19% Ext-30%
Tone	B7355-7356 : Tone of muscles of trunk-all muscles of the body	Or infants with axial hypotonia. When you are sure that it is kind of fortuitous and that it is not explained by a neurological problem, I would feel more comfortable to let them go with an exercise program.	69%
ROM of other joints	B710 : Mobility of joints	And joints' asymmetries. [...] You have to be careful that the shoulder on the side where the child is having fixations that the gleno-humeral range is complete. [...]The same for the hip.	16%
Oral-motor (Breastfeeding problems)	B5100-5105 : Sucking and swallowing	Problems with suction, history of weak suck. [...] Even if it is resolved, if there was a time in the neonatal period where there was important feeding problems. It is not always a good sign of neurological maturity.	50%

[1] Percentage of therapists who considered this factor as having a great or very great impact on their decision-making

BODY STRUCTURES (BS)			
Muscle mass	S7104 : Muscles of the head and neck region – 2nd qualifier = 7 qualitative change in structure	Generally, when you have a fibromatis colli you pull your hair out because you know it will be hard. So, it is sure that this will increase your frequency. Cause I've seen kids who have a significant hematoma [...] and their range isn't too bad but I've seen others that have no big hematoma and their range is pretty bad.	78%
Muscle tightness	S7104 : Muscles of the head and neck region – 2nd qualifier = 4 aberrant dimension (shortening)	Do you have capital lateral flexion? Is it more the scalens? [...] So I feel that with time we have to get to these details. The upper trapezium, we often forget about it. The first time I see an infant it is not rare that they have retractions in their upper trapezium.	Not assessed
Plagiocephaly	S7100-7101 : Bones of cranium-face	So you know that they are at risk of deteriorating those kids. [...] Once the plagio is installed it is like trying to hold an egg standing, the infant always goes back into it. Cause most of the times, not most but a lot of the times, that's the parents' more pressing concern, the shape of the head. Rather than my baby can't turn one way versus the other.	73%
ACTIVITIES AND PARTICIPATION (AP)			
Head tilt	D4155 : Maintaining head position	I tend to look at the tilt because sometimes you will get the limitation in the rotation and stuff but the tilt isn't quite as bad as others that are really cranked to one side.	83%
Postural alignment	D415 : Maintaining body positions	I explain right away to the parents that this will have an influence on posture. Until the age they are standing you look at the influence of a torticollis on posture.	85%
Global motor development	D410-415-420-450 to 469 : Changing basic body positions; maintaining body positions, transferring oneself; walking and moving	On rare occasions you'll have more than just a torticollis and you may be concerned that there is something that is going on with their development or their quality of movement [...] you'd keep more an eye on these patients. Some of the developmental issues that may go along with torticollis.	93%
Visual tracking	D110 : Watching	And the eyes influence so much on head rotation that for some you just block the vision and the eyes are coming back to the midline and they are able to bring back their head. Yes it is sure that if you don't have visual contact it will take longer.	59%

ENVIRONMENTAL FACTORS (EF)			
Direct environment	E1150 : General products and technology for personal use in daily living	Car seats, swings, this and that...there is too much verticalisation, too early on. Whether it is in the little chair, when they are feeding, breastfeeding, we try to show them how.	Not assessed
Handling and positioning	E410-415 -440 : Individual attitude of immediate/extended family members and personal caregivers	You want to verify parental habits, look at the influence of those habits on what you see in the child, this is essential. I look at how the parents handle the child, how they do their carrying, how do they do their feeding, that type of thing. How is the child positioned at home?	88%
Awareness of the problem by parents	E410 : Individual attitude of immediate family members	And then you get the next group that say: '' the only reason I'm here is because my pediatrician said there was a problem and I don't really see a problem''. The latter family and the plagio or torticollis is severe, then you are thinking that you have to educate these parents on the problem so maybe you would see them more frequently.	85%
Parents' ability to perform exercises		It is important to try to see how the parents are able to generalize this [home program and advice] to their everyday life. The reaction of the parents with me, with the child, the ability of the parents to do the exercises.	88%
Parental anxiety		If it is a stressed out parent who can't even handle coping with the everyday life with a newborn, and just changing a diaper is a big thing, then adding on an exercise program is too much for them. Then those parents you would see them more frequently as well just to get them going kind of thing.	63%
Parental motivation		Yes it can make them more participative if they say I worked hard and I had results I will continue to do the exercises. I'm going towards improvement.	85%
Parental coping strategies		And sometimes the parents just can't cope.	Not assessed
Parent-child interaction		Or just the chemistry that was between the child and the parents.	63%
Parental understanding of the problem		And sometimes, to make the family realize the needs of the infant as well because some families don't see it necessarily.	95%
Parent' mental state		And the other example is [...] post-partum depression [...], we'll have to see each other often!	73%
Parents who are fearful of moving their baby		You have some parents that are able to stretch them, and you have parents who are not even able to touch the head before going in the opposite direction.	80%

Parents' capacity to collaborate		Ask the parents if they are ready to come to the appointments, to which level they are able to collaborate.	83%
Family network	E310-340 : Support and relationship of extended family members-personal caregivers	I feel like we don't always have with us the person who is taking care of the baby the most at home. Not always. And this is important. I always question about who is at home. Apart from the mother obviously who is at home during the first months. But sometimes there is a grand-mother who is caring or a father who is often present. So I often invite these people. Or a baby-sitter. (...) I ask if this significant person can be there at least once so that I can teach them.	77%
Role perception of the physical therapist	E450 : Personal attitudes of health professionals	I think our role is more to assess and see what needs to be done and then to assist the parents in doing it at home.	Not assessed
Experience of the physical therapist		Those are all things, speaking from someone whose been working here for 2 ½ years, at the beginning I found that a lot harder to come up with those things versus now that I've seen a multitude.	
Personal factors of the physical therapist		Why would we do it differently? **(readiness to change)** X talked a lot about this in his course. **(knowledge)**	
Other professionals' attitudes		Because we were saying often we get them later because the pediatricians reassure the parents and then Oops it's a little too late. Because I think the philosophy is also still Back to Sleep and you know regardless of the head shape and so what not.	
Available resources	E5800 : Health services	But it is always a question of how to deal with resources versus the needs. We try to find ways to be more efficient but if we could multiply ourselves, we would do so. There is limited time unfortunately.	
Type of workplace	E5801: Health systems	In fact, I work in the home care assistance program which is a bit different. I feel that Community Health and Social Centers should play a great role in that *(prevention)*.	
Protocols, accepted way of providing services	E5802 : Health policies	Canadian Pediatric Society has changed their recommendations because their recommendation were Back to Sleep only and that's it and that's fine they still have that but now what they are saying is alternate the head sides and they are also really pushing play tummy time. Our policy is usually once we get the referral there's a delay of what? 2 weeks?	

PERSONNAL FACTORS (PF) (NB no codes in ICF-CY for this category, for associated health conditions ICD-10[46] codes were used)			
Age at presentation	_____	We are stuck with a torticollis at 10 months that is way much harder to treat than if we would have seen it at 2 or 3 months. [...] And that's a little harder to address because they've had a few months of being in a specific posture and the muscles get a little tighter.	88%
Baby's response to exercises and baby's personality	_____	How the child responds to us and to their parents. - I think the personality of the baby because if the baby or the child, if you put your hands on their heads and the baby starts screaming, the parents are going to have a really tough time carrying out the home program.	Response to exercises 88% Personality/ Irritability 49%
Prematurity	P07 : Disorders related to short gestation and low birth weight	Premature babies. A premature baby who is disorganised.	37%
Complicated birth	P01.7 : Foetus affected by malpresentation before labour P03.2/3 : Foetus affected by forceps/vacuum delivery Others	Relating to history, I would add infants with breech presentation. If there's any complication during the pregnancy, positioning in utero, sometimes the child is positioned a certain way, how the birth went, any problem with that, if the baby required any type of instruments for extraction such as ventouses or forceps, anything that could potentially lead to any type of injury at the neck area, if there was excessive pulling, any type of prolonged labour[...] I had infants with a low APGAR score but which ''recover'' quickly so the baby had no follow-up regarding this but I like to know about it so that I can make a closer follow-up.	Birth com-plication 51% APGAR 7%
Associated medical health conditions	Q65 : Congenital deformity of hip Q66 : Congenital deformity of foot P92 : Feeding problems of newborns Others	Those with more important medical problems. Family history of orthopedic conditions. Because we get to one year of age and we see foot problems. Any associated hip and foot deformities as well, as they are sometimes associated with torticollis. If you have gastroesophagial reflux I am not sure it will influence your frequency but it will certainly influence the torticollis. Bronchodysplasia in premature babies. But in fact it was an infant who later had a diagnosis of Autism Spectrum Disorder but this kid was not accepting my hands on his head, on him. I had to work with my hands on his mother's hands.	Musculo-skeletal problem 76% Other medical condition 63%