No. 1, November 2015

GONGE
INSIGHTS

River Stones and Stability Training

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The theme of this Gonge Insights is static balance, and how River Stones can be used in training children who have difficulties with stability. There are three types of balance: **Dynamic balance, proactive balance and static balance.**

Dynamic balance: Dynamic balance is when we move and keep our balance at the same time. We balance on a supporting surface. The larger the supporting surface, the easier it is to keep our balance. Acceleration and speed of movement also help us to maintain our balance. We all recognise the situation in which, by accelerating just as we are about to fall, we avoid falling altogether. When we accelerate, our entire vestibular system helps us to maintain our balance.
Just as we are about to lose our balance, we often react in order to avert a fall, for example, flailing our arms in a reflexive attempt to regain equilibrium.
Cycling requires good dynamic balance. If you watch a child who is learning to ride a bicycle, you will note that the child's balance is better when the bicycle is travelling at speed, whereas the whole process is more difficult and requires better balance when the child is cycling slowly.

Proactive balance: Proactive balance is the ability to predict what you need to do to maintain your balance a split second, before you do it, e.g. we know precisely how much tension and elasticity to apply in our legs, when we jump up from the floor and we know how much is required to gain equilibrium, if we land on a cushion or another wobbly and uneven surface. If we misjudge the movement, we land heavily or clumsily or lose our balance and slide off the cushion.

Static balance: Static balance is the ability to hold a position, i.e. when we stand on one leg while putting a sock on the other foot or when we hold our body in a certain position for a longer period of time, e.g. while working at a desk.

When all three systems are coordinated, we move elegantly and smoothly and our bodies work optimally and efficiently with no unnecessary tension. When playing and moving, all three types of balance are coordinated. In effect, each type of balance exerts strong influence on the other two. Children may sometimes have problems with one or more types of balance. For training to be effective, it is important that the therapist analyses the weakness and exercises the type of balance the child finds difficult and, at the same time, exploits the child's own resources.

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Case:

Mark, a very active boy, aged 5 years. He has always moved around a lot. He can ride a bicycle well and is good at running and boisterous play. But he literally can't stand still. He falls to the ground. He falls from his chair at mealtimes. He is unable to stand on one leg. When seated at the table, he rests his head on the table. When playing with cars on the floor, he lies down and rests his head on his upper arm instead of sitting.

When asked to complete a motor skills trail at my clinic, he is through it before I have finished instructing him in what he has to do: Quick as a flash, he is through it, jumping and running at a great rate of knots. He finds dynamic balance easy, he has good proactive balance, but static balance is difficult. I praise Mark. He's a good boy, but I explain we have to try something more difficult as I get the impression that he finds it difficult to move slowly. Mark nods. The adults have always chided him: take it easy, slow down and relax. Maybe Mark doesn't know how? Because when he does relax, he falls and loses his balance.
Now we have a common goal: I will help Mark to master what he finds difficult, i.e. slowing the pace. I will teach him how to move slowly. In professional terms, he has to learn static balance and physical stability.

I bring out the River Stones and ask Mark to stand on a high stone in the middle. Small River Stones in different colours are scattered around the high stone. I ask Mark to put one foot on a stone of a specific colour. The other foot must remain on his "base", the high River Stone.
Each time I say a new colour, Mark starts with both feet on the high River Stone and then he chooses which foot to use to rest on a smaller stone of the correct colour. This exercise slows Mark down. He has to make a special effort to keep his balance, when both feet are on the high River Stone and then allow for the difference in height, when he has his feet on stones of different heights. This exercise helps train static balance. After he has had one foot on a coloured stone, Mark must remember to return both feet to the middle stone. This encourages him to reduce speed even further and is yet more challenging. Mark chuckles every time he forgets to return to base and moves directly from one low River Stone to another. We laugh at his mistakes and I praise him when he concentrates and remembers to return to base before choosing a new River Stone.

I can make the exercise more difficult. I can delay the process and take my time when choosing a new colour. The slower I am, the more challenging the exercise for Mark's static balancing skills. I can also change the degree of difficulty by alternately choosing a stone that is close to the high base stone and one that is behind it or by switching from left to right. I can also make it more difficult still. I tell Mark that he cannot decide for himself which foot to use, but that he must use his right and left foot alternately.
If Mark was not able to keep his balance during the exercise or was unable to wait for me to dictate the colour, a more simple game would be to lay all the River Stones in a random pattern and ask Mark to stand with both feet on the stone I ask him to.
It is important that I match the child's level, give him or her challenges and a simultaneous sense of success and mastery. After only a few minutes, Mark no longer makes mistakes. He masters the game. He succeeds in slowing the pace and keeping his balance.
We agree that I give him five more colours and then the game will end.

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