What is the Difference between Muscle Tone and Muscle Strength?

Have you ever been told that your child has low muscle tone? Has a doctor or therapist written this on a report? What does it mean? Is your child weak? Do they need to exercise more? These are some common questions that parents ask when they are told their child has issues regarding muscle tone. In this article I will briefly describe the differences between muscle tone and muscle strength.

What is muscle tone?

Muscle tone refers to the resting condition of the muscles. At rest, a muscle should have just enough tension in it that it can move easily if the brain sends it a message to do so. For example, if your child is playing catch with a friend, normal muscle tone will allow your child to react when the ball is thrown by lifting arms and positioning hands at just the right time to catch the ball. Normal muscle tone insures that the body is ready to move at any time. It also allows the body to make small adjustments to posture and balance. In addition, normal muscle tone helps the muscles hold their shape at rest and insures that normal blood flow and nerve conduction can occur.

How does this differ from muscle strength?

While muscle tone describes the condition of muscles at rest, muscle strength describes the muscles in action. Muscle strength is defined as the amount of force a muscle is able to produce against some form of resistance. Climbing trees or arm wrestling the kid next door are not the only activities that require your child to use muscle strength. Different types and ranges of muscle strength are required every day to do everything from participating in sports to lifting a toothbrush to your mouth.

So how does muscle tone affect muscle strength?

Since muscle tone affects a muscle’s readiness to move, normal muscle tone will insure that a muscle will be able to move with the appropriate amount of force when it needs to. Abnormal muscle tone may cause the muscle to move with either not enough force or too much force. Muscle tone, therefore, directly affects muscle strength.

My child has low muscle tone. What does this mean?

Low muscle tone, or hypotonia, means that the muscles do not have enough resting tension to allow for normal movement. Children with low muscle tone may appear sort of “soft” or “floppy”. They may be slightly slow to move their bodies when they need to and may have
difficulty maintaining their posture and balance. Children with low muscle tone often slouch over their work and may have trouble positioning their upper bodies to complete table top activities such as writing or coloring. They may also have difficulty participating in physical education classes or playing games at recess.

High muscle tone, in contrast, means that the muscles have too much resting tension. Called, hypertonia, the muscles of a child with high muscle tone may appear tense or may “pop out”. You may see small muscle spasms when the child is resting. When the child moves, his or her muscles may react with too much force at first, causing the body to over-react to the action needed. Children with high muscle tone may frequently drop objects or knock things over as they move. They may hold writing tools very tightly or may rip open food packets with too much force, causing spilling.

So how does this affect what my child does at school?

If your child has low muscle tone, he or she may experience difficulties initiating movements to complete required tasks. When muscle tone is low, the muscles around the neck, shoulders, and trunk of the body cannot make the small adjustments needed to keep the body upright.

Your child may slouch at his or her desk, creating difficulty seeing the teacher or instructional materials. A child with low muscle tone has to work harder to keep his or her balance while sitting or standing, making it harder for him or her to lift his or her arms to write, draw, turn pages, or other activities. Handwriting may be large and sloppy, and your child may need extra help with simple tasks like tying shoes or opening milk cartons. Your child may come home feeling tired every day and may just flop down on the couch, rather than wanting to go outside and play or do anything physical.

What can I do to help my child with low muscle tone?

To help your child gain the postural control he or she needs during the school day, have your child participate in activities that focus on what is called “core strength”. This actually means the ability of the muscles of the trunk to hold the body upright against the resistance of gravity. There are many activities that children can engage in to help increase core strength. Here are a few examples:

- Have your child do exercises that focus on the muscles of the trunk of the body. Bridges, push-ups, sit-ups, and planks are examples of these. You may want to do the exercises with your child to model the exercises for them. Simple yoga workouts may also help your child build strength.

- Have your child sit on an exercise ball while watching television or playing video games. Make sure the ball is the correct size so that your child’s feet touch the floor when they are sitting on the ball.

- Allow your child to lie on his or her stomach across the exercise ball. He or she should use arms to
hold up the upper body while the ball supports the pelvis. He or she can do a puzzle or play catch with you while in this position.

- Encourage your child to participate in sports that provide a total body workout. Swimming or martial arts are also good for improving core strength.

Does my child's low muscle tone mean that he has a disability?

Low muscle tone can occur as a part of a larger condition, such as Down's Syndrome. However, it can also occur in children with typical development. Low muscle tone does not mean that your child has a larger disabling condition. If you are concerned about your child's health or suspect that your child has other problems in addition to low muscle tone, then certainly consult your child's physician or therapists.

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