



# How good are your muscles?



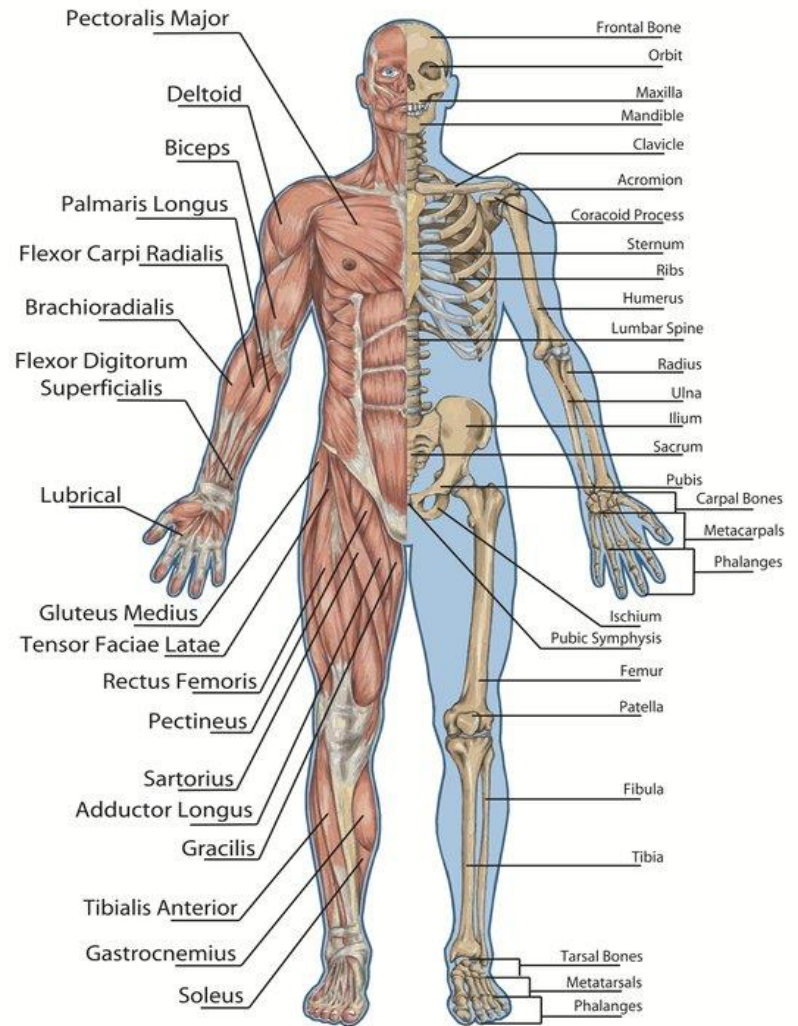
A workshop designed to help you support your children  
presented by the HASP EYFS group

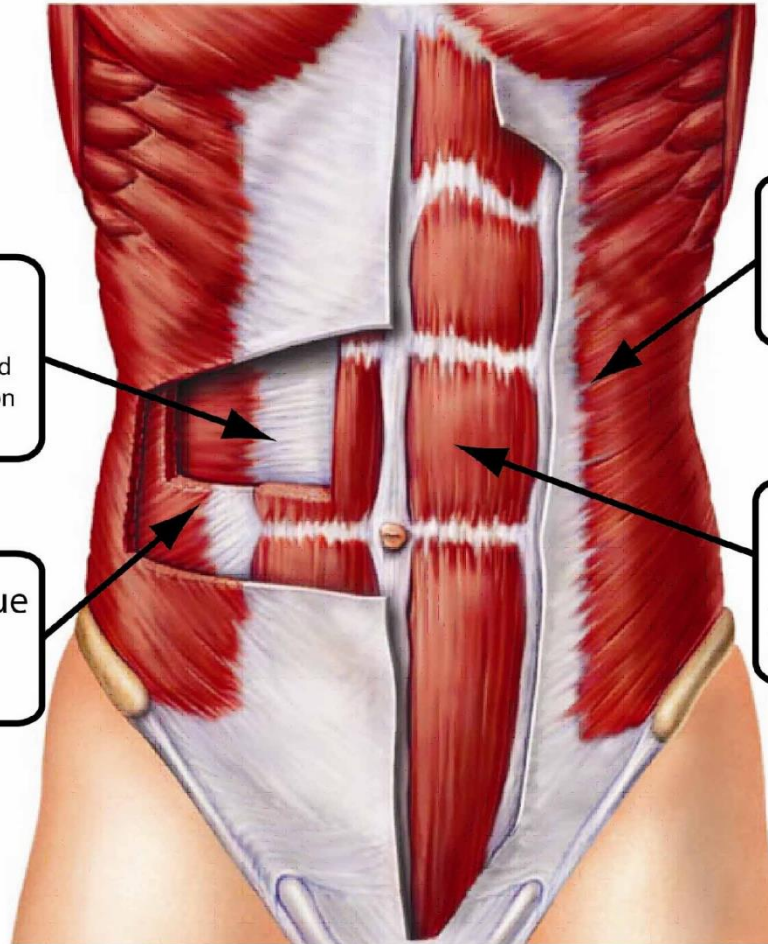
# Aims of this evening

- To find out more about the muscles needed for writing
- The ways we develop children's physical development which in turn helps them write
- Ideas for helping your child at home

# Did you know?

- 700 muscles in the body
- 43 muscles used in writing





### Transverse abdominis

Located under the obliques, it is the deepest of the abdominal muscles and wraps around your spine for protection and stability.

### Internal abdominal oblique

Located under the external obliques, running in the opposite direction.

### External abdominal oblique

Located on the side and front of the abdomen.

### Rectus abdominis

Located along the front of the abdomen, this is the most well-known abdominal. Often referred to as the "six pack."

# Components of the Core



- Deep Lumbar spine stabilizer muscles
- Abdominal muscles
- Muscles of the lower and middle back
- Hip muscles
- Thoracolumbar fascia

Kibler, W.B., Press J. and Sciascia, A. (2006) The Role of Core Stability in Athletic Function. Sports Med 36 (3): 189-198 [\[full text\]](#)

# What is Core Stability?

- Core stability is the coordinated effort of the deep muscles of the trunk, pelvis, hips, abdominal muscles and small muscles along the spinal column.
- These muscles contract together to create force used to hold the spinal column in alignment.
- The strength of these muscles is less important than their endurance and the co-contraction of the muscles to provide support.
- Since these muscles must stabilize the spinal column during all movement they must have good endurance with enough strength to counter forces placed on them during extreme activities.
- The muscles must be equal in strength and contract in correct proportions to maintain the proper posture of the spine during all activities.

# Core Stability and Strength

- Benefits of core stability training:
- Improved balance
- Improved joint and body stability
- Improved posture
- Increased core strength
- Reduced risk of injury



# What is my child's core stability like?

Watch your child during a ten minute colouring or writing task.

Do they lean on their arms or body on the table?

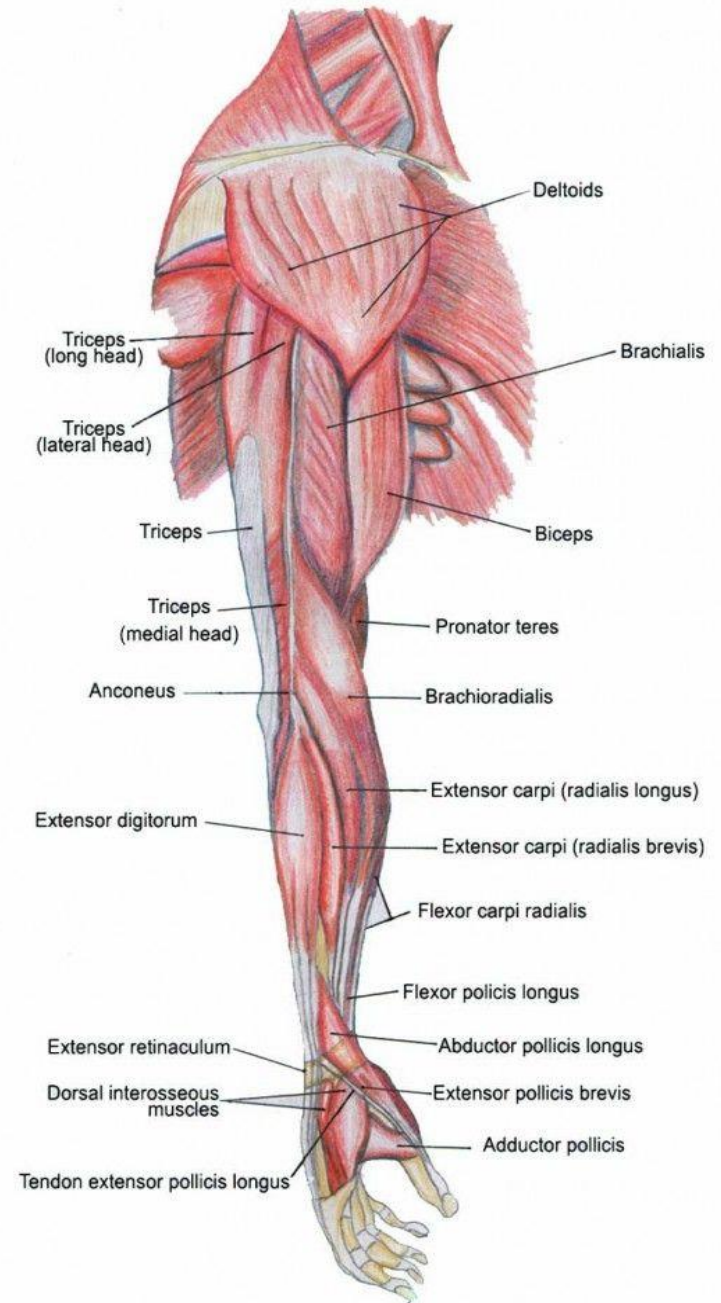
Do they rest their head on their hands?

These could be signs of weakness with their core stability.





- Strong core strength and stability is needed in order for strong co-contraction of the muscles around the shoulder joint. This is necessary to provide a supportive base in order to enable the steady and refined movements of the hand that are required for writing.



# Importance of the shoulder joint

Being able to control a pencil depends on stability of the shoulder and arm, and strength and dexterity of the hand and fingers.

Many muscles around the shoulder work together to hold the shoulder joint stable. When writing, we use very slow, well controlled shoulder movements. If a child has poor shoulder stability, then they cannot hold this joint stable. If this joint is loose, then fine motor control needed for writing is impossible to achieve.



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A child has problems with shoulder stability if they cannot hold themselves in a hands and knees position or locks the elbow joint in this position. They may brace their arm against their side when engaged in a fine motor activity

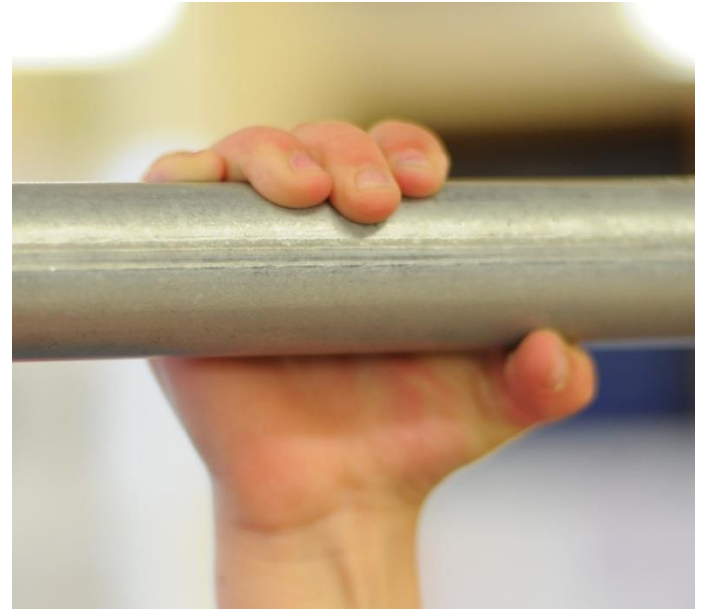
# Ways to help shoulder stability

- Work in pairs and stand opposite each other. One child draws a simple picture in the air and the other child has to guess what it is. The children then exchange roles and the other child draws. Encourage the child to play with games in the quadruped (hands and knees) position e.g. children work in pairs and each child has a straw and one very small ball between them. They are positioned one metre apart, each behind a line. The object of the game is to blow the ball over their partner's line. They must remain in the hands and knees position.

## Did you know?

When your child is having fun exploring climbing equipment and apparatus, they are developing skills ready for writing?

- Climbing equipment is the perfect place for children to develop a stable core. The core muscles are the many different muscles in the abdomen and back that work together to support your spine and hold you upright. Muscles in the shoulders and hips also form part of the core.





- A child's hand is a powerful tool for learning. With their hands they can control the world around them, build and create all that they can imagine, and express himself, first in gestures, then with scribbles, and eventually with the written word.

Parents know the importance of fine motor control -- especially when it comes to handwriting

# In Order to write my name

1. The upper body must be strong enough to hold the body in an upright standing or sitting position.
2. The shoulders muscles must be strong enough to control the weight of the arm, and flexible enough to rotate freely to position the arm for writing.
3. The upper arm holds the weight of the lower arm and hand, delivering the hand to the page.
4. The lower arm provides a sturdy fulcrum on which the wrist rotates.
5. The wrist holds the hand steady and rotates to the appropriate position.
6. The fingers fold around the pencil which is held in place by the thumb.
7. Together, all five fingers do a precision dance on the page:
  - a. placing the pencil at the exact angle to meet the page,
  - b. pressing down and maintaining the right amount of pressure to leave the imprint
  - c. coordinating the tiny up, down, left, and right movements across the page.

If any of those muscles in that chain of events don't do their job, writing my name will be a very hard thing to do.



- Climbing, hanging, swinging, and any other high-energy activities that **build strength in his upper body and core muscles** are vital precursors to fine motor skills.
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- Twisting, turning, dangling, and swinging helps develop the **flexibility and agility necessary for rotating the shoulders, elbows, wrists, and fingers.**
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- Pushing, pulling, tugging, and lifting himself up builds strength while **developing an intuitive understanding of simple physics such as weight, pressure, and resistance.**
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- And when they come off the monkey bars, messy play is ideal for building up **strength and dexterity in the hand muscles.** Play-Doh, sand and water play, mud (yes, mud!), and any other tactile play is great sensory experience for the brain and hands which one day may mean neater handwriting!



“Good upper body strength (including good proximal stability) and an upright posture have been shown to lead to better fine motor task performance “

(Rosenblum et al., 2006).