

## Posture for Archers – Power and Aiming Unit

3<sup>rd</sup> Part of a series of articles produced during the COVID -19 pandemic

### The Power and Aiming units

#### Power unit

These are the muscles that are going to provide the energy to propel the arrow. The bow handling technique deals with how to deliver what you store in the limbs and string to the arrow in an effective and efficient way. This is about how you get the power to the string and bow limbs effectively and consistently while avoiding injury.

The muscles between spine and skull to the shoulder blade and the muscles around the shoulder to the elbow are the prime power providers. Those from the elbow to fingers provide stability to the bow hand and enable the string hand to form the hook shape to draw the bow and execute the shot.

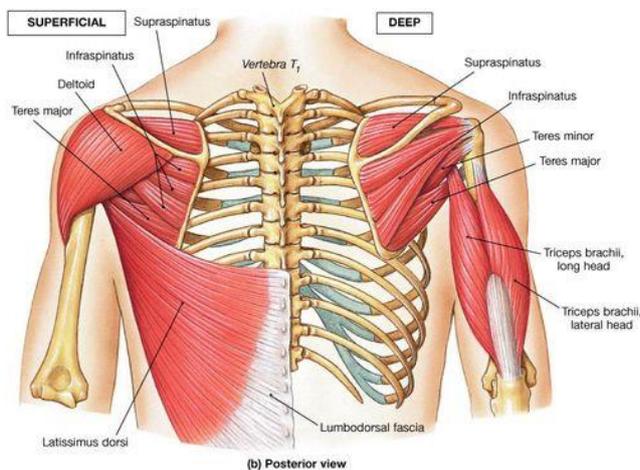


Fig 1

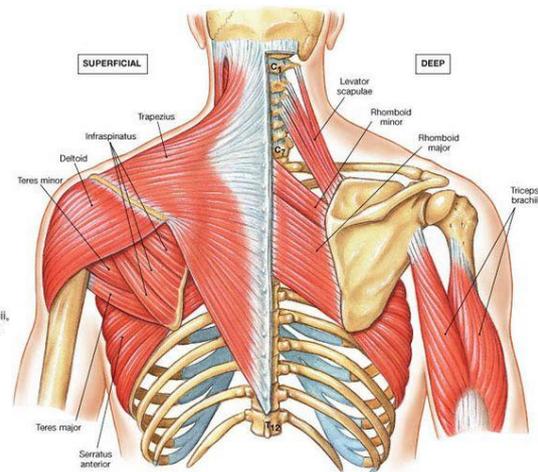


Fig 2

The figures 1 and 2 show the muscles in situ. These are joined by the Pectoralis Major and Minor muscles sitting on the front of the chest. The deeper muscles provide stability, and the larger more superficial ones deliver the majority of the power.

When sufficient to the task only the necessary muscles will work, but in order to build strength, one must push beyond the easy capacity. This is best done in training so that when it comes to competition one is not recruiting the smaller muscles to deliver extra power and introduce variation in the shot.

We only grow when we are challenged, also we grow best adapted to an activity by actually doing that activity; close mimicking will work if the real thing isn't possible. It is also known that the muscles are primed to act when considering the actions to be undertaken, visualising the actions won't improve strength but will habituate the shot process making it more second nature.

If the actions of the muscles are as symmetrical as possible when pulling the shoulder blades together before losing a shot, the 2 forces will act to stabilise each other. If the spinal part of the foundation unit sits straight, it will allow this to occur naturally and avoid over stressing one side and

expending energy to provide a suitable anchor for the increased strength demands of one side over the other.

### Direction of pull

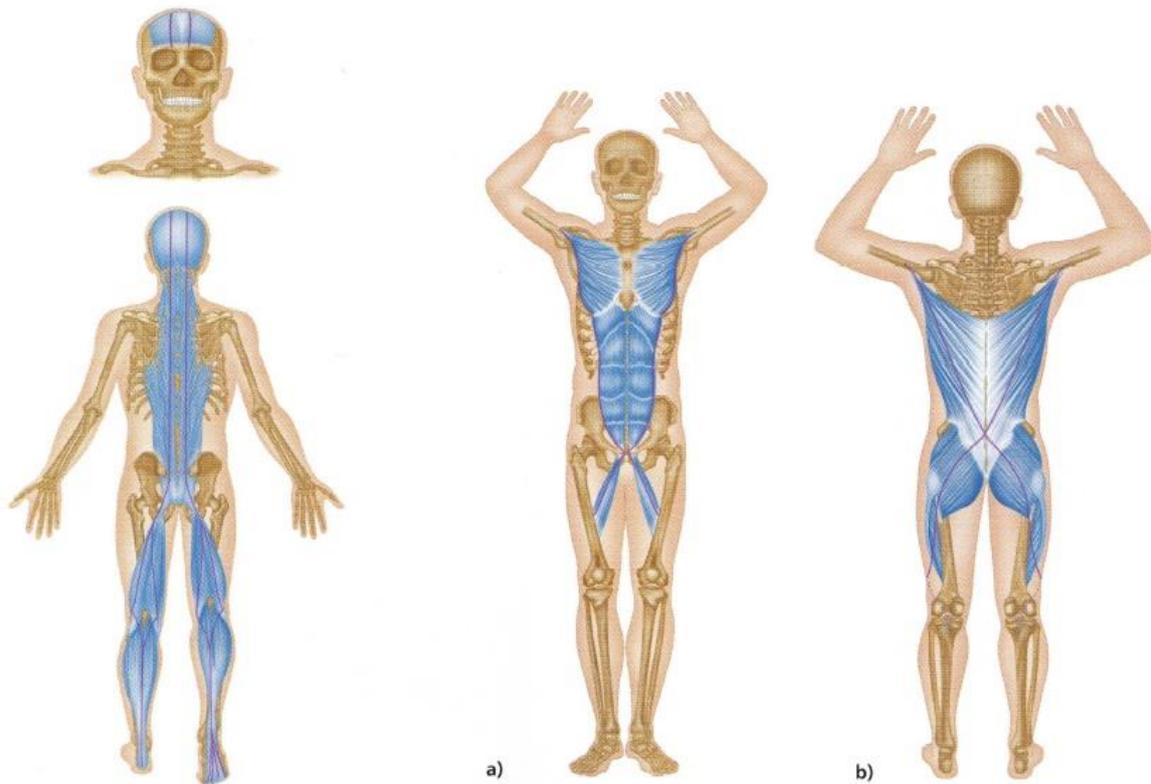


Fig 3

The overall muscle lines shown in blue in Fig 3 show the direction of the muscle fibres. In b) notice the crossing of force line at the lower back – this is a natural point of stress in newer archers. To avoid this move to “tuck your tail under” pulling up the front of the body - note the abdominals in a) - which allows the tensegrity systems to work and spread the forces throughout the body. The left-hand figure shows the deeper muscles which operate in the foundation set. These are activated in the foundation unit and base posture (see previous articles).

Pulling all this together – Exercise 5 – check your foot position; tuck your tail; adopt the upright posture and feel the balance; lean into the big toes; draw your bow (actually or pretend) and settle for the aim; that final “pull through the clicker” should be made along the red lines in Fig 3 b. try activating that muscle set and be aware of how **this** feels (Check you counter that force with an equal pull up the front). Repeat often and regularly.

### Aiming unit

Any organism with binocular vision can tell exactly how far away anything is as long as the eyes are level. This is such an inbuilt feature of all predator species that it is automatic and unconscious in application. This triangulation is automatic and near instantaneous, it is a survival trait. Thus, without you having to do any thinking your body knows where to put the point of the arrow. This is not a guess but inherent and unconscious knowledge.

To allow this to function you will need good neck mobility, particularly in turning. It is also preferable if the muscles of the front and back of the neck are free to act without being recruited to load power

to the draw. ("Recruiting" means the use of accessory muscles to boost the power for an action when the prime movers of that action are insufficiently powered to do the job.) If the muscles of the front and back of the neck are recruited, it will cost energy, adversely affect perfect alignment and attenuate the shot.



Fig4

The neck muscles must be free to act to enable perfect this alignment and should not be recruited into providing power to the shot, their subtle action is needed for the binocular vision to function.

By controlling posture and positioning yourself (thus your neck) correctly and efficiently, the neck muscles will not be required for power. This allows the underlying joints to be free to move allowing this whole system to work. Fig 4 shows the eye line, though using a sight, the binocular vision is active.

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