

Movement Screening

A film or a photo?

Through both necessity and desire the personal trainer's bag of skills seems to be ever expanding. If trainers were smart phones it seems that they would not be able to stop downloading apps! New kit and concepts are championed that are 'must haves' to stay 'ahead of' or even just stay 'in the game'. Under the heading of the new comes 'Movement Screening', currently challenging the traditional static postural assessment, as a means to judge injury risk. **Lincoln Blandford** asks can movement screening give trainers a competitive edge, by maintaining their clients' 'movement health' and supply a base for goal achievement?

What will prove most revealing in keeping clients' injury free, the 'moving picture' of a movement screen or the 'freeze frame' plumbline postural assessment?

Posture, which refers to the relative arrangement of the differing regions of the body, has long been considered informative of a client's overall movement health. Observed deviations from the proposed ideal have been linked to pain and non-optimal performance. Desirable posture is often identified by a person not having to think too much about maintaining it - neuro-musculo-skeletal components should work quietly and habitually in the background of daily function.

Postural Assessment

Clients' posture is routinely assessed statically in a comparative process against the fall of a plumbline. Beneficially, this reveals the composite arrangement of the body regions,

the distribution of muscle bulk and asymmetries suggestive of patterns of loading, history of injury and daily habits (i.e. whether some one is left or right handed). Also, through the judgment of relative contributions of

whilst standing on two feet.

Harder to ascertain from a static postural assessment - due to its lack of a dynamic element - is how the client accommodates movement. Movement creates challenges in

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numerous muscles and their principally isometric (muscular action where no movement occurs) capabilities we may comment on whether alignment is efficiently maintained. In summary we capture a 'snapshot' of the client's current strategy to battle the constant of gravity

the form of managing ground reaction force, changes in centre of mass over base of support and the effects of other exerted forces. Obviously from a static assessment the client's ability to effectively manage movement when exercising will remain largely speculative.

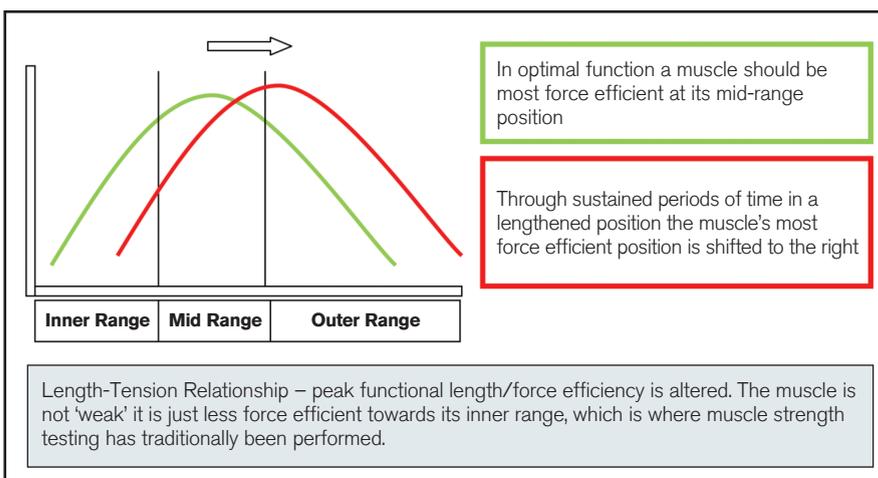
Movement Screening

In terms of assessing potential injury risk movement quality matters. The maintenance or restoration of precise movement is fundamental to limiting injury occurrence, a viewpoint that has the potential to place trainers centre stage in the injury prevention process as movement quality reflects movement health.

Movement screening protocols challenge clients' alignment and co-ordination during dynamic situations of varying intensity, speed, range and complexity. These movement tests often seek to match the observed performance against an ideal technical model. Other movement screens seek not to identify if clients can meet benchmarks but questions how they meet them. During testing, simple closed questions are asked of the movement system: can the client prevent a movement from occurring, during a series of multi-joint tests? When the answer is no, 'uncontrolled movement' - regarded as a risk factor for injury - is deemed present. Uncontrolled movement can be defined as a movement that cannot be prevented and is still evident following several attempts to eliminate it. The client has moved from the unconscious incapable stage, 'I didn't know I couldn't do that', to the conscious incapable stage, 'Now, I know I can't do it.' As with many things awareness is the first step. Once identified, specific exercises can be successfully employed to correct it. These exercises can be evident through subsequent improved test performance and the ongoing absence of injury. The client moves through the stages of training/learning until they are finally automatically unconsciously capable of moving well.

So, can static postural assessment still play a part in the trainer's options of assessment when compared to movement screening? Movement screening and postural assessments do differ, one inherently dynamic in nature, the other fixed, yet a relationship does exist between the fixed and the flowing, as posture/alignment influences movement quality. Through subtle processes the movement system can suffer at the unrelenting hands of gravity. Muscles produce varying amounts of force, in regard to posture for example, as a result of a habitual postural lengthening. This is seen to alter muscles'

Fig 1 Range and Muscle Control



ability to effectively control movement at certain points in range see Fig 1 (above).

During a postural assessment a client may display an excessively kyphotic spine (head bent forward, very rounded shoulder posture), an alignment maintaining the extensor muscles of the thoracic (mid/upper back) spine in a sustained, lengthened range. During a movement screen this postural adaptation may cause the client to struggle in preventing thoracic flexion occurring during testing. Typically, they migrate to the position at which they are force efficient i.e. the kyphotic position.

Gravity's presence provides a sensory stimulus to the muscles that resist it. The central nervous system recognises these structures and the resultant loop of neural activity maintains the recruitment of these postural/anti-gravity muscles. However, prolonged changes to alignment/posture can reduce the sensory prompt of gravity to the muscles best suited to the role. For example, a swayback posture can be commonly observed as accompanied by ineffective glute recruitment. This is because the pelvis has moved sufficiently forward to change the line of fall of gravity to the extent that these muscles are no longer loaded when standing. Unloading may lead to atrophy (muscle loss). During a movement screen we may predict that this client will struggle with hip flexion control, for example by leaning excessively forward

from the hips in a lunge or cramping quickly in the hamstrings when performing a bridge.

In conclusion posture does appear to play its part as a piece of a larger movement jigsaw. Alignment alters quality of movement and movement quality has direct links to injury prevention. The 'freeze frame' of static postural assessments might be best employed as an easy and familiar way to make clients more effectively aware of their own alignment. As a learning tool it could then assist in reducing the effects of sustained muscle lengthening and restoring gravity facilitated recruitment of key postural muscles. Movement screens place methods of assessing and improving movement quality and movement health into trainers' hands. The use of these methods by trainers will help to keep your clients injury free and goal-attaining keeping them in health and fitness. **UF**



Lincoln is a member of the world renowned Performance Matrix team, developing and delivering movement screening and retraining courses for personal trainers. He maintains a select PT client base in gyms and homes in addition to his tutoring role for training providers YMCAfit.

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