

## Torque the internal capacity to generate complimentary rotation

During motion our bodies undergo elements of rotation that enables us to produce force to overcome inertia. Rotational forces allow less effort to produce movement when equilibrium of biomechanics alignment exists, however as often seen in modern day living this is just not the case.

Walking may be one of the simplest daily chores we expose our bodies to, seemingly simply walking actually involves complex processes of acceleration and deceleration through relational rotational torque occurring within our joints through the integration of muscular contribution. From plantar flexion to our arm accelerating pelvic extension all elements of movement can provide insight to potential of maximal performance or that of possible harm to our bodies.

Two of the most common areas of injury would be that of the hip and shoulder, these two joints are ball and socket joints which allow greater range of motion and freedom to the associated appendicular structures of the knee or elbow. Increased capacity of movement also requires increase integration of stability to provide optimal force production through an optimal strength curve, thus when the hip or shoulder are not working in harmony the outcome may lead to excessive use of the knee or elbow to provide stability against excessive force going through these related structures.

Thus when our shoulders are excessively medially rotated or our hips anteriorly rotated we may notice impaired function of the opposing contractile movements being that of lateral rotation or hip extension. Excessive force going through any plane of movement without antagonistic involvement will thus lead to impaired biomechanical function of the joint(s) in question.

Continued impaired function of one area within the body leads to compensatory patterns arising within other areas of the body, this may be contralateral or ipsilateral to the area of dysfunction. The reason for global dysfunction occurring from local inhibition is due to the processes of locomotion and the neuromuscular patterning developed to overcome inertia being that imposed by the external environment or internal resistance (caused by inhibition or injury).

Training toward aesthetics or performance should have four main considerations in mind:

1. Is there pain (not exertion) during a given movement?
2. Are elements of stability and mobility integrated throughout the movement?
3. Is there a balance between synergistic fibres?
4. Does any element of reciprocal inhibition exist within the phases of a given movement?