

Joint centration is key to improve all aspects of physical performance

Basically put, if your not in the right position the body will not functionally optimally and in addition, being out of position will increase your chances of getting injured.

I have been incorporating many of the principles of PRI (postural restoration institute) for some time now and some of the results, in both private and sporting settings have been fantastic.

There are several PRI courses however the common principle between them all is that the body is made up asymmetrically and that symmetrical alignment may not be possible. This is largely due to our anatomical make up. For more info check out the PRI site. This goes against many previous concepts and the principle that we as physiotherapists, strength and conditioning coaches and trainers are always chasing symmetry.

What is clear however, is that we must be able to get close to neutral, particularly so if we are adding load to a system i.e. strength training. Being out of position and adding load will likely equal a less symmetrical pattern, movement dysfunction and with enough loading.... injury.

Just like this example.....



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One very common pattern seen is a left anterior interior chain (AIC) in which we find the left hip in a position of abduction, external rotation and anterior rotation. Contra-laterally, the right hip will be the opposite; hip adduction, internal rotation and a relative position of posterior rotation. This can be clearly seen in the x-ray shown below.

Look at the asymmetry between the left and right sides, in particular the size difference in the obturator foramina, the asymmetry in the pelvic floor opening and the difference between the left and right head of the femurs. This is a classic example of a left AIC pelvis.



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In a left AIC pattern we know the pelvis is in a position of left internal rotation, anterior rotation and external rotation. Just being in an anteriorly rotated pelvic position will mean relatively poor control of extension on that side. In the sagittal plane the hamstrings will be positionally long as will the sagittal orientated glute fibres.

As a result the two strongest hip extensors are in a lengthened position greatly limiting their ability to store and produce force. We know muscles work best in their mid range position. Any deviation from this mid range position means a reduction in force generation.

Walking, running, jumping, squatting, lunging (basically any athletic movement) involves hip extension. If in a left AIC pattern all these movements are going to be less efficient by the virtue they cannot generate force because they are out of position.

In addition, the body will try and compensate. In a left AIC pattern such individuals weight will be carried forwards on the left side. In compensation we often see increased extension elsewhere in the body. Common examples include:

- increased plantarflexion
- increased lumbar lordosis scapular

- increased cervical extension

That is why we often see individuals winding up with pathology and injury away from the pelvis i.e. calf tear, however, the cause of such an injury may be driven by a poor pelvic position.

Using the calf as an example, it may have been overworking to propel the body forwards (extend) due to the poor position of the left pelvis and in turn the lack of hip extension (due to lengthened hamstrings/glutes). If this pattern is not corrected the calf will with enough loading break down if it is given too much work to do.

These individuals are already on the path to poor movement and less than optimal physical performance because they are far and away from a neutral position. Add load and they will break down.

Hope this gives an insight into why getting into the correct position (or a close to neutral as we can) is going to improve physical performance.

Please share if you found this helpful.

Thanks for reading

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