

Pelvic Tilt in the Jerk

Leo Isaac

The very nature of Weightlifting is to lift weights overhead which are dramatically heavy. In the Clean & Jerk weights of 200% bodyweight are commonplace among lifters of national standard and 250% bodyweight is not unusual in World class lifting (excepting heavyweight lifters). In stabilising such enormous weights overhead, even if only for a moment to satisfy the referees, particular attention must be paid to achieving the correct configuration of the body underneath. Any weakness in, or improper positioning of, any part of the body will surely diminish the lifter's potential.

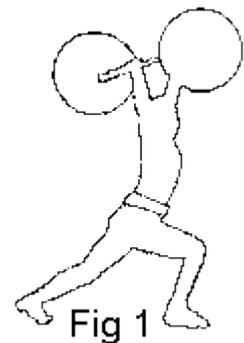


Figure 1 portrays a problem which commonly occurs in the receiving position for the jerk, especially among novice lifters. In this position there is excessive curvature in the spine and a poor alignment of the hips which are also not directly under the bar. This error more often than not results in weights being lost forwards. Uncorrected, the problem may not only lead to dissatisfaction with performance in the jerk but can also lead to injury.

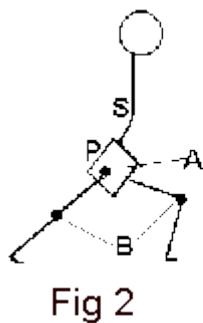


Fig 2

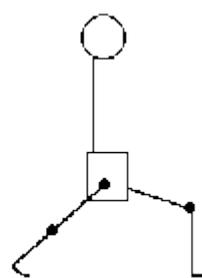


Fig 3

Compare Figures 2 and 3 where S=Spine, P=Pelvis, A=Hip Joint and B=Knee Joint. Figure 2 is a diagrammatic representation of Figure 1 and illustrates the pelvis, the rectangle marked P, at an abnormal angle. This "Pelvic Tilt" produces a compensatory curvature in the Spine(S) which under heavy load may lead to injury. Furthermore

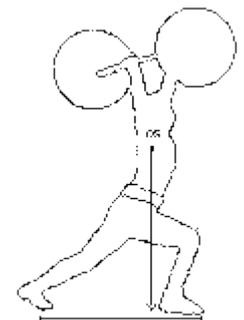


Fig 4

the position with the pelvis behind the bar and a forward lean of the torso will result in a reduction of stability as the centre of mass is not over the centre of the base (see Figure 4).

Figure 3, on the other hand, represents an ideal position where the spine and pelvis are in the natural alignment and both legs are equally supporting the bar.

Pelvic tilt is essentially a problem of a lack of flexibility in the hip flexors (particularly the Rectus Femoris (B), Pectineus (A) and parts of the Adductor group(C) (see Figure 6).

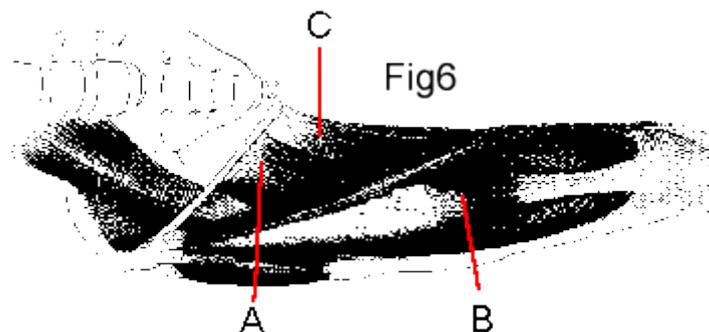


Fig6

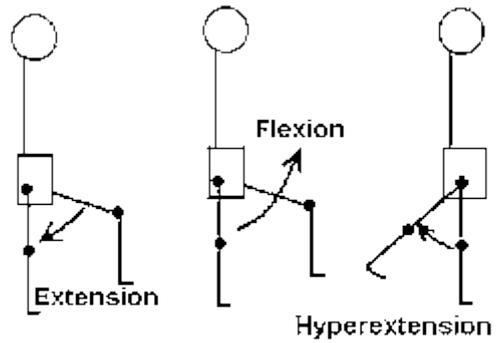


Fig 5

This reduces the capability of the femur to hyperextend (see Figure 5). In the bygone era of Weightlifting when the split style was not only used for the jerk but for the snatch and clean also, this problem in the jerk was far less prevalent. The low split positions for the snatch and clean required lifters to be concerned about hip and groin flexibility especially hyperextension of the femur. Nowadays, with low split positions being neither utilised nor required, there is in general little concern about stretching the hip flexors. In the receiving position in the jerk this lack of flexibility is compensated by the tilting of the pelvis.

One strategy to combat to prevent pelvic tilt is therefore to utilise stretching exercises which act on the hip flexors. Three stretches are recommended the first of which, depicted by Figure 7, stretches the rectus femoris. Whilst standing erect the heel is pulled to the buttocks. It is important when carrying out this stretch that the torso is upright. The second exercise, see Figure 8, stretches more particularly the Pectineus and the Adductors. Again it is important to keep the trunk upright for the stretch to have full effect. The third exercise, see Figure 9, requires the lifter to lie on a table so that the buttocks are perched half off with one knee drawn up to the chest and held and the alternate leg hanging off the table. The weight of the hanging leg will stretch both the Pectineus, the Adductors and to some extent the Rectus Femoris.

As with all stretching exercises the body should be "warmed-up" and stretches should be held for a minimum of 30 seconds.

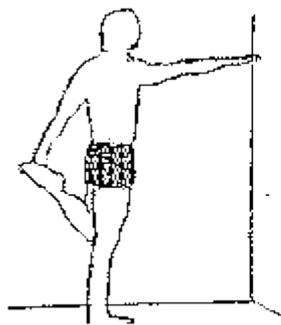


Fig 7

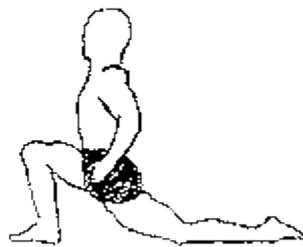


Fig 8

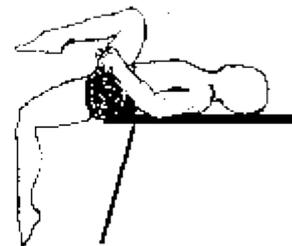
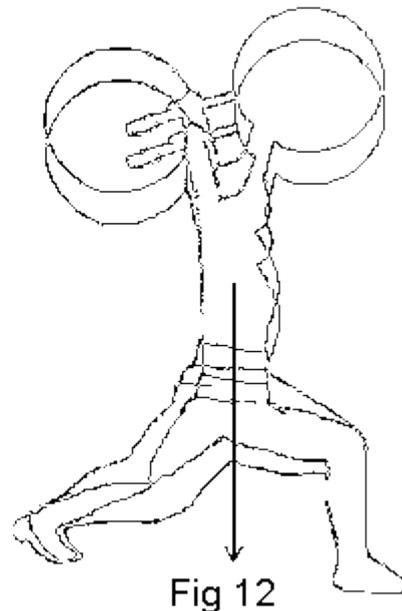
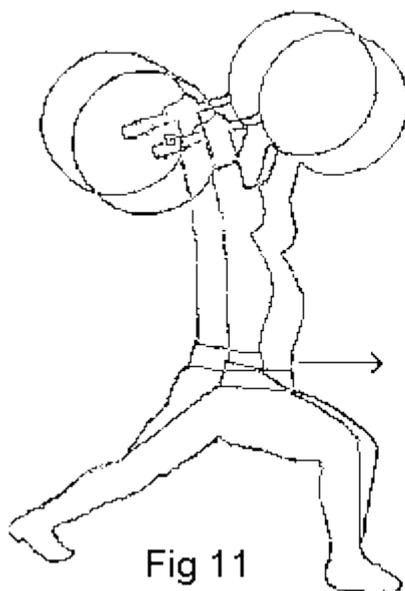


Fig 9

Another strategy to prevent pelvic tilt is to employ a receiving position as portrayed by Figure 10. Here the rear leg is bent at the knee and because there is less hyperextension of the femur, the requirement for hip flexibility is reduced. In fact for those lifters whose hip flexors are very short, the bent knee strategy will be necessary. This bending of the

rear knee is a point of contention amongst Australian coaches. However the recommendation of this article is that both strategies should be employed. There is, in the opinion of the author, another reason why some degree of bend in the rear leg is necessary.

Consider the moment at which the lifter locks out the barbell overhead. For some small amount of time, before, during and shortly after the lockout, the bar will descend. This movement of the bar must be absorbed by the lifter. This "shock absorption" cannot take place in the arms which must remain rigid or else there will be a press-out or a complete failure. The absorption should not take place in the torso or else there will be injurious bending of the spine. The downward movement of the bar must of course be arrested by the legs, the strongest and most suitable part of the anatomy which can bend and give without either injury or an infringement of the rules. If the rear leg remains rigid and only the front leg bends there will be an undesirable forward movement of both barbell and body (see Figure 11). The "shock absorption" should therefore be accomplished by both legs and this will require some bending of the rear knee as in Figure 12.



In the early moments of learning the complexities of the sport of Weightlifting, the jerk movement may seem one of the easier problems to solve. Whereas the squat snatch requires close attention to detail and considerable practise to achieve at all, the split jerk can be performed in a crude form after just one practise session. Despite the comparative easiness of the jerk initially, in later years many lifters experience a tendency to fail clean & jerks more often in the jerk section rather than the clean. For some lifters this takes on nightmare proportions. It is therefore important to have a vision of the weights your lifter will lift if they will rise to be a champion and what level of technical mastery they will require to lift such weights. Without this vision it is all too easy to be satisfied with a receiving position in the jerk which copes for the present but will ultimately prove unsound.