

Figure 7-12. The effect of tibia angle on hamstring tightness. The more acute the knee, the shorter the hamstring; this is the function of the hamstring in knee flexion. But when the knee angle becomes more acute *without* an active hamstring contraction – as it does when the knees passively travel forward on the way to the bottom of the squat – the hamstrings lose the opportunity to contribute to *hip extension*, because they are already shortened.

So the primary difference between the back squat and front squat is one of degree in terms of the amount of involvement from the contributing muscle groups. But the primary reason for the difference is the position in which the system is in balance – the bar in both cases must be over the middle of the foot, and the correct back angle is the one that keeps it there.

Learning the front squat is best done from the power rack or squat stands. The bar is set at the same position as for a back squat, the level of the mid-sternum. The grip is a very important component of the front squat, more so than in the back squat. The grip must allow the elbows to come up high enough that the shoulders can support the load while the back remains vertical during the movement. The grip width will depend largely on individual flexibility, and will vary between trainees and during the individual trainee's career as flexibility is acquired through stretching or lost due to injury. In general, the less flexibility a trainee exhibits, the wider the grip will need to be. Also, some people have

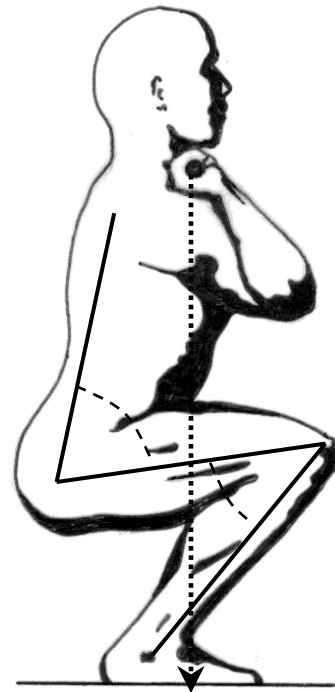


Figure 7-13. The differences in the back squat and front squat are determined by the position of the bar. The resulting angles and their effects on the biomechanics of the movements are responsible for the different training effects of the two exercises.