

Technique

A Typical Performance Problem in a Giant Swing

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The giant swing has become an essential skill for women's uneven bars, and always was essential for men's horizontal bar. Considerable time and effort are spent in learning and perfecting the giant swing because of its fundamental nature for many more advanced skills. The upswing of the giant swing is the most common area for modification of this skill. Although there are several skills that are performed on the downswing (mostly entries to inbar work), the upswing has perhaps the largest repertoire of skills for the gymnast. Therefore, the upswing should be extensively and intensively trained to ensure that the gymnast can prepare the modifications of the upswing without deterioration of the giant swing itself.

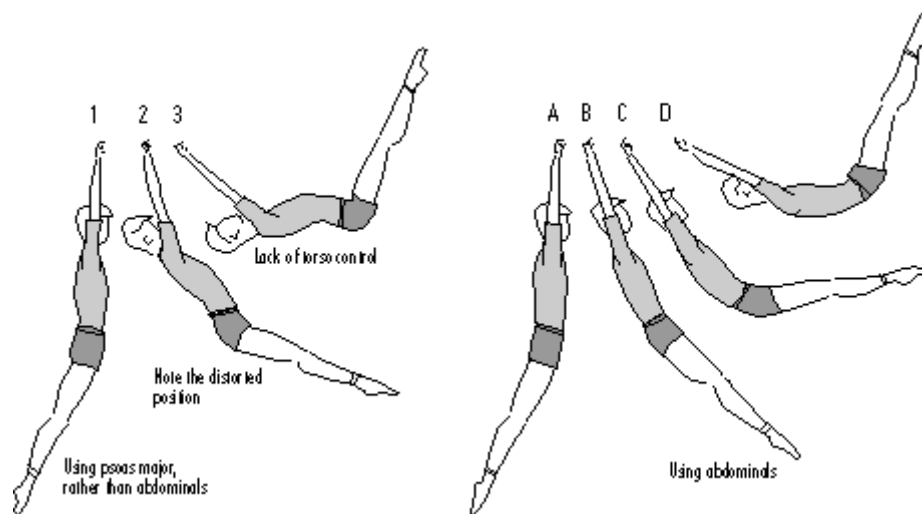
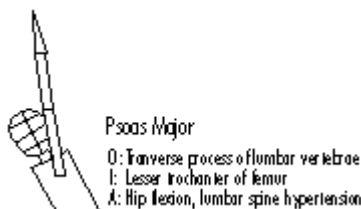


Figure 1 shows two common variations of upswings as performed by athletes at many levels of competition. Interestingly, the pictures shown in 1, 2, and 3, do not appear to discriminate, in that, very accomplished athletes and rank beginner athletes often show this problem. The body position, shown in 1, 2, and 3, is obviously incorrect and visually unappealing. However, it is often surprising to see how very many good gymnasts perform their upswing with the positions shown in 1, 2, and 3. Of course, the positions preferred are shown in A, B, C, and D. You can probably imagine the nature of the difficulties the athlete will endure when trying to learn a Tkatchev, blind change, flyaway, and so forth with an upswing as shown in 1, 2, and 3. Unfortunately, the gymnast often passes through these positions so quickly that only frame by frame analysis from video will offer up these positions for easy viewing.



The primary reason for this problem is shown in Figure 2 which includes a crudely drawn muscle running from the thigh bone (femur) to the back (lumbar spine). This muscle is called psoas major (pronounced so'ass major). It is an interesting muscle, because it has been considered the villain

in sit ups and is why you usually do sit ups with bent knees. The primary action of psoas major is hip flexion or piking. However, it is also very active during the forward swing phase of the free leg during walking and running gait. It has been shown that psoas major is very well developed in even the most emaciated cadavers. This indicates that special conditioning aimed at psoas major is unnecessary. In fact, gymnasts should work very hard to train other muscles (primarily abdominals) to overcome the action of psoas major so that, in a sense, it is canceled. The low back position shown in Figure 1, pictures 1, 2, and 3, is obviously not conducive to the health and stability of the spine. I could argue that the primary reason for doing lots of abdominal exercises is not so much to assist the athlete in piking, but to prevent psoas major from pulling the lumbar spine (low back) forward. Strong abdominal muscles help control the pelvis and prevent the anterior pelvic tilt as shown in Figure 1, pictures 1, 2, and 3.

As a means of diagnosis of this problem, you should place your video camera at right angles to the plane of the swing of the gymnast. Video tape his/her giant swing and then view the upswing in a frame by frame mode. If you see positions as shown in Figure 1, pictures 1, 2, and 3, then you need to return to drills of the upswing, and your athlete needs more focused abdominal conditioning. If you see frames more like Figure 1, pictures A, B, C, and D, congratulations, that athlete is very well trained.

If you find the problems shown in Figures 1 and 2, you should begin drills for the upswing and abdominal conditioning immediately. Drills for the upswing usually involve simple increased awareness of the problem and changed or enhanced language regarding body position during the upswing. Abdominal conditioning should be of the crunch variety. You may want to eliminate full leg lifts as done on stall bars or the high bar for a while until the athlete can control his/her pelvis. Watch leg lift or piking exercises carefully to ensure that you are not promoting the problem by conditioning the gymnast into the poor positions described here. Of course, dance training and postural alignment training can also be very helpful. You should also be aware that the abdominal conditioning should not be a zillion crunches! The problem in this case is not endurance. The problem here is strength and power. Therefore, when performing crunches the athlete should perform less than 25 and should be weighted. In other words, the athlete should fail in under 25 repetitions, and the athlete should use added resistance. The added resistance can be provided by holding a weight plate on top of, or behind, the head. Sometimes a towel between the head and the plate can add considerable comfort. You may be surprised at how much a small athlete can lift in this exercise, so the use of fairly heavy weight plates is not unusual. Watch their form very closely. If their low back is coming forward or off the ground, stop the exercise and use less resistance. There is a large amount of skill involved in learning to isolate the abdominals and keep the pelvis under control. Finally, while watching the athlete perform crunch type exercises, you should note that the abdomen does not stick-up or protrude forward. Sometimes an athlete will hold the back flat while still protruding the abdomen. The abdomen should be held flat also, by contraction of the abdominal muscles, particularly transversus abdominus.

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