

Power Hitting and Pitching: It's All in the Hips Part I

ESPN has this sweet, new feature on its baseball broadcasts where it slows down – frame-by-frame, in HD no less – a batter's swing. This is particularly cool when it's a guy that has just gone yard...after all, hitting a homerun is the product of great hitting and great power, two qualities every young hitter desires. Nonetheless, this feature highlights for the viewer the hitting technique of a successful major leaguer – the analyst can further emphasize the *modus operandi* during this period. What I've been able to notice is something that we've known and trained for some time now: the best hitters actually throw their bodies at the ball as opposed to just swinging a bat. Without a doubt, that may come across as a sloppy generalization of the procedure, but please allow me to explain and then illustrate how you can become more powerful, too.

Now, I could throw out terms like torque, angular velocity and Newton's Laws, but I'll assume that if you were interested in a physics lesson you'd be more an engineer than a baseball player or coach. That's not to discount what we can learn from disciplines like physics, biomechanics, etc., but we'll leave that to guys like myself and others in the performance specialist field. What you need to gain an appreciation for, though, is that both the baseball swing and throw revolve around the forces produced through the ground (i.e., ground reaction forces) and the rotational velocity of our hips. This isn't a soapbox speech by any means, but let me just highlight the fact that **upper body strength is not the foundation of a great power hitter or a great power pitcher.**

If you've had the opportunity to watch the aforementioned slow motion video, you have seen how those power hitters lead their swings with their hips...their upper body follows, then their arms, then their hands, and finally the bat comes through. That is to say that the baseball bat is essentially an extension of your body when you swing. I'm sure you've had coaches say to you that you have to keep your hands back. This may be a good cue for young hitters to focus on throwing their hips at the ball as opposed to just swinging the bat.

Rotational velocity is the key to great power. The more rotational velocity you can create the more momentum you will produce. The greater your momentum when you contact the ball, the greater the force you transfer to the ball. Likewise, as a pitcher or fielder, the greater the velocity you create with your body, the greater the speed of your throw. Therefore, if we can teach the body – through training, both in the training room and on the baseball field – to create more rotational velocity and more force, then we can create a more powerful baseball player, both on the offensive and defensive.

With some of these general ideas in mind, let's take a look at what we need to address in a training program to achieve greater rotational power.

- We have to teach our bodies to apply more force into the ground, particularly off the back foot when hitting or throwing (i.e., right foot for a right-handed hitter/thrower). As mentioned before, if we apply a force to the ground, we create ground reaction forces that are stored and transmitted through our bodies. In the case of baseball, these forces can then be transferred to the implement that is held in the hands (i.e., bat or ball).
- Our hips are a powerhouse, and we must teach them how to load and store energy and then explode and unleash that energy. By creating high rotational velocity at our body's center – yep, that's our core – we begin a chain reaction of rotation where the velocity continues to build right up to the end of our proverbial whip, which, in the case of the baseball player, is the bat or ball.
- That coordination to which I just referred in the previous point – where the rotation begins at the hips and continues through the shoulders, arms and finally the ball or bat – is also something that must be taught. We can improve this coordination by properly training the muscles that comprise the core – which includes but goes well beyond the abdominals. It's important to train the core and its sub-systems to load and explode in a manner that's very similar to how it will be required to work on the field.
- We cannot discount the importance of mobility – which refers to the range of motion at a joint – as it is the foundation for our ability to store energy. If we lack mobility in any point of the chain, we will sacrifice the load at that joint and we will create energy leaks. These energy leaks can lead to compensations, loss of power and even deleterious injuries.

This concludes the first part of this series on training for rotational power. In the second and final portion of this article, we'll go into how we address this need in our training regime. Specifically, we'll highlight the types of movements that will be included in a training program for the baseball athlete. The goal of the movement training will be to increase mobility of the hips and thoracic spine; enhance the body's ability to create ground reaction forces; increase the capacity of the hips to load and explode; and, improve the body's ability to transfer the load from the ground through the bat or ball.