

## **Lights, Camera, Action! – Training Action Sport Athletes.**

**By Gerard Recio and Peter Twist**

You see them everywhere....TV advertisements, TV Shows, TV Commercials, Motion Pictures, magazine ads, and YouTube. Action Sports are still on the rise and show no sign of letting down. In 1995 ESPN launched the first ever X-Games (a made for television event that showcases extreme/action sports), and two years later, in 1997, they launched the Winter X-Games. These two Extreme Sport or Action Sport events became the launching platform for various board sports like Snowboarding, Skateboarding, Wakeboarding, and Surfing. And also skyrocketed a variety of bike sports like BMX, Downhill Mountain Biking, and Freestyle Motocross, to the forefront of all Action Sports. Today, these sports are taking over the ranks of recreational activities. Participation in Action Sports, like snowboarding, skateboarding, BMX, and Mountain biking has exponentially increased since the X-Games. More and more youth, young adults and week-end warriors of all ages and abilities are taking part in these thrill seeking sports. And more and more are turning to specialize training programs to help them improve their abilities, and to prevent dreaded injuries resulting from the physical demands of these activities.

### **What classifies an action sport?**

To train action sport athletes, a trainer needs to know what action sports are and what classifies an action sport? – Action Sports (sometimes still referred to as Extreme Sports) usually tend to involve a very high level of risk or danger. They push the athlete's physical abilities and fear, and often involve amazing speeds, outrageous heights, a high level of physical exertion, and a high level of physical skill to perform mind boggling stunts, and tricks on highly specialized equipment. They tend to be individual rather than team oriented and can include non competitive and competitive activities. When action sports first arose, the athletes were not considered "real" athletes at all. Most of them were considered crazy stunt men. This has obviously changed with the current rise of this type of sports, some of them becoming top Olympic spectator sports. When you have a sport that reaches the worldwide Olympic stage, a world class training style must definitely be implemented.

Some people contend that that the difference between an action sport and a "traditional sport" can be attributed to marketing. Snowboarding is a good example. Snowboarding has risen as an action sport due largely to marketing strategies towards youth and young adults, and to the fact that it is a newer sport. Its close cousin Skiing, is as equally dangerous, and if not faster.

However due to the fact that the sport has been around for a while, and a broader population participates, marketing has moved away from skiing, and its "extremeness" has not been recognized as an action sport until the last couple of years. This is when skiers started competing in the same action sport disciplines as snowboarding, like boarder-cross, slopestyle, big air, and half pipe, where skiers can showcase their toolbox of tricks, and achieve a rush of adrenalin while doing so.

The so called "adrenaline rush" from these sports has skyrocketed these sports to the forefront of recreational activities. Every year, more and more weekend adventure seekers, take up snowboarding, mountain biking, surfing, hoping to get a taste of the adrenaline rush their professional idols on TV, in magazines, and in movies experience. They may get 1 foot of air, or 20 feet. Whatever it is, they get the adrenaline rush. And it is this addictive experience that keeps most action sport athletes coming back for more. However, as they progress, most often or not, people are going to fall. There is a saying in action sports: "If you don't fall, you're not learning." This is easier said than done. Action sport athletes want to minimize their falls, build up their physical tools, and increase their confidence in their sport. That's where a well prescribed strength and conditioning program comes in.

Action sport athletes, like the other "traditional" athletes we train, can benefit from a well thought out training program. These athletes need to prepare their bodies for the demands of their particular sports. You take a look at any board oriented action sport (we will also include skiing into this category), or any bike oriented action sport (BMX, FMX, Motocross, Super cross, or even road racing). All of them involve the primary fitness characteristics of aerobic fitness, muscular strength and endurance, flexibility and body composition. But what is more importantly involved, and should be a focus of their training are the Secondary Fitness Characteristics of Balance, Agility, Deceleration, Reaction Skills, Linked System Strength, Rotary Power, and Anaerobic energetics.

### **Balance and Proprioception for Action Sports**

It's easy to see that snowboarders, skateboarders, surfers all need balance to stay atop their board when riding on snow, concrete or water. They need to be able to manipulate the board to change direction, control speed, and do stunts and tricks. They need to have a good concept of gradation of force in order to transfer weight from one foot to the other foot, or even alter body position to stay balanced on the board, or when they are doing certain tricks. As much as boarders need balance, bikers need balance and good body awareness as well. Take a downhill

mountain biker for example. Sometime the requirements of the sport requires the athlete to ride atop skinny wood logs, and man made fixtures that are 10 feet off the ground! Without balance and body awareness, a crash is inevitable. One physical demand all bike actions sports have in common is the ability to lean their bike over to create positive angle with the ground when cornering, or riding up jumps and walls. The biker not only needs to know how their bike handles, but they must also have extraordinary proprioception in order to know how far they can lean that bike over in order to carry more speed into a turn. They must be able to know where there body and joints are in the space that they are competing in. It is important to train balance and proprioception and keep it at its peak potential.

### **Deceleration for Action Sports**

Deceleration plays an important role in all board action sports in controlling speed, and on landings. Whether it's snowboarding down a mountain, dropping into a 10 foot wave on a surfboard, or landing a trick on a skateboard in a vert ramp, your legs in harmony with your whole body, need to be able to coordinate muscle contractions to absorb the force quickly and precisely. The loaded muscles need to be able to eccentrically contract in the correct firing sequence to quickly to absorb, maintain balance and posture, so that the athlete can stay on their board to continue their run. For example, a skateboarder in a vert ramp (half pipe) has to do about 20 tricks in the air in one competition run that last for about 45 seconds. This translate to about 2 seconds to land one trick, find their perfect point of balance, set up for the next trick, and initiate the new trick on the opposite wall. Even though bikes have brakes and suspension, bikers rely on their bodies as much as boarders do when absorbing the force of gravity to land various stunts and tricks. They not only absorb with the lower body, but they need to learn how to absorb force with the upper body as well. A strong core provides a solid platform for the limbs to anchor absorbing movements. This also allows for smooth fluid riding technique, and contributes to less energy expenditure.

### **Rotary Power and Deceleration for Action Sports**

Rotary movements are a constant in board sports. The upper body actually needs to counter rotate the lower body when athletes of various board sports turn their boards. Rotary power is needed to initiate spins and rotary tricks and stunts in the air, to continue circular movement and also prevent rotation when landing these high risk maneuvers. Similar function is required for freestyle BMX'ers and freeride mountain bikers. These action sport athletes are going bigger than ever before. They must use their whole body to initiate rotary movements of not only their

body, but also of their bikes! Downhill mountain bikers and motorcycle racers need rotary eccentric strength to prevent rotation through the trunk when steering their bikes into, and out of turns.

### **Linked System™ Strength**

Action Sport athletes must link a variety of tricks together. Likewise, their bodies must respond in a linked sequence of muscle action. The body is a kinetic chain, and we must train the links of the body to work together by following a Linked System™ approach when training action sport athletes. Similar to the goal of refining tricks and stunts to look fluid, coaches must train action sport bodies to execute exercises in the same fluid manner. Choosing exercises that link the lower body with the upper body through the core is essential to action sport training programming. Assess how a snowboarder or a skateboarder prepares for a jump. They get in a low athletic stance and triple flex the ankle knees, and hips. If there is rotation in the trick, they pre-coil their rotation and approach the jump in this pre-coiled position. At the lip of the jump, they quickly pop and triple extend the ankles knees and hips; their hips fire and rotate, and their upper body follows through for the desired rotation on various axis. The action sport strength coach must be able to prescribe exercises that train the body to fire muscles in a similar fashion.

### **Reaction Skills for Action Sports**

The speed at which these action sports occur is very fast to say the least. Because action sports usually involves gravity, and also an implement like a board or bike that enhances acceleration due to gravity, things come up faster then they would if the athlete was just traveling on their own two feet. The action sport athlete needs to be able to react to their ever changing environment, and be able to react within fractions of a second. They need to be able to react in two different ways, and therefore must train these two types of reactivity. External reactivity is the ability to react to the unpredictability of an athlete's sporting environment. An example of this would be the ability of a motorcycle racer or a boarder-cross snowboarder to react to the race course, and its turns, straight-aways, and other obstacles. They must also react to their competition and adjust their bike or board to accomplish the body and machine mechanics to maintain speed in and around these obstacles.

Internal reactivity is the ability of the neuromuscular system to recognize and react to an unpredictable stimulus or unstable environment and continue to quickly move in a desired direction. For a snowboarder or mountain biker, the ground surface is ever changing. A snowboarder must adapt to changing snow conditions, just like a mountain biker must adapt to

gravel, loose soil, slick rock, and mud. To train the nervous system to react and process info thru a neural loop to elicit a faster response decision and as well muscles that can respond accurately, would be a definite component of any action sport athlete's training program. Incorporating drills with audible, visual, and tactile stimuli is would be very valuable to the athlete.

### **Anaerobic Energetics for Action Sports**

Most action sports competitions and informal runs are very brief. Snowboarding slopestyle and halfpipe competitions are over in about a minute. Downhill mountain bike races are over in 2-3 times that amount. Since most action sports are over in such a short time span and require quick, intense muscle contractions, the muscles mostly draw energy from the ATP-PC system and anaerobic glycolic system (lactic acid system), and minimally draws from the aerobic systems. Action sport athletes need to be trained anaerobically by adjusting intervals accordingly. Quick short bursts of intense effort should be a focus in programming. This method can be incorporated into strength training programs by making exercises more complex and increasing the speed of movement to make movements quick and intense. You can take this a step further by strategically linking 4 or 5 explosive strength exercises in a row to get their heart rates up to those similar during a competition. This also challenges the body to generate strength and power, rotation, maintain balance, and coordinate movements in a fatigue state.

### **Experience the Sport**

Before we jump into the concepts of designing your exercise tool box, one of the first steps to train action sports athletes is that you need to understand the demands of the sport. If you have the opportunity to, get your athlete to take you out and participate in their action sport, so you can experience the sport, and see what they see, hear what they hear, and feel what muscles your athletes feel. There is no better way for a strength coach to understand the sport, than if the coach has actually participated in the activity itself. You don't have to go off 50 foot table tops on your skis and snowboards, but get the gear on, and spend a day doing some runs of your ability. If you don't feel comfortable participating, go and watch your athlete compete, or practice. It is one thing to see skateboarders go up and down a vert ramp (some times known as a half pipe) on TV, but to actually stand atop one, and look 20 feet down to the bottom of the transition is another! It's a great way to understand what your athlete has to go through.

Understanding the demands also means researching the language, or lingo in which your athlete will try to communicate with you. This goes for any sport or activity. If you can communicate in

the same language, you will gain the confidence of your athlete. Also, if you can show how certain exercises relate directly with their sport, it is more likely they will participate harder at that drill, or exercise.

### **Extreme Demands doesn't mean extreme exercises**

Action Sports may seem very extreme in terms of the speeds they travel, heights they jump, and the number of rotations they spin. The exercises that you choose don't have to be extreme as well. Progress your athletes accordingly, and know when to take a step back, or crank it up a notch. Foundational exercises such as static supine and prone holds are needed to lay a proper foundation from the inside out. There are many ingredients that comprise a continuum of challenges. Begin simple and light and progressively shift to complex and intense over the course of a long periodized program. A careful thought out training program incorporating the secondary fitness characteristics can be an extreme challenge for some. Just remember what you are trying to accomplish – enhance performance, prevent injury. Knowing your goals will keep you on track, and will also will get your clients ready for action in no time! Good luck with your training programs and see you on the mountains or on the race tracks.

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