

Working Out Outdoors

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Working out in the outdoors has two primary advantages over working out indoors. First, there is a distinct pleasure in working out outside. Second, the outdoors can provide a terrific training ground. The interiors of buildings have certain universal or nearly universal characteristics. Among these are a flat level solid ground surface, uniform lighting, and the confinement by the walls. The outdoors is characterized by its nonuniformity and by its lack of confinement.

This thesis will delineate several methods and ideas which may be used to take advantage of the outdoor environment to enhance workouts. It will also delineate some of the dangers peculiar to outdoor workouts. While there will be little reference to the aesthetic advantages of working out outside, this will remain an underlying motivation for working out outside.

There are five sections in this thesis. These deal with working out on beaches, working out on hills, working out in fields or parks, using environmental variation, and outdoor safety.

Beaches

Sand and water are the two things that characterize most beaches. The combination of these can be used as a superb training ground. The sand is an ideal surface for training the legs, and the water gives the sand several different surface types on which to train.

The simplest training that may be done on a beach is to run. "Running sand" is significantly more difficult than almost all other kinds of running, the only possible exception being running steep hills. Running on sand has other advantages over most other forms of running as well. First, on a sand beach free of sharp objects (either natural or deposited by man), long runs may be done barefoot without any severe consequences. Second, the typical problems caused by repeated jarring from running on hard surfaces are completely avoided by running on sand beaches.

The sand on a typical ocean beach has a wet part and a dry part. Each of these have advantages and disadvantages over the other. The wet sand on the beach is both flatter and slightly more supportive than the dry sand on the beach. Running on this sand strengthens the legs relatively uniformly.

The dry sand on a beach is less supportive and usually significantly less uniform. Running on this sand is particularly useful for strengthening the calf muscles.

Performing patterns on the beach is useful to train several things. First, because the ground gives under the reaction force from all motions, it is more difficult to maintain balance and proper form while performing patterns on a sand beach. Second, pivoting is in general more difficult. This because the process of lifting the heel usually results primarily in digging the balls of the foot further into the sand. The heel lift which precedes pivoting on the balls of the feet has to be exaggerated on a beach in order to be effective. Third, beaches usually have a breeze. If the pattern contains moves which are awkward, even a light breeze can make balance more difficult than no breeze at all. Finally, just as for running, movement while performing a pattern on sand is significantly harder than on a solid surface.

The beach provides all of the same difficulties for performing kicks as it does for patterns. In addition, jumping off of a sand surface is particularly difficult. The additional strength required to jump off of a soft surface such as sand can result in a higher and stronger jump when the same technique is performed on a hard surface. Finally, the fact that the surface on which the feet lie is displaced by the movement of the feet makes balancing for multiple kicks noticeably more difficult.

In summary, the beach provides excellent training for balance, stamina, and leg strength. By performing techniques or running on both packed and unpacked sand, different aspects as well as different parts of the body are exercised.

Hills

Hills, particularly those with both trees and open areas are an excellent training ground. Just as with beaches, the simplest exercise which may be enhanced in the hills is running.

Running up hills is perhaps the most difficult of all types of running. Not only is energy expended in keeping the body in motion, but additional energy is used to climb. Jarring is reduced both by running on dirt trails

and by emphasizing running up hills. The dirt is softer than any form of pavement, and in general the feet land more lightly when running up a hill than when running either on a level surface or on a downhill slope. Running on hills either on or off trails often requires more agility than running along roads or along the beach. Most trails have various obstacles, changes in grade, switch backs and so forth all of which may challenge the agility of a runner.

The trees which are often found on hills are well suited for use as targets. It is important to realize however that tree trunks have no give, and consequently, full power techniques which strike the trunk of the tree are dangerous and should not be practiced. Given this caveat, trees can still be used as targets in several ways. Trees usually have distinctive marks along their trunks which maybe used to gauge focus. By setting the focus point for an attack or block near but outside the tree, the danger of striking a surface which does not give is avoided. Further, by setting the focus point of the attack or block near a marked point in three dimensions, the athlete has a gauge by which to judge and improve her/his focus. While the trunks of trees do not give sufficiently to allow them to be struck safely with full power, branches often do. It is usually easy to find a tree with small overhanging branches or even leaves which may be used directly as targets. One final point which should be made about using trees as targets is that they are often surrounded by a slight cresting of the ground at the base of the trunk. This can make some techniques a little awkward.

Most hills have flat areas in addition to the slopes. These are often good places to perform patterns and kicks. They have the same characteristics as do open fields, but have the advantage of being in the hills.

Perhaps the best workout that may be offered in the hills is a sort of circuit training. After having stretched, the athlete starts off by running. Along the run, after several minutes, the athlete finds a tree and proceeds to throw kicks using the tree as a target. Once a number of kicks are thrown, the athlete then proceeds to run for several more minutes. Again the athlete finds a tree and uses it for target practice. This may proceed for as many cycles as the athlete wishes. At some point, the athlete may find a field. The field may then be used for patterns or kicks, again depending on what

Taekwondo skills the athlete wants to practice. The combination of hill running, focus practice, and patterns practice may be carried out in a very concentrated manner in the hills.

Fields

In many ways, working out on fields is very similar to working out indoors. There are several notable differences. First, in general fields are much larger than most Dojangs. Second, the surface is often not level. Third, the surface is often softer than surfaces inside buildings. Fourth, the surface of most fields is usually at least a little uneven. Finally, fields are often more slippery than the floors of most buildings.

The size of many fields allows martial artists to do many things they simply cannot do inside most buildings. It is only in the biggest of gymnasiums that an athlete may practice throwing one or more types of kicks for 100 meters in a straight line. This kind of drill is particularly useful if all the kicks are done in fast motion with no stopping techniques. Fast motion kicking such as this is useful in speeding up hip rotation for kicks as well as improving balance and stamina.

Anyone who has worked out on a surface with even a slight slope knows that it is different from working out on a level surface. A surface which is not level but none the less offers good even footing is an excellent surface for practicing jump kicks. Doing kicks either going downhill or uphill will train jumping. Doing jump kicks while moving downhill is essentially a basic plyometric exercise. Doing jump kicks while going uphill provides an additional challenge to the technique.

A student working out on a field or lawn for the first time is often surprised by how much harder it is to perform techniques which would normally present little or no difficulty indoors. There are two reasons for this. First, most outdoor surfaces are significantly softer than most indoor surfaces. Extra energy has to be put into each technique because some of the energy is lost into the surface. As long as the surface moves and does not "spring back," basic physics predicts there will be an energy loss. This energy loss has already been described for sand beaches, but is also a

characteristic of turf and most loosely packed soil. The second reason that performing techniques on fields is more difficult than indoors is it is more difficult to maintain balance on most field surfaces. Maintaining balance on a field is more difficult than maintaining balance indoors because most fields are at least a little uneven, and because (as was described in the section on beaches) field surfaces deform as the athlete moves. The end result is that at any level of proficiency, there is additional energy expended to control balance. It should be pointed out that at higher skill levels, the extra amount of energy expended to maintain balance decreases.

The additional challenge of maintaining balance on a slippery surface trains several skills important to a martial artist. First, it requires a finer sense of balance. Second, it trains smoothness in technique. Third, it trains quickness in reacting to unexpected changes, in this case footing. Finally, the slipperiness as well as the unevenness of fields trains the student to have a more acute awareness of the environment. This can be particularly important in many real fighting scenarios.

Any training which can be done indoors can be done on an outdoor field. All training which is done on an outdoor field is harder than the same training done inside a training hall. This includes patterns, kicks, hand techniques, and sparring. Training on an irregular or uneven surface also trains the student to be aware of his/her surroundings.

Outdoor Environment

Variations in the outdoor environment offer excellent training for the advanced student. Generally, the environmental variations described in this section are those which make exercising more difficult and somewhat more dangerous. It is therefore recommended that these be used primarily by advanced students.

One of the most interesting environmental variations is to work out in a field after night has fallen. The fact that vision is less effective than during the day requires the student to use her/his sense of feel more than they might during the day. While the same exercise may be performed indoors with the lights out, the variations in even a smooth outdoor surface require a

significantly greater sensitivity to that surface. Further, such factors as the slipperiness of the surface only exacerbate the difficulty of dealing with an outdoor surface in the dark. Finally, for most people balance is determined by sight as well as by feel. By removing some large ability to see, a larger portion of sense of balance is shifted naturally to the sense of feel.

Another outdoor variation is to work in difficult weather conditions. Rain offers a more slippery surface and requires greater balance. Further, it is likely that even advanced students will fall on a sufficiently slippery surface, and working out on such a surface helps to exercise indomitable spirit. Wind perturbs the balance and in general makes it more difficult.

In general, any outdoor condition which makes the normal performance of technique more difficult can be used as part of a Taekwondo training regimen.

Safety and Hazards

Training outdoors presents several training hazards which are normally not present for indoor training. Some exist for all forms of outdoor training. These include effects of the sun, effects of the cold, objects which may cut the feet, and irregularities which may cause sprains, strains, or muscle pulls. Additionally, some of the workouts described previously have hazards which are not universal to outdoor workouts.

The important thing for the athlete to do is to be aware of the environment. If the sun is out, and the athlete has not recently been working out in the sun, heat exhaustion and sunstroke are possible. The vulnerability to these has little to do with the athlete's level of conditioning, and much more to do with whether the athlete has recently been training outside. The cold is also a problem, though for the period over which a workout takes place, it is usually minor. There is little if no scientific evidence that becoming chilled for short periods has any effect on such things as catching a cold. However, in extremely cold environments, frostbite is always a problem. Hypothermia is very unlikely in a normal outdoor workout scenario both because workouts are not long enough to allow the body to cool and because the nature of a workout causes the body to produce large amounts of additional heat. The

exception to this is if one is working out in cold water such as in the ocean or a lake or stream, the time it takes to cool the body is greatly shortened, and the danger of hypothermia has to be considered.

It is critical to pay attention to the workout surface wherever it may be. Beaches may have broken bottles or opened cans which can cut through even callused feet. Fields can have ditches or holes which if not avoided can cause severe injuries. It is particularly important to be aware of any sprinkler systems in parks and manmade fields.

Because of the extra demands of the outdoor environment and the additional ways in which a student may be injured, warming up and stretching before a hard workout commences on an outdoor surface is even more important than for a workout on an indoor surface. By being more limber and warm, some of the injuries which can be caused by outdoor surfaces may be avoided.

Finally, there are hazards which are peculiar to various forms of outdoor workouts. On beaches, flying sand can be tossed or blown into the eyes. Striking tree trunks can result in bruises and strains. Working out at night on a surface of unknown quality may result in the athlete finding out that the quality is poor. Running downhill is both very jarring and can easily result in a slip and fall.

The difference between working out outdoors and working out indoors is the environment. By examining the environment and intelligently deciding what exercises to practice, the martial artist can insure that he/she has as safe and enjoyable workout as is possible.

