

Weight Training for Water Polo and for Life

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Weight training is something one should start early, around 10 years of age, and continue as long as you can physically lift weights to increase muscle strength. Resistance training is a life long process that individuals should do so they can remain healthy and active all their life. Lack of muscle strength is one of the major causes of older human beings not being able to take care of themselves. Human beings as they grow older lose muscle mass and gain fat not because this is something that has to happen but because as they grow older they stop stressing their muscles so their muscles give up. Put a body part in a cast where the muscle is not used and it will atrophy very quickly. As you grow older if you stop stressing your muscles by making them work they will shrink until you can no longer make them perform. Keeping your muscle mass is key to having a high quality of life as one ages.

When should one start lifting or stressing the muscles so they will grow? The general rule of thumb is somewhere between 8 and 10 years of age. I don't think anyone feels that heavy weights are a good thing for young children up until 12 or 14 years of age but if a coach or parent knows what he or she is doing and doesn't try to force young human beings with too much stress one can build up a background in technique and form that will greatly help young individuals gain power as they grow older. It is important to work and try to gain muscle mass when the body is growing and individuals have a larger number of growth hormones flowing through their bodies. Most human beings have the largest number of growth hormones from age 14 to around 24. Then these growth hormones gradually decrease in number which is part of the aging process.

When players are young, below the age of 12, it is a good time to teach them the technique of doing the snatch and cleans and jerks. This can be done with a broom handle with no weight. I believe that young individuals can do many exercises which involve nothing but their own body weight like push ups, bar dips, chin ups, sit ups, crunches, leg raises, rope climb, hand stands or hand stand push ups. For young children up to 12 I think basic gymnastics gives them all of the above exercises plus teaches them to deal with body balance and overall body coordination. I have watched several of my grandchildren doing beginning gymnastics and it seems to me that a basic gymnastic program would do wonders for early body development particularly the upper body. Swimming is also a good upper body and overall muscle developer for young bodies.

Starting individuals early will help balance tendon and ligament growth with muscle growth so, as they grow older they will not have as many injuries. Next, there are three things human beings all need to develop a productive and healthy life style. These are physical, mental and emotional toughness. These 3 are closely inter-related so starting physical fitness early in life will help young human beings develop mental and emotional toughness, as well as physical toughness. It is a known fact that youth in the US is becoming less fit physically so starting children at the age of 6 or 7 on the road to a physically active life is really important to the overall health of the human beings in this country. If something is not done now health care costs will continue to rise which is something we really can not afford.

Water polo, like swimming because it takes place in a liquid, is a sport that really doesn't require a lot of fast twitch fiber. Watch the hand and foot action of a sprinter in the water and you will see they really

don't move very quickly in comparison to a sprinter running. In water polo shooting the ball is probably the only place where fast twitch fiber may really play a large role in performance. In swimming the dive is the only place where fast twitch fiber probably helps performance. In both of these sports power in the water has to always be drawn from being able to have a feel for the water. The better one can feel the water the better one will be able to use the power in their muscles to move through the water. Even in shooting body balance and feel for the water is much more important to hand speed than a lot of fast twitch fiber. Because water polo is a contact sport below the water players need and use power to deal directly with other players. The higher the level the more contact players have to deal with so developing body power by weight training becomes more and more important.

Most weight training coaches really are not familiar with speed of movement in the water and they don't understand the concept that to transform muscle power in the water an athlete must first be able to feel or some way get a hold of the water. Explosive speed just doesn't work or really happen in the water like it does on land. To transform power from the legs to the upper body to shoot the ball require a great deal more stomach strength than the same motion done on land. In serving a tennis ball or throwing a baseball or football gravity can be used much more effectively to help increase power into speed than in the water which restricts body motion. Obviously the higher one can get out of the water the more they can use gravity to help them increase power and speed of motion.

The secret, if there is one to increasing muscle strength, is to take a muscle to complete failure or fatigue. Then the body will react and force the muscle to grow so it can deal with this increased stress. The harder one stresses the muscle the more the body will try to adjust to deal with this outside stress by increasing muscle size and its ability to deliver power. Most physiologists believe at birth you have a given number of muscle fibers and they don't think you can increase this number but with work, i.e. stress, you can increase the size of the muscle fibers you have been given. Some people have the misconception that you can change fat to muscle or muscle to fat but this is not true. Fat cells are fat cells just as muscle cells are muscle cells. Fat cells can increase and take over areas where muscle fiber has atrophied from lack of use and muscle fiber can increase in size under a very thick layer of fat cells. Also it is important to remember that only muscles burn calories, fat burns nothing because it doesn't have the ability to move. The higher your % of muscle mass to fat in the body the higher your basic metabolism will be. The only way to stay thin is to gradually lose fat while trying to retain muscle mass. If one tries to lose weight too quickly the body will burn up both muscle mass and fat and your metabolism will slow down because of the lack of muscle mass. Then when you go back to eating normally like you did when you had more muscle mass you will gain more fat weight because you will need less calories to deal with what your muscles were burning.

One of the best ways to really fatigue a muscle is called zero effort lifting. What is meant by zero effort is you take the muscle to a level of fatigue where you really have no ability to raise the weight as you really have no effort left in the muscle to make it contract. There are basically two parts to every lift the positive or concentric contraction and the negative or eccentric contraction. In zero effort lifting you lift the weight till you fail in the ability to lift it. Then with the help of a spotter the weight is raised and then the lifter brings the weight down slowly. This is the negative contraction. Then the spotter helps him raise the weight again then he lowers it slowly. The lifter does this till he literally cannot stop the weight from almost free falling. This means he has reached negative failure and the muscle is completely fatigued. This kind of lifting requires the lifter to deal with a good deal of muscle pain. The pain in the muscle gets so severe that the lifter gives into the pain and stops fighting and the weight free falls. The pain is the most difficult part about zero effort lifting. The more you do this kind of lifting the better one gets at dealing with the pain and the longer he or she can continue in a zero effort set. When one moves from one set to another the lifter wants to keep the rest periods as short as possible. The purpose is getting the muscle to fatigue and not how much weight one is putting up.

This type of lifting can be done with almost any lift you want to use. I will give you a couple of examples.

Do chin ups until you can not get up another time; using a bench help yourself up with your legs then go down slowly, Help yourself up again and down slowly do this until you can't stop yourself from just free falling on the way down. This usually comes because the pain becomes so severe you just can't fight through it any more. Take 10-15 second rest and do this over again until the pain and fatigue stop you from being able to do the exercise and complete fatigue has set in. At first maybe only 2 set will be enough to blow you away but as you gain power and the ability to deal with the pain hopefully you will be able to deal with 6 set.

Then go over and do bent over rowing and go through the same process but start the first lift at say 40-60% of max. If you have hammered the muscles on the chin ups and you keep the rest short it won't take very long to bring the lats into complete fatigue again in bent over rowing. The whole thing is taking the muscle to positive and negative failure and keeping the rest time to no longer than 15 seconds between sets. You have to take rest while your partner is taking his muscle to fatigue, Then it is back to your turn again.

Another good series is 6 sets of 6 reps doing bench presses starting at 80% of max and dropping a little weight as you reach positive and negative failure and taking only 10 second rest between sets. After your six sets your partner does his 6 sets and you go through this until each man has done 6 sets of 6 reps 3 times. There are many variations of sets and using 80% to 35 % of ones max. but what the individuals aim is always to fatigue the muscle by forcing it to positive and negative failure as many times as possible during a workout. The limiting factor is your motivation to deal with muscle pain that is caused by taking a muscle to positive and negative failure.

It is important to change exercises every 2 weeks because the body will become accustomed to exercise and the stress will be less if you want to increase muscle growth and development. There are many exercises you can use to stress given areas of the body . Since you will probably only use 2 or 3 working a given area these can be changed around every 2 weeks and you will never run out of things to do.

You can set up your exercises so you are basically working with two major areas each morning. Like Back and Triceps one day M-W; Chest and legs T-Th. Traps, Legs Friday. Or you can work just with one major area each day. Chest Monday, Back Tuesday, Triceps and Biceps Wednesday, legs Thursday and then start over again.

I believe stomach work should be done every day because it is so important. Stomach work is a good way to warm up so you do it at the start or a great way to end a workout.

There are 5 basic stomach exercises that I feel are worth while.

1. Start off raising the legs and then when they get straight up over your hips raise the hips and legs as high off the ground as possible then back down again.
2. put knees up and feet on the floor and hands behind head and raise shoulder off the ground keeping the lower back on the mat and hold in the up position for several seconds. This motion is easy on the back but really works the stomach.
3. Do stomach crunches. Bend knees with feet off the floor raise shoulders and head up toward knees these are done rapidly.
4. Bend knees feet on floor hands behind head keeping the back on the mat raise up the shoulders and rotate toward the left then after you have finished change and rotate toward the right.

5. Bend knees feet off the floor hand behind head pull up shoulders and touch right elbow to left knee then left elbow to right knee. How many you do depends on your physical condition.

I feel that if you have time you should spend 40 minutes lifting and 20 minutes doing stomach work. Off season players should spend at least 1 hour lifting and 20 minutes on their stomachs.

On days you have to miss because of a big exams or because you were up studying you always have time to run through a set of 1 push up, stand up, drop down, and do 2, stand up, and drop down and do 3 and so forth-3-4-5-6-7-8-9-10-11-12-13-14-15 push ups , bar dips, or even chin ups. This is a good way to wake yourself up and allow yourself to study or do mental work for a little bit longer. A set of push up like this will take about 10 minutes and every one has 10 minutes in a day to work the muscles out and get the body moving. By staying in shape all the time you avoid getting sore and beat up when you have to start over. The secret is staying in shape not starting and stopping.

What does a weight program like this really take on the part of any athlete? It takes the same thing that is needed to be successful at anything individuals strive to achieve at. The key things are self discipline and self motivation. 90 % of life is just showing up. The key is getting up each day and getting it done. Lifting hard will go a long way to increase mental and emotional toughness. If individuals know they have paid the price to win they will then have the self respect and confidence needed to allow them to perform. Self doubt is one of the major causes for poor performance. If an athlete can deal with the pain needed to lift hard they can be beaten but they wont beat themselves because they will have paid to high a price so they won't roll over.

Every two weeks you should test players and while there are many good ways to test John Vargas and I set up a good testing program to see if players were really exercising and lifting on their own. We start them going to failure on chin ups giving them 15 second rest and going to failure again. 5 minutes rest and have the take 80% of their body weight and bench press it until they reached positive failure 15 second rest and go again to positive failure. 5 minutes rest and do bar dips to positive failure 15 seconds rest and go again to positive failure.

We scored these as follows:

- First set: body weight times number of chin ups.
- Second set: body weight times number of chin ups times a bonus of 1/3 of total on the last set.
- On the bench press: number of lifts times weight they were lifting on first set.. Second set weight lifted times number lifts plus 1/3 of second total.
- Bar dips is number of dips time body weight on the first set. Second set is total dips completed times body weight plus 20% more.

The second sets are all much harder and give the tester a good idea of how well those tested can recover and deal with muscle pain. By giving a reward we felt they would try harder on the second set so this would give us a good feeling for self discipline and self motivation of those being tested.

The last test I would give is number of sit up an individual can do in 5 minutes. Have some one hold the feet down of the individual who is being tested; start with the hands behind the neck and go from flat on the floor till the elbows touch the knees.

Scoring should be 10 points for each set up from 1-100, 15 points per set up from 101-200. 20 points for every push up from 201-300. I have never seen anyone make more than 260 in 5 minutes.

If you have trouble thinking of enough exercises to change every two weeks contact me.

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