

Dixie Zone Newsletter

Winter 2010

2010 USMS SCY NATIONALS

The Georgia LMSC is hosting the 2010 SC Nationals in Atlanta at the Georgia Tech Olympic Natatorium. Dates are May 20 – 23. Meet details will be in the next SWIMMER magazine. Everyone in the Dixie Zone is encouraged to attend and support these Nationals. LMSC Chairs and Coaches - please continue to promote this meet to your swimmers over the next months. We need a high attendance to make this meet a success!

2011 USMS LC NATIONALS

Auburn Masters Swimming and the James E Martin Aquatics Center at Auburn University are excited to announce that we will host the 2011 Long Course National Championship Meet. The proposed dates are August 9-13, 2011.

The Indoor Competition pool at the Aquatics Center has successfully hosted many large competitions, including the 1994, 2003, and 2009 SEC Swimming and Diving Championships, the 1998 Men's and 2003 Women's NCAA Division I Championships, the 1995, 2000 and 2005 US Open Championships, and of course the 2001 and 2007 Dixie Zone SCY Masters Championships. The water depth and flow over gutter system help to make the pool one of the fastest in the world as evidenced by the number of NCAA, American and US Open records set in it. Auburn Masters Swimming also hosts an annual meet every February that is always well attended and well received.

In addition to the Indoor Competition pool, for warm-up and cool down there is an 8 lane 25 yard pool housed in the same building and a 50 meter by 25 meter outdoor pool within a one minute walk of the Aquatics Center building.

Auburn is a 90 minute drive from Atlanta's Hartsfield airport. A regular shuttle bus service connects Auburn and the airport, and the shuttle operators plan to increase capacity to meet expected demand. There will also be shuttle service linking the pool and area hotels, of which there will be no shortage. For those who prefer to drive, there will be ample free parking near the pool.

As many of you know, Auburn is a major center of swimming excellence, and the Aquatics Center is festooned with banners celebrating SEC and NCAA championships by both our men's and women's teams.

We hope that a number of our "emeritus" varsity swimmers will compete as a tune-up for the 2012 Olympics!

We look forward to hosting you in our home pool and in our community.

Sarah Stallkamp, Director, Aquatics Center, Auburn University

Conner Bailey, Auburn Masters Swimmers

DAYTONA BEACH MASTERS

Daytona Beach Masters Swimming has merged with Swim Volusia Masters and will swim as Daytona Beach Masters Swimming for 2010. The group is coached by Scott Bay, Luke Downer and Frank Lill and is operating out of three sites. The move brings together all of the Adult Aquatics in the area that serve the competitive, fitness and open water/triathlon communities to provide a sound structure with professional coaches.

DBMS Swimmer Charlie Lydecker kicked off the Short Course season with 3 Top Ten Dixie Zone Swims. The 2009 Long Course Season continued that fast swimming and included Top Ten Dixie Zone times by Scott Bay (2) Cameron Edwards (3) Debbie Roberts (4) and Terry Livingston (9). Terry also claimed a National Championship in the 100 Breast stroke along with 4 other top ten National times and was also named as an All American for recording the fastest time in the 100 breast for 2009 in LCM.

The 2009 SCM season also had some fast swimming with Alan Holt putting up 3 Top Ten Dixie Zone times. He joins Bill Blalock (1), Luke Downer (5), Terry Livingston (3), Blaire Fromm (6), Terra Brock (7), Mindy Nowviske (6) and Megan Hyndman (6). Masters swimmers Ruth Thompson, Nadine Olney and Iris Threatt-Milton combined to swim two top ten times in the 3000 and 6000yd postal relays.

Daytona Beach Masters will also be hosting an indoor SCY meet on Feb. 6 at Daytona State College. Please see the website:
http://www.daytonabeachswimming.org/MASTER_IND_EX.html

TESTIMONY

Ann Walton

June, 2004 I injured my back. After the spasms cleared, I had found that I couldn't pick up my feet to walk I could only shuffle. I had little use of my hip flexors. I could only get in and out of a chair that had arms. I started physical therapy. This seemed to help some but we found that my strength was not getting any better. My physical therapist suggested that I get an MRI. I did and found I had a debilitating injury. I was told that surgery would give me 50% chance of correcting the problem. I opted to stay with physical therapy. I rotated days going to physical therapy with opposite days at the health club. I was committed to getting better. I worked with my therapist to develop a program of walking in the pool. Eventually was able to run in the pool and then started swimming. I found that I was moving very slowly.

One of my friend's kids swam for Crawfish Aquatics. I called and spoke with Jan Ripple. I asked if they had a program to work with adults. I explained my injury. She convinced me to come in and swim with their swim team. I did, my first visit I was the only adult to show up. The coach on deck was very patient and worked with me. I continued to return. I eventually dropped my health club membership and became a member of the Crawfish Masters team. I was so slow and didn't know any swimming techniques and was very handicapped.

I feel I am blessed to have so many wonderful people work with me. Every member of this team reached out to help me succeed. All of the coaching staff was patient and worked with me to get better. (I'm not sure any of the coaches knew what they were getting into with me). I do appreciate all of them. Nan Fontenet has been so supportive.

2005 Dr. Ripple opened Exerfit (opened under another name). He had hired a new LSU graduate swimmer, Mandy Leach. Mandy worked with us at Crawfish Aquatics and helped promote the new facility. Mandy knew of my handicapped and encouraged me to workout with her at Exerfit. I jumped right in to join.

Mandy worked with me and soon had me walking better and able to balance more. My first accomplishment was being able to stand up from being down on the floor. I have reached many more goals since that time.

I have been consistently swimming and working out at Exerfit. I am now swimming competitive swim meets. Recently, I made top 10 swimmer in our district. My goal is to compete in triathlon in 2010. It wasn't long ago that I could not imagine doing anything like that.

"Exerfit and Crawfish Aquatics has greatly improved my quality of life".

Mandy's Boot Camp helped me on the road to losing weight and getting in better physical shape. I am thankful to be a part of Crawfish Aquatics and Exerfit.

STUDY SUMMARY

Dr. Joel Stager (Indiana University) sent out a preliminary evaluation of a recent research study focusing on master swimmers. This is THE GREAT REWARD to all of us master swimmers, confirming that we are definitely on the right path to improved quality and possibly length of life. Here is a short summary of Joel's summary.

Recently, it has been suggested that much of what we assume to be physical and mental deterioration due to aging might, in fact, be due to a prolonged sedentary lifestyle. Preliminary research at Indiana University's Counselman Center of the Dept. of Kinesiology, focused upon Master Swimmers because they have engaged in routine intensive daily exercise for decades is beginning to challenge that assumption.

NERVE CONDUCTION VELOCITY (NCV) – Is a measure of the speed at which nerve impulses travel from the central nervous system to muscles shows that in Master Swimmers ages 40-70 only minimal declines compared to the general population (GP). 80 year old Master Swimmers show NCV similar to a 50 year old GP.

COGNITIVE PARAMETERS – The preliminary study also suggests that Master Swimmers show smaller age-related declines in working memory capacity.

CARDIOVASCULAR PARAMETERS (Arterial Elasticity) – The study of Master Swimmers demonstrates that a highly active lifestyle can delay age-associated reductions in central and peripheral arterial elasticity, a reflection of good vascular health.

MUSCLE MASS – Is a key component of being able to sustain free-living life styles as we age. Older Master Swimmers have a muscle mass that is equivalent to persons 15 years younger. The older the Master Swimmer gets, the more different they become.

CONCLUSION – While research comparing Master Swimmers against the general population cannot suggest that aging can be halted by physical activity, this research data suggests that in the highly active (Master Swimmer), there maybe age offsets in the magnitude of decades.

THE PHYSIOLOGY OF BEING IN SHAPE

....Adaptation at its Best

By Edward H. Nessel, RPh, MS, MPH, PharmD

Every person who engages in prolonged vigorous movement realizes that with continuous training something happens over time that allows the body to withstand increasingly-demanding physical challenges. What would have sunk your ship in stormy seas just a few weeks ago now presents with calmer water towards your destination. This destination is what every serious athlete and dedicated exercise participant should be striving for throughout their training experience: to be in the kind of shape that allows FOR a positive ADAPTIVE TRANSFORMATION to OCCUR THAT MATCHES the physical potential Nature has granted each of us, and then a little more. Climbing the formidable mountain of *being in shape* should be the goal of everyone wanting to be labeled an athlete.

Getting in “shape” is neither easy to attain nor to explain. As you know, the human body is a wondrous machine with complicated systems able to produce great quantities of energy both quickly and over extended periods of time. This permits the body to adapt to whatever is physically challenging it, and enlarge its capacity to handle increasingly more vigorous exercise. Unlike an automobile engine which has the exact parts needed to produce a certain amount of predicted energy and power, the human body's components can be made to produce more by having them induced more through use of specific physiologic protocols over time. In every instance of adapting to exercise, three main elements, the holy grails of athletic training as I see it, are brought into the picture and must be addressed to a greater or lesser extent depending upon the venue and sport. These elements are *endurance*, *strength*, and *power*. Following the correct pathway to physiologic condition is like a professional concert or jazz musician mastering the three main woodwind instruments in proper order: clarinet, saxophone, and flute. The athlete should build endurance, then go for increased strength and finally, work to CAPTURE power.

Endurance

Endurance is where it all starts if the coach/trainer and athlete CORRECTLY approach getting in shape. It takes the greatest amount of time and the most effort to develop all the physiological CHANGES the body needs to BUILD endurance. It is not a simple goal; it is an ongoing process. When speaking of endurance, we must include both the muscular and cardio-respiratory systems. In dealing with muscular tissue, endurance becomes specific to individual muscle groups. When dealing with cardio-respiratory endurance, we speak more of the body as a whole and its ability to sustain

extended vigorous physical exercise. This becomes the more important aspect of physical fitness. If physical condition is suspect and fatigue sets in too quickly, muscular strength diminishes as does neuromuscular coordination, concentration, and alertness. To prevent this and to correctly train the athlete, we need to increase the mechanisms required to harvest and utilize energy supplies for prolonged BOUTS OF movement and to concomitantly increase the distribution of nutrients and oxygen throughout the body to sustain TOTAL BODY INVOLVEMENT.

Although fast-twitch muscle fibers are usually larger in size than slow-twitch, slow-twitch fibers can become up to 22% larger than fast-twitch fibers with effective endurance training. What this causes, however, is increased development of endurance fibers at the expense of pure power. Even the subtype of fast-twitch fibers (Fiia), which has more oxidative capacity than the absolute all-out fast twitch fibers (Fiib), develop more with endurance training. Consequently, the athlete ends up sacrificing all-out power for enhanced endurance.

Specificity of training will enhance ONE ability at the cost of another. A sprinter who trains mostly endurance will cause some fast twitch fibers to switch over to fire more slowly; this will lessen power and all-out speed, but will add THE ABILITY TO PERFORM LONGER. Along with the change in fiber type, a second adaptation occurs: an increase of more than 15% in the number of capillaries innervating muscle fibers which allows for greater exchange of O₂ and CO₂, heat, wastes, and nutrients between the blood and active muscle tissue. This is an important adaptation; the muscles are then able to contract more efficiently over an extended period of time which delays fatigue.

A third muscular adaptation to endurance training is the increased formation of THE IRON-CONTAINING PROTEIN, myoglobin. With appropriate aerobic training, muscle myoglobin can be increased *in situ* by up to 80%, ALLOWING FOR A MUCH BETTER OXYGEN SUPPLY.

The fourth adaptation to aerobic training is an increased number of muscle mitochondria, allowing for increased energy production throughout the working muscles. Again, specificity of training—only those muscles being trained regularly will produce more mitochondria. This is the goal of much of our training: work the main muscle groups needed to power the athlete through the event's requirements, but don't ignore the ancillary groups that can be used to support the whole body through various movements. Total body development is key to superior athletic performance.

It takes vigorous exercise to better induce mitochondria to enlarge, multiply, and perform efficiently. But it's important to remember that as the production of

mitochondria progresses to where they split and double in amount, those doing the splitting temporarily lose their ability to provide energy. During this time, the athlete may feel sluggish and fatigue more easily. This is only a temporary condition until all the new mitochondria are able to CONTRIBUTE to the aggregate energy supply.

The fifth adaptation to occur in aerobically-trained muscle is the enhanced ability to utilize free fatty acids (FFAs) for energy, sparing more of the carbohydrate stores until later in the event or training session for fueling speed.

The cardio-respiratory system's response to endurance-type training is even more encompassing as the major systems adapt to deliver oxygen and energy in greater supply per unit time. The heart's left ventricle chamber gets larger and the wall thickens to increase the stroke volume, thus the "athletic heart." And, of course, the heart rate decreases during rest and in sub-maximal activity because of the heart's increased efficiency. Several studies have shown that an average of one beat/minute per week is dropped as cardiac condition improves. After six months or more of training, some RESPONSIVE athletes can drop their resting heart rates by 20 to 30 beats per minute or more.

The conditioned athlete also benefits from increased VO₂ max; however, in fully-matured athletes, the highest attainable VO₂ max is reached within eight to 18 months. This indicates that athletes have genetic limits to maximal oxygen consumption.

The respiratory system can be enhanced to a greater percentage increase than cardiovascular function. Though respiration at rest or with easy movement does not increase in functionality FROM aerobic training, the tidal volume rises consistently at maximum aerobic effort as does the respiratory rate. This is due to increased usage of respiratory tissue, its flexibility in function, increased activity of the intercostal muscles, and increased vascularity for enhanced O₂ and CO₂ respiration.

Strength

The athlete may ask the trainer or coach, "Why do I need more strength?" "Why should I devote time and effort to weight training when my focus is endurance?" Of course the answer to that athlete would be "because a stronger athlete can perform the same tasks with less effort and this translates into less fatigue over time." And as you know, the athlete must also work on areas that are intimately involved with muscle. Connective tissue must be made to adapt to handling increasing resistance from resistance training; tendons must be forced to adapt to handle stronger and thicker muscle fibers that result from this training. Within the first 10 weeks of strength training, the

nervous system also adapts by producing more motor-neuronal units.

Power

Powerful athletes can move through their sport or ACTIVITY-SPECIFIC requirements with speed and grace, and training for power should be as sport specific as possible.

Moving heavy resistance is not enough. Moving heavy resistance quickly but under control is what develops power (with sufficient rest and recovery between power-training bouts, of course).

When pushing the body through bouts of power-generating activity, past the "comfort zone," the athlete is also intentionally creating chemical buffers at the cellular level; ONE OF WHICH, bicarbonate, forms to absorb lactic acid and delay paralyzing acidosis.

Some athletes are just genetically gifted, having a greater percentage of fast-twitch muscle fibers to produce more power. Being the largest fibers in muscle, fast-twitch react the quickest when voluntarily ASKED to contract; however, without a blood supply, the ability to produce energy and remove waste is hindered, AND THUS LIMITED. The slower type of fast twitch fiber can be INDUCED to HAVE increased blood innervation which allows two things to occur: (1) an increase in the power ability of the athlete ABLE to BE HELD for a longer time but (2) the absolute amount of potential power able to be generated is somewhat diminished. The positive aspect of this is that the increased power produced, though not at an absolute maximum, can be held over a GREATER period of time. The athlete then has the ability to pursue the power event LONGER stronger to the finish. Fast twitch fibers also retain their ability to produce power much longer, up to six months, during de-training than slow-twitch fibers which lose their functional aerobic endurance CAPACITY within approximately two weeks of inactivity.

Getting in good condition is a relative thing. Almost everyone has an innate ability to rise to their optimum level, but most who commit to enhancing their physiologic condition will stop short of this. They may fail to see the importance of capturing the elements of endurance, strength, and power. As a result, they will miss the opportunity to achieve an optimally conditioned state.

Coach Ed Nessel, a frequent contributor to the AMAA Journal, is the United States Masters Swimming (USMS) National Resource Librarian and active member of the Sports Medicine and Coaches Committees. He was selected USMS Coach of the Year in 1998 and was invited to coach at the Olympic Training Center in 2002.

DIXIE ZONE CALENDAR

2010		
Feb. 6	SCY	Daytona Beach Swimming Masters – Daytona Beach, FL
Feb. 6-7	SCY	South Carolina SCY State Meet – North Myrtle Beach, SC
Feb. 13-14	SCY	Valentine Meet – Clearwater, FL
Feb. 13-14	SCY	Auburn Masters Invitational – Auburn, AL
Feb. 19-21	SCY	17 th Annual Masters Challenge – Fort Lauderdale, FL
Feb. 19	SCY	Sarasota Games for Life – Sarasota, FL (for ages 50+)
Feb. 27	SCY	Frank Clark Masters Open – Greensboro, NC
Feb. 27-28	SCY	Polk Senior Games – Lakeland, FL (for ages 50+)
Mar. 5-7	SCY	Crawfish Aquatics SCY Championships – Baton Rouge, LA
Mar. 6	SCY	Central Florida Marlins Masters Winter Splash – Ocala, FL
Mar. 6	SCY	Fourth Annual John O’Keefe Spring Splash – Miami Shores, FL
Mar. 20	LCM	Goodlife Games – Clearwater, FL (for ages 50+)
Mar. 19-21	SCY	St Pete 40 th Anniversary SCY Championships – St Petersburg, FL
Mar. 26-28	SCY	Dixie Zone SCY Championships – Orlando, FL
Mar. 27-28	SCY	St Patrick’s Day Invitational – Atlanta, GA
Apr. 10	SCY	Hilton Head, SC
Apr. 15-18	SCY	YMCA Masters Nationals – Fort Lauderdale, FL
Apr. 17	OW	Nike Swim Miami (1 mi, 5K, 10K) – Miami, FL
May 1-2	LCM	May Day Relay-Sprint Meet – Ft. Myers, FL
May 1-2	SCY	Tiger Masters Meet – Clemson, SC
May 1-2	SCY	North Carolina SCY Championships – Hillsborough, NC
May 8	OW	Hurricane Man (2.4 mi, 1000 yd) – St Petersburg, FL
May 20-23	SCY	USMS SCY Nationals – Atlanta, GA
May 29	OW	USMS 1-mile Championship – Charlotte, NC
June 5	LCM	Classic City Invitational – Athens, GA, Univ. of GA
June 11-13	LCM	Dixie Zone LCM Championships – Sarasota, FL
June 12	OW	Swim Around Key West – Key West, FL
June 12-13	OW	Open Water Festival – Ft. Myers Beach, FL
June 18-20	LCM	June Krauser Summer Splash – Fort Lauderdale, FL
June 18-20	LCM	Orlando, FL
June 26-27	LCM	South Carolina LC Championships – Greenville, SC
July 17	LCM	Central Florida Marlins Masters Summer Splash – Ocala, FL
July 31 - Aug 6	LCM	FINA World Masters Championships – Goteborg, Sweden (tent.)
Aug. 9-12	LCM	USMS LCM Nationals – San Juan, Puerto Rico
Oct. 2	OW	Dixie Zone OW Championship/Tropical Splash – Sarasota, FL
Dec. 3-5	SCM	Dixie Zone SCM Championships – New Orleans, LA

For more calendar details, check out www.usms.org and www.dixiezone.org.
It is recommended that meet directors post their meet information on the main USMS Calendar as well as on the Dixie Zone Calendar.

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