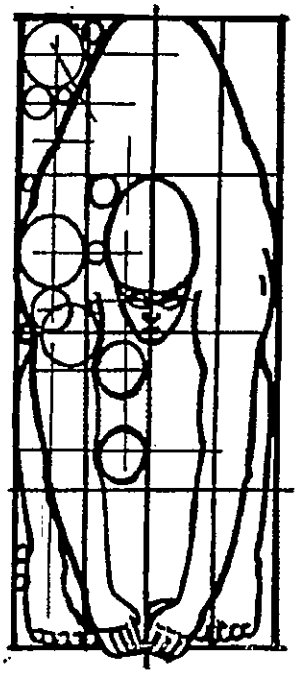

AUSTRALIAN MASTERS SWIMMING COACHES NEWSLETTER

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EDITORIAL

Hello Readers,

Welcome to the third issue for 2001. You will find a number of articles in this issue have been taken from the web.

The authorless article "Feedback and Motivational Tools" printed on the front page of issue 2, 2001 was written by Jacinta Stirrat, NT State Coaching Director. Thankyou Jacinta for notifying me and for your contributions.

I will be handing over the AMSCN editorial reins at the end of this year. I hope each issue has provided you with snippets of information. Thank you to all the people who have taken the time to send in articles. It makes our newsletter more original and specific. Don't forget this newsletter is for coaches and swimmers so please feel free to jot down some notes and send them in. See you next issue.

Claire Reaburn

THIS ISSUE

LEARNING FROM THE MASTERS: SKILL TRANSFER IN ACTION

BY LISA MAYOCCHI & DR STEPHANIE HANRAHAN

FEW OF US HAVE THE LUXURY OF BEING ABLE TO TRAIN IN OUR SPORT FULL-TIME. RATHER, MANY OF US PARTICIPATE IN OR COMPETE IN SPORT WHILE ALSO ENGAGING IN A NON-SPORTING CAREER. THE GOOD NEWS IS THAT WHAT WE LEARN WHEN WE ARE SWIMMING THOSE LAPS OR CYCLING THOSE TRACKS CAN ACTUALLY HELP US AT WORK.

A study was conducted at the Australian Masters Games in Melbourne with individuals who had been involved in open level state, national or international competitions in sport, and who were involved in a non-athletic career. You may in fact have been one of the individuals who completed a questionnaire for our project! Thanks to the participation of 242 individuals at the event, we were able to present a summary of the results of our research project.

It has been suggested that sport experiences can help athletes develop skills, characteristics and qualities that are not only useful for athletic achievement, but are also important for success outside athletics (such as one's non-sporting career). Examples of these skills are determination, perseverance, the ability to meet challenges and the ability to perform under pressure.

So to what extent are the skills used in sport also useful in one's non-athletic career? The study reported below was conducted to look at this issue more closely.

WHO PARTICIPATED IN THE PROJECT?

Participants in the study were 143 males and 99 females who had been involved in sport in open-level state, national or international competitions, and who were currently engaged in a full-time or part-time occupation. The average age of participants was 42 years. Forty-three different sports were represented in the study, with athletics (52 participants), rowing (24), basketball (23) and swimming (11) having the highest number of respondents.

The most frequently cited reasons for retiring from open level competition in sport were family, study or work commitments, injury or accident, and age. Approximately 23% of the sample were still competing in open level state, national or international competitions. Those participating in the study were managers and administrators (29%), professionals (33%), paraprofessionals (13%), tradespersons (6%), clerks (5%), salespersons and personal service workers (5%), plant and machine operators (3%) and labourers (3%).

WHAT SKILLS ARE USEFUL IN SPORT AND WORK?

Each participant in the study rated the extent to which they displayed twenty skills or qualities (e.g., patience, time management, self-confidence) in their sport and in their current occupation. The choice of responses ranged from 1- not at all, to 5 - totally. On average, the five skills that participants indicated they displayed to the greatest extent in their sport were:

- trying your best *
- determination *
- dedication
- motivation
- ability to concentrate

In contrast, the following five skills received the highest average rating for individuals' non-sporting occupations:

- trying your best *
- communicating with others
- decision-making
- determination *
- organisational skills

You've probably noticed that "trying your best" and "determination" appear in both lists. So in both situations, individuals displayed the will or determination to put in their best effort.

Continued on page 2

Sports Skills- Life Skills cont'd from page 1

The remaining three skills differ for both lists. In terms of one's sport, being dedicated, having motivation and having the ability to concentrate when required were qualities that were displayed to a great extent by the participants when they were competing at an open level. In contrast, the skills displayed to the greatest extent in one's non-sporting career related to working with others (communication), organisation and planning (organisational skills) and decision-making.

How useful do athletes find these skills at work?

On average, participants in the study thought that the skills they used in sport were somewhat useful in their current occupation, and they reported that they displayed the skills from sport in their current occupation to some extent.

You might be wondering "In what way did the respondents find the skills they use in sport useful in their non-athletic career?" Perhaps an example will help clarify this. One individual summed up how the skills she uses in athletics help her in running her own business in photography: "Being self-employed requires very high levels of motivation, dedication and self-discipline - just as athletics does - so the two complement each other well."

What factors might affect whether we use these skills at work?

Of course, not everybody used their skills in sport to the same degree that they used these skills at work. Through examining people's responses to questions about their work, we found that several factors affected how much people used their skills in their sport and in their non-athletic career.

Individuals who reported high enthusiasm for their job used the skills that they had applied in their athletic career in their non-athletic career more than those who reported low levels of job enthusiasm. Four other work-related aspects had an impact on use of skills from sport to work, but only for those individuals who reported that they used their skills in sport to a great extent. Individuals who believed that they had the ability to perform the tasks required of them in their non-athletic career reported significantly higher use of those skills in their non-athletic career, and those who received encouragement from supervisors reported higher use of skills from sport to work than those who reported that they received a low level of encouragement from supervisors. In cases where quality of management was poor and/or co-worker relations were poor, individuals were found to use the skills from sport in their workplace to a greater extent than if co-worker relations and quality of management were regarded to be good. This might be because individuals draw upon those same skills that assisted them in succeeding in their sport when an aspect of the work environment is in need of improvement.

So what does this all mean for the Masters athlete?

The implications of this study for the masters athlete are in terms of highlighting the links between sport and work. For although the two may be separate in our lives, this does not mean they have to be separate in our minds. Being aware that the skills, qualities, and characteristics we display in sport can also be used in the workplace may give a new perspective to work. As a final thought, it might also be worthwhile to consider, next time we are at work, that what we learn in the workplace can also be applied in the sport setting. After all, there is nothing to say that the cross-over can't go both 2 ways!

This article was reprinted with permission from The Masters Athlete, Issue 7, June 1996. There has been slight editing of the article.

Overcoming Fatigue Out of the Pool

www.swimpsychology.com Tip No.78 by Craig Townend

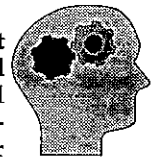
Fatigue outside of the pool is an issue which is just as important as fatigue in the pool - as this can affect your performance on many different levels, in both training and meets. This is a problem I regularly get asked about by concerned swimmers.

Fatigue from training or races can obviously affect your energy and endurance levels, plus it can also directly impact upon your training, enthusiasm, morale, positivity and concentration. Needless to say, overcoming fatigue during a week-long meet can put you at a distinct advantage over your competitor in the finals!

Of course, if you experience fatigue outside of the pool, probably the first things to check are that your diet and the amount of sleep you are getting each night are adequate for your needs.

If these are not the problem, then the next place to look is within your own mind. A US swimmer's parent asked me during the week about her daughter - whose eating and sleeping habits were perfectly fine, yet for some reason she still felt the draining effects of fatigue each day.

So once diet and sleep have been discounted from the list of possible causes, fatigue is most usually coming from mental over-exertion, which manifests within the body as plain tiredness. This is brought on by the mind becoming tired of the constant focus upon the goals in training or meets - and once the mind becomes tired, so does the body. (Please note that this does not discount the possibility of other medical causes).



It makes sense that the best way to overcome mental fatigue is through mental rather than physical techniques - primarily regular mental relaxation. Relaxing the mind for 5-10 minutes each day releases the body's taut muscles and clears the mind of stress - and this helps to make physical recovery time from swimming 2-3 times faster! A mental relaxation exercise is much like taking your mind on a mental holiday for 10 minutes, and in this short time, it helps to rejuvenate your body's energy levels and immune system, plus your mind's clarity and concentration. Doing this regularly will help to overcome fatigue far more quickly, which of course improves your chances in the pool. For those already doing a regular daily visualization or my audio exercise, this should take care of this problem for you (though please note that if you are doing this exercise without the audio guidance, it is important that you are doing the laxation part of it correctly).

An earlier swimtip I wrote on 'overcoming nervousness before races' happens to also describe exactly how to do this perfect relaxation for overcoming fatigue as well (it's truly a multi-purpose exercise!). For overcoming fatigue, this exercise is generally used while you are at home, however as the swimtip explains, it can also be used directly before races for the purpose of overcoming chronic nervousness.

Rather than go through this entire technique again for you here, I will instead direct you to this swimtip on mental relaxation, which will show you exactly how to do this. Remember as you read it that it can be used for both fatigue and nerves. This tip is at http://www.swimpsychology.com/tips/swimtip12.html

So don't put up with fatigue, find the cause of it and discover your energy again.

"The Mind controls the body, and the mind is unlimited".

The best of success, Craig Townsend

If you wish to receive my new tips by email, visit my SwimPsychology Home Page to subscribe (all details kept 100% private).

PROTEIN POWER FOR ENDURANCE ATHLETES

BY HOLLY FRAIL (B. SC. GRAD. DIP. NUTR. DIET., D.A.A.,A.P.D)

PROTEIN REQUIREMENTS FOR ATHLETES HAVE BEEN A HOTLY DEBATED TOPIC FOR MANY YEARS. IN THE CASE OF MASTERS ATHLETES INVOLVED IN ENDURANCE SPORTS, IT SOMETIMES HAPPENS THAT CARBOHYDRATES TAKE SUCH A PRIORITY THAT WE FORGET ABOUT THE IMPORTANCE OF PROTEIN ALTOGETHER. A LITTLE BIT OF BALANCE IS REQUIRED TO ENSURE THAT ALL ESSENTIAL NUTRIENTS ARE CONSUMED IN OUR TRAINING AND COMPETITION EATING PLANS.

Protein consists of various combinations of building blocks known as amino acids. The body can manufacture some of these, while others (known as essential amino acids) can only be obtained from food. Animal proteins (found in meat, poultry, fish, seafood, eggs and dairy products) are the highest quality, as they contain a good variety of all the essential amino acids. Plant proteins on the other hand (found in foods such as legumes, pulses, grains, fruit and vegetables) tend to be low in one or more of these essentials. For this reason, vegetarians must carefully mix and match their food choices to obtain a balanced protein intake.

The recommended protein intake for the masters athlete engaged in endurance exercise is 1.2 - 1.4 grams of protein per kilogram body weight per day, which should be easily obtained if sensible choices are made within our high energy training diet. For those of us involved in very prolonged strenuous training, for example preparing for an ultra-marathon type event, this requirement is most likely increased to around 1.6 grams/kg/day. This should represent about 12-15% of your total energy intake, but if you are a small eater, this may need to make up closer to 15-20% of your daily kilojoules.

The problems that may arise when we fail to consume adequate protein for endurance exercise include:

- inability to reach or maintain desired lean body mass
- general fatigue poor recovery from exercise, injury and illness
- inadequate intake of essential nutrients such as iron and calcium.

These factors may in the long run be devastating to both your performance in training and races, as well as to your health. Unfortunately, poor protein intake may be quite common in the daily diet of many masters swimmers, runners, triathletes, road cyclists and other distance specialists.

Our protein needs are increased by all forms of exercise. Protein is required for increased lean body mass, optimal repair and recovery and to a small extent as a muscle fuel. When our endurance sessions are long and intense, the contribution of protein as an energy source becomes more significant, and may account for 5-10% of the fuel used. As our muscle glycogen stores become low during exercise, our body converts protein, or certain amino acids, to glucose in the liver through a process known as gluconeogenesis. This glucose may then be used as a fuel source for working muscles, as well as for our brain and central nervous system. It has been estimated that during a marathon, as much as 50 grams of protein may be used. This also, or course, highlights the need for adequate carbohydrate intake before and during endurance exercise in order to preserve those hard earned muscles!

Prolonged exercise may also increase protein requirements due to degenerative and inflammatory responses in muscle and increased muscle enzyme turnover. Some recent research has suggested there may be benefit in providing protein as part of the post-exercise recovery plan. This is of particular importance for rapid glycogen restoration if you only have a short recovery time, and therefore perhaps useful for the masters triathletes amongst us. Nutrients such as protein, vitamins and minerals are involved in the first aid process for damaged tissues and the reconstruction of cells after exercise.

The message here is that if your training and/or competition schedule is demanding, and you need a bit of help with recovery and repair - try a carbohydrate-protein combination in your post-exercise food or drink. In practical terms this could consist of a homemade low fat milk drink such as a "smoothie", a commercial liquid meal supplement, a "sports" bar, yoghurt, bowl of cereal with milk, or a chicken sandwich. An alternative strategy would be to consume your normal post-exercise carbohydrate drink, then make sure you eat a meal soon afterwards that contains some protein as well as more carbohydrates to complete your recovery. You could plan to have a protein drink while you are preparing your post-training meal, or eat a dessert such as yoghurt before the main course. In other words - make sure you are organised with a stock of suitable snacks and drinks, a repertoire of quick nutritious recipes for meals after training, or plan to cook ahead.

Some endurance athletes have become interested in recent research into supplementation with branched chain amino acids (BCAAs) during prolonged exercise. The theory behind this is that a fall in BCAA levels during endurance exercise may lead to a chain of events which include changes in brain chemicals such as serotonin, and may lead to what is known as "central fatigue". In simple terms, maybe you can identify this as "my brain is tired"! Some studies showed improved performance in some individuals when BCAAs were added to a carbohydrate drink during endurance exercise. However, other studies showed the same results with the carbohydrate drink alone. Further work on the effects of amino acid supplementation for endurance exercise is required before any possible benefits can be clearly decided. The best proven prevention for "hitting the wall" (or bonking if you prefer!) is to keep up your carbohydrates during long training sessions and races.

It is important to choose protein foods that keep our other nutritional goals in mind. This includes making low fat choices, using low fat food preparation methods, and including foods that are good sources of other nutrients essential to performance and health. Lean and low fat animal products supply our best sources of iron, calcium and zinc. Many plant protein foods also provide us with valuable extra carbohydrates.

Despite a bit of publicity, there is no danger in consuming carbohydrates and proteins at the same time. Both these nutrients are already present in many nutritious foods that we all eat such as rice, pasta, milk and yoghurt, as well as legumes. Glenn Cardwell, a well-known sports dietitian from Perth has a great comment on this topic. He writes in his book "Gold Medal Nutrition"

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"PROTEIN IS REQUIRED FOR INCREASED LEAN BODY MASS, OPTIMAL REPAIR AND RECOVERY AND TO A SMALL EXTENT AS A MUSCLE FUEL."

NUTRIENTS SUCH AS PROTEIN, VITAMINS AND MINERALS ARE INVOLVED IN THE FIRST AID PROCESS FOR DAMAGED TISSUES AND THE RECONSTRUCTION OF CELLS AFTER EXERCISE.

HYPOTHERMIA- SWIMMING IN THE GREAT OUTDOORS

BY DR JANE MOORE

SWIMMING IS PRIMARILY AN INDOOR SPORT IN MOST AREAS OF THE UNITED STATES FROM SEPTEMBER THROUGH MAY. TEMPERATURE-RELATED ILLNESSES ARE UNUSUAL IN THE CONTROLLED CONDITIONS OF INDOOR POOLS. DURING THE SUMMER MONTHS, MANY SWIMMERS LOOK TO OPEN WATER SWIMMING FOR A CHANGE OF PACE, AND THE COOLER WEATHER FOUND IN NATURAL BODIES OF WATER OUTDOORS CAN PRESENT PROBLEMS.

Hypothermia occurs when a person's body temperature drops below normal. The medical definition of hyporthermia is a body temperature lower than 95 degrees Fahrenheit (35 degrees Celsius).

These lower body temperatures are commonly experienced by open water swimmers. After completing a swim and leaving the cold water, an additional decrease in body temperature, known as afterdrop, may occur. Afterdrop results from a combination of factors. The cooled blood from the arms and legs returns to the central body where the warm blood from the trunk goes to the extremities which are cool. Vigorous exercise following immersion in cold water may increase afterdrop. The drop could be significant for people who participate in triathlons or biathlons.

Water temperature below 60F (16C) is likely to cause hypothermia. Longer exposure from swims in water of 60-70F (16-21C) may result in hypothermia. Even swims in relatively warm water – 71.6-77.0F (22-25C) can result in hypothermia if a swimmer is in the water for an extended length of time.

CAUSES

Humans lose heat primarily through the skin. During immersion, a layer of water adheres to the skin's surface. This water is warmed by body heat conducted through the skin, providing a layer of insulation.

However, body or water movement causes this insulating layer to be disturbed and replaced by a new layer of water molecules. These cooler molecules conduct additional heat away from the body. The amount of heat lost by a body depends on the difference in temperature between the body and the water, and also on the speed of movement.

The heat generated by active, exercising muscles is usually not enough to replace the heat lost by conduction to the water. Because water is a much better conductor of heat than air, the loss of heat from the skin to the water makes cooling occur much more rapidly in the water than it does in the air or land.

SIGNS OF HYPOTHERMIA

It is very important to recognize the early signs of hypothermia. Failure to recognize these signs can lead to more serious problems – especially if a swimmer remains in the water.

Initially, a swimmer's activity will increase in an attempt to warm up. Shivering may start, but it may not occur because of the body activity. The swimmer may appear pale, weak or fatigued and may also complain of numbness. At a body temperature of 97F, uncontrollable shivering begins and body movements become uncoordinated. The victim may complain of discomfort or pain because of the cold. The condition is mild hypothermia.

Moderate hypothermia starts at a body temperature of 93F. Shivering slows or stops and mental confusion sets in. The skin may look bluish or gray, and the person may be very uncoordinated, behave strangely or appear drunk. Breathing slows, and the speech will become slow and vague.

At a body temperature below 90F, severe hypothermia occurs. The swimmer will be confused and may deny that there is a problem and refuse help. If the temperature continues to fall, the swimmer will lose consciousness and breathing may stop. Although the victim may appear dead, many severely hypothermic persons have been successfully revived as they were warmed.

Smaller people generally have a larger percentage of exposed surface area relative to their weight. This larger surface area contacts more water molecules and consequently allows larger decreases in body temperature. For this reason, elderly people may be more prone to hypothermia. The body's ability to regulate temperature may also be affected by illness or medications.

EFFECTS

Sudden immersion in very cold water causes a *reflex gasp*. The gasp is followed by an increase in the rate and depth of breathing (hyperventilation). The heart rate increases and blood vessels in the skin and muscles constrict. This is called the *cold shock response*. There are reports of death in untrained persons who inhale water during the gasp of the cold shock response.

As the body temperature drops, larger amounts of oxygen are required to do the same amount of work. For this reason, some swimmers may not be able to maintain the energy output to complete planned swims. Cooling causes muscle stiffness and loss of coordination, and movements become jerky and uncoordinated. This response may impair swimming performance enough to cause drowning.

Thinking processes and decision-making abilities also slow as the body cools. Eventually, confusion, forgetfulness, disorientation, lethargy and sleepiness develop. After an initial increase, the heart rate decreases as the body cools, causing the circulation to slow. Irregularities of the heart rhythm may occur, and blood sugar may drop to dangerously low levels because of the higher metabolic needs combined with decreased blood flow. Eventually, breathing also slows and becomes shallow.

At a body temperature below 86F (30C), a swimmer usually becomes unconscious. At a body temperature of 82-86F (27.5-30C), blood flow to the brain is one-third of normal, and to the heart it is one-half of normal.

Swimming speed and peak heart rate have been found to be much lower w maximum-effort swims in 68F (20C) wa than in 89.6F (32C) water. The effect of water temperature on speed and heart rate appears to be much less for sub-maximal swims. Lactate concentration seems unrelated to water temperature.

TRAINING AND ADAPTATION

A person can adapt to the cold, particularly when repeatedly exposed to cold water, which improves the body's ability to tolerate the cold. This adaptation results from changes in metabolic process and hormone production. The body's control centers adapt to repeated exposures to cold water.

After cold-water training, shivering starts later during the cooling period, and more heat is produced through other mechanisms. Changes in the endocrine (hormone) and immune systems also occur in response to repeated exposure to cold water. These changes allow a swimmer to remain in cold water for a longer time without developing hypothermia.

Repeated immersion in cold water lessens the shock response and shortens the

Continued on page 5

Hypothermia cont'd from page 4

duration of the response. Increases in the respiratory rate and heart rate are less substantial when a swimmer accustomed to being in cold water re-enters the cold water. This adaptation may last for several months after the conclusion of regular swims in cold water. The adaptive effects of training in cold water will assist performance in even colder water.

TREATMENT

Anyone suspected of being hypothermic should be immediately removed from the water and taken to shelter. Wet garments should be removed, and the swimmer should be covered with dry blankets. Clothes and a hat should be provided. A heat source such as a fire or stove is helpful, but for more sever hypothermia, warm blankets can be placed on the head and neck. Hot water bottles can be placed in the armpits, neck and groin. If the swimmer is alert, sips of warm liquids will help.

If severe hypothermia is suspected, the victim should be transported to the nearest hospital as soon as possible, without delay. Treatment should be started during transport. The victim can also be placed in a warm sleeping bag with one or two other warm people. Victims should be handled gently, and the arms and legs should be warmed before the truck. This type of warming should prevent afterdrop caused by cold blood from the arms and legs returning to a warmer core.

BE AWARE

Although there is a good possibility of hypothermia for swimmers who participate in open water swimming, developing an awareness of hypothermia can help swimmers avoid serious problem. All participants, including organizers of such events, should be aware of the risks and signs of hypothermia.

Open water events should be undertaken with caution, and swimmers should be made aware of expected water temperature before the event, and of actual water temperature at the event. Medical personnel should be available to provide care for any emergency problems, and careful observation should continue after rigorous open water swimming to watch for effects of afterdrop. With the proper precautions, it can also be a safe way for swimmers to enjoy the great outdoor.

Reprinted with permission from SWIM Magazine (US Masters Swimming), March/April, 2001. Dr Jane Moore is a family physician in private practice in Tacoma, Wash. She holds a B.S. from Oklahoma State University and completed her M.D. at the University of Oklahoma. She is a fellow of the American Academy of Family Physicians and the American College of Sports Medicine. She is a member of the USMS Sports Medicine Committee and the USA Swimming Sports Medicine Society.

"ALTHOUGH HYPOTHERMIA IS DEFINITELY A RISK FOR SWIMMERS WHO PARTICIPATE IN OPEN WATER SWIMMING, DEVELOPING AN AWARENESS OF HYPOTHERMIA CAN HELP SWIMMERS AVOID SERIOUS PROBLEMS."

HOW TO MOTIVATE SENIORS TO BECOME PHYSICALLY ACTIVE

BY COURTNEY HADDEN, B.S., AND THOMAS P. SATTLER, ED.D.
ILLUSTRATED BY JIM WHITING

IT IS DIFFICULT TO BELIEVE THAT THE LARGE NUMBER OF OLDER ADULTS WHO DO NOT ENGAGE IN PHYSICAL ACTIVITY ARE SIMPLY UNWILLING TO EXERCISE. INSTEAD OF WRITING THEM OFF, MAYBE THE FITNESS INDUSTRY NEEDS TO CHANGE ITS MOTIVATIONAL STRATEGY. MOTIVATION IS AN IMPORTANT FACTOR IN OLDER ADULTS' ABILITIES TO PERFORM FUNCTIONAL ACTIVITIES AND RECOVER FROM DISABLING EVENTS. SOME RESEARCH HAS FOUND THAT BELIEFS, SOCIAL SUPPORT AND VERBAL ENCOURAGEMENT ARE RELATED TO OLDER ADULTS' MOTIVATION TO PARTICIPATE IN EXERCISE ACTIVITIES. THEY ALSO PARTICIPATE TO RECOVER FROM ORTHOPEDIC AND CARDIAC EVENTS.

So, how can you motivate the older adult population to exercise? You can strengthen their motivation by focusing on the following factors: beliefs, physical sensations, individualized care, social support, spirituality and goal setting.

BELIEFS

Beliefs result from perceptions formed from previous experiences. If people believe that they can perform a physical activity, they will likely try. If they shy away from physical activity, they have probably not been motivated to try anything in the past, and they are probably convinced that they cannot perform such activities. Some simple ways to alter people's beliefs in their ability to exercise include giving verbal encouragement, pairing them with people who are already active, and eliminating unpleasant sensations associated with the activity. Remember that some seniors will shy away from a facility that is crowded.

PHYSICAL SENSATIONS

Pain and fear have a major impact on motivation. They can directly affect an older adult's willingness to perform specific activities. To relieve discomfort, facilitate appropriate use of pain medication. "Facilitate" means encouraging older adults to consult with their physicians. Also, start with programs that are pleasurable, such as relaxation techniques and yoga. After their mindset changes about physical activity, your senior members can progress to activities that are more intense, but not painful.

INDIVIDUALIZED CARE

Individualized care acknowledges that older adults are unique. Recognize differences and needs by using kindness and humor, empowering older adults to take an active role in their own health, and providing gentle verbal persuasion and positive reinforcement. Recognizing a unique need can be demonstrated by offering a rest period or playing appropriate music.

SOCIAL SUPPORT

Emotional and material resources provided by other people make up social support. This support can include encouragement from others and making each participant feel cared for and cared about. Offering group exercise classes or outings is an example. Another way to increase social support and, thus, motivation, is to pair up participants for workouts or encourage them to recruit a friend as a workout partner. This social interaction can be just as important to older adults as the activity itself.

SPIRITUALITY

Spirituality can be defined as a belief in and a feeling of interconnectedness with a power greater than the self. Spirituality offers the possibility of hope in the face of illness, the receiving and giving of love, and a purpose in life. At the minimum, it may be possible to encourage this interconnectedness by having older members keep a journal or set aside time each day for meditation and reflection.

GOAL SETTING

Goal setting is an important motivational component in exercise programs for everyone. It helps people incorporate self-determination and realize that it is their own personalities and resolutions that keep them motivated. Goals are most effective when

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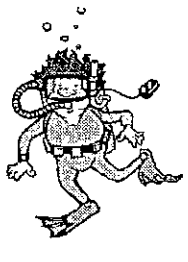
IS FATTER FASTER?

TAKEN FROM PEAK PERFORMANCE NEWSLETTER ONLINE **www.pponline.co.uk**

SWIMMERS TEND TO BE FATTER THAN OTHER ATHLETES, BUT MOST SWIMMERS AND THEIR COACHES BELIEVE THAT SLIMMING DOWN CAN LEAD TO SWIFTER SWIM PERFORMANCES. IN FACT, THEY SEEM TO THINK THAT SWIMMERS SHOULD BE JUST LIKE TOP-LEVEL RUNNERS AND CYCLISTS, WITH EQUALLY LOW LEVELS OF BODY FAT. THE KNOCK ON FAT IS THAT IT IS SIMPLY DEAD WEIGHT WHICH MUST BE LUGGED ALONG AS AN ATHLETE MOVES - WEIGHT WHICH CANNOT PROVIDE EVEN A SMIDGEN OF PROPULSIVE FORCE.

However, propelling one's body through water is quite different than moving through air, and it's possible that pudginess might be an advantage in the water. For one thing, fat has a lower density than water (muscle and bone have higher densities). Thus, while muscle and bone make you sink like a rock, fat can make your body more like an unsinkable buoy. As a result, corpulent swimmers can use their muscular power to drive their bodies forward and don't have to waste energy providing vertical lift in the water column. Also, as fat converts an athlete's body into a sort of fishing bobber, it also reduces the 'drag' (friction) with which water slows down swimming speed. To put it simply, with more fat there's less of the body in the water, less drag, and therefore (one might hope) higher performance. Perhaps swimmers should eat like sumo wrestlers!

Supporting the view that fat is fine for swimmers, studies have shown that triathletes who wear wet suits have better flotation and improved performance times during the swim portions of triathlons, compared to triathletes who compete in the raw.



One interpretation is that a wet suit may act like a layer of subcutaneous fat, retarding sinking and diminishing drag.

To see if feasting and fattening is really a good idea for swimmers, scientists at the University of Miami artificially increased body fat levels by 2 per cent or more in a group of 10 male and female swimmers who had been swimming competitively for at least three years. 'Fatness was enhanced by fitting latex pads under a spandex triathlon suit in the swimmers' adominal, hip, thigh, chest, back, and buttock areas. Microscopic balloons were added to the latex so that the pads had the same density as actual body fat. Male swimmers attached a total of 3.3 pounds of artificial fat, while females donned an extra four pounds. Each athlete swam a 50-yard freestyle race as fast as possible, with and without the pads.

While the latex pads did improve flotation, they also slowed the swimmers down considerably. The athletes could rip through their 50-yard sprints in about 26.6 seconds without the added 'fat' but required around 27.4 seconds with the additional fat on board. Thus, each additional pound of fat slowed 50-yard swim times by approximately .2 seconds.

Why did added 'fat' slow performance, even though it improved buoyancy? While supplemental fat can reduce friction drag, it can actually expand something called 'form drag,' which is determined by the dimensions of a swimmer's body. Specifically, as a swimmer fattens up in the abdomen, thigh, and buttock areas, swirling eddy currents form around these protruding areas and can slow swimming velocity appreciably.

A second kind of drag - 'frontal surface resistance' - can also make it harder for corpulent swimmers to get through water. Frontal surface resistance is a function of how much body you actually have. If you have a big body, you have more frontal resistance, because there's more body to push against the water ('more front for the water to confront'). Instead of slipping through the water like a torpedo, you constantly bump into it. As water crashes against your large surface, it slows you down. Thus, even though fat helps by getting you out of the water, the part of a fatty body which remains in the water impedes progress. Perhaps the ideal free-style swimmer would have a fat back and sides but a slim anterior, while a backstroke specialist would have a paunchy tummy and flat buttocks.

The lack of benefit from fat doesn't mean that wearing a wet suit is bad during competitive swimming, however. In fact, studies have shown that slipping into a wet suit during the swim portions of triathlons can improve performance by about 7 per cent, primarily because a wet suit can reduce drag on a swimmer's body when swimming velocity is between 1.1 and 1.5 meters per second. Neoprene, the material used in wet suits, is less dense than fat, improves flotation more than fat, and significantly reduces the frontal area that a swimmer presents to the water. In addition, since a wet suit covers the trunk and legs but not the head, it shifts a swimmer's centre of buoyancy toward the feet and puts a swimmer in a more horizontal position, which further reduces the frontal surface area which makes direct contact with the water. With wet suits, swimmers simply become more streamlined.

SPECIFICALLY, AS A SWIMMER FATTENS UP IN THE ABDOMEN, THIGH, AND BUTTOCK AREAS, SWIRLING EDDY CURRENTS FORM AROUND THESE PROTRUDING AREAS AND CAN SLOW SWIMMING VELOCITY APPRECIABLY.

Also, the Miami study doesn't necessarily mean that fat is always bad for swimmers. The swimmers in the Miami research were not bone thin; males possessed 11-per cent body fat while females checked in at 21 percent. It's possible that thinner swimmers might have actually benefited from increased body fat. The idea would be that an ultra-slim swimmer might slip too far down in the water column, hiking frontal drag to performance-hampering levels. Also, given the prevalence of eating disorders in athletes, it's unwise to put pressure on swimmers to lose large chunks of weight. The bottom line is that we don't yet know the true impact of body fat on swimming performance - or which level of fat produces the fastest times.

(The Effect of Varying Body Composition on Swimming Performance,' Journal of Strength and Conditioning Research, vol. 8(3), pp. 149-154, 1994)

Motivating Seniors cont'd from page 5

they are related to specific behaviors, and when they are challenging, realistic and achievable. If a goal is long term, help the person make additional short-term goals to attain the ultimate goal. Involve the individual in goal setting. Goals are more likely to be followed when the individual creates them.

Focus on strengthening these factors in your senior programs, and you can help motivate the older population to engage in physical activity, and to improve functional ability and quality of life. FM

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Taken from www.fitnessworld. com

"ABSTINENCE: SEX LIFE WHEN BOTH HUSBAND AND WIFE ARE IN TRAINING FOR MARATHONS.
FANATIC: ONE WHO WEARS A HELMET WHEN RIDING AN EXERCISE BIKE."
The Health & Fitness Dictionary by Keith Dunstan

The Cardiac Club

BY BILL VOLCKENING

IF YOU VISIT THE POOL FREQUENTLY, THERE IS A GOOD CHANCE YOU KNOW PEOPLE WHO SWIM FOR THEIR HEALTH AND FITNESS. SOME SWIM FOR REHABILITATION OR TO ALLEVIATE THE DISCOMFORT OF CHRONIC MEDICAL CONDITIONS. AMONG THIS GROUP, THERE IS A GROWING NUMBER OF SWIMMERS WHO HAVE FACED SERIOUS HEART PROBLEMS.

Masters swimming world record holders Ray Taft and Ron Johnson are two of the most well-known, accomplished swimmers who have successfully returned to swimming after suffering heart attacks. Each year, more swimmers join the cardiac club. They often have vivid memories of their heart attacks and the road to recovery. Of the swimmers who have reached full recovery, some are swimming even faster than they did before their heart attacks. In many cases, swimming not only helps to reduce the severity of the damage, but it also contributes to a successful recovery.

When a Heart Attack Strikes

There are often warning signs leading up to a heart attack, such as mild symptoms of chest discomfort gradually increasing over a period of weeks or months. But sometimes, heart attacks strike with little or no warning. 1956 Olympian Dave Radcliff has a clear recollection of the series of events leading up to his sudden heart attack in 1998.

"Sept. 8th was a special day for two reasons," says Radcliff. "Our new coach was giving his first workout, and I was planning to go to California shortly after the workout for a reunion, followed by the La Jolla Rough Water Swim.

"In my college days, I had competed in the swim and had won the event in 1953, '54, and '55. To return 43 years later and swim in the event also caused a lot of anticipation for the trip. We had a great workout, and I felt it was a good tuneup for La Jolla. After workout, I showered and talked with the rest of the team in the locker room. Then I headed home.

"On the way home, I developed a real bad case of indigestion. That was all — no pain in my chest, no numbness — just bad indigestion. When I walked into the house, my wife, Nancy, asked, 'How was the workout?' I said it was great, and mentioned how much I had enjoyed the main set. Then I said, 'The only thing is that I got a bad case of indigestion driving home.'

"She looked at me and said, 'Are you OK?' I replied, 'I don't know.' This was an unusual answer for me. After 40 years of marriage, Nancy read something into my answer and said, 'Let's run over to the clinic and have them check you out before we leave.' For some reason that sounded like a good idea to me and I said, 'OK.'

"Nancy turned to get her purse and keys, and the heart attack hit me. I felt a strong grabbing and pain in my chest, and I went gray and broke into a heavy sweat. Nancy turned from picking up her keys, took one look at me, grabbed the phone and dialed 911. I heard her say, 'My husband is having a heart attack.' "

Masters All-American George Thayer, 64, had a similar experience in November 1996, when he was returning home after swimming. "I was driving down the hill past St. Charles Hospital and Bend Memorial Clinic," recalls Thayer. "I broke out in a total sweat and became nauseous. I stopped in the clinic parking lot in case I might get sick, thinking that this flu had really come on fast. I got out of the car, and after a few deep breaths, the nausea went away.

"But I caught a glimpse of myself in the side view mirror as I was getting back into the car. I didn't like what I saw, so I decided to go right into the clinic's urgent care. It's the best decision I ever made."

Coincidentally, Radcliff and Thayer are Oregon Masters teammates. They often swim on relays together, and sometimes joke about forming a cardiac relay. Both swimmers were fortunate to be close to hospitals when they had their heart attacks.

One of the most frightening scenarios is when a swimmer has a heart attack while swimming. Masters world record holder Laura Val describes a situation in which she assisted a swimmer who had cardiac arrest at a swim meet. This scenario illustrates the importance of being prepared to react to an emergency situation.

"I was at a meet in Mountain View, Calif.," remembers Val, "and someone yelled that a swimmer had collapsed. He had just finished a 400 free and had been walking to the warm-down pool. I was in the office working on results, and I ran out to check. He had fallen unconscious and looked like he had a broken nose. He was a mess! We assessed him and called 911. No breathing, no pulse. So, with the help of pool staff and a fellow swimmer, we began CPR.

"The paramedics arrived in five to ten minutes. They hooked him up to the monitor, and he was in a rhythm called ventricular fibrillation. He was shocked (defibrillated) several times. When they took him away, he was still unconscious. I heard he was in a coma for about a week, and then transferred to another hospital where they did open-heart surgery.

Eventually he woke up, went back to work and is now swimming. I didn't know him before the incident, but we see each other frequently at swim meets now. He came up to me at a meet and introduced himself. He said, 'I've been told you are the one who saved my life.' "

Signs of Trouble

If you have a chest sensation that you've never felt before and have trouble describing, a cardiac source must be high on your list of considerations. George Thayer had experienced symptoms for a few weeks before his heart attack, but like many other victims, he did not see the warning signals as evidence of a more serious problem.

"I had been having little indicators for a couple of weeks," says Thayer. "I had a little tightness at the top of my chest during warm-up, and one of my fellow swimmers asked if I felt OK. I was going to look into it after the Northwest Zone Meet the following week."

Shortly before his attack, Thayer was finishing a workout by swimming a set of fast sprints with a teammate. "We decided to do a set of five descending 50s. On the last one we pushed pretty hard, and afterward, I just wasn't recovering. It hurt across the top of my chest and I couldn't do my usual warm-down. Things subsided but I still didn't feel right."

Although Radcliff had some family history of cardiac disease, he had not experienced symptoms or warning signs for very long. "The heart attack caught everyone by surprise," says Radcliff, "especially me." Not only was his weight fine, but his blood pressure had always been low, his resting heartbeat was 59, his cholesterol was 183, he had never smoked, and he had been competing hard all summer with no problems.

"I remember one of the doctors saying I had them confused. I was doing just what they were telling people to do. I have the feeling I am an interesting case to them. Usually they are dealing with patients who have had heart attacks for a clear reason. In a perfect world, I probably should not have had a heart attack."

Return to the Pool

Perhaps the greatest challenge for an individual is to return to a normal physical fitness routine following a heart attack. Not only is it important to start slowly and gradually increase the amount of effort, but it is imperative to consult with a physician during this process. If a patient is progressing

Continued on page 8

HEART ATTACKS CAN STRIKE ANY OF US AT ANY TIME. FORTUNATELY, THE GREATEST RISK FACTORS ARE UNDER OUR CONTROL. A HEALTHY LIFESTYLE, INCLUDING A PHYSICAL FITNESS PROGRAM INVOLVING SWIMMING, CAN GREATLY REDUCE THE RISK OF DEATH BY CARDIAC ARREST.

Protein Power cont'd from page 3

that "breast milk, the perfect start for babies, contains both protein and carbohydrate. We don't know of a woman with one breast labelled 'protein' and the other 'carbohydrate'"!!

Foods that provide 10 grams protein

Animal foods

grilled fish	50 g (cooked)
low fat cheese	30 g
tuna/salmon	50 g
cottage cheese	70 g
lean meat	35 g (cooked)
low fat fruit yoghurt	200 g
chicken/turkey	40 g (cooked)
low fat milk	300 ml
eggs	2 small
liquid meal supplement	150 ml

Plant foods

bread	4 slices
cooked lentils	3/4 cup
flake cereal	1 cup
baked beans	200 g
untoasted muesli	1 cup
cooked soybeans/tofu	120 g
cooked pasta	2 cups
nuts and seeds	60 g
cooked brown rice	3 cups

The Cardiac Club cont'd from page 7

well, the physician may raise the limit.

Just 36 hours after the heart attack, Radcliff was allowed to get up and do some gentle walking. He walked partway down the hall with his wife and was "just amazed at how weak" he was. After two weeks of gradually increasing his walking routine, Radcliff was given permission by his physician to start swimming again.

"I will never forget that first day back at the pool," says Radcliff. "My wife, Nancy, and I went during lap swim hours in the morning. Laurie, the pool manager, and every lifeguard kept a very close watch on me. I just 'lazed' through the water. It felt good to be back."

Although the physical challenges are certainly the most evident ones at first, sometimes the greatest obstacles are emotional and psychological. One of the most important things Radcliff did during his return to the pool was work on his stroke. His focus on stroke length and body balance helped him become a more efficient swimmer.

"I knew I couldn't push too hard," he comments, "but, oh boy, did I want to! I had to learn to swim in the water, not fight the water."

About three months after starting to swim again, he entered his first meet. After participating in several other local events, including the Oregon Masters Open Water Series, he decided to enter the USMS Long Course National Championships in Minneapolis.

"I kept my heart beat under the limits set by my doctor, but sprinting scared me. Sprinting is explosive. I wasn't supposed to explode. As we went into the taper for nationals, I was worried about sprinting, so I held back. How high could I take my heart rate? How much should I push the envelope?"

Two of Radcliff's teammates helped Dave overcome his own psychological doubts. "Sam Rousseau, a nurse practitioner, spent a lot of time talking with me about not becoming a 'cardiac cripple.' One other person who helped me a great deal was Dr. Jody Welborn. To have one of the leading cardiologists in Portland swimming in your lane gives you a real peace of mind. When Jody told my wife, Nancy, 'Don't worry, I'm not going let anything happen to Dave,' we both felt much better."

Editor - Due to lack of space this article will be continued in Issue 4, 2001 of the AUSSI Masters Swimming Coaches Newsletter

"By-Pass: A sign of age. Under twenty-five you talk about the number of your sexual conquests. Under thirty-five you talk about the number of your marriages. Over forty-five you talk about your by-pass operations- whether you have had a single, double, triple or quadruple."

Health and Fitness Dictionary by Keith Dunstan

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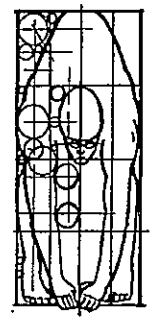

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