

AUSTRALIAN MASTERS SWIMMING COACHES NEWSLETTER

VOLUME 6 NUMBER 2



1994
THE YEAR
OF the
COACH

MAY 1994

There are plenty of activities in "The Year of the Coach" to keep us swimming and coaching.

The World Masters Games in Brisbane are gearing up to be a great meet with entries due on the 15th July. By now I expect you will all have your entry forms and it sounds as though the organisers have some exciting social events planned. It is generally believed that an event of this magnitude for Masters won't be held in Australia again for another 20 years.

Those not wanting to go quite so far north may want to consider entering the Honda Masters Games in Alice Springs (details page 16) which grows bigger and better every year. I expect many overseas visitors will stay on after the World Masters Games to meet up in the Alice for what is always a relaxed, fun but sharply run meet.

To all AUSSI's travelling further afield to Canada for the FINA World Masters Swimming Championships, I wish you well.

Speaking of the Year of the Coach, whilst it has had its detractors AUSSI announced its 1993 Coach of the Year at the National Swim Presentation dinner in Adelaide. Congratulations to Ed Peters, the recipient of this award. You can read his citation on page 4.

The Year of the Coach is about recognising the special input coaches make to the overall quality of our lives. They are certainly the mainstay of many of our clubs. What has your club, or you as an individual, done to recognise or thank your coach for their efforts recently? A little bit of praise and encouragement goes along way. While your at it, how about thanking some of the volunteers who give up many hours per year to provide us with enhanced leisure activities that we often take for granted.

If you feel your coach is particularly deserving why don't you or your club nominate them for an Australian Coaching Council Coach Recognition Award? Apex has combined with the ACC to honour coaches at a local Apex function to present award certificates. It could also serve to help promote your club to the locals in your area. Details and nomination forms may be found over the page.

It is always good to get readers letters and this issue I have had a response from the February edition article on Osteoporosis. This is reprinted for your information on page 5.

Masters swimmers seem to have a greater incidence of shoulder injuries than our age group counterparts and is a topic of continuing interest for my readers. I have therefore reprinted a fine article titled "Reconstructive Therapy" on page 7. Of course prevention is always better than cure, and as a coach I am always struggling to get my swimmers to adequately stretch. Most injuries are caused through poor flexibility or warm up procedures, some from incorrect biomechanics, bad posture or old injuries.

Over the years I have cultivated a working relationship with a very good physiotherapist who I refer swimmers to. It is important that you find a physiotherapist that understands swimming biomechanics so they can prescribe the correct treatment. We are now in the midst of setting up a

1994 THE YEAR OF THE COACH

Coach Recognition Awards

1994
THE YEAR
OF the
COACH



Nominate A Coach For A Recognition Award

Do you know a coach who deserves special recognition?

Send in the nomination form below and in a few words telling us why.

The Coach Recognition Awards are part of the 1994 Year Of the Coach campaign and are being conducted by the Australian Coaching Council and Apex — giving Australia's coaches the recognition they deserve!

Coaches nominated will be presented with their certificates at a local Apex function.

Nomination Form — Coach Recognition Awards

Name of Coach: _____

Address of Coach: _____

_____ Sport: _____

Is your coach accredited? _____ If so, what level? _____

Nominated by: _____

Address: _____

_____ Telephone: _____

In twenty words or less explain why your coach should receive an award.

Please Return to: Coach Recognition Awards
Australian Coaching Council
PO Box 176
Belconnen ACT 2616



ACT GOVERNMENT
OFFICE OF
SPORT AND RECREATION

N.S.W.



SPORT · REC



Department of
Tourism, Sport
and Racing,
Queensland



Division of Sport
South Australia

TASMANIA



DEPARTMENT
OF TOURISM,
SPORT AND
RECREATION



SPORT AND
RECREATION
VICTORIA



WESTERN AUSTRALIAN
COACHING FOUNDATION

WHAT'S IN A NAME?

Our name is AUSSI - which sets us apart from all the other Aussies.

However, many a journalist, sign writer, letter writer or whoever can get it wrong - gets it wrong from time to time. But - is it always their fault? One suspects that it may be complacency on our part, rather than their ignorance.

In with this Newsletter, is yet another copy of "Information for the Media". Media people love it, because it covers just about all they need to know about AUSSI, but alas, it is no guarantee that the "e" won't sneak in by the sub-editor. You will find however, that if you adopt the practice of always writing AUSSI in upper case as it should be, you will have a much better chance of it staying that way.

"Info. for the Media" is handy for other applications too: people making a speech at an AUSSI function, prospective new members and so on. Don't be afraid to use it.

SHEFFIELD TO HOST THE 1996 WORLD MASTERS CHAMPIONSHIP

At the FINA Bureau Meeting held in Taipei, Sheffield was awarded the V1 World Masters Swimming Championships. It will be the first time that the event has been staged in Europe. Swimming, Diving, Water Polo and Synchronised Swimming will be held at the magnificent Ponds Forge International Sports Centre. This attractive venue and the magnificent facilities available, promises to make the Championships a memorable event. The Open Water 5km will be staged in the regatta lake of the Holme Pierrepont National Water Sports Centre. Situated close to the city of Nottingham, the centre is one of the most comprehensive water sports facilities in the world.

NATIONAL TOP TEN

A pair of National Top Tens (Long Course and Short Course) has just been delivered to all AUSSI Clubs.

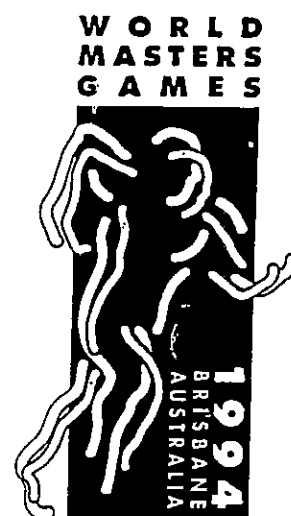
A limited number of additional copies are available from the National Office at \$10.00 a pair - including postage.

AUSTRALIAN MASTERS GAMES MELBOURNE 1995.

The Swimming component of the Games will be held from the 6th - 8th of October inclusive. There will be a full AUSSI style program plus 1500m and 800m Freestyle events. The Victorian AUSSI Masters Swimming Branch is running the swimming component of the Games. At this stage 500 plus entries are expected, and the entry fee will be approx \$70-\$80 (\$50 base fee plus the swimming add on)

WORLD MASTERS GAMES BRISBANE - SWIMMING

The closing date for entries is slowly creeping up on us. Not so long ago it seemed like ages before the closing date, but it is drawing nearer. Entries close on the 15th JULY so please do not become complacent, send entries off now, or you might forget!



***the VI World Masters Swimming Championships
will be held in
SHEFFIELD , ENGLAND
from 22 June to 2 July 1996.***

20th NATIONAL SWIM PERTH 1995

The swim meet will be held over the Easter period at the Perth Superdrome, which is a World Class venue. It has a 50m pool & diving pool, plus 2 x 50m outdoor pools that are also heated.

THURSDAY 13th April - 8.30am

1. 400m Freestyle

OPENING CEREMONY

- 4 x 50m Womens Zedar Challenge Relay
- 4 x 50m Mens Zedar Challenge Relay

2. 50m Freestyle
3. 100m Butterfly
4. 4 x 50m Mixed Medley Relay

FRIDAY 14th April - 8.30am

5. 400m Individual Relay
6. 100m Freestyle
7. 200m Backstroke
8. 100m Breaststroke
9. 200m Butterfly
10. 4 x 50m Mixed Freestyle Relay

SATURDAY 15th April - 8.30am

11. 200m Freestyle
12. 50m Butterfly
13. 200m Breaststroke
14. 100m Backstroke
15. 4 x 50m Womens Medley Relay
16. 4 x 50m Mens Medley Relay

SUNDAY 16th April - 8.30

17. 50m Breaststroke
18. 200m Individual Medley
19. 50m Backstroke
20. 4 x 50m Womens Freestyle Relay
21. 4 x 50m Mens Freestyle Relay

MONDAY 17th April - 8am

Open Water Swim - Indian Ocean

If I don't work all the time, I'm not great I'm good. (Benny Goodman)

1993 COACH OF THE YEAR

At the National Swim presentation dinner in Adelaide, it was announced that ED PETERS from the Western Australian AUSSI Club of LEEMING is the 1993 Coach of the Year.

Here is an extract from his nomination form:-

Ed Peters is a respected coach of the Leeming AUSSI Club in WA. He is sensitive and respects club members as individuals. Together with his technical expertise, he has a pleasant personality and possesses the ability to show warmth and enthusiasm with a sense of humour and fair play. He realises that as a coach it is important not only to build the competence of a swimmer, but their confidence and self esteem.

His positive image of coaching is encompassed in planning, instructing, motivating, and supporting his swimmers

Ed demonstrates a thorough technical knowledge, and knowledge of individuals techniques and personalities. He has made all swimmers aware of measuring Basal Pulse Rate for safe and effective training. He is always able to answer swimmers queries and readily refers to theoretical background knowledge. Sport psychology is a major concern in his coaching, and he also gives advice on nutrition before major swim meets and also for general good health.

He treats his swimmers consistently, forever mindful not to pay most of the attention to the "best" swimmers. Time is also shared with swimmers of all abilities. He makes all the swimmers feel they are important to him as a coach. Ed ensures pool etiquette is adhered to so that training sessions are fair for all participants.

Congratulations to Ed on receiving this award.





THE FLINDERS UNIVERSITY
OF SOUTH AUSTRALIA

School of Education - Sturt Buildings

GPO Box 2100
Adelaide 5001
Australia

Telephone: (08) 201 3480
Fax: (08) 201 3184

29 March, 1994

Ms Anita Killmier,
Editor,
Australian Masters Swimming Coaches Newsletter,
27 Johnstone Street,
MALVERN. VIC. 3144.

Dear Ms Killmier,

I wish to comment on an article which appeared in the *Australian Masters Swimming Coaches Newsletter*, vol 6 no 1, February, 1994.

The article, by Ruth Sova, reprinted from *Swim* magazine, stated that there was evidence that swimming was beneficial in the prevention of osteoporosis. The author did not cite the research evidence she quoted, so it is not possible for me to check her source material. However, the conclusion she draws, that swimming will maintain bone density in women, runs counter to the research I have studied over the past few years.

One of the major causes of osteoporosis is weightlessness, which is why loss of bone density is one of the side effects of prolonged bed rest and why astronauts from manned space flights lost startling amounts of bone density during quite short flights - density which was not recovered entirely even five years after return to Earth. (Tilton, et al, Long-term follow up of Skylab bone demineralisation. *Aviation, space and environmental medicine*, vol 51, 1980). Because swimming is a weightless physical activity due to the buoyancy of the water, it has not been recommended as a preventive measure for osteoporosis.

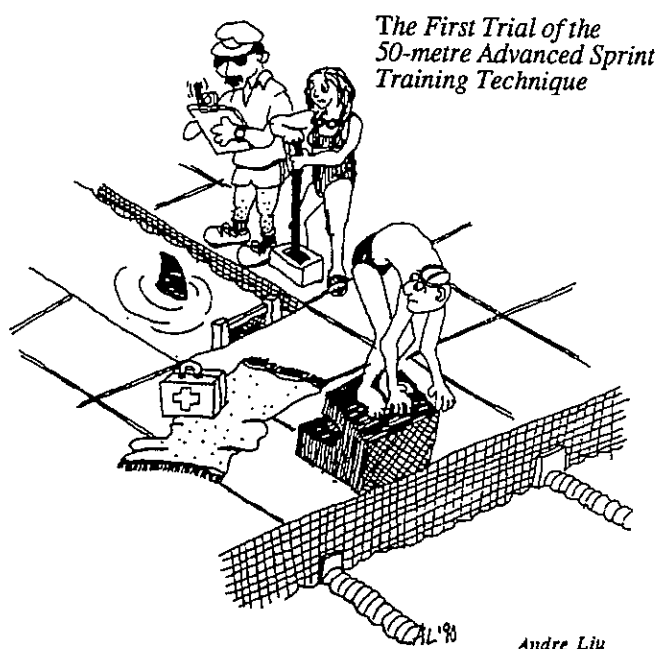
Although very little research has been done directly on masters swimmers, there has been some comparative research done on the bone density of different kinds of athletes of college age, and some of this research showed women swimmers with very low bone density. (Jacobson, et al, Bone density in women: college athletes and older athletic women. *Journal of orthopaedic research*, vol 2, 1984, and Heinrich, et al, Bone mineral content of cyclically menstruating female resistance and endurance trained athletes. *Medicine and science in sports and exercise*, vol 22, no 5, 1990).

A directly relevant research report on masters swimmers showed that while men gained some benefit in bone density from the pull of muscle against bone, women swimmers did not achieve the same effect. (Orwoll, et al, The relationship of swimming exercise to bone mass in men and women. *Archives of international medicine*, vol 149, 1989). I enclose a copy of this research for your information.

The whole problem of osteoporosis is a complicated one, since it involves hormonal status, calcium intake and general health as well as exercise patterns, but I feel it is misleading to suggest that swimming for women will act as a preventive against bone loss. I would strongly suggest some form of weight-bearing exercise in addition to swimming, for example, a workout with free weights twice a week, to counteract the effects of buoyancy, as well as a consistent calcium intake of more than 1,000 mg daily, and monitoring of hormone levels to ensure adequate oestrogen.

Yours sincerely,

Carolyn Fleming
CAROLYN FLEMING



Wave Lengths

NATIONAL PUBLICATION FOR MASTERS AQUATICS

Wave Lengths magazine has been dealing with issues and information of interest to the Canadian Master and adult fitness swimmer since 1980.

Masters swimming is growing at an incredible rate, both here in Canada and around the world. Our aim is to assist in involving you in that growth by making you aware of what is happening in our sport.

Have *FUN* becoming fitter and faster!

SUBSCRIPTION FORM

Make cheques payable to: WHITTALL PUBLISHING
4 issues (one year) for \$20

Mail to: R.R. #1, Meaford, Ontario, N0H 1Y0

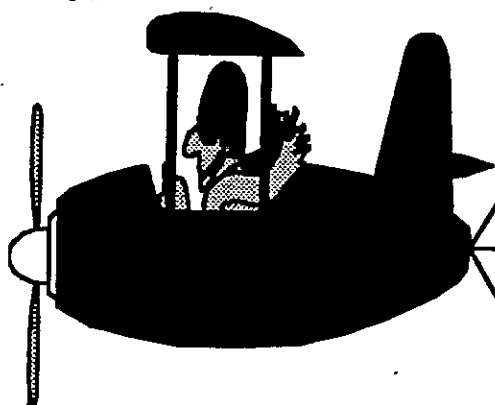
NAME: _____

STREET: _____

CITY: _____

PROV: _____ POSTAL CODE: _____

CLUB AFFILIATION: _____



ANNUAL SUBSCRIPTION

Your subscription renewal date is now printed on your envelope address label. Failure to renew by this date will mean missing that month's issue.



Reconstructive Therapy

Repairing and strengthening connective tissues without going under the knife.

by Brady Bingham

The pain in your swimmer's shoulder was getting worse every time he got back in the pool to train. The increased pain was starting to have an adverse affect on the mechanics of his stroke and causing very poor workouts. The injury had gotten to the point where you thought he may need to have surgery to repair ligament damage in his shoulder. However, the loss of several weeks of training to recover would finish his season.

What's the answer?

Many physicians believe that the best way to repair the injury is through the natural healing process of the body. But, this could also take several weeks of rest before the afflicted area would return to 100 percent.

What if that natural healing process were sped up, enabling the swimmer to return to his normal workout schedule within a couple of days, with the possibility of his shoulder actually gaining in strength?

Dr. William J. Faber, medical director of the Milwaukee Pain Clinic is one of the leading spokesman and physicians performing a revolutionary approach to the repair of ligament, tendon and cartilage areas without the use of surgery.

Reconstructive therapy—also known as prolotherapy—is a method of stimulating the regrowth of torn ligaments, tendons,

cartilage and connective tissue by stimulation of the body's own healing process. It's now being performed professionally by approximately 250 doctors, said Faber.

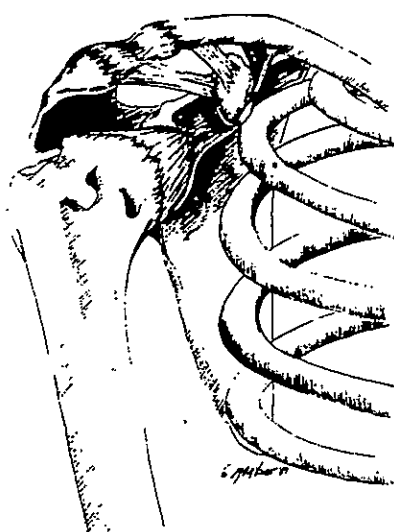
"It's sort of like cutting your finger," said Faber. "That cut creates an irritation. That irritation signals more blood to travel to the area. When the blood travels to the area, growth factors are released. And, these growth factors cause the division of cells, cause new blood vessels to form and cause the laying down of collagen, which is protein healing tissue, to permanently repair and strengthen the area.

"A reason why your finger heals well, is because it has good blood supply. A reason why tendons, cartilage and ligaments do not heal well is because they have relatively poor blood supply.

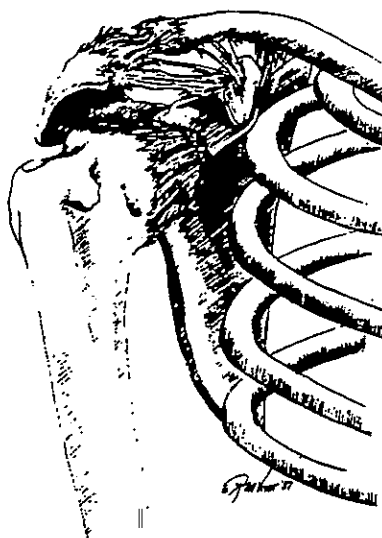
"We help the body heal itself with this technique by an injection in the precise area where the tendon, ligament, cartilage or connective tissue is torn. This injection stimulates more blood flow to the area by creating an irritation and new tissue growth in the area.

"This growth could make the area up to 30-40 percent stronger than normal," added Faber.

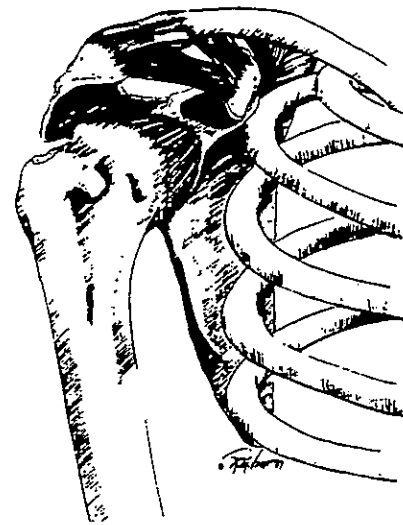
There are a number of different substances that doctors may use to inject into the area and cause the irritation. These substances are in no way steroidal "in any way shape or form,"



Normal shoulder joint with stable ligaments.



Shoulder with torn and stretched ligaments causing pain.



Shoulder with results of reconstructive therapy. Ligaments have increased in size and strength by 30-40 percent above normal.

said Faber.

"Cortisone is steroid and can actually cause a weakening in the joint area. These (substances like lidocaine which Dr. Faber uses), you might say are the opposite," said Faber.

"Inflammation is the body's own healing response. When you give an anti-inflammatory, like cortisone, you suppress the healing response. It (an anti-inflammatory) puts the fire out, but that fire, or irritation is what stimulates the tissues healing," he continued.

The end result is the injected substance induces a controlled irritation that gives the body a boost in healing the afflicted area. The pain is minimal with at most the patient feeling a little stiffness and soreness for a couple of days, according to Faber. "The patient gets the treatment, gets in his car and drives away."

Thus, no down time!

Faber added that if a patient has not severely damaged an area, yet has had pain for many years, it might take that person 12-30 sessions, if he is a non-athlete, to build the area to over 100 percent. An athlete, depending on the vigor of the sport, may take two-to-three times that long because they are beating down what the therapy is building up. Faber believes the "two-to-three times" figure would not apply to swimmers because swimming is a much more therapeutic sport.

Using this procedure, a swimmer may continue to train, all the while healing his aches and pains and actually strengthening the affected area.

Some the other numerous positives obtained with this treatment include increased endurance, energy and optimal strength. Also, flexibility, which can be of utmost importance to a swimmer, can also be "corrected" by the therapy. "In a patient that is hyper-mobile, or too flexible," said Faber, "the procedure strengthens the joint to its proper flexibility. If the joint is too stiff, often times it is because the muscles are splinting. The muscles splint because the ligaments have been injured and the muscles try to take over. Muscles, which tendons are hooked to, give primarily a mobility function. Ligaments are the primary stabilizers.

"So it works either way. If you strengthen the ligament on a stiff joint, you no longer splint and increase your range of motion. If you have a hyper range of motion, (for instance; if your shoulder is popping or grinding while doing the butterfly, you are said to be in the hyper-mobile stage) and you rebuild the ligaments, the popping, grinding sound goes away and the soreness goes away," said Faber.

"The ligaments now have more strength and endurance. And, you can increase their range of motion. If you increase their range of

motion, you can increase their performance."

Dr. Faber has been using the treatment for ten years and has treated thousands of patients. Each patient he sees will first go through a screening process to get a history of everything that has happened to them in their life—all their infections, all their injuries, all their surgeries, their dental history, drug reactions, and allergies. Then the doctor will look into their neurological system, the cardiovascular system, gastro-intestinal system, respiratory system and so on to get a good read on the overall health of the patient. Once this research is completed the doctor will get an idea as to how affective the therapy will

continued on page 13

"SWIMMING EVEN FASTER"

by Ernest W. Maglischo

A BOOK REVIEW by Peter Ruddock, Level 3 Coach

If you have read Dr. James Counsilman's book "On Swimming" and Ernest Maglischo's first book "Swimming Faster" now you can read "Swimming Even Faster".

This is indeed a great book - it is a book every swimming coach should read and study.

"Swimming Even Faster" gives new information on stroke technique, as well as information on female swimmers, training of various age groups, and coverage of the anaerobic threshold theory of endurance training. This information is based on research conducted with the 1984 and 1988 U.S. Olympic Swimming Teams.

Maglischo has a great background - in the U.S.A. he was awarded as the person deemed to have made the greatest annual contribution to swimming as a competitive sport.

This is an expensive book (\$75) but it is a book coaches should have in their library and is available from:

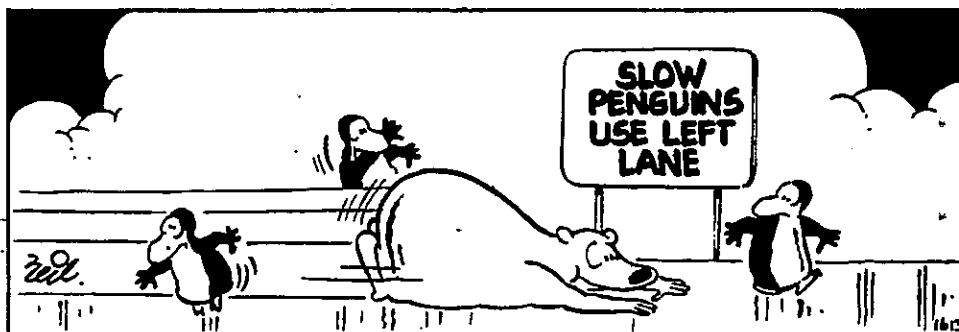
ACHPER

PO Box 304

HINDMARSH SA 5007

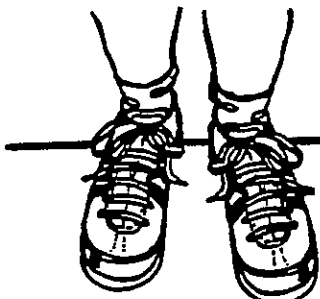
TELEPHONE: (08) 340 3388

HIGH TIDE

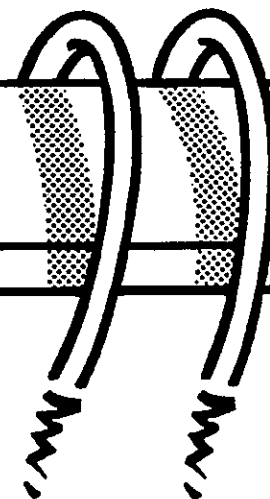


MASTERING SWIMMING

Copies of this publication are running out and it may be some time before a second print run is done. As this is the text for the AUSSI Level 1M coaching accreditation, it would be advisable for those contemplating doing the course in the near future, to purchase a copy. Your branch may still have some in stock, otherwise you may purchase a copy from the address listed on the back of this newsletter. You will be invoiced for the cost of the book (\$26.95) plus postage.



COACHING



This article has been sitting on my desk for some years and I have been unable to track down either the source or the author. However it is an excellent article and with apologies to the unknown author, I have reprinted it for your interest.

Coaching is a very specialised field, the most important attribute of a coach is the ability to recognise whether the swimmers under their charge are sprinters, middle distance, distance or which stroke they are more suited to. This requires the understanding of the basic knowledge of psychology, simple energy, metabolism, some psychology and above all empathy which would enable them to appreciate the swimmers triumphs and failures.

In today's climate of swimming where 0.01 seconds could result in winning or losing an event, it is important for the coaches to use the modern scientific methods that are available for sport today. Coaches and swimmers should have a full appreciation of the psychology of the human body before they can achieve the most from their training programme. Constant testing of swimmers in general to appraise their fitness and to evaluate various training programmes should be part and parcel of today's coaching scene. Measurements relating to work, power, metabolism, respiratory response and cardiovascular fitness can easily be obtained in a properly equipped laboratory. Therefore making it very important for the coach to be able to make use of the facilities in the laboratories at various times during the year so as to note progress in the swimmer.

The psychology of both sprint and distance swimmers are basically the same. That is for respiration and fitness. Respiration can be regarded as the quantity of oxygen taken into the body per unit of time commonly known as oxygen consumption. Cardiovascular fitness can also be regarded as the same in both types of swimmer, since a slow heart rate at a particular work load and a quick return to normal is indicative of fitness in both sprint and distance swimmers.

What then is the difference, and more important how can a coach identify the difference between the potential sprinter and the distance swimmer. Performance is the most positive indication, that is the speed the swimmer performs over both short and distance work. Build is often, though not always an indication of swimming type, the heavy built wide shoulders and powerful legs generally indicate the sprint swimmer, unfortunately these signs are not always correct and like many other areas in life there are always exceptions to the rule.

Metabolically there are definite differences in the sprinters use of his energy systems to that of the distance swimmer. The sprint swimmer works mainly off the A.T.P. lactic acid system which is an anaerobic system, whereas the distance swimmers works mainly the aerobic system. The sprinter and distance swimmer is decided at birth. You are born with either fast twitch fibres (white muscles) which is used by the sprinter or slow twitch fibres (red muscles) used by the distance swimmer. Originally scientists believed that the only difference between what is called red (slow twitch) fibres and white (fast twitch) fibres was in the quantity of the protein myoglobin which has a strong attraction to oxygen and gives the

red colour to the fibres. The higher proportion of myoglobin in the slow twitch fibres gives them much higher metabolic capacity for continuing aerobic oxidation which gives better endurance. Red or slow twitch fibres cannot, regardless of the type of training, be converted to white or fast twitch fibres. However there is a grey area in the slow twitch fibres, where some of this type can almost be classed as the fast twitch category, the fibres contain more myoglobin than the fast twitch one but do not contract as fast. This also works the other way, whereas the slow twitch swimmer can move into a type of white or fast twitch due to training, so even a fast twitch swimmer move into a (fast) red twitch. In other words if a fast twitch swimmer is trained in endurance work, mainly working the aerobic system which is foreign to his body then he will become a mediocre middle distance swimmer, rather than a top sprinter. Because of this factor it is important that the coach identify the sprinter and distance swimmer in his squad. Below there is a summary of changes associated with swim training.

ENDURANCE TRAINING		SPRINT TRAINING	
Metabolic Changes	Benefit to Swimmer	Metabolic Changes	Benefit to Swimmer
1. increase enzymes for aerobic metabolism	less reliance on anaerobic energy and fatigue producing substances	1. increase enzymes for anaerobic metabolism	allows ATP to be formed at more rapid rate and thus may allow the swimmer to contract muscles faster and harder. The result is a faster sprint.
2. increased number of open capillaries in muscle	easier to get oxygen into the muscles		there may be an increased tolerance for lactic acid.
3. increased storage of glycogen in muscle	increases capacity to perform more repeats or quality swims	2. increase storage of rapid energy sources such as creatine phosphate and ATP	may permit swimmer to go faster for a longer period of time before fatigue sets in
4. increased number of mitochondria in muscle	allows more glycogen to produce ATP in presence of oxygen rather than having glycogen produce lactic acid		

TAILORING A PROGRAMME

A COACHING SEMINAR WITH ANITA KILLMIER

A transcript of this 2 day seminar conducted by AUSSI Tasmania is now available in booklet form to all members. Cost is \$5.00 which includes postage and all monies go directly to purchase more videos for the AUSSI Resource Centre.

The booklet is also available as a video to borrow from your branch or the Resource Centre and contents include;

- Elements of physical fitness
- Energy systems used in swimming and how to train these systems for specific events
- Pulse rate counting
- Goal Setting
- Devising a Seasonal Plan

**Cardiovascular
Changes**
**Cardiovascular
Changes**

- | | | |
|---|--|------------------------|
| 1. increase the amount of blood that can be pumped by the heart | increases the blood flow to muscles for each beat of the heart | No significant changes |
| 2. increase the maximal blood flow to the muscles | as above | |
| 3. lowering of maximal heart rates for a constant workload | more efficient heart rate for any submaximal swimming speed | |
-

Net Effect

- combined effects act to allow more energy to be derived from oxygen. This also has the advantage that less lactic acid is built up and thus fatigue processes are delayed. The swimmer ultimately can swim faster.

Net Effect

- there is as yet not too much known about the metabolism and physiology of anaerobic training. However, there appears to be an increased tolerance for lactic acid and a faster generation of energy from anaerobic sources. This should help the sprinter to sprint faster.

The coach must have a good understanding of psychological preparations because the swimmer could be physically prepared yet not have the will to win. So it is important for the coach to know his swimmer and to be able to psych him up for the big event, so as to achieve his best on the day of the race.

Training therefore should be different for these swimming types. Bonen and others in their book *Swimming Coaching at the Club Level* (1978) suggest a typical training programme as shown below.

.. THE SUNRICE HIGH PERFORMANCE EATING STRATEGIES VIDEO

IS NOW AVAILABLE FOR HIRE FROM THE AUSSI RESOURCE CENTRE

Featuring high profile sports dietician Karen Inge, B Sc Dip Diet F ASMF, the video plus booklet gives you the nutrition tips used by top sports people to train, compete and recover at your best.

Karen joins a group of leading Australian sportspeople to discuss how to maximise performance through proper nutrition management.

Karen's seven strategies for high performance eating for training as well as the special considerations for strength and endurance competitors, sprinters and female athletes are covered, along with tips on eating before, during and after competition.

Whether you're committed to sporting achievement, a coach or a teacher, or just a fitness swimmer, you'll find this video full of nutritional advice on how effective eating can have some very exciting performance enhancing results.

Table 2. - Comparison of swimming distances, repetitions and rest periods to build endurance or sprint capacities

Distance	Examples of Program to build endurance or aerobic capacity	Examples of Program to build sprint or anaerobic capacity
25 m	60 x 25 m with 2 sec rest	4 x 25 (5 sec rest) x 4 sets - 2 min rest between sets
50 m	30 x 50 m with 5 sec rest	4 x 50 m (20 sec rest) x 4 sets - 5 - 10 min rest between sets
100 m	30 x 100 m with 5 - 10 sec rest	3 x 100 m (2 min rest) x 3 sets - 10 min rest between sets
200 m	10 x 200 m with 30 sec rest	2 x 200 m (5 min rest) x 2 sets - 15 min rest between sets - limited sprinting benefit
400 m	8 x 400 m with 10 sec rest.	no sprinting benefits for distances of 400 m and up
	Comment - Each repetition in a set should occur at desired race pace.	Comment - Swimmer must sprint nearly all out each time for the prescribed distance.

In conclusion, the swimmer must trust and be able to be inspired by the coach. This trust can be achieved by the coach, if he/she is trustworthy, considerate, knows the latest proven methods and techniques, appreciates the differences between swimming types, has a sense of humour and yet be able to instill loyalty from his/her swimmers.

Body Tech

Do You Have the Heart for Competition?

■ What masters athletes should know about their body's most vital organ.

By Benjamin H. Lewis, M.D., F.A.C.C.

(Excerpted from a talk Dr. Lewis will give at "What Makes the Masters Athlete Different?", a seminar on April 5, 1994, at New York City's Downtown Athletic Club. See p. 5).

Will the ghost of Jim Fixx ever go away? Probably not as long as we remember that fateful day years ago when one of running's earliest and most enthusiastic missionaries was found dead by the side of the road from a heart

attack during a workout. Though the "mystery" of how this could befall so aerobically fit an athlete was subsequently dispelled when we learned he'd noticed earlier symptoms but had overlooked them, Fixx's shadow still looms.

As a cardiologist who treats everyone from Olympic-level athletes to octogenarians, I understand the concern. Know, however, that the mystery is often not so deep. For one thing, any genetic defect in your heart, like mitral valve prolapse or hypertrophic cardiomyopathy, will have shown up long before you reach the age of most masters athletes. Men over 35, and women over 45, who are suddenly felled by a heart attack are almost always victims of coro-

Threats to a Healthy Heart

Should you worry about your workouts?
A few of the main warning signals.

1. Do you experience chest pain at any time, not just during exercise (stress in the office can trigger heart trouble just as surely as physical stress can), especially pain that seems to travel?
2. Has any physician ever diagnosed you as having a heart murmur?
3. Have you ever had rheumatic fever? (The effect on your heart often isn't apparent until you're past 35.)
4. Have you ever smoked? Athletes who are reformed smokers should know that the additional risk to the heart can take ten years to normalize.
5. Have you ever used cocaine? The drug can cause hypertrophy, or thickening and stiffening, of the heart muscle or arteries.
6. And of course the obvious questions: Does your family have a history of coronary artery disease? Do you suffer from obesity, high blood pressure, or diabetes, or have an elevated cholesterol level?

—B.H.L.

continued on page 22

cont. from page 8

be for that patient.

"Since this process stimulates the body's own healing process, it is like the old farming analogy. If you have good soil, and other factors like good sunlight and water, and freedom from bugs, you are probably going to have a good crop. If your soil is full of toxins, heavy metals or bugs, which are all around us, you won't. If you're taking cortisone, anti-inflammatories, drink a lot of soda pop, or smoke cigarettes, you may see less success with this therapy. In that scenario, you end up with a computer analogy. . .garbage in, garbage out," said Faber.

Since it is generally believed that competitive swimmers are in very good condition, this therapy may be extremely effective for them. However, "Beauty is only skin deep, as they say," said Faber.

Most of the patients that Faber sees are what he calls "crips," or people already "busted up."

"We want to change the therapy's focus to its athletic benefits. This therapy, given to the right person, will help that person set world records that will be very hard to break. When you have 40 percent more structure in your ligament, that can quite a benefit."

Faber gave the example of Mark Spitz winning all of those gold medals because he had good form.

"He would not be as successful today because athletes now build their bodies," he said. "They cross train. Spitz didn't cross train. Also, you now have to fit the physique for the specific sport. Everyone trains differently."

"But this procedure does something that can't be done with any amount of training. With exercise, you can not increase your joint strength. You can increase your muscle strength, but not the ligament, tendon, cartilage or connective tissue strength. This can make a unique advantage," added Faber.

Another most exciting aspect of this procedure is the prospect of treating patients before they have an injury. The tremendous advantage to this is there is no lost ground to be made up.

"When you have an injury, or wear and tear, you have to first get that athlete to 100 percent," said Faber, "then get them to the 130-140 percent level, which is our goal. If we took someone without an injury, we could figure out their most vulnerable spots, then starting at 100 percent, build them to 130-140 percent. That would make it very hard for that athlete to get injured."

In summary, swimmers may soon be exposed to a new therapeutic treatment for the repair of tendons, cartilage, ligaments and connective tissue. The positives for this procedure include no down time and no pain, a better solution for the repair of injuries than an intrusive surgery process, actually strengthening the afflicted area for better performance down the line, and no use an illegal or banned substance.

This still young procedure is gaining acceptance throughout the medical profession and has been reviewed in a number of medical journals. Look for it to become more popular among athletes in the near future. §

Dr. William J. Faber is the co-author, along with Dr. Morton Walker, of the book "Pain, Pain Go Away." This book goes into detail the benefits of reconstructive therapy for different parts of the body. For information on how to purchase the book call the Milwaukee Pain Clinic, 6529 West Fond de lac Ave., Milwaukee, Wisc. 53218. Phone: (414) 464-7680. Mon.-Fri. 9 a.m. to 4 p.m. for phone orders.

New member kits

Most clubs now have supplies of these to give to new members as they join. Some clubs give club information as well as a club swim cap and/or club Tshirt. New members who have not received a kit should contact their club secretary.

Working Out: The Maintenance Set

by Tom Lyndon SWIM • May/June 1993

Sometimes all you want is a respectable insert of serious swimming in the middle of your workout. You may not want every minute dedicated to swimming self-improvement. A maintenance set can fill your need for some serious training without making you a pace clock slave.

With summer coming on and more ways to keep fit vying for your time, the pool may not fare so well in your exercise plans. Consider a commitment to maintenance swimming and a maintenance set that will tell you how you are holding it together, swimmingwise. Periodically, swim that maintenance set and keep track of how you do each time.

The maintenance set doesn't have to be short, long, easy, or hard. It just needs to be a set you are willing to commit to doing periodically for a month or two. Yes, commitment can be hard, but give it a try. It may be a set you've been doing from time to time. More likely, you will select a new set that somehow appeals to you.

This 10 x 100 on 2 set shows how to do it plus the many options packages for customizing it.

10 x 100 on 2

- Start swimming when the clock's second hand is straight up on the 60.
- Swim 100 yards.
- Note your time.
- Rest until the the second hand gets back to the 60 two minutes after you started.
- Swim 100 yards again.
- Continue this cycle for ten swims.
- Keep track of your times.
- Start taking your pulse within 10 seconds of the finish of your tenth swim.
- Take your pulse again after 60 seconds.
- Calculate the average time for your ten swims.
- Write down your two pulse counts and your average time.

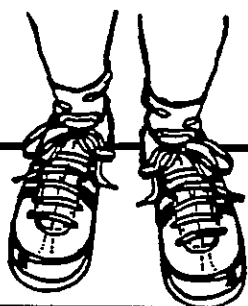
Your pulse tells you how hard you are swimming and how fit you are. A relatively high pulse with the same time as before may mean you are working harder, you are less fit than before, or both. A higher average time with the same pulse probably is telling you your fitness is fading. The pulse taken 60 seconds after the first pulse tells you how well you are recovering from your exertion. If it doesn't go as low as it had before, you may be slipping out of shape. Be alert to these meaningful "sea changes."

The 10 x 100 on 2 set can have more variations than J.S. Bach. Shorten or increase the two minute interval. Swim more or fewer 100s. Swim 50s, 200s, 300s, etc. instead of 100s. Etc. This is your own personal maintenance set, so tune it to fit your capabilities and willingness to stay with it.

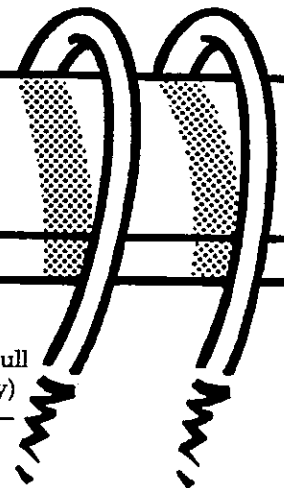
THE BUSINESS OF EATING

US survey: The best meal for closing deals is lunch.

- 17% prefer breakfast as the meal to wrap up deals,
- 23% prefer to do so over an evening meal, but,
- 58% prefer to do it over lunch.



Backstroke



Stroke Technique—Key Points From Kathy McKee

1. Head still
2. Stress steady kick
3. Kick should look like boiling water at the toes (throw water off the toes)
4. Little finger entry—clean entry
5. Bent arm on underwater pull
6. Finish stroke by hip
7. Deep catch and then get right into the pull
8. Roll hips and shoulders (kick diagonally)
9. Recovery—thumb up and straight arm—straight over
10. Lean on pulling arm
11. The pull pattern is: "Down, up, down, up."



Arm Recovery Drills:

Kathy McKee

Kick with half recovery. Swimmer lifts thumb out of water and recovers to midpoint (rotate hand as if to complete arm recovery). The swimmer stops at this point and slowly returns arm back next to hips. Repeat with other arm.

Brent Rutemiller

Shake hands with fans and wave to the fans in the stands. Teach shoulder to come out of water first, hand recovers thumb first, water runs off little finger (have swimmer imagine they are shaking hands), turn hand so that the baby finger enters first. As the hand moves past the half way point in recovery, (swimmers imagine they are waving to fans in the stands) rotate palm to bottom and stretch after entry.

Dan Patton

Thumb-Pinky Drill—exit the water with the thumb up, bring your arm to straight up position (pointed at ceiling) and stop. Turn your hand to palm out so that pinky will enter first, then finish recovery.

Tom Himes

Recovery without pull. Swimmers should be on back kicking with hands/arms at their sides. Lift hand through full recovery. Touch water over head and bring hand/arm back to their side. Do drill using two times with right arm, two times with left arm, then complete cycles.

Hand Entry Drills:

Dan Patton

One Arm Backstroke—this lets the swimmer concentrate on rolling and slicing down into the water so that the catch is deep, almost palm down. Keep the opposite arm at your side.

Tom Himes

Back catch up drill. Start on your back, kicking arms over your head. Swimmers should reach back one arm at a time until hand (pinky first) enters the water. Then, bring hand back up and repeat with one arm.

Kathy McKee

Double arm backstroke drill. Swim with both arms recovering together while concentrating on baby finger hand entry. Good for eliminating over reaching problem.

Change over back—as hand enters the water, quickly press six inches deep and press palm down and away from body.

Brent Rutemiller

Moving heads, not hands drill. Explain that the only difference between freestyle and backstroke is head position. Have the swimmer swim with one arm outstretched. The other arm down by the hip. Swim a 25 with head in water while hand stretches forward and down (freestyle position). Then repeat a 25 with body in same position but head out of water and chin on shoulder (backstroke position). Emphasize stretching forward with palm down.

Streamlining Drills:

Brent Rutemiller

Bellies up drill. Kick a 25 with hands locked overhead, concentrating on stretching for the bottom about six inches below surface. Belly button out of water, kick just below the surface.

Dan Patton

All flags drill. We do all backstroke kicks in the streamline position and the swimmers must stay streamline after turns until they reach the flags (minimum).

Tom Himes

Kick width drill. Swim underwater holding tight streamlining position (on the swimmer's back).

Backstroke

Body Roll Drills:

Brent Rutemiller

Rock head drill. Kick a 25 meter/yard with one arm extended forward and the other arm at your side so that you are swimming on your side with one shoulder out of the water. "Place chin on the shoulder." Perform drill with a rock balanced on swimmer's forehead.

Kathy McKee

Kick and Roll. Kick with arms at side and roll body from the one side to the other every 12 kicks, then every six kicks. Keep the head very still.

Hesitation drill—have swimmer kick on one side 12 times and take one stroke, roll to the other side and kick 12 times. Make sure swimmer keeps his/her head still while rolling the body.

Dan Patton

12 or 6 kick changeover—have the swimmer kick on their side with bottom arm out and top arm on their hip. They change sides with a regular backstroke pull every 6 or 12 kicks.

Sherwood Watts

Three sculls drill. Have the swimmer swim on his side with palm down, scull three times then pull.

Tom Himes

Thumb lift drill. While swimmer is kicking and arms at sides, the swimmer rolls shoulder and lifts his/her hand out of the water 6-12 inches and then lets hand fall back into the water. (May be repeated, right, right. . . left, left. . . right, right, etc.)

Stroke Rate/Breathing/Timing:

Dan Patton

Spin Drill—push off, then drop your hips to a sitting position and lift your head. Spin your arms as fast as possible.

Brent Rutemiller

Distance per stroke drill—swimmer kicks on his side for eight kicks concentrating on shoulder and body position, after eight kicks swimmer does a perfect arm recovery while rotating his body on his other side for eight kicks. Repeat drill for six kicks. Then four, then pause. When swimming normally, emphasize that the shoulders should be out of the water before the hand accelerates.

Tom Himes

In/Exhale drill. Inhale on one arm recovery, exhale on the other arm recovery.

Underwater Pulling Drills:

Kathy McKee

"S" drill—first step is one arm free with opposite arm at side. Ask swimmers to watch the hand perform the "S" pattern. Swimmers breathe to the opposite side of the arm that is pulling. The second step is to have swimmer kick on his/her side with face in the water and again watch the hand perform the same "S" pattern. On this drill the recovery is underwater. The third step is to ask the swimmer to turn to his/her back and with one arm drill, and with good body roll, ask the swimmer to concentrate on the same pull pattern. And fourth, have the swimmer swim regular backstroke and work the "S" pull pattern.

Dan Patton

Pop-up drill. This must be done with a strong kick and the shoulder of the pulling arm must "pop up" when they finish the pull. This won't happen if swimmer's pull straight arm.

Tom Himes

Bent elbow drill. While swimmer is on his/her back kicking with arms at side, bend elbows to bring hands to just under the surface, then push water toward feet snapping wrist/hand at the end.

Finish Stroke Drills:

Kathy McKee

Hip slips. Double arm pull with the thumb running down the side of the hips followed by sculling 25s with hands close to hips.

Sherwood Watts

Hand finish drill. Kick on back, hands down at side, scull with hands down, quickly rotate hand around and through the finish.

Finish At Wall Drills:

Dan Patton

We practice backstroke finishes by throwing our head back and lunging for the wall.

Tom Himes

Swimmers start in center of pool (short course). Sprint to the wall counting strokes from flags to finish (five times). Then do the same with eyes closed (after the swimmer's see the flags). Stress that swimmer's not slow up going into the wall.

Bill Thompson

Teach throwing head back. First, discover stroke count from flags to wall. Next swim long distance using that stroke count. Example: if it takes five strokes from flags to wall, swimmer will swim a 200 or 400 where he throws his head back toward the wall at the beginning of every fifth stroke recovery.

Reprinted with permission from *Swimming Technique* Aug - Oct 1993

SUCCESS - Self satisfaction of knowing that you have given your best to become the best that you are capable of becoming. (John Wooden)



The Friendly Games
October 15-23, 1994

1994 SWIMMING INFORMATION SHEET

Dates:

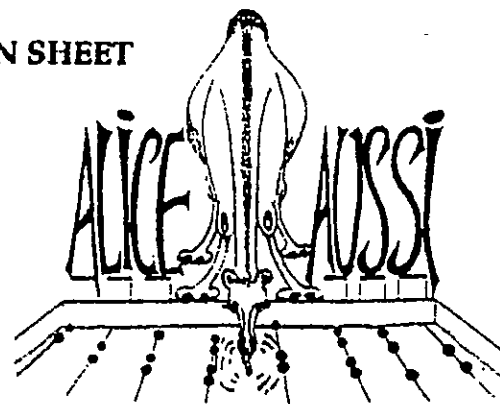
October 16, 17 & 19, 20, 21 inclusive

Times:

1.00pm Warm up each day - 2.30pm Start.

Venue:

Alice Springs Swimming Centre, Speed Street.



Facilities:

The swimming Centre has a 50m, 8 lane open air pool, attractively sited with lawns and ample shade areas with the rugged MacDonnell Ranges providing a picturesque backdrop.

The Centre is well served with flood lighting, toilets, showers, (with limited hot water) and a canteen. The swimming pool water temperature is dependant upon the weather conditions.

Rules:

The meet will be conducted under the rules of AUSSI MASTERS SWIMMING IN AUSTRALIA with the exceptions contained herein.

Eligibility:

All adults 25 years of age and over. Swimmers age group shall be determined by their age on the last day of the swim meet, 21st October 1994.

Membership of AUSSI or any other swimming organisation is not essential.

Entries:

Entry is effected by completing the official Honda Masters Games, Alice Springs Entry Form and forwarding it to:

Honda Masters Games Office,
PO Box 1095
ALICE SPRINGS NT 0871

ENTRIES
31.8.94 CLOSE

Relays:

Relay entrants must swim in at least one individual event. The submission of relay nomination cards will be finalised with the MEET RECORDER before 4pm day prior to relay events, enabling all swimmers ample time to formulate teams. Time cards will be made available with MEET RECORDER day prior to events.



Office of Sport, Recreation and Ethnic Affairs
Honda Masters Games
PO Box 1095
ALICE SPRINGS 0871

Telephone: (089) 51 5329
Facsimile: (089) 51 5330

Medals & Trophies:

Gold, Silver and Bronze medals will be awarded to the 1st, 2nd and 3rd placegetters in each individual event in each age group.

Trophies will be awarded to individuals scoring the highest point score total in each age group. Gold, Silver and Bronze medals will be awarded to each four (4) member relay team placing 1st, 2nd and 3rd in each age group.

SWIMMING CONDUCTED BY ALICE AUSSI CLUB

Co-ordinator: Mrs Louise Johns
PO Box 8835
ALICE SPRINGS NT 0871

Phone (089) 597113 BH
(089) 526252 AH

Age Groupings (Individual events)

25-29	30-34	35-39	40-44	45-49	50-54
55-59	60-64	65-69	70-74	75-79	80+

Age groupings (Relays)

100+	120+	160+	200+	240+	280+	320+
------	------	------	------	------	------	------

PROGRAMME**Sunday**

200m Individual Medley
50m Freestyle
100m Backstroke
50m Breaststroke
100m Butterfly
200m MIXED Freestyle RELAY

Wednesday

100m Freestyle
200m Butterfly
200m Breaststroke
50m Backstroke
200m MIXED Medley RELAY

Friday

1500m Freestyle

Monday

400m Freestyle
200m WOMENS Medley RELAY
200m MEN'S Medley RELAY

Tuesday

REST DAY

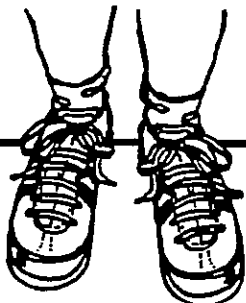
Thursday

50m Butterfly
200m Backstroke
100m Breaststroke
200m Freestyle
200m WOMENS Freestyle RELAY
200m MEN'S Freestyle RELAY *

Please note
addition.

Entries

Competitors are limited to a maximum of five individual swims, including a maximum of three freestyle swims. The 1500 metre event is not included in the three freestyle swims or the five individual swims. The 1500 metre event will not be included for aggregate points.



WHY SWIMMING TIMES HAVE IMPROVED SO MUCH IN THE

PAST 50 YEARS

By J. K. Edwards, NEM NEWS Editor

Last spring NEM Kevin Salisbury, president of the Rhode Island Swimming Coaches Association, asked me to speak at the Association's annual awards dinner. Swimmers from six to 18 and their parents and coaches would be my audience. What should be my topic? My choice, Kevin said. For how long should I talk? As long as I liked.

I had graduated from the University of Michigan High School ("U High"), Cy Hopkins' alma mater, almost precisely 50 years before the date of the dinner. I had been on U. High swimming team during my last two years of school. Our home pool was the University of Michigan's varsity pool. The great Matt Mann, who coached Michigan to half a dozen NCAA championships during the '30's, occasionally gave us tips, and his nephew and assistant coach, Harvey Muller, was our coach. A letter in swimming at Michigan earned almost as much prestige as a letter in football. So it was only natural that I should become as fascinated by swimming times as I had been in baseball batting averages since I was five.

Like most serious Masters swimmers - and even non-swimmers, for that matter - I have always been intrigued by the dramatic improvement in swimming times since I was in school. I concluded that a talk on the reasons for such improvement would be of interest to the kids, their coaches, and their parents. NEM Amy Jordan, who coaches the youngest Little Rhody Aquatic Club swimmers (eight to ten, I think), concurred.

From the notes that I made last year I have reconstructed the talk and publish it here for the possible edification of our NEM NEWS readership.

Fifty years ago almost to this very day I graduated from the University of Michigan High School in Ann Arbor, Michigan.

Michigan and Yale were the two great powers in collegiate swimming throughout the 1930's. Matt Mann, of Michigan, and Bob Kiphuth, of Yale, had both been or were later to be Olympic swimming coaches.

The national collegiate record for the men's 100 free was :51.6. The American record was :51.1, set in 1927 by Johnny Weismuller (Tarzan).

How many of you here have already broken :51.1?

The national Masters record for the men's 100 free in the 45-49 division is now :50.4; in the 55-59 division it is now :51+, set three weeks ago by honorary NEM Jeff Farrell.

In 1939 the national collegiate men's 50 free record was :22.9. The present national masters record for the 50-54 division is :22.93.

In 1939 the national record for the 100 yard backstroke was about 57 seconds, set by Adolf Kiefer, whose 1936 Olympics winning time for the 100 meters backstroke was 1:05:9. How many of you girls have broken 1:05.9 for 100 meters back? How many of you boys have broken :57 for the 100 yard back or 1:05.9 for the 100 meters back? This past spring Harvard's David Berkof did about 47 seconds for the 100 yard back.

In 1932 Buster Crabbe - how many of you swimmers know who he was? - was the only U.S. male to win a gold medal at the Los Angeles Olympics. In the 400 meters his time was 4:48.4. In 1947 when I was in the Army of Occupation in Japan, I saw Hironoshin Furuhashi set a world's record in the 400 free in 4:38.4. How many of you boys have already broken 4:38.4? How many of you girls?

Janet Evans did about 4:03 for the 400 last year in Seoul. The women's Olympic record in 1939 was 5:26.4 (set in 1936). At the Olympic trials in 1952, Bumpy Jones, then 18, of Michigan did the 400 in 4:41+; for 4th place. At age 41 in Masters competition Bumpy swam the 400 in 4:38+.

I, myself, at age 21 did 22:27 in the 1500 in the national collegiates at Yale, for 5th place. Three years later I did 21.50+ in Yokohama. At age 52 in the national Masters I did 22:37, only 10 seconds slower than I had done at age 21. It is humbling for me to realize that there is probably not one boy or girl over 12 in this audience who has not already gone faster than my lifetime best set 42 years ago.

WHAT'S GOING ON HERE? HOW CAN ONE ACCOUNT FOR SWIMMERS' TIMES BEING SO MUCH FASTER THAN THEY WERE 50 YEARS AGO?

I am not a professional coach - not counting the \$.25 lessons I gave on Cape Cod the summer after I graduated from U. High - but I think that I can identify for you most of the reasons for the dramatically faster present day times. You coaches may not all agree with me entirely, but most of you were very young - if, indeed, alive - in 1939, so you may find my opinions interesting.

As I see it, the reasons can be put into nine or ten somewhat overlapping categories. I'll go through these now, not necessarily in the order of their significance.

1. STATISTICALLY

The younger the sport, the greater the time improvements that one should expect. Compared with running, competitive swimming was in its infancy in 1939. There are many more pools now than there were in 1939. And there are far more participants, in large part due to the development of age group programs and women's college swimming. I have a sister who was on the Radcliffe swimming team in the early '40's. She remembers that her team prepared for a Saturday dual meet with Wellesley by going to the pool on Friday, for her first swim of the week.

II. POOLS

Modern pools are wider and therefore have more lanes. They are deeper, which in itself makes them less turbulent on the surface and therefore faster. Better designed drains also cut down on turbulence. Separate diving wells were rare 50 years ago. Non-turbulent lane dividers had not yet been invented. In 1939 the closest thing to such - and usually used only for meets - was a string of wooden beads placed in the middle of the pool to separate the opposing teams. It had no effect on surface turbulence.

III. EQUIPMENT

In 1939 pace clocks were unknown. The closest thing to them that I can remember was a continuous line with a cloth on it, which could be set at, say, 40 seconds. We had one at West Point. We called it the "rabbit." How I hated it! It never got tired.

There were no hand paddles and no fins for kicking (although there were heavy wooden kick boards and tubing to hold up one's legs while working on one's stroke). There were no starting blocks. We dove from the pool deck.

With respect to suits, men's were still full-length silk. Divers wore shorts. Within the next year or two swimmers switched to shorts too. (In practice at Michigan men wore no suits.)

Women's suits had little skirts. They were of heavier material than Lycra and less transparent.

Goggles were not used either in meets or in practice. Imagine how much fun it would have been to read Julius Caesar in the evening after swimming without goggles one of your typical present-day 5000 yard workouts in a chlorinated pool!

The ultimate measure of a man (athlete) is not where he stands in moments of comfort and convenience, but where he stands at times of challenge.

IV. SWIMMING TECHNIQUES

So far as I can tell, prescribed stroke techniques have not radically changed since 1939. (Although they have been far more scientifically analyzed and better understood.) The principal change that has impressed me the most is the far faster turnover, at every distance from 100 yards on up. Janet Evans in her 1500 has the turnover of a 100-yard sprinter of 50 years ago.

For a swimmer to breathe on both sides was quite unusual. And it was unheard of in a race of more than 100 yards for a swimmer not to breathe every stroke.

V. RULE CHANGES

In 1939 a freestyler had to touch with his hand. If Matt Biondi had had to touch with his hand, what would his best 100 yard freestyle time have been? Probably :44+ instead of :42+, I would think. Or, if Alan Ford could have turned without touching with his hand, wouldn't his 49.7 100 have been no slower than :47.7?

In 1939 the butterfly stroke had not yet been approved. Until around 1936 the breaststroke was all "conventional," a/k/a/ "orthodox," with the frog kick. In the late '30's the butterfly stroke was first permitted, but with the frog kick - no dolphin kick. In the 200 breast, swimmers usually did most of the first length underwater, the next three or four fly, then two or three orthodox, ending with a pathetic-looking fly for the final length. The 1956 Olympics were, I think, the first Olympics in which there was held a 200 meter butterfly race separate from the 200 meter breaststroke. Dr. Bill Yorzyk, now a valuable member of the New England Masters, won the 200 fly that year. In Masters, by way, in butterfly events the swimmer may use the frog kick instead of the dolphin kick he wishes; and in the 60-64 division and older divisions some Masters flyers will be still seen using the frog kick.

VI. TRAINING

Back in 1939 the high school swimming season started in November and ended in early March. There was no summer training at all, except for the super hotshots in AAU meets. Competition usually started at age 14 or 15.

Swimmers now do far greater yardage than we did. At West Point I was considered one of the workhorses on our team, and I rarely did more than 72 lengths a day.

Repeats and interval work were pretty much unknown until the runner, Jim Ryun, started training by repeating quarter miles at, say, 90% effort.

Dry land exercises were almost unknown. That was one of the differences between Kiphuth and Mann. Kiphuth developed out-of-the-pool exercises for his swimmers at Yale. Mann's view was that the best training for swimming is swimming. Kiphuth's views have, as you all well know, prevailed.

As for proper nutrition, much more is now known and practiced. Our pre-meet meal at West Point, I remember, featured steak and ice cream. "Carbo loading" was unknown 50 years ago.

Shaving down was unheard of. How many of you think the benefits of shaving are strictly psychological? Those of you who think so are, I must tell you, quite mistaken. Scientific studies conducted in recent years have established conclusively that shaving down has physiological (as well as psychological) benefits.

Back in 1939 tapering before a big meet was practiced, but not nearly as well understood or as finely tuned as today. It is true that a coach had his swimmers cut down on their workout the day before the meet and that he did emphasize speed more than endurance as the climax of the season neared; but a specifically designed two-week taper schedule before the big meet was, so far as I am aware, unknown to the coaching fraternity.

I have mentioned that the use of pace clocks did not come along until some time after 1945. Some thoughtful students of swimming credit the use of pace clocks more than anything else with the general improvement in times over the past half century.

Nowadays many coaches have their swimmers do some speedy swimming only minutes before a race. That was not the practice of any established coach 50 years ago. I myself should have realized the benefits of some fast swimming not long before a race, since my best college 440 came when I had swum a 220 earlier in the meet.

VII. COACHING

There are now far more and far better coaches, and they have far more scientific knowledge to draw upon as to stroke and training methods. Every coach here has far more understanding of productive stroke techniques and training than either Matt Mann or Eob

Kiphuth had. There are more coaches for a team these days, and, at least at the college level, a swimming team today has a diving coach. Today's swimming coach does not have to dilute the attention he pays his swimmers by coaching his divers as well, as Matt Mann did at Michigan.

VIII. PSYCHOLOGY

In track, once Bannister broke four minutes for the mile, a host of others did so soon afterwards. I have no doubt that Weismuller would have gone faster than 51 for the 100 if there had been anyone else who could go that fast.

Much is written these days by "sports psychologists." Some coaches teach their swimmers to envision their race before swimming it. Maybe they have something there, I don't really know.

My guess is that, if there was anything that Mann and Kiphuth could do as well as today's most successful swimming coaches, it was to understand the individual psyches of their swimmers and inspire them to do their best.

IX. PHYSIOLOGICAL CHANGES IN HUMAN BODY

In 1939 Michigan had a giant of a center on its basketball team: he was 6'4"! And they had a 180lb. all-American guard on their football team. These people were almost midgets compared with today's college basketball and football players. I believe that the average American body in 1989 is bigger than its counterpart of 50 years ago. While size seems to mean less in swimming than in most sports, the size of the Montgomerys, Biondis, and Nabers and other modern-day swimming stars suggests to me that increased size may have some bearing on improved times.

X. MOST IMPORTANT OF ALL

Coaches, what factor have I not yet mentioned?

When I was at West Point my closest friends, in addition to my roommates, were the guys on the swimming team with me. Why is that? Simply because we got to know each other so well through sitting around talking while waiting for an empty lane. In my view, the EFFICIENT USE OF THE SWIMMING POOL IS THE MOST SIGNIFICANT FACTOR OF ALL in the improvement in swimming times since my high school graduation. I don't know who first came up with the idea of putting in lane dividers during practice, assigning five or six swimmers of similar ability to each lane, and having them swim circle. As a direct result of this device, a college swimmer today can get in 5000 to 6000 yards in an 1½ hour workout, while back in '39 and at least until '45, a swimmer might be at the pool for two to two and a half hours and yet get in only 1250 yards; and those 1250 yards would not have been of as high quality as the 5000 to 6000 yards that you youngsters and, of course, college swimmers routinely put in these days.

How I wish that my college coach had thought of using lane dividers in practice - and, of course, that no other coach had learned his secret at least until after I had graduated.

I wish you all good luck. I hope that you get as much out of swimming in your lifetime as I have in mine. Swimming has enriched my life, and it is still enriching it.

MILLION METRE CARDS

Million Metre Cards are in your New Member's Kit. It takes a long time to earn a Million Metre patch, so maybe we should follow Queensland's example and have a State Award for a quarter of a million or half a million metres, to encourage newer members...

Now let's see; 1,000,000 metres in a 50 metre pool is 20,000 laps. If you swim 5km a week (or 100 laps a week) it'd take you 200 weeks or around 4 years allowing for a bit of time off, to swim a million metres. If you swam it all at once, averaging a minute per 50m, it'd take you only 14 days, but then you'd be famous to have swum for 14 days and 14 nights, without rest or food... and you'd probably be dead from exhaustion.



"Pete looks better wet than dry, just like those pretty little stones you collect along the beach."

How I Sweat

Get Loose, Get Strong, Get Going!

■ Warm up, stretch out, build power, save time. It's the medicine ball express.

By Vern Gambetta

Warmups and stretches are like flossing your teeth: Everybody agrees they're the right thing to do, nobody wants to take time. A warmup to raise muscle temperature should ideally come before flexibility exercises, and by the time you've gotten both of those done, it seems like half your workout time is already over.

But with a simple technique using a medicine ball, you can not only do both at once, you can get better results, loosen

and strengthen your muscles, and knock it all off in 15 minutes or less. I've used it successfully with the professional baseball players I work with, and it's what you might call Bolero Ball: every time you repeat each exercise it gets a little tougher as you move slightly faster, and hold the ball at a more demanding angle.

Sweating and stretching are thereby both achieved in one series of exercises, and the ball's weight leads you through a greater range of motion, doing a better job of drawing out tight muscles. At the same time, since you're moving a weight around, you're building strength. And you've done it all using movements—instead of static tensions—that are a lot like the ones in your sport coming up. I

also contend that by doing it regularly and cumulatively chipping away at muscle stiffness, you're raising your fitness level. Finally, my hunch is that it's reduced the number of injuries our players get.

It's not a "one size fits all" program, though. Athletes under 140 pounds should work with a 2 kg ball, while middleweights up to 180 can handle 3 kg. Clydesdales over 180 should be able to heft a 4 kg. As your fitness increases, boost amplitude or number of reps, not ball weight. Do two or three sets of 10-20 reps of each exercise, resting 30 seconds between sets. Or cycle quickly through all six for two or three cycles, with two minutes of rest between circuits. Either way, try to gradually boost speed as you go. □

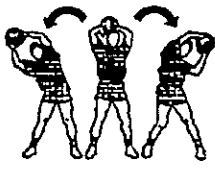
Vern Gambetta is Chicago White Sox Director of Conditioning and head of Optimum Sports Training, a Sarasota, FL-based fitness consulting firm.



TORSO CIRCLES
Movement: Ball goes in large circle. Then reverse. Arch back, and bend knees.
Build by: Start with small circle, say from forehead to waist. Each rep, increase diameter until ball is straight over your head and down to your toes.



MED BALL SQUAT
Movement: Straddle stand, ball at chest. Squat down, stand up.
Build by: First one-third reps, hold ball at chest; second one-third, lift to forehead as you squat, bring back down as you stand up; last third, raise to overhead position, then back down.



SIDE BENDS
Movement: Straddle stand, knees flexed slightly. Alternate left and right sides, slightly bending knees.
Build by: Move ball farther out as set progresses.

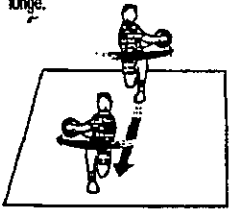
It's a Stretch. No, It's a Warmup.
(No, it's both. The "Bolero Ball" moves.)

GOOD MORNINGS
Movement: Straddle stand, knees slightly flexed. Bend at waist, flex knees slightly more.
Build by: Touch each elbow to opposite knee. Protect your back by rotating your hip, and allowing heel on same side as elbow to rise slightly.



WOOD CHOPPER
Movement: Straddle stand, knees slightly flexed. Swing ball forward and down, bending at knees and waist.
Build by: Start by holding the ball at chest for a few reps, then extend all the way as above. Bend almost to full squat, then extend up nearly onto toes.

MED BALL LUNGE AND TWIST
Movement: Straddle stand, ball extended out in front of chest. Step into lunge position and twist, swinging ball to side of forward leg. Repeat to opposite side.
Build by: Start with short stride, gradually increasing length of your lunge.



(Illustrations from The Complete Guide to Medicine Ball Training, a workbook by Vern Gambetta and Steve Odgers available from M-F Athletic Company (800) 556-7464. MEDICINE BALL SOURCES: M-F, or D-Ball Training Equipment (800) 500-322

Heart for Competition

continued from page 12
nary disease, not some hereditary flaw.

Can Athletes Fool Stress Tests?

Still, if you're feeling skeptical about the exercise stress test so religiously recommended for older athletes, I can't blame you: One in three people with diseased hearts can pass the typical examination on a treadmill that starts slow and gradually speeds up and tilts. Endurance athletes are especially good at this since their bodies have learned to adapt. One marathon runner who trained 8-10 miles a day came to see me complaining of chest pains he had when he wasn't exercising. He'd already passed the conventional test, one where

the work level is increased in stages from 1 to 7, so we put him on what I call the "supramaximal protocol" where the treadmill starts right off at stage 4. That showed us what we needed to know, a critical coronary blockage that had to be treated with balloon angioplasty. It wasn't the first test that was at fault. It was more the athlete's ability to make an end run around it.

At least his body had given him some warning. Not so the athlete in his early 40s who had been just a nick away from Olympic caliber and was still powerful and fit, but concerned about slight hypertension he'd recently been told about. His "routine" test turned into something else when we discovered he was subject to exercise-induced high blood pressure which skyrocketed from a nearly normal resting sys-

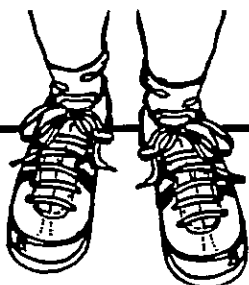
tolic value, to 250. Medication can control this, but not if you don't know you have it. Even if he'd suspected something and had his own sphygmomanometer at home, he'd probably never have picked this up since just five minutes after exercise, with your heart rate down and all those blood vessels nicely opened up from the workout, your pressure sinks to subnormal.

The Big Question: "What about me?"

For the majority of athletes, though, the question for now is not what some test showed, but whether or not to even consider having one. Like most cardiologists, I recognize that regular exercise may stack the deck in your favor by helping to lower your resting pulse rate and blood pressure, decreasing total serum cholesterol and

continued on page 24

Whether you think you can or can't, you are probably right. (Henry Ford)



Dr. Swim

The Portable Pool

- A traveling workout for swimmers and non-swimmers.
- No water required.

By Terry Laughlin

It's embarrassing for a professional swimming coach to admit, but here goes: I do not have a pool in my back yard. The budget, you know. What I do have is a spacious deck, and out there I often get just as good a workout as I would in a lap pool. All it takes is a simple set of stretch cords, and less time than I'd have actually spent in the pool anyway.

Stretch cords are latex tubing with handles at each end and a nylon loop in the middle which attaches easily to a wide variety of fixed objects. They come in a range of gauges, so you want to pick a set that matches your own strength.

It's easy to underestimate these snake-like, cheap, unsexy things. That would be a mistake. Cords have been my favorite non-swimming swim training aid for over 20 years because they're the most affordable—and one of the most effective—strength-building tools. Safe and productive for swimmers, their versatility makes them even more valuable for cross-training athletes.

In the fall and spring, when I drop a few swim sessions every week to take advantage of the great running and biking weather, stretch-cord workouts help me neglect chest and back muscles. In fact, a recent study at Canada's University of New Brunswick found that a daily stretch-cord workout of just 20 minutes (12-14 minutes of exercise, 6-8 minutes of rest) helped swimmers stay in top shape during a three-week layoff.

As for convenience, they're no tougher to carry around than a thick string. When I can't make it to the pool at all, a stretch-cord workout at home is almost as good. If I do go and all the lanes are busy, I pull the cords out of my gear bag and warm up or work out with them until I can squeeze in. And traveling? No more worries about whether the hotel health club is closed, or the neighborhood is safe for a run; the cords turn my room into a mini-gym.

Unlike weight training, it's virtually impossible to hurt yourself with these things. You can adjust the resistance to perfectly match your strength, increasing it in small increments as your muscles grow more powerful. Doctors even pre-

scribe stretch-cord exercises for injury rehab.

Getting Started

Stretch cords cost \$30-35 per set, and seem to be a mostly mail-order item so if you need advice in getting the right one, contact me at the address below.

Anyone who blisters easily should wear cotton work gloves. Fasten the midpoint of the tube around a secure object, such as a radiator, pool ladder, or deck railing, or close a window or door over it. Careful of any sharp edges that could cut the tubing. To equalize the resistance on both arms, make sure your cord is anchored exactly at midpoint. Begin with a few sets of 20 to 25 repetitions at moderate resistance using exercises that involve arm, chest, shoulder, and back muscles, like simulated butterfly and breaststroke pulls, seated rowing, lateral raises, bicep curls, tricep extensions—all described in the booklets that come with the cords. As you gain strength and endurance, build on these beginning sets (see below). Repeat 3-5 times weekly.

Resistance: Start each pull with light tension on the tubing, never with it loose. Because the band is elastic, there's less resistance at the beginning of your pull, more at the end. That's ideal for training, since more resistance matches the mechanical advantage you gain as you press farther back. To increase resistance overall, move farther from the anchor point.

Duration: You can get a decent enough workout in as little as 5 minutes, or add sets and exercises for a tougher session of 15 to 20 minutes. Since the exercise is so concentrated, there's little need to go longer than that.

Sets:

■ **Beginner:** 4 x 10-15 repetitions, moderate resistance. Rest 30-60 sec. between sets. Increase number of reps/set by 5 each week until you can do 30-40 reps comfortably. Then begin increasing the number of sets by one each week to as many as 8 sets.

■ **Intermediate:** 5 sets of 30 seconds work (12-15 pulls), 30 seconds rest. Increase duration of work bout by 10 seconds each week, keeping rest at 30 seconds, until you reach 60 seconds. Then begin increasing the number of sets by one each week up to 10.

■ **Advanced:** 2-3 sets of 3-5 x 60 seconds work, 30 seconds rest. Between sets do 3-5 minutes of abdominal or lower body exercises as part of a circuit (see below).

What's Your Goal?

■ **Speed:** Except for high-speed power-building sets, the most effective pace is between 35 and 40 per minute, which corresponds to swimming stroke tempo. Calibrate yourself by setting the countdown timer on a sports watch for one minute, then practice until you get the count inside that range. As you gain strength and fitness, you should be able to handle more and longer sets while holding your tempo and resistance steady. You've improved your resistance to muscle fatigue.

■ **Endurance:** Do longer sets (work bouts of 60 seconds or more, and longer total work time) with lighter resistance. (Ex: 8-10 sets of 60 seconds work, 30 seconds rest.)

■ **Power:** Shorter sets (10-12 pulls or 10-15 seconds) at high resistance and high speed. (Ex: 4-8 sets of 15 seconds work, 45 seconds rest.)

A Stretch-Cord Circuit

For an advanced workout, include stretch-cord exercises in a circuit with non-cord movements that work other muscle groups. This builds both endurance and strength by keeping your heart rate up for a prolonged period while you work on muscle strengthening. And constantly changing muscle groups lets you get more work done before your body says it's quitting time. □

Nationally ranked Masters swimmer Terry Lachlan, Director of Total Immersion Adult Swim Camps and a consultant to Speedo America.

This article together with Heart for Competition and Get Loose, Get Strong, Get Going are reprinted with permission from MasterSports Nov 1993 and March 1994 issues.

Subscription enquiries may be directed to:
400 East 85th St.,
Suite 9D,
New York, N.Y. 10028

What you conceive and believe, you can achieve. (Napoleon Hill)

Wise Words

"Reason can answer questions, but imagination has to ask them."

Ralph W. Gerard.

"Procrastination is the art of keeping up with yesterday."

Dan Marquis.

"I have a simple philosophy. Fill what's empty. Empty what's full. Scratch where it itches."

Alice Roosevelt Lincoln.

"If you can dream it, you can do it."

Walt Disney.

"Quit now, you'll never make it. If you disregard this advice, you'll be halfway there."

David Zucker.

"SUCCESSFUL STROKES"

The ASI developed "Successful Strokes" schools manual will be available for distribution from January 1994. Individual copies retail at \$40 (incl. postage and handling) and can be ordered from:

Australian Swimming Inc.

PO Box 940

DICKSON ACT 2602

Ph. 06 257 3255

Fax 06 257 4349

The bulk price is \$30 for orders of 10 or more (incl. postage and handling).

"Successful Strokes" is the course textbook for "Orientation to Coaching" courses (formerly Level 0).

DIRECT MAIL CAMPAIGN TIPS

1. It takes respondents 15 seconds to open a direct mail letter. It takes another 15 seconds for them to find the benefit, and 15 more to find out whether the information is what they want. So you've got to capture them in 45 seconds . . . maybe 60 if they like what they're reading.

2. A hand written postscript is a good way of emphasising the opening paragraph, which is where your main benefit ought to be. So the PS becomes a good reminder.

3. Keep all campaigns and study the results. Compare the success rates of opening paragraphs, different headlines, colour combinations, etc. You're sure to learn a lot.

4. Short letters work better in mailings to business addresses.

5. Long letters work better in mailings to home addresses.

6. If you have too much information to fit in a business letter, put the extra in an accompanying brochure.

7. People respond well to bright

colours, especially on catalogues.

8. Never mention your competitors in any of your mailings. It reminds the reader that they are an option too.

9. To succeed, direct mail does not have to be cheaper than retail.

10. Two-thirds of all business letters are opened before they are received by the person they are addressed to, therefore putting a message on the outside of direct mail to business people doesn't affect response.

11. People like to see their names in print. Use names - but make sure you get the spelling exactly right, otherwise this has a negative effect.

12. If the material you are sending looks attractive, consider putting it in a plastic envelope so that it can be easily seen.

13. Make sure each component of your package stand out clearly from the rest. People are in a hurry when they open envelopes.

cont. from page 22

triglyceride (blood fat) levels, and—in some people—boosting the desirable high-density lipoproteins (HDL) that apparently help keep arteries clean.

But there's more to life than exercise. A fatty diet and a high stress job, for example, can work just as hard against you. And a normal cholesterol profile does not preclude heart disease. If you've had a physical in the last year that raised any cardiac questions, an exercise test is probably a good idea. If not, at least take a look at the risk list in the accompanying box. It's not complete, but even one "yes" should make you wary enough to consider a workup.

If you're concerned, you might meanwhile want to stay away from heavy weight workouts in your cross-training. Low-resistance/high repetition work is OK, but beware sudden bursts of power where you can't breathe through the exercise. Sudden bursts of power put abnormal pressure on your heart's mitral valve which controls blood flow from the lungs. It's not a body part you want to risk damaging.

My advice to an athlete concerned about his heart is the same as the counsel of most coaches: Listen to your body. If you have any symptoms at all, get to a doctor. If not, don't think you can be careless about precautions like a regular physical and a sensible diet. Remember, the heart can suffer in silence. □

Cardiologist Dr. Benjamin Lewis is Assistant Professor of Clinical Medicine at Columbia Univ's. College of Physicians and Surgeons.

club stretching clinic in the hope that an "expert" can convince more swimmers to establish a regular stretching routine.

Perhaps you have people with special areas of expertise who are able to offer clinics for your members. I find winter a particularly good time to offer these sort of club activities, especially if your club scales down its training at this time.

Happy Reading

Anita

*"I can't find anyone to talk to
about my menstrual cycle."*

*"I suffer from PMS, yet I don't pay a
great deal of attention to it."*

*"Doctors don't convey information
about the pill or hormone
replacement."*

*"I find it difficult to
discuss any of this
with my G.P."*

*"Now I know what
I need to find out
about myself."*

*"Most doctors are not interested and are
poorly informed on issues concerning
pre-menstrual tension."*

*"I would like to know how
to cope with P.M.S. while
actually training."*

*"Most doctors don't
take women athletes
seriously."*

*"Menstruation is not a comfortable
subject for discussion - coaches think
you are coming up with excuses."*

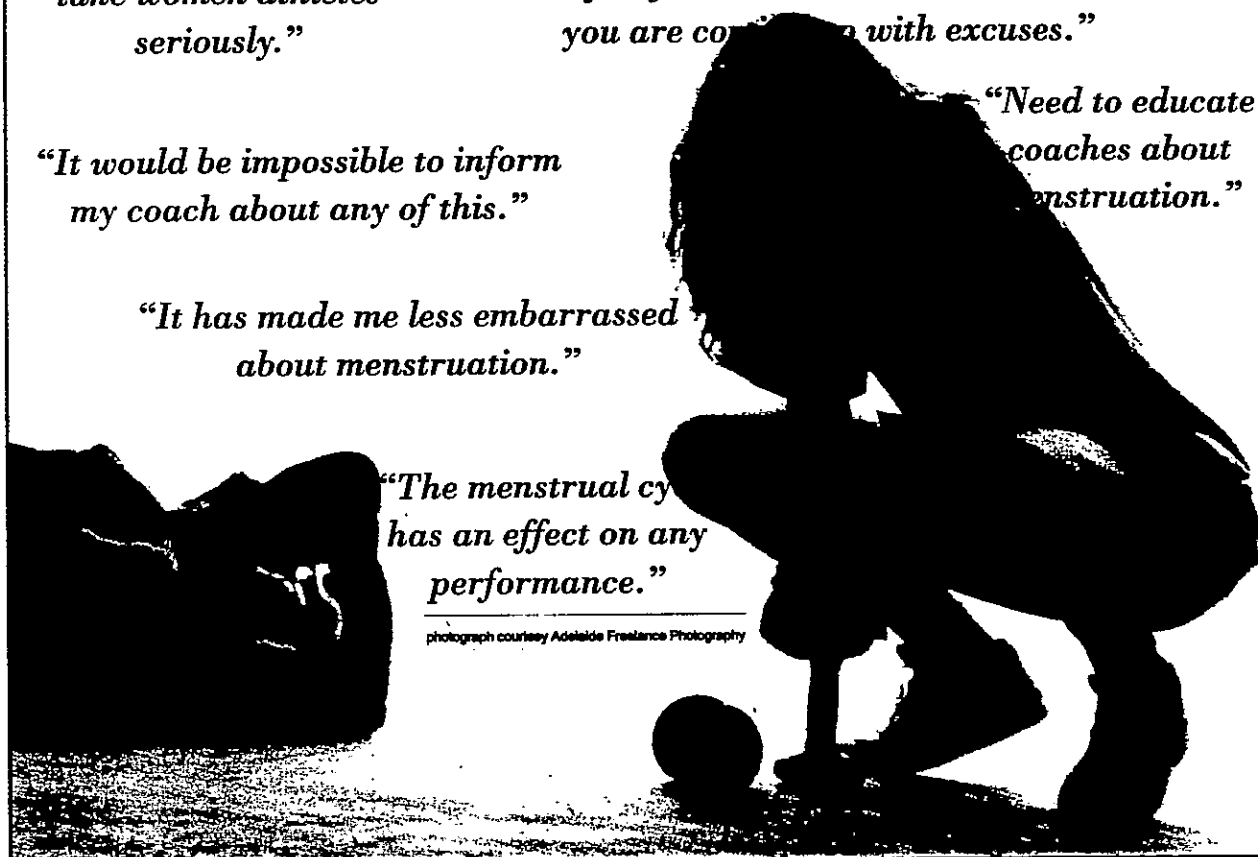
*"It would be impossible to inform
my coach about any of this."*

*"Need to educate
coaches about
menstruation."*

*"It has made me less embarrassed
about menstruation."*

*"The menstrual cycle
has an effect on any
performance."*

photograph courtesy Adelaide Freelance Photography



Women, Hormones, and Sport.

**A PILOT SURVEY INVOLVING MEMBERS OF THE 1992 AUSTRALIAN OLYMPIC TEAM
AND THE NATIONAL OPEN AND UNDER 21 NETBALL TEAMS.**

Wendy M. Ey, BEM, M.Ed. Womens Adviser, Department of Recreation and Sport,
PO Box 1865, GPO Adelaide.5001 Tel. 08 2267301

Introduction

Sport at the highest level has become very prestigious and athletes will seek every possible way to achieve their best performance. Sports science has been used to assist athletes achieve this goal, but it is only recently that gynaecology has been included in this process. Cyclical changes can affect both physical and psychological capacities and while this is not equally true for all women, it is undoubtedly a factor that should be considered when aiming to maximise performance.

The history of the menstrual cycle and athletic performance is a fascinating one, with myths, uncertainty and error permeating the knowledge women had of their own bodies. Warnings have always been paramount. In her 1918 book "Physical Beauty How to Keep It", Annette Kellerman reminded women, "I do not wish you to get the impression that the strenuous exercises that I have recommended are to be indulged in at the time of your menstrual periods."

The introduction of the tampon to Australia in the 1950's was probably one of the most significant events in sportswomen's lives. Some of the most reliable information about menstruation came from these advertisements and for the first time, women were told that they could "swim any time of the month."

Even up to the beginning of the seventies, there were still people holding the view that athletic activity during menstruation was dangerous and damaging to health. At the same time there were surveys showing that women had won Olympic gold medals and set world records at all stages of the menstrual cycle.

But uncertainty, misunderstanding and embarrassment still revolve around menstruation. The rules of sport make it difficult for the female competitor. Evonne Goolagong commented that a tennis player risks forfeiting a match if she leaves the court suddenly when struck by what she called "a periodic malady" and must rely on the understanding of the umpire to let her continue playing. Coyness remains in our society regarding menstruation. In Kay Cottee's book of her solo trip around the world where she listed everything she packed for the journey, there was no mention of tampons or pads, and Individual sportswomen are not used by advertisers to endorse these products.

Most of the research relating to athletic performance and the menstrual cycle has focussed on the impact of training on the cycle (the incidence of amenorrhoea and the predisposition to osteoporosis and cardiovascular disease) and very little on the reverse. There has been a notion that a certain amount of discomfort should be accepted, and women have been taught to accept that things such as minor weight gain, irritability and depression are part of being female.

Menstrual Cycle

In this study the age at first menstruation ranged from 11 to 17 years, with the average being 15, and there were 4 who had not yet started. This is a late age for menarche, with the average being 12. A later age of menarche has been reported for athletes than non athletes (Malina et al, 1978), while various researchers (Baker et al 1981, Calabrese et al 1983) have drawn connections between late menarche, amenorrhoea and age at commencing training, while others (Schwartz et al 1981, Shangold and Levine 1982) found no such connections.

Pre menstrual Syndrome (PMS)

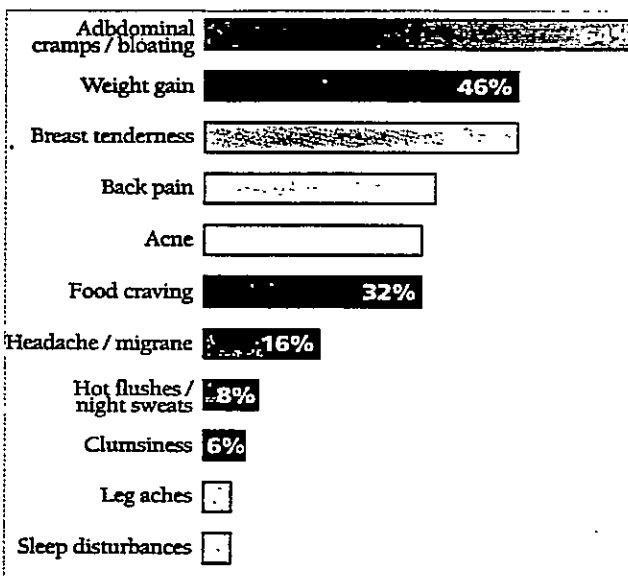
The "pre menstrual syndrome" (PMS) is a mixture of physical and emotional symptoms occurring during the week prior to menstruation. Exercise is commonly listed as a remedy for PMS, so it might be expected that the incidence of PMS among these athletes would be low.

There were however 24% who said they "often" suffered from PMS, 40% who "sometimes" suffered, 28% who "hardly ever" suffered and only 8% who "never suffered".

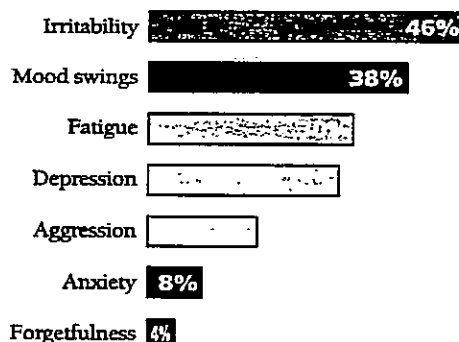
This is similar to the general population, where between 5 and 10% of women experience severe symptoms, 20% have moderate symptoms, 50% have mild symptoms and 20% do not have any. (Abraham).

The athletes responded to a list of physical and emotional symptoms that characterise PMS and from the response it is clear that PMS is an issue for this group of athletes.

Physical Symptoms



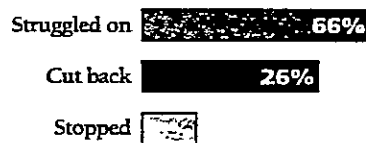
Emotional Symptoms



It would be expected that athletes at this level would not allow PMS to affect their training and only 8% said it "often" affected their training, while 39% said that "sometimes" PMS affected their training, there were 14% who said "no" and 39% who said "hardly ever".

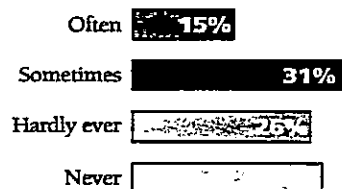
For those athletes affected, 66% said they "struggled on", 26% cut back on training, while 8% stopped training.

Training



Medication was taken by 15% "often", 31% "sometimes", 26% "hardly ever" and 28% "never".

Medication



The majority (48%) took aspirin/panadol, while 18% had prescription medication and 14% "hormone treatment". The remainder (20%) consulted with family, doctor or coach.

Protection

Young athletes, when they begin to menstruate are frequently concerned about the best form of protection to use. This would not be expected to be a problem at this level of competition. However, there were 30% of the sample who said they did not know what was the best form of protection and 33% who were not prepared to discuss this with the coach.

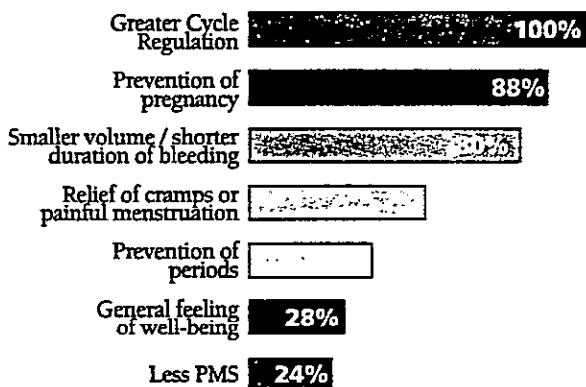
Record Keeping

Despite the impact of the menstrual on the individual athletes, only 24% actually have a method of recording their cycle in their training diary. This may be because the coach has not suggested it or simply because there is no provision in the standard training diary.

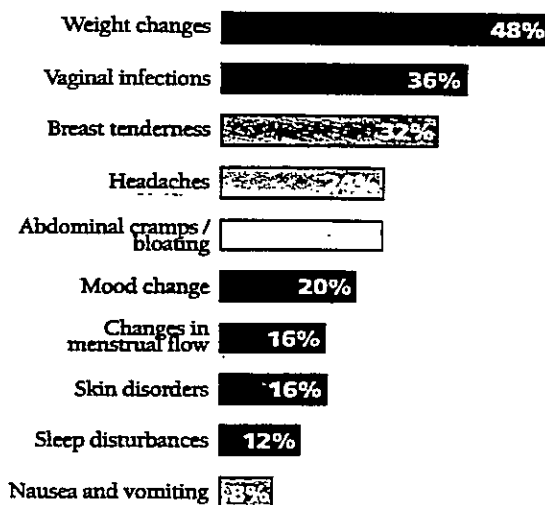
Control of the menstrual cycle.

Exactly half of the athletes surveyed had attempted to control their menstrual cycle and 65% of these has used the contraceptive pill for this purpose. The length of time ranged from 1-11 years, with the average at 5 years.

The advantages of the pill as listed by this group were:



Despite the advantages above, some athletes did experience side effects from the pill, as follows:



Nevertheless the level of satisfaction with the pill was "very good" for 59%, "good" for 28% and: "fair" for 13%.

It was surprising that only 2 athletes "often" and 3 "sometimes" adjusted their menstrual cycle to suit their training and competition program. For athletes who experience a loss of performance before or during menstruation, the use of the pill to change the time of menstruation or to alleviate the symptoms would seem to be a suitable solution.

After all, the importance of uninterrupted training at this level cannot be overemphasised. If there is a disruption, say for 2 days per cycle, 26 days per year then a 7% increase in training could be achieved if this were reversed.

There is no doubt that a number of athletes do not feel they have access to satisfactory information and the following unsolicited comment sums this up - "Would like more information on the effects of the pill on the athletes body and her performance - not enough known".

Amenorrhoea

Irregular periods and amenorrhoea are more common among athletic women than among the general population. Amenorrhoea is a feature of endurance training and while the cause is unknown, there is an association with low body weight, low body fat, low caloric intake, previous menstrual irregularity, psychological stress and the type and intensity of training. While many athletes are happy with this state of affairs, the most worrying feature of prolonged amenorrhoea in a young athlete is the risk of osteoporosis.

In this survey, 30% indicated that they had "a lot" of knowledge about amenorrhoea, while 36% had "some" and 34% "none". The high percentage with no knowledge is both surprising and cause for some concern. However in the light of the following comment, the issue needs to be addressed at several levels.

"I fully support this research project. I am sick of asking questions about my body and relating it to all of life style and not getting answers or any interest. The only way I found out about osteoporosis as a long term effect of amenorrhoea was through my podiatrist. I was going to a

specialist gynaecologist - why didn't he advise me of this when I asked him what the long term effects are? The answer I got was that although it was abnormal to get cessation of periods, it is normal!!! Hormones and hormone changes are "powerful" and have an impact on our whole lifestyle. This research should assist women regardless of whether they are athletes or not, from girls to post menopausal women. It will also hopefully engender some interest from doctors and result in the provision of better services and consideration from them."

In this group, 39% indicated that their periods had stopped; 40% for more than 12 months, 27% for more than 3 months and 33% for less than 3 months. The majority (55%) had consulted a doctor, while the remainder discussed the matter with family, other athletes or their coach.

The group was equally divided about whether they wished to remain amenorrhoeic. One athlete commented "I would prefer to be amenorrhoeic while I am doing gymnastics, but when I retire I want to have a normal menstrual cycle."

Even though, in an earlier question, 30% said they had "a lot" of knowledge about amenorrhoea, when asked about the long term effects, there were 40% not aware of them. Bearing in mind the elite nature of this group, this is rather surprising.

Osteoporosis

Athletes who are amenorrhoeic have an increased risk of injury and potentially an increased risk of osteoporosis in later life. Osteoporosis is not exclusively an old age disease. An increasing number of young women, particularly athletes, have been identified with symptoms of premature osteoporosis. It appears that oestrogen may have a protective effect over bone loss and therefore women who cease menstruating or have delayed menarche, due to dieting or excessive exercise may develop premature osteoporosis.

In this survey, 45% indicated that they knew "a lot" about osteoporosis, yet, while most (84%) believed that the cause was inadequate dietary calcium, only 24% saw a connection with amenorrhoea and 14% believed it to be a disease that only affects older women. The majority (56%) did not believe that they were at risk of developing osteoporosis.

Diet and training

"The number of sportswomen who suffer from eating disorders is on the increase". Some 10 in every 50 women involved in sports where leanness is emphasised are believed to have eating disorders. This compares to 1 in 50 for the non-athletic female population. (O'Brien)

Anorexia nervosa

Anorexia nervosa is an eating disorder characterised by severe self-imposed weight loss, self induced vomiting, altered body image, an intense fear of becoming fat, and amenorrhoeic. (De Souza)

Amongst this group there were 16% diagnosed as anorectic. The action taken by this group ranged from having fad diets (40%) to taking diuretics and laxatives (20%) and seeking support from family, other athletes or coach (40%).

The majority (86%) felt that they had "a lot" of knowledge about anorexia nervosa and the remainder had "some" knowledge. All indicated that they were aware of extreme weight loss, concern about body image and of becoming fat. The majority (over 70%) knew about the use of diet pills and of related disorders such

as amenorrhoea. Even more (94%) said that they understood the consequences of anorexia, particularly low body fat, while slightly less (78%) said that it would lead to poor exercise performance, 72% to poor muscular development and 70% to amenorrhoea. It was surprising, however that 29% did not understand the relationship between body weight and a healthy menstrual cycle.

Considering the importance of diet to good sporting performance and the level at which these athletes were performing, it was surprising that only 12% had received "a lot" of help in planning their diet. A larger group (28%) had received "some" help while the largest (34%) had only received "a little" help. One of the major concerns held by many athletes is summed up as follows:

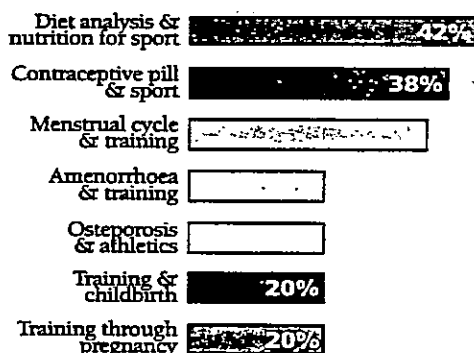
"How to maintain a low body fat, hold onto the right intensity of training, while getting the right dietary requirements - just need to find out how"

Knowledge

At the end of the questionnaire, the athletes were asked about the level of knowledge of their coach on hormone changes and athletic performance. The largest group (40%) did not know, while 26% said it was "poor", only 14% said it was "very good". As you would expect, the support and knowledge of their doctors was much better, with 30% indicating it was "very good", although an equal number "did not know" (possibly they had no reason to enquire) while 12% said it was "fair-poor". The frustrations of some athletes are summed up as follows-

"Dr. X is the only doctor I have found who at least has never criticised my dedication. At least five other doctors and physios have been skeptical when they hear of my training schedule and plans for the future"

One of the most important and interesting questions concerned the areas where more information was requested. The greatest demand was for diet analysis and nutrition education for sport (42%), followed by the contraceptive pill and sport (38%), menstrual cycle and training (35%) while there was a smaller interest (around 20%) for amenorrhoea and training, osteoporosis and athletics, training after childbirth, and training through pregnancy.



Conclusion

The overwhelming impression gained from this group of athletes was that "hormones and sport" is an issue for them and that they were grateful that at last it was being taken seriously. They are thirsty for knowledge and for the understanding and assistance of coaches and doctors. While short term athletic performance is important, so is long term health.

AUSSI RESOURCE CENTRE

A great way to get your club together for a social night/fundraiser is to have a video night. Clubs who may not be able to swim all year round could use this to keep some continuity in their lay off period.

Items are available for the following hiring charges:

1 Video	1 Week \$5	2 Weeks \$8
2 Videos.	1 Week \$8	2 Weeks \$12
3 Videos.	1 Week \$10	2 Weeks \$15
1 Audio Tape.	1 Week \$3	2 Weeks \$5
2 Audio Tapes	1 Week \$5	2 Weeks \$8

A bill will be forwarded to you with the goods (including postage) and payment must be sent with the items, on their return.

VIDEOS

- * Sunrice High Performance Eating Strategies, plus booklet
- * Mark Tonelli tapes
- * Aussi Coaching Seminar with Kirk Marks
- * THE ATHLETIC INSTITUTE SWIMMING SERIES
 1. Freestyle & Backstroke
 2. Breaststroke & Butterfly
 3. Starts, Turns & Progressive Drills
- * AUSSI WORKSHOP - Tailoring a Programme plus booklet
- * Stretching - Bob Anderson
- * Food for Sport
- * Masterstroke Technique
- * Your Backyard Swimming Pool is your home fitness centre
- * AUSKA - Swimming Strokes
- * SWIM SMARTER, SWIM FASTER AND
- * STARTS, TURNS AND FINISHES
- * Masters Stroke Techniques
- * Swimming Fastest
- * A.S.C.A. Conference MASTERS Adelaide 92
- * Strength Training
- * Visualisation
- * Media Matters
- * Exercise beats Arthritis

AUDIO TAPES

* THE CREATIVE PERFORMANCE INSTITUTE

1. Guided Imagery for Racing Risk Taking & Racing
2. Guided Imagery for Training Commitment & Training Today Relaxation and Mental Rehearsal

* AUSTRALIAN COACHES CONFERENCE SERIES 1990

1. The Role of the National Coach In Australian Swimming - Don Talbot OBE
2. Integrating School and Club Swimming - Dick Shoulberg
3. Managerial Perspectives of Parent, Coach, Athlete Relationships - Professor Andrew Crouch
4. Blood Lactate Responses in Masters Swimmers During Active and Passive Recovery - Peter Reaburn
5. Utilisation of Time and Space for Swimming and Dryland Training - Dick Shoulberg
6. Physiological Considerations in Tapering Swimmers - David Pyne
7. Coaching Butterfliers - Doug Frost
8. Training and Racing the Individual Medley - Dick Shoulberg
9. The Importance of Teaching Good Technique - Laurie Lawrence
10. The AUSTSWIM Swimming Program - John Kilpatrick
11. Long Distance Swimming Training - Dick Campion
12. High Altitude Training - Ian Findlay
13. Coaching the Elite Distance Swimmer - Ian Findlay

AUSSI RESOURCE CENTRE - ORDER FORM

NAME _____

ADDRESS _____

AUSSIE CLUB _____

MEMBERSHIP NO. _____

I REQUEST THE HIRE OF THE FOLLOWING ITEMS

1. _____
2. _____
3. _____

I WOULD LIKE TO HIRE THEM FOR A TOTAL OF _____ WKS COMMENCING _____ DATE _____

I AGREE TO RETURN THEM IN GOOD ORDER COMPLETE WITH MY CHEQUE FOR HIRE AND POSTAGE

SIGNED _____

DATE _____

CHEQUES MUST BE MADE TO "AUSSI"
27 Johnstone Street,
MALVERN 3144

AUSTRALIAN MASTERS SWIMMING COACHES NEWSLETTER

AUSTRALIAN SUBSCRIBERS \$16.00 / 4 issues

OVERSEAS SUBSCRIBERS \$24.00 / 4 issues (Bank Draft Only)

Please send me one year's subscription of the AUSTRALIAN MASTERS SWIMMING COACHES NEWSLETTER.

NAME:

ADDRESS:

.

. POSTCODE

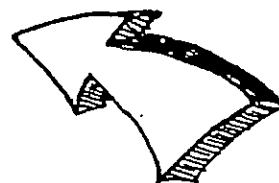
PLEASE TICK: ☐ SUBSCRIPTION RENEWAL ☐ NEW SUBSCRIPTION

PLEASE DETACH AND SEND THE WHOLE PAGE

CHEQUES TO BE MADE PAYABLE TO:

"AUSSI"

C/- Australian Masters Swimming Coaches Newsletter
27 Johnstone Street,
MALVERN VIC 3144
AUSTRALIA

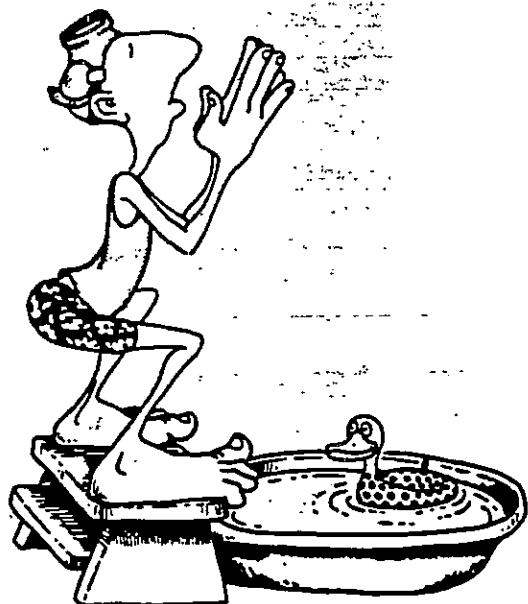


OFFICE USE ONLY: Feb

May

Aug

Nov



The MSI Hawaii Festival 1995

Venue: University of Hawaii, 8 lane 50m pool
Entry Forms: Will be available in Montreal

PROGRAM - AUGUST

Monday 7th - Warm-ups, Registrations, Cocktail reception.
Tuesday 8th - Pool Swim Day 1 plus Happy Hour
Wednesday 9th - Pool Swim Day 2 plus Happy Hour
Thursday 10th - Pool Swim Day 3 plus Happy Hour
Friday 11th - Pool Swim Day 4 plus Happy Hour
Saturday 12th - Open Water Swim, Beach events, Luau
Sunday 13th - Golf Competition