

# T11E MASTERS ATHLETE

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A total fitness guide to optimise training and performance for the older athlete

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Guest Editorial - Steve Scarlett General Manager Honda Masters Games

The inaugural Honda Masters Games was held in 1984 and attracted some 500 competitors. In 1996 the elusive "5000 competitor" number was reached and Alice Springs hosted the biggest Masters Games to date.

My own perspective is that of a former competitor and now as General Manager. Along with myself, 1995 welcomed an entirely new team within the Northern Territory Department of Sport and Recreation. We have a small team of four people to organise major events for central Australia, including the Lasseter's Indoor Challenge and of course the Honda Masters Games.

With this new team came new ideas and many changes to the way thing were done ar rganised.

of actually getting competitors to Alice Springs. Our marketing has varied quite considerable and has involved the assistance of the Northern Territory Tourist Commission.

Alice Springs is a small town of approximately 25,000 people, and stands in its own right as one of Australia's major tourist centres. In 1995/96 we welcomed 620,000 visitors. Statistics show that with the increase in competitor numbers to the Masters Games, there has been a steady increase in the 'touring' competitor also.

Our marketing and promotion efforts resulted in welcoming a rugby union team from Texas, a large contingent from Hong Kong, and competitors from several other destinations including Sri Lanka, Singapore, New Zealand, USA, Canada and Guam. The largest Australian contingent continues to be the Northern Territory, closely followed by South Australia. It is interesting to note that early survey results from this year indicate that the last proportion of visitors to the Games come from Rural Australia.

In 1996 we established a Bed Bank managed by the Northern Territory Tourist Commission. This is a database that lists all available accommodation in Alice Springs, including hotels, motels, caravan parks, camping

the war

areas etc. This provided potential competitors a free-call, one stop-shop for accommodation.

Due to the numbers involved, we established two "tent cities" on a trial basis. They were thankfully a success and attracted not only the competitors who failed to make prior arrangements but also those travelling on a limited budget. I am pleased to say that the tent cities will continue for future Masters Games.

Sponsorship for an event such as this is essential. The major sponsor is of course Honda Australia. Mr Neil Robertson is General Manager for Honda Australia and has pledged his personal and Honda's financial support for the Masters Games until the year 2000.

Other sponsorship came in many forms.

NGOM is the Northern Territory Government organisation responsible for the office automation and telephone databases for all Government Departments. Their sponsorship consisted an entire facelift of the computer system for the Masters Games including registration, check-in, results and even a results page on the Internet.

Acclaim Courts is a firm based in Adelaide and another sponsor of the Honda Masters Games. The netball courts in Alice Springs were bitumen, and caused the majority of sports injuries in previous Games. Acclaim Courts resurfaced the netball courts with a high performance coating system. The injury toll was reduced quite significantly and feedback was very positive.

The Opening Ceremony is the first and largest single social event during the Masters Games week. The opening ceremony gives the sponsors and other dignitaries their moment to thank the competitors and pledge their support to the Games. Most importantly, the opening ceremony is to welcome the competitors and wish them luck in the up and coming week.

The focus for the Opening Ceremony was a largely Centralian theme with Aboriginal music and a fireshow leading the nights entertainment.

With the full social calendar of our Friendly Games, competitors were never short of entertainment. The didgeridoo playing Talent Quest produced sounds probably never heard before and some of the team entries were certainly worth seeing although the listening was a bit testing!

There was in total 31 sports held during the 1996 Masters Games, from the traditional team and individual events through to a new event held this year - gliding, which attracted an international standard field of competitors. The individual sports are required to nominate a co-ordinator who then, with his/her committee organises the format of competition and draw.

Volunteers are relied on very heavily during the week of the games, and in fact our Games could not function without the huge support of the Alice Springs community. We also have a unique ambassadorial service. Our ambassadors are dressed in uniform and have duties such as welcoming competitors at the airport, visiting sporting events, assisting in medal presentations and looking after the dignitaries.

A consultant was commissioned in 1996 to gain information from competitors on how the Masters Games could be improved and their general view on the town and the competition. Early feedback indicates that competitors enjoy visiting Alice Springs for the close proximity of the sports and services, camaraderie and wonderful scenery.

Although many changes and improvements took place in 1996, many more are likely and I can only invite all previous and new competitors to Alice Springs for the 1998 Honda Masters Games.

## Editorial

Happy New Year to all

We hope you all had a relaxing and enjoyable Christmas break. Ours was chaotic as Peter has accepted a position as Exercise Physiologist at the University of Central Queensland (Rockhampton), starting February 97. Trying to sell a house, move a business, settle two children and have a bit of a break all at once is not the easiest of tasks. For the time being our address will stay as is and we will notify you once we have permanently settled in Rockhampton.

Don't forget if you have a yellow slip in your copy, it is time to renew.

This year we hope to include a couple of articles on mountain biking, kayaking, outrigging and walking. These sports were not originally targeted by the publication but it seems we have subscribers interested in knowing more about training for these sports.

If there is a topic you want to know more about, please drop us a line and we'll do our best.

Peter and Claire

#### THE MASTERS ATHLETE

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Australian Sports Commission

ENDURANCE

# Tapering for the Big One

© by Dr Peter Reaburn

per is the term used to describe a reduction in training before competition. However, while most of us taper, very 1ew scientific studies have actually compared performance before and after a period of reduced training.

This article will examine some of the available research studies and their implications for us as older endurance athletes. A summary of the available research appears in Table 1 below. The most important point to note is that it appears that a lowering of training volume with a maintenance of training intensity appears to produce the greatest improvement in performance.

results in improved performance.

Reducing the training volume gradually by up to 60% of normal distances appears to lead to the best gains in performance.

#### 3) Exercise intensity

Training during tapering is usually done with interval work with enough recovery between intervals to maximise intensity. A While reducing the training volume, the intensity of each workout should be main-

Highly-trained athletes should taper for no longer than 14 days, training frequency should not be reduced by more than 50%

Moderately-trained athletes need only taper for 3-5 days to improve performance.

Some athletes may feel "heavy" during the taper, possibly due to increased carbohydrate storage in muscles as a result of not training as often or as hard. A possible solution is to do some intense work right up to the day before competition.

Tapering is highly individual and each athlete "psychs" themselves in differen during this period. Some athletes feel they "need" days of rest, some "need" a small hitout the day before a race. Listen to your body and learn what works for you. Smart tapering - great racing.

Have you ever noticed what golf spells backwards?"

Al Boliska - US humorist

Table 1: Effects of different tapers on muscle power and performance

Athletes	Taper	Measure	Change
Runners Runners Runners Runners Runners Runners Runners Swimmers Swimmers Cyclists	5 days of high intensity intervals 5 days of low intensity running 7 days of no running 5 days of high intensity intervals 5 days of low intensity running 7 days of no running 14 days no running 7 days high intensity intervals 14 days reduced volume (53%) 10 day reduced volume (76%) 4-8 day reduced volume	Leg strength Leg strength TE TTE TTE TTE 5k run times Swim times Swim power Cycle power	33% increase 33% increase 37% increase 22% increase 6% increase 3% decrease 9.2% decrease 3% decrease 3.1% decrease 5% increase 8% increase
TTE = Time to	Exhaustion		

When tapering for major races, we can manipulate the following variables:

- 1) Taper length or duration
- 2) Training volume
- 3) Exercise intensity
- 4) Exercise frequency
- Let's examine each of these in turn.

#### Taper Length

Studies done on swimmers in the late 1980's examined blood variables like haemoglobin and red blood cell number rather than performance. These studies suggested that a 7 day taper was optimal, with longer tapers being negative to a number of blood parameters. More recent studies have shown that tapers between 7 and 21 days, as long as they are stepwise (volume gradually reduced over time), will result in improved performance, with tapers longer than 21 days leading to only maintenance of performance and not improve-

#### 2) Training volume

A stepwise reduction in training volume appears critical to improved performance. Studies done on swimmers have shown that this gradual reduction in training volume leads to both improved swim performance and swim bench power output. In contrast, a study done on runners in 1990 reduced training volume straight away to 70% of normal volume for three weeks and found no improvement in 5k run performance.

Taken together, it appears that an incremental, stepwise decrease in training volume

number of studies have shown that reducing training intensity below 70% of VO2max (about 80% of maximal heart rate) either maintains or reduces performance. In contrast, tapers that use high intensity intervals have lead to significant performance improvements as long as the volume is reduced at the same time. This suggests that if you are used to say 15 x 100m swims or 400m runs that you might reduce this to 12 > 10 > 8 > 6 > 4 over time. However, the important point is that the intensity of these efforts is maintained.

#### 4) Exercise frequency

The number of training sessions per week varies greatly between individuals depending on work and family commitments, level of motivation, holidays etc. A great reduction in training frequency is not recommended. A study on swimmers in the late 80's found that a 50-85% reduction in training frequency, combined with the standard reduction in training volume lead to decreases in performance. In contrast, a number of studies on cyclists and runners only reduced training frequency by 20-40 % and observed improved performance as long as training intensity was maintained. These results suggest that a great reduction in training frequency should be avoided, particularly in the "feel" sports like swimming and

#### Practical Recommendations

Athletes should gradually reduce the volume (kms, mins) of training by up to 60% in the 7-14 days.

# **☆** The Team

PETER REABURN - Editor CLAIRE REABURN - Co-ordinator

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# Tips on Prevention of Sports Injury

© by Dr Stephen Hinchy

irstly let me define injury - There are two main types - EXTRINSIC - usually contact with another object (ground/person/goal posts etc) and INTRINSIC - self inflicted such as overuse/inappropriate preparation/activity.

Injuries range through bruises, sprains and strains, tears/laceration (including internal organs), bone and joint injury (subluxation, dislocation, fracture) and head injury. How to prevent this - prior to embarking upon any activity one should have a medical check to rule out problems such as high blood pressure, heart disease, diabetes, epilepsy, other physical deformities, so that an appropriate activity can be designed (eg epileptics should never swim alone, appropriate exercise can benefit heart, blood pressure). Flexibility examination is desirable - this is usually done by sports otherapists.

#### SOME BASIC RULES -

Don't exercise if unwell, running a temperature, have chest pain, dizzy spells, unusual shortness of breath or if these symptoms develop during exercise it may well be advisable to stop the activity. NO PAIN - NO GAIN is NOT the criteria we should be following.

It is difficult to prioritise the methods of injury prevention as many would disagree with a formal 'seeding' but here goes:-

- SPECIFICITY The development of appropriate skills and fitness level for the sports performance required training in the activity required for the sport develops the muscles used in that activity incorrect training, playing while not fully recovered from injury, playing when not fully fit will increase the likelihood of injury.
- WARM UP This increases the blood supply and oxygen supply to the muscles and go a slight increase in muscle and overall bouy temperature thus helping to reduce possible injury from sudden stretching of cold tissue. Warm up should be done for 5 to 10 minutes before stretching and appropriate warm ups are gentle aerobic exercises and flexibility exercises.
- STRETCHING Without stretching muscles lose flexibility - injury may result when the muscles fail to respond to sudden/extreme movements. Correct stretching attempts to lengthen muscle and tendon units which reduces muscle tension, improves blood circulation to muscle, prevents traumatic injuries and enhances performance.

It is best done *before* and *after* activity. It should be done gently and slowly - no ballistic stretches and should involve *alternate* muscle groups stretching to the point of tension but not pain.

• CONDITIONING - This involves adequate preparation - Physically AND psychologically. Conditioning for one activity is not necessarily appropriate for another so we hark back to specificity. We must simulate as close as pos-

- sible the types of movement and skills required for the specific sport/activity AND concentrate on particular aspects of the system requiring improvement. Must be tailored for the specific event and individual athlete. Conditioning should be maintained all year, not just during the season.
- FITNESS Encompasses physical, social, emotional and intellectual components. Lack of fitness leads to injury so the areas to be addressed to prevent injury are endurance, strength, power, flexibility, speed and agility. Any lack in these can cause impaired performance whereas development in these areas eg confidence and psychological competence to compete is a key factor in the prevention of injury.
- TRAINING I have already stressed specificity in training. Another very important factor is progressive loading of your systems by gradually increasing the intensity (how hard), duration (how long) and frequency (how often). This allows your body to adapt slowly and prevent injuries and overtraining.

No Pain - No Gain is NOT the criteria we should be following. 99

- PROTECTIVE EQUIPMENT This would seem like common sense but is often ignored.
   Use of bike helmets, protective eyewear (especially squash), appropriate footwear, and suitable clothing (for hot or cold) all will prevent injury to some extent.
- FACILITIES Ensuring the facilities are properly prepared and maintained with protection where required (eg padded goalposts) and hygienic dressing room/toilets will reduce risk of injury.
- PERSONAL RESPONSIBILITIES Basic hygiene helps prevent infection both to yourself and others eg in contact sports. Spread of infection coughs/colds/glandular fever is highly prevalent in crowded dressing rooms. Avoid contact where possible. Hepatitis B vaccination and Tetanus vaccination should be maintained, especially in contact sports and those who travel internationally (other vaccinations/precautions may be required depending upon the area being visited).

- RULE BREAKING Don't forget that many rules have been put in place to specifically prevent injury either to yourself or others. Obey the rules.
- APPROPRIATE TRAINING TIMES Especially in Australia with its hot conditions training AND competition should be undertaken morning or afternoon avoiding extremes of heat in the middle of the day.
- ADEQUATE HYDRATION Is essential to avoid heat stroke/exhaustion. Fluid replacement with water at the rate of 250ml/fifteen minutes is usually sufficient. Although weak electrolyte solutions are not necessary for electrolyte replacement, fluid absorption is enhanced with these so better hydration is obtained with their use.
- NUTRITION Adequate carbohydrates are necessary for sports performance fats and high protein diets should be avoided as much as possible and the use of carbohydrate polymer supplements may be necessary in order to ingest sufficient carbohydrate in heavy exercise. Don't be reluctant to see a sports dietitian/nutritionist.
- MASSAGE PRE AND POST EVENT Massage improves blood circulation to the tissues and improves elasticity. Helps to remove waste metabolic products after exercise. Athletes who have access to massage experience fewer injuries/faster recovery times.

Above all - listen to your body. If hurts, ease back. Any persistent pain should be treated, not ignored. Remember - early intervention and appropriate treatment will often prevent further injury and result in an early resumption of activity.

"Running races should be absolutely forbidden to men over 27 years of age. Between 30 and 40 a man may indulge in running at a moderate pace for exercise, but not in races. Men over 60 years of age should never run at all for anything, not even to catch a train."

Sir James Cantlle (1851 - 1926) physician

# **Eating before Racing**

© by Dr Peter Reaburn

ost of us know that we need to increase carbohydrate intake to 70% of total calories in the last three days leading up to a major race. But how many of us know what, when, and how much should I eat before an early morning or late afternoon race? Let's see what the science says and then give some practical tips as well.

#### ■ Introduction

The primary goals of the precompetition meal are to provide fluid and energy to support us during competition, while not making us feel uncomfortable during racing. The major energy source during racing is carbohydrate so the precomp meal should aim at topping up the carbo supplies in the muscles and liver and then help maintain blood glucose levels throughout the race.

The rates of food digestion in order from fastest to slowest are high glycemic index foods (eg. bread, lollies, sports drinks), low glycemic index foods (eg. oats, beans, fruit), protein (eg. meats) and fats. Liquid foods also empty from the stomach faster than solid foods. So a liquid, high glycemic index food as the precomp meal will help top up the supplies before racing while the solid, low glycemic foods will help maintain energy levels during the race.

The amounts and types of foods and the time interval before racing that food can comfortably be eaten also varies widely between athletes. However, let's examine what the research suggests is the way to go.

#### ■ When to eat?

Blood glucose and insulin (the hormone for reducing blood glucose levels) peak 30-60 minutes after eating carbos. If exercise is started during this time, there is theoretically a drop in blood glucose levels due to the combined effects of insulin and muscle use of glucose. Research has shown that while in some athletes this drop in blood glucose may lead to a decrease in performance, in most athletes the blood glucose level changes minimally and if it does, there is no effect on performance. However, the research examining carbo ingestion 30-60 minutes before exercise is divided with negative, neutral and positive effects having been reported. Individuality appears to be the key.

In contrast, there is no doubt that endurance capacity is enhanced by eating solid or liquid high carbohydrate foods 1-4 hours before exercise. This is because it takes about 3-4 hours to completely absorb 100 grams of glucose. Eating meals closer than one hour prior to competition may lead to feelings of "fullness" or discomfort. Again, different strokes for different folks. Speaking of strokes, lightweight rowers who are weighed prior to racing should plan to eat after weigh-in. If you weigh in early morning and race in the afternoon then eat a large meal. If the race is early, have a high carbo snack immediately after weigh in.

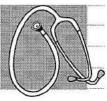
Continued on Page 5.

Food Fruits	Amount	CHO (g)	Food	Amount	CHO (g)
Apple	one	21	Banana	one	27
Fig	one	10	Grapes	half cup	8
Orange	one	15	Peach	one	10
Pear	one	30	Pineapple	half cup	10
Raisins	half cup	57	Watermelon	half cup	6
Vegetables	nun cup	ŭ,	1.010111101011	a. eup	
Carrot	half cup	8	Corn	half cup	17
Peas	half cup	11	Potatoes	half cup	16
Sweet Pot's	half cup	33	Tomatoes	half cup	3
Breads/grains/		.00	Tomatoca	Trail Cap	1
Bagel	one	.31	Beans	third cup	13
Bun	one	20	Bran muffin	one	17
Bread	one slice	13	Croissant	one	12
Pancakes	one	9	Pasta	half cup	15
Pita bread	one slice	21	Popcorn	half cup	2
Porridge	half cup	13	Rice cake	one	8
Rice (brown) h		23	Rice (white)	half cup	17
Milk products				4.04	
Fruit yogh't	one cup	43	Milk (all)	one cup	12
Plain yogh't	one cup	16			
Sports drinks/fo					
Gatorade	one cup	15	GatorLode	one cup	47
Exceed	one cup	17	Exceed (HC)		59
Power bar	one	40			
Sugars			50 E. C.	1 1 1 1 1 1	
Muesli bar	one	16	Jam	one t'spoor	14
Jelly	one t'spoon	13	Soft drink	one cup	25
	unces or 226 gr				

Table 1. Carbohydrate (CHO) content of selected foods

## "Is your Health putting you at Risk in your Sport?"

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For more information, please contact:

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#### Wesley Corporate Health Program

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Telephone: (07) 3870 7016 Facsimile: (07) 3371 5325

#### Sports Nutrition continued from Page 4...

#### How much to eat?

Food eaten one hour before should provide 1-2 grams of carbos per kilogram of body weight. If food is eaten four hours before racing, the recommended carbohydrate content is 5 grams per kilo of weight. For example, a 68 kg athlete would consume 340 grams of carbohydrate by eating two bagels, one banana, one cup of orange juice, one cup of plain yoghurt, two muffins, and two cups of sports drink. Table 1 gives some examples of common foods and their carbohydrate content.

#### ■ What to eat?

The prime consideration here is that the foods eaten must be those we like, that we are used to and that are well tolerated without giving us wind or gut upsets. For example, I wouldn't go spicy mexican the night before a race - I'd end up with a "burning ring of fire" the next day and my wife wouldn't sleep "be constant interruptions of both the y and nasal kind!!

ds high in fat, fibre or calories delay stomacn emptying and should be avoided.

Plan to take the foods selected with you to the race if you are racing away from home don't think they'll be there or you'll try whatever is available.

#### Conclusion

It can't be emphasised enough that the 'best' pre-race meal is an individual matter. The meal should consist of foods and fluids that we like, are used to, can tolerate, have tried before previous races, and that we believe will help us achieve our goals.

### 🔎 From the Research 🗞

### What happens to 'em all?

Ever wondered where those once arniliar faces from events disappear In order to examine what happens to runners over a long period, Atlanta researchers surveyed 535 persons (326 M, 209 F) by mail, 10 years after they had completed the 1980 Peachtree Road Race. Only 56% of respondents were still running although 81% said they were still exercising regularly. In the men, injury (31%) was the chief reason for giving up running, while in the women, 28% stopped running because they chose another form of exercise. Fifty-three percent of the repliers had at least one injury over the 10-year interval, with the major cause due to high weekly mileage. The major site of injury was the knee. Interestingly, 35% of men and 39% of women had been verbally assaulted, with about 10% hit by thrown objects or bitten by a dog.

The natural history of exercise: a 10yr follow-up of a cohort of runners. Koplan, J.P. et al., Medicine and Science in Sport and Exercise 27 (8), 1180-

1184, 1995.

## Athlete Profile

Name: Mal Wilson Age: 45 years

Sports/Events:
Long Distance Running

Occupation:

Past: Self Employed Present:

What do you enjoy about masters sport?

Competing against people my own age.

What motivates you to participate? To show people you can still be fit at 45.

How do you keep yourself motivated? Train 5 to 6 days a week and dream of winning in front of family and friends.

Favourite training session: Overcast and wet days.

How often do you train: 5 times a week.

Do you train under a coach, with a group of friends, or by yourself? Why? On my own. I am not good enough to have a coach.

Person most admired and why?: Robert de Castella. He takes the time out to talk to you not matter who you are

Other interests/hobbies: Golf and my two boys.

Your most memorable moment in sport: Doing a 10k training run with Deek.

Your most memorable moment in life so

Robert de Castella talking about me on the stage after the Brisbane half marathon on my heart surgery and running the Gold Coast Marathon with my surgeon.

Favourite movie: A River runs through it.

Favourite book: De Castella on running

Favourite 'bad' foods: Fish and Chips.

Favourite 'good' foods: Grilled Fish and Salad.

Philosophy on life: Never Quit

Advice to masters athletes wanting to improve:

I run for my health and enjoyment. I don't over do it and I vary may training and most of all good diet and listen to what my body says.

Other comments: Enjoy life to the fullest.

# Letter to the Editor

Reader Dr Peter Couttie from Victoria sent a letter questioning the role of sports drinks *before* an endurance race (p 4 of Dec, 1996 TMA). Peter's question was based on his belief that a carbohydrate drink *immediately* before a race would elevate the hormone insulin which then lowers blood glucose and make the athlete tired.

His point is a valid one depending on how long before the race the drink is taken, what the length and intensity of the race is, and how much and what type of drink the athlete takes in.

For athletes in events shorter than 15 minutes that are intense, a small volume of sports drink immediately before the race will be no problems unless the athlete has discovered that the drink gives them tummy upsets. In events such as an Olympic distance triathlon or marathon where the intensity is lower, the theory goes that elevating blood glucose immediately before a race will lead, as Peter points out, to a lowering of blood glucose. However, not all research supports this theory. It appears that once exercise commences, blood glucose levels plateau at close to normal levels due to the increased uptake of glucose by muscles.

To play it safe, if you decide to use a sports drink before a race, drink the 500mls 60-90 minutes before the race unless you have found using them later helps you in which case drink small amounts leading up to the start. During events longer than one hour when carbohydrates may become depleted, sports drinks are essential to replace lost carbohydrate, fluids and sodium.

Peter also has questioned whether foods are what they used to be in terms of vitamin and mineral content. All I can say is they sure don't taste like they used to. We have a dietitian responding to that excellent question in an upcoming issue.

RUNNING

**Running Wiser** 

© by Tracey Langfield

ith age comes wisdom! Does this mean that Master athletes train more wisely and avoid injury? Let's check with 10 tips on how to avoid injury during the running season.

1. Medical - If you are just starting to run or planning to increase your running to the half or full marathons, a medical from a sports physician would be a good start.

2. Flexibility is fundamental. Two sure things in life occur....we get older and our flexibility decreases. At least we can do something about the latter. I can not overemphasise stretching. Consistent stretchers have less injuries. Research has shown that the repetitive nature of distance running leads to shortening of both the contractile and connective elements of the muscle tissue. The major muscle groups implicated and the areas they influence are shown below:

i) Anterior Posterior - your pelvis should not tip forward and arch your back. Keep your rib cage lifted away for your pelvis and gently tuck your tummy in. NB. Don't completely flatten your back, it's not normal.

ii) Lateral - when you land on your left foot ensure that your right hip doesn't drop and vice versa.

iii) Rotation- theses are the corkscrew runners. Check that when you land on your left foot, your left knee doesn't turn in and that your upper body doesn't counter-rotate so much that your right hand crosses the midline. A lack of central stability can result in spinal and a myriad of lower limb injuries as well as

an inefficient running action.

2) Heel Strike - ideally you should heel strike. Research shows that it is best for shock absorption. Consider 6 to 8 times your body weight landing with an average of 500 strikes per foot per km, multiplied by 20 for a 20km run, and you will

appreciate the necessity to heel strike and absorb shock. NB. Avoid overstriding as your leg then acts like a braking mechanism and increases

Muscle Groups Injury Area Lumbar Spine ......Low back Pain (LBP) Hamstrings ...... LBP/Pelvis/Knee/Patello femoral (PF) Iliotibial Band (ITB) (Side of thigh) ...... ITB Friction/PF/Pelvis Adductors (inside of thigh) ...... Groin/Pelvis/Knee Calf......Knee/Calf/Achilles/Plantar Fascia

Table 1: Muscle groups and injury areas

When to Stretch? You should have three different stretching times - warm-up, cool down and separate sessions. The types, aims and technique for the different stretches are discussed in the table 2:

Type	Aim	Technique
1) Warm Up	Prepare the muscle for the	1 - 2 x 20 secs each
	smooth lengthening through	
	the range.	
2) Cool-down	Reverse tightening that	2 x 30 - 60 secs each
	occurred during the run	
3) Separate Sessions	a) Muscle tissue - 'resets' the	light contraction x 6 secs
	tension in the contracting	moderate stretch x 10 secs
	tissue	Dan Bandi ka pagalawa a sa sa sa
	b) Connective tissue -	1 minute moderate stretch
	lengthen the connective tissue	2 - 3 times each
	T.I. 0 T	

Table 2: Type, aim and techniques

If pain, stinging or burning is experienced or no gains in length are achieved despite consistent stretching, consult your sports physiotherapist for advice. Don't forget massage professional, self or swap with a friend - for relieving those spots that stretching doesn't

3. Technique - especially important when increasing the kilometres or intensity.

Two key points to remember are:

1)Central Stability implies a stable pelvis and trunk from which the arms and legs can move as levers. There are 3 directions in which you should be stable.

4. Footwear - you need the correct shoes! Basically there are three foot types overpronators, normal and supinators- each requiring different footwear. Overpronating feet are the most common. Pronation is normal as the foot adapts to the ground. Once we reach mid-stance we should begin to resupinate and form a rigid foot for push off. Overpronators remain pronated past midstance, hence leaving the foot less rigid and the lower limb turned in. Overpronation can result in injuries from the foot to the back.

Supinated feet are too rigid and often result in injuries relating to a lack of shock absorption, eg. Stress fractures.

A reputable sports shoe store, sports physiotherapist or sports podiatrist can assist you. Also consider that you may require at least one new pair of shoes per year and limit your kilometres when first in a new pair of shoes.

5. Feet - Blisters and ingrown toenails can be frustrating injuries stopping your running.

Keep calluses soft and buffed to avoid friction on underlying tissue and causing deep blisters.

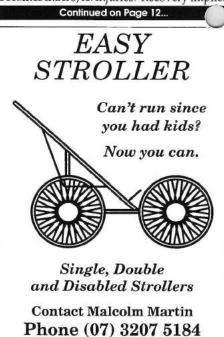
Blisters mean friction so check shoe fit and wear cotton socks or try vaseline on prone ar-

If prone to ingrown or black toenails obtain advice from a podiatrist.

6. Surfaces - the hardness of the r surface is a major determinant of the tude of force transmitted up the leg after landing. Bones, cartilage and muscles cope with this force. Sudden increases in the hardness of the running surface or long kilometres on hard surfaces may produce fatigue failure in those tissues and injuries such as stress fractures or cartilage degeneration. Stay on the grass when possible and only increase to harder surface by 10-15% of your kilometres per week.

7. Volume - I find that a lot of Masters runners can cope with distance but breakdown with intensity work. Remember to do an effective warm-up; wean into intensity work; and decrease the distance on the stronger weeks. Get to know how your body reacts.

8. Recovery - Pushing your body to the limit uses up reserves and produces microdamage. If there is no time for recovery we become overtrained and the microdamage becomes macro, ie. Injuries. Recovery implies



#### ROWING

# Ten Tapering Tips for Veteran Rowers

© by Tim Kerrison

ne of the common mistakes I see athletes and coaches make in preparation for competition is the failure to taper correctly. Often, inexperienced athletes and coaches will intensify training leading up to a major competition, including more 'racing' work in their training regimens, without leaving adequate time for recovery.



Tim Kerrison

As we train we place a great deal of stress on our bodies. Just as it is important to recover from the fatigue induced by a single training session before the next session is undertaken, it is also important to recover from the cumulative fatigue caused by previous training before you undertake a major competition. This

ess is known as tapering and is characterised by increases in muscular strength and power, improved psychological state, and most importantly, improvements in perform-

Tapering represents a delicate balance between reducing training enough to allow the body to recover, without backing-off so far that performance will decrease (known as detraining). During the taper period, which may vary from a few days to three weeks, the total volume of training is reduced, but it is important that training intensity is maintained. In rowing this may be achieved by cutting back on a few morning training sessions (a few sleepins are a great way to freshen up for a competition), having slightly shorter paddles (e.g., row 8km instead of 12km) while concentrating on higher intensity work such as starts, 250's and 500's, and perhaps some race simulation work.

Great differences can be observed in the way in which different athletes and coaches r, particularly when comparing different sports (e.g., rowing and swimming). Swimmers typically have a longer taper than rowers and place a lot more emphasis on the taper. But little research has been done to examine what methods of tapering are best. The best idea is to experiment with a few different tapers and see which one suits you best.

I am a great believer in athletes always remaining in touch with how their body is responding to training and this is particularly important when preparing for a competition. Listen to your body. You should know what it feels like to be fully recovered and if you don't feel fresh going into a major competition then you should modify your taper for the next competition until you find a taper that suits you.

Below are 10 practical tips to help you plan your taper period;

1. Plan your season - when are you going to taper??

It is always important to plan out your entire season well in advance, and this includes tapers. Only taper for major competitions and don't include more than four tapers in a year (two or three is better). A tapering period, combined with carefully planned training leading up to it represents a peak, and if & preparation for the peak is too short then performance at the peak will not be as good as it could otherwise be.

#### 2. Plan you taper Make sure you do enough work before the taper period so that you can reduce training volume during the taper, without the risk of losing fitness. You should enter the taper period fighting fit and use the

taper to fine-tune your body, and recover from the previous hard training. Have the taper itself planned out so you know roughly what training you should be doing during the taper. As always you should record your training (as well as diet, emotional state, etc...) so that you can assess the effectiveness of the taper post mortem, and make any necessary changes for next time.

#### 3. Reduce training volume

During the taper reduce training volume by reducing the number of sessions per week as well as the distance travelled per session. As long as you entered the taper period well prepared, aerobic fitness should not be com-

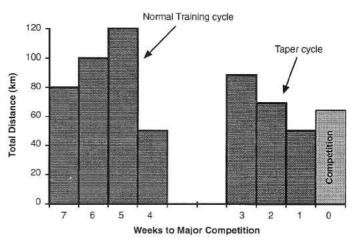


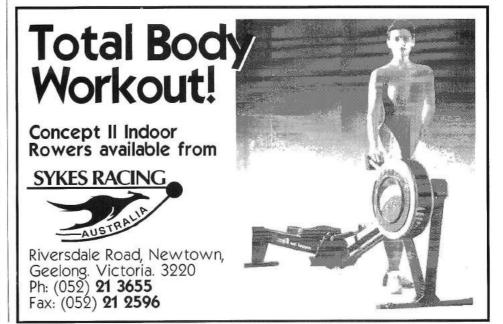
Figure 1: Examples of a normal and taper training cycle.

promised by reducing training volume. Below in Figure 1 is an example taper cycle compared with a normal training cycle. Each column represents the total volume of training (time or distance) in a week.

#### 4. Maintain intensity

It is crucial that training intensity is maintained during the taper. So, even though you are doing less training, you are still going to go out and do some fast, hard work. Early in the taper you might do some tough transport work (heart rate above 90% of max), developing abilities such as lactic acid tolerance and the ability to push oneself at race pace all the

Continued on Page 10...



## The Need for Speed

© by Dr Peter Reaburn

ost masters swimmers don't know how to train for speed. We all want PB's at meets that usually have events that are 50 to 200 metres in length, yet at training we invariably do distance work. Distance training is great for reducing cardiac risk factors, keeping some control over those waist and hiplines, and giving us endurance. However, it will not get us fast.

Sprint training gets us fast and sprint training is completely different to distance training. This article will focus on how to get fast and why speed work is critical for both the sprint and distance swimmer as they age.

#### The three types of sprint training

Sprint training has four objectives:

 To increase the rate of lactic acid production - believe it or not a sprint swimmer needs to produce the stuff in order to keep producing energy for the muscles to keep contracting.

2) To improve lactic acid buffering capacity - lactic acid hurts and when in large amounts can upset muscle contraction. That's why we go to pieces at the end of a 100m sprint. The right type of sprint training can train the muscles to reduce the effects of lactic acid.

To improve pain tolerance - we must teach our heads to cope with pain so that we can achieve our body's physical limits.

4) To improve muscle power - this can also be done in a gym and if you've read my previous articles in TMA you will know this is critical for older sprinters. In this article we'll focus on how to improve muscle power in the pool.

In order to achieve these objectives, three types of sprint training are crucial:

Power training - to achieve an increase in muscle power

2) Lactate production training - to increase how much lactic acid is produced

3) Lactate tolerance training - to reduce the effects of lactic acid and increase tolerance to pain - what a pleasant thought!

Let's now have a look at each of these types of training in turn then see how we put them together.

#### 1) Power training

To improve muscle power, we need to improve either how many strokes we take in a length or time period (stroke rate), the amount of force per stroke (stroke length), or both. These can easily be calculated by counting the number of strokes per 50m or minute (stroke rate) and then dividing the distance covered by the number of strokes (stroke length in metres per stroke). A number of drills are useful for improving stroke length and rate:

1) doing a set of 25 or 50m efforts and counting strokes - try to maintain times but reduce stroke rate or swim faster with the same number of strokes.

2) see how far you can sprint in a period

of time (say 10 seconds).

Obviously sprint technique is critical here and a good coach can help you out. Assuming good sprint technique, now let's focus on how we might construct sets that develop the muscle power and thus speed.

The guidelines for constructing power sets

a) Distance per repeat: 10-50m

b) Total distance: 200-600m in 1-2 sets

c) Rest intervals: 30 secs to 5 minutes. 10m sprints get 30 secs, 50m sprints 5 minutes (yep - 5 minutes). Remember we need speed and for speed we need to be fresh.

d) Speed: maximum possible

e) Times per week: twice

Power means speed, once form goes so will speed. The critical point is to make sure that swim form is maintained - if you are getting tired or producing too much lactic acid (you'll feel it), take a longer rest or break the work into smaller sets.

#### 2) Lactate production training

As mentioned earlier, we need to produce energy and lactic acid quickly in sprints. We thus need to train our muscles to produce lactic acid quickly but not in the large quantities that upset sprint technique - that is the last type of sprint training - lactate tolerance training. The best distances for lactate production are 25 - 50m, although younger swimmers might make 75m efforts. The important point is that the time frames should be 15-50 seconds.

The guidelines for constructing lactate production sets are:

a) Distance per repeat: 25-75m

b) Total distance: 200-500m in 1-3 sets

- c) Rest intervals: 1-5 minutes. 25m sprints get 1 minute, 75m sprints get 5 minutes. Again, remember we need speed and for speed we need to be fresh. Do an easy swim between sets or intervals to enable the next repeat to be fast.
  - d) Speed: maximum possible
  - e) Times per week: twice
  - 3) Lactate tolerance training

Like to hurt? This is for you! This type of training achieves the objectives of teaching the muscles to reduce the effects of lactic acid on the muscles and also teaching us to hurt and tolerate that hurt.

The length of the sprints should be long enough to produce high levels of lactic acid the stimulus for improving muscle and blood buffering (lowering the effects of acid) capacity. Research in younger swimmers suggests the best distance for lactate tolerance training is 75-200m. In older swimmers this might be 50-150m swims because we swim them at a slower pace and sprinting time is the important factor here. The rest interval should be long enough to be able to swim another repeat at the same speed. However, we can also do shorter repeats like 25-50m swims in small sets with shorter rests. Three to five sets ap-

pears optimal in a session and long (10-15 mins) swim recoveries should be done between sets.

The guidelines for constructing lactate tolerance sets are:

- a) Distance per repeat: 75-150m or 25-50m in sets of 2-10. 2-5 sets are optimal.
  - b) Total distance: 200-600m in 1-2 sets
- c) Rest intervals: 5-15 minutes between longer repeats. 25m sprints get 10 secs, 50m sprints get 30 seconds with 15 minutes between sets.
  - d) Speed: maximum possible
  - e) Times per week: once to twice.

This type of training hurts and can easily tear an athlete down and lead to overtraining if done too often. It should be done after a large base of endurance and lactate production training has been done. It is usually done in the last 6 to 8 weeks leading into a major meet.

#### Other forms of sprint training

a) Sprint-resisted swimming requires us to exert more force on the water, thus improving power. Thus, short, intense efforts of 5-15 seconds should be used here. Surgical tubing attached to the blocks or lane rope holders, drag suits, swimming with shoes, rubbers around ankles or sprinting with paddles are options here. Try to maintain stroke rates and/or lengths when doing this work and use it in moderation.

b) Sprint-assisted swimming aims to increase stroke rate. Sprinting with flippers,

Continued on Page 10..

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## Blinded by Technology

© by Liz Hepple

t the last Olympic Games, a couple of Italians stunned the cycling world by performing brilliantly on the track in their revolutionary 'Superman' position. Only a few years prior to this, Graeme O'Bree made a similar impact by slashing the world pursuit record on his 'Postman's Bike'.



Liz Hepple

Going back a few more years, 'time trial bars' became standard equipment for cyclists after Greg Lemond used them to win the final and deciding time trial in the Tour de France. History was created when Lemond gained enough time to win the Tour de

France from Laurent Fignon by a mere eight

Cycling is a sport renowned as much for its remarkable technological innovations as it is by the feats of the great athletes in the sport. But many equipment modifications do not stand the tough test of the UCI (International Cycling Union), and of the three innovations mentioned above, only time trial bars remain. 'Superman' and 'Postman' bikes have been judged as 'too dangerous' and 'contrary to the spirit of the sport of cycling' and restrictions have now been put in place to prevent their

The 'Superman' position will be near impossible to achieve in future due to a recent UCI ruling that the front of the bars must be no further forward than 15 cms in front of the front wheel axel. A limit has also been placed on the wheel base of the bike to prevent cyclists extending the front wheel out to ridiculous extremes to get around this limitation. This allows shorter riders to ride bikes with long top tubes and be considerably more aerodynamic within the rules. Given the rapid rate hich the rules change, by the time this article goes to print - this too may be restricted.

Despite these set backs, the cycling industry continues to experiment with technological changes which may save a few precious seconds in a bike race. And recently leading motor industry scientists have been getting in on the act. Lotus was responsible for the production of Olympic champion Chris Boardman's 'monocoque' frame, and BMW recently launched its new aerodynamic cycling machine.

But some argue that technology is not necessarily making practical improvements. In fact there may be some sort of conspiracy in the bike industry which, like the fashion industry, regularly changes its designs to get customers to part with their hard earned cash. Is improved technology really the answer to better performances, or are you pouring money down the carbon fibre drain trying to go that bit faster?

The answer is that you can go faster by improving your equipment, but your physiology and psychology are the major factors contributing to your race performance. These

should be dealt with first before you go and mortgage the house to pay for the latest disc wheels. However, given that you are following a suitable training program to improve your physiology, and that you are mentally tough and focused when you ride, upgrading your bike is the next step in achieving better results. Here's some ideas.

...YOU CAN GO FASTER BY IMPROVING YOUR EQUIPMENT, BUT YOUR PHYSIOLOGY AND PSYCHOLOGY ARE THE MAJOR FACTORS CONTRIBUTING TO YOUR RACE PERFORMANCE.

THESE SHOULD BE DEALT WITH FIRST BEFORE YOU GO AND MORTGAGE THE HOUSE TO PAY FOR THE LATEST DISC WHEELS.

#### Aerodynamics

As air resistance is the major factor slowing cyclists down at fast speeds, improving the aerodynamics of your bike is probably the best way to make you go faster, particularly if you are concentrating on time trialling. The faster you go, the greater will be the effect of wind resistance, hence the bigger the advantage of aerodynamic equipment.

Olds, Norton and Craig (1996) developed a model predicting the effect of different aerodynamic accessories on a 26 km time trial performance. It indicates that the greatest benefit is to be gained from riding an aerodynamic bike with a small front wheel (average of 50 secs improvement). Both disc wheels and 16-spoke wheels with 'deep V rims' were predicted to reduce time by over 30 seconds. For a lower cost a good 'legal' aerodynamic helmet could save you more than 20 seconds, whereas, a poorly designed one might add more than 30 seconds to your time.

Other minor improvements of around 10 seconds could be achieved by wearing a skin suit or using an 'aero' water bottle. Even shaving your legs might save your more than 2 seconds! Road riders now have the aerodynamic advantage of using shorter time trial bars (Spinaci bars) in races, which improve a riders ability to break away and to 'drive' hard at the front of the bunch.

#### Reducing weight

Many people believe that it is crucial to have their bike as light as possible. Some have even gone to the extent of drilling holes in chainrings and other parts in order to save a few ounces. However, Olds et. al. predicted that in a flat time trial, you would need to lighten your bike by 1.8 kilograms to get a mere 1% reduction in time. Time trial riders and pursuiters would find it more cost effective to make their bikes more aerodynamic than to reduce its weight.

Obviously the advantages of a lightweight bicycle increase in proportion to the hill climbing to be done in a road race, and road riders would benefit from using a light weight bike and wheels. Lighter bikes are also easier to accelerate, which is useful in break aways and sprints, so are an advantage in bunch races.

#### Rolling resistance

Throughout history, better tyre designs and materials have been developed to help cyclists go faster by reducing the rolling resistance. Presently cyclists can choose tyres with a smooth tread and thin walls which can take up to 220 psi air pressure, however, this advantage is offset by the fact that they are much more likely to puncture.

#### Skill execution

Some technological improvements have not necessarily made cyclists go faster down the road but have helped them execute skills more easily. Finger tip gearing (such as Shimano STI or Campagnolo Ergopower) has enabled riders to leave their hands on the handlebars while changing gears. Cyclists can now change gears faster to break away and when accelerating out of corners in a criterium. Not only are the changes much smoother, but they can be made while riding out of the saddle. This gearing often means the difference between getting dropped or going with the break, and are a worthwhile investment for a road rider.

Electronic gearing is the ultimate in gearchanging luxury, and is presently being used by some lucky riders. However, some claim that it is unreliable, and for this reason it may not be worth the huge price.

#### Comfort and Injury prevention

Clipless pedals became popular in the mid-eighties, partly because they simply looked more modern. Many cyclists claim they relieve the discomfort of having thin toe straps tightened around the top of the foot and they are easier to 'clip' into at the start of races. Some riders still prefer toe straps on their pedals, particularly in track races on fixed wheel bikes, because of the danger of inadvertently unclipping the shoes with clipless pedals.

'Floating' cleats have been shown to help prevent injuries in certain cases. By allowing the foot to rest in its natural position, the stress on the knee and hip joint is reduced. Despite

Continued on Page 10...

#### Cycling continued from Page 9..

this many riders don't like the movement with floating cleats, and opt for the fixed position.

Gearing

Just when you thought that you had the ultimate in gear ratios with '8-speed' gearing, the major component manufacturers have now released the '9-speed' version. With nine cogs on the back wheel, there will be a greater variety of gear combinations, and riders probably won't need different clusters for different terrain. Cyclists may now decide to change chainrings rather than clusters (eg: have a 46/ 53 combination for flat/undulating races, and a 39/53 for mountainous type courses. '9 speed' gears will also require cyclists to purchase the compatible narrow chain and may wear slightly faster due to the thinner cogs.

In conclusion, technology can make you go faster, but usually at a price. Cyclists need to select the equipment to suit their type of racing and their wallet.

## 🖍 Did You Know? 🔌

- · Our eyes can detect 10,000,000 different shades of colour.
- · Did you know the human eye is so sensitive that a person sitting on top of a hill on a moonless night could see a match being struck up to 80km away!
- · If you hold your nose and close your eyes it will probably be impossible to tell the difference between mashed apple and mashed onion!
- · The human nervous system sends messages as fast as 288km/hr.
- The bottom is the least sensitive part of the body for pressure.
- There are about 650 muscles in the body .... and when you step forward you use 54 of them.
- · The tongue is one of the strongest muscles in our body.

#### Swimming continued from Page 8...

swimming with the surgical tubing pulling you towards the wall or having buddies tow you with a rope (that sounds extreme!) are possibilities here.

There is absolutely no doubt too much endurance training will slow down our sprint speed. Yet I continue to see masters swimmers doing hours of distance work then wonder why they aren't getting faster at meets that have 25-200m races. The above training methods are crucial to developing speed for sprinting. I also strongly believe that distance swimmers who have done years of endurance training can benefit greatly from power training as outlined above.

In the next issue of TMA we'll examine how we might go about putting the above training methods into a season training plan. Good and fast racing guaranteed - if you train fast, you'll race fast.

#### Rowing continued from Page 7

way down the course. Later in the taper this type of work would be phased out and replaced with shorter, sharper work, such as starts and 250m sprints.

5. Retain flexibility & 6. Listen to your body Although the taper should be panned in advance, it is important that you retain the flexibility to respond to your body's reactions. It is no good to plan every detail of every session six months in advance and then execute it to the letter. Be perceptive about how your body is responding to the taper and adjust your training accordingly. Perhaps you will require an extra session, or maybe you'll need to do a bit less than was originally planned. No-one knows your body like you do and by learning to perceive how your body is responding to training you can customise the taper to your body's needs.

7. Sleep in!!

As you reduce your training volume you should be able to cut out a few morning sessions. Take advantage of these and sleep in if possible. Masters rowers, many of whom combine hectic work and training schedules and have families, would have to be amongst the world's most sleep deprived people. A few hours of extra sleep will do the world of good for your mental and physical state.

8. Practice psychological skills.

If you are like most elite rowers, the thought of reducing the amount of training you are doing will be unsettling, especially with a major competition looming. One way of dealing with this is to incorporate some mental skills training into your training program. These skills, such as mentally rehearsing the race and relaxation exercises will almost certainly improve your performance at the upcoming competition.

#### 9. Eat and drink well

As always, it is important to make sure you are getting adequate nutritional intake during the taper. Make sure your diet is rich in carbohydrates and that you are drinking plenty of fluids.

#### 10. Remember 1000m!!!

Always remember that the physiological demands of racing over 1000m is very different to 2000m. Be careful not to just follow blindly what younger rowers are doing. Masters rowers, because of the increased anaerobic component of the 1000m race, will require more high intensity work as the competition approaches. But the masters rower may also enter the taper period in a more fatigued state due to increased high intensity work leading up to it. This may necessitate greater reductions in volume, but more intensity during a masters rower's taper, compared with a rower who races over 2000m.

#### Conclusion

By tapering correctly, masters rowers can get a distinct advantage over their competitors. Substantial performance improvements will be observed, but it is essential that the taper is done in accordance with the above guidelines. Experiment with a few different tapers to see what suits you best and above all, learn to listen to your body to gauge when you are fully recovered.

See you on the water!!

### 🕻 🎤 From the Research 🗞

### Intervals the way to go.

Interval training or continuous training? - that is the question. Researchers from Texas in USA may have an answer. Ten welltrained runners (VO2max = 61.7ml/kg/min) took part in a twopart, 16-week study. During the first six weeks they all ran 80k per week at a moderate pace. During the following 10 weeks they split into two groups - one did two x 4600m interval sessions a week while the other group averaged 29 minutes of continuous anaerobic threshold running twice a week. Both maintaine other run sessions. Run times for 10k and 800m improved by 1.1 minutes and 6.6 secs in the continuous run group over the 16 weeks. The interval group improved by 2.1 minutes and 11.2 seconds on the 10k and 800m run tests respectively. VO2max improved by 4% in the continuous group and 12% in the interval group. While no statistical differences were observed between the groups in the changes of VO2max and performance, this may have been due to the small sample size and / or wide variety of individual responses. However, the extent of the changes with interval training versus continuou running would certainly suggest that intervals are the way to go to improve that 10k run time.

High intensity training programs for well-conditioned runners. Kispert, C. et al., Medicine and Science in Sports and Exercise 21(2), \$75, 1989.

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## **Tapering Tips**

© by Greg Reddan

he Canadian, Hans Selye (1956) was a pioneer in the study of stress and promoted the term 'failing adaptation'. Forbes Carlile, the great Australian swim coach, studied Selye's work and concluded that swimmers needed far more rest before competition than they were previously receiving.



Greg Reddan

He believed this caused the adaptive processes of the body to overcompensate as the athlete prepares for a maximum effort. Carlile was a graduate student of the late Professor Cotton at the University of Sydney in

the fifties and they discovered that for physiological adaptation to occur, arduous training had to be tempered with adequate rest.

Colwin, another famous swim coach, noted that the concept of tapering is based on this realisation and it proved to be one of the most significant contributions to competitive swimming for more than 30 years. He also stated that "a successful taper results from good judgement and careful planning" and be planned individually for each athlete. Colwin believed that the tapering period should allow complete recovery from accumulated fatigue to overcompensate in its adaptation to stress, producing a superior performance.

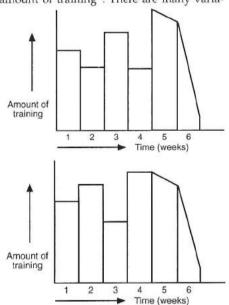
Ironman triathlete and physiologist, Glenn Town, states that "when training is ongoing, the microstructure of skeletal muscle remains in a constant state of degradation and rebuilding. The constant tearing down and repairing is a normal and preferred phenomenon: skeletal muscles rebuilds to greater capacities than previous levels, thus, meeting demands placed on in the future." However, whilst this is

ing and the body is in a state of renere is an increased risk of muscle and connective tissue injury. He felt that those athletes who failed to give the body suffi-

cient time and nutrition to recover, may eventually become injured or ill.

It was not until the eighties before athletes and coaches began to plan recovery as part of the normal training process. Up to this point, recovery mainly occurred when an athlete was failing to adapt or was tapering for a major competition.

Hellemans came up with 'cyclic training' where the duration and/or intensity of training is increased weekly and progressively, with easy weeks interspersed between hard weeks. He points out that "the total training is the combination of training frequency, duration and intensity which means that when we increase the intensity and/or duration of our training sessions, we increase the total amount of training". There are many varia-



tions in the application of cyclic training. The programme can run from four to twelve weeks and can be performed for one to three disciplines as desired. Examples are shown in the diagrams below.

I know many athletes who train to exhaustion regularly and comment that "I'll be okay when I taper". They miss the point of recovery to allow for adaptation in regular training throughout the year and do not perform to their optimum ability on race day, no matter how long

Peaking relates to the development of an athlete to the point where he/she can perform at their best. It is influenced more by psychological factors than by either fitness or skill. These latter factors should be fully developed before peaking is attempted. Competitions should be planned for the end of macrocycles, allowing adequate development and unloading to occur before the event.

General Guidelines to Tapering

1. No single tapering plan will work for all triathletes - tapering depends on the athlete's fitness and speed of recovery. Master's athletes require longer recovery periods - the older you are, the longer the recovery!

2. Tapering will be affected by the duration of the event. Longer events require a longer taper to decrease training volumes than shorter events.

3. The importance of the competition must be considered when planning a taper - the more important the event, the longer the taper.

4. Some speed work (intervals) should be maintained during the taper to 'spike' the central cardiovascular component and maintain functioning.

Continued on Page 12...

# Get Set!

## Calendar of Events

#### MARCH 28 - 31 1997

Aust. Veteran Cycling Championships Bendigo, VIC Contact: (054) 468 422

#### MARCH 28 - 31 1997

Aust. Veteran Track & Field Championships Melbourne, VIC

Contact: (03) 9874 2501

#### APRIL 1 - 6 1997

1997 Aust. Masters Rowing Championships Lake Barrington, TAS Contact (03) 9813 1399

#### APRIL 16 - 17 1997

1997 Aust. Masters Surf Life Saving C'ships Kurrawa, QLD Contact: (02) 9597 5588

#### APRIL 25 - MAY 5 1997

1997 Whitsunday Masters Games Contact: (079) 466 673

#### **APRIL 20 1997**

Aust. Triathlon Distance Championships Mooloolaba, QLD Contact: (06) 285 4802

#### JUNE 23- 29 1997

#### Pan Pacific Masters Swim

Maui, Hawaii Contact: (08) 344 1217

#### OCTOBER 24 - NOV 1 1997

Australian Masters Games AIS, Canberra, ACT Contact: (08) 344 1217

#### **AUGUST 9-22 1998**

Nike World Masters Games Portland, Oregan, USA Contact: (08) 344 1217

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#### JUNE 21 - 30 1998

World Masters Swimming Championships Casablanca, Morocco

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#### Triathlon continued from Page 11...

5. Only easy work should be performed over the last three days, with training limited to swimming and cycling on the second last day. The final day before the race should be either rest or gentle exercise.

6. Watch overeating- cut back on the food intake in relation to the decreased volume of exercise. It is easy to put on unnecessary weight with a decrease in volume of training.

7. Emphasise carbohydrate intake, particularly when loading for events lasting longer than two hours, in order to increase glycogen supplies. Remember to hydrate fully, especially over the last few days to ensure you do not suffer from dehydration in the race.

8. Ensure you get sufficient rest and sleep in that last week - Mark Allen apparently was a great sleeper before each Hawaiian Ironman!

9. Eliminate other stresses in your life - try to relax as much as possible and store as much energy as possible. When overseas, save the trips and parties until after the race.

10. Include mental preparation as part of your taper - concentrate on the positive and look forward to enjoying the fruits of your hard labour!

Have a great race!

#### Running continued from Page 6...

a day off; active recovery sessions like a swim, cycle or water run; and periodising your training. Three week blocks of easy, moderate and hard weeks works well.

9. Niggles - The Rule of 3's:

Seek advice if you experience any pain-(3/10 on a scale of 0=pain free to 10=worst, OR

lasting 3 days.

Early intervention avoids prolonged suf-

10.Race Day - The Golden Rule is "never do anything during the race that you haven't practised in training". This includes: clothes, footwear, strapping, drinking (H<sub>2</sub>0 and supplements), pacing.

Running wiser lets you enjoy running and reap the satisfaction from your efforts.

"I no count the years. Men may steal my chickens, men may steal my sheep. But no man can steal my age. "

> Mirutus Frifter Ethiopian long distance runner

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