

YOUTH ROWING - TRAINING GUIDELINES

Preamble

The matter of sweep rowing, sculling training and working with weights has been discussed at length at FISA Commission meetings and in Australian Rowing forums.

It is not a matter where there is indisputable scientific evidence on which we can base hard and fast rules. It is clear however that the decisive factor for the amount of load and load toleration is not the age of the youth but their stage of biological development.

These guidelines are prepared to assist coaches and schools make appropriate judgements on the selection of rowers and to prepare training programs that avoid the incidence of long term injuries.

They are issued preliminary to NSW Rowing endorsing a more complete treatment of this important matter by Dr Bill Webb and submitting it to Rowing Australia as a national position paper. They are issued therefore as interim guidelines to the position paper.

Physical Development

High demands are put on the body during puberty and the effects of these vary greatly from one individual to another. The blood volume increases by almost 50% and the heart and lungs attain their final growth.

This is not a reason to reduce training but it underscores the importance of a qualified coach and their responsibility to have a clear picture of the health of each athlete.

Unexpected surges in output and long plateaus of performance are caused by normal, but individual varying, biological developments.

Up to around 15 years of age the heart must work harder than in adulthood and will only achieve high performances with high beat frequency. The resting rate is likely to be around 80/min. and under stresses such as ergometer work it will reach values over 200/min. The cardiac muscle will strengthen itself gradually at first and then adapt itself to the load with a greater beat volume. The frequency of breath and the volume of inhalation will behave in a similar way.

Under these circumstances, and up to the end of puberty, high intensity training should have a low priority compared with low and medium level work which will better prepare the athlete for future high load requirements. Put simply, skill based work over long duration at low intensity should dominate the training plan for all up to the age of say 14 or 15.

Prior to the age of 15 or 16 the connective tissues (muscle, bones, cartilage, tendons and ligaments) do not attain a rigid structure. If in the lead up to this age level, an athlete was to concentrate on sweep rowing, and on one side of the boat the strain would invariably lead to deformation and damage.

In later years of adult competition the high strain demanded by rowing over long distances is only capable of being supported by fully intact connective tissues. It is important therefore to develop the muscles involved in trunk stability at an early stage to support the stresses of competition at the elite level.

Accordingly it is advisable for rowers in the 12/13 to 14/15 years development stages to concentrate mainly on sculling and accompany this with resistance training using body weight or circuit work as well as a number of cross training activities such as swimming, bike riding, running and gymnastics. However, it is beneficial for skill development if they undertake some sweep oar rowing at low intensity and on both sides of the boat. This may even entail an occasional race up to 1000 meters in distance for the better developed of this group in the 14 to 15 years age levels.

At the age of 15/16 years it is appropriate to move to sweep oar rowing providing the sculling apprenticeship has been served and the individual has reached a sufficient stage of physical development. It is essential to accompany this with a properly supervised strength and conditioning program and advisable for rowers to learn to row both sides of the boat. (Some will not be able to do this.)

Girls generally grow and mature earlier than boys. Cross sectional height values for girls are around 160cm and begin to plateau at age 14 or 15 years of age while boys grow steadily through this period to around 170cm. Similarly girls weights level off at the same time at 55kg while boys grow to 60kg.

The differences in the range of values for both sexes from these studies is significant. There are late developers and early developers. Late developers grow for longer than early developers and they are generally taller as adults. Late developers need different rowing preparations, they need more skill based work, constant strengthening programs without heavy weights and medium rather than high intensity in the boat. Early developers can cope with high levels of intensity and strengthening programs based on endurance principles. Neither group should ever be subject to hypertrophy programs (ever increasing weights). Boys or girls could begin these programs at 17 or 18 years depending on their development and only under the care of a qualified instructor. The program would be for a short period rather than a sustained term.

There is common agreement that pre adolescent weight training will do little to increase the muscle size of a child. Some benefits may emerge in skill and technique. Young rowers may be introduced to weight training in the form of circuit work using body weight. Until an athlete stops growing in height, any weight program should be undertaken with great care, never without the guidance of a qualified instructor.

We are fortunate generally that nutrition is not a factor in the development of young people in Australia. However diet education is an essential part of the training program and coaches should ensure it is included. The discussion should cover energy systems, the correct use of sports drinks and hydration techniques. Drugs in sport should also be part of the education of a young athlete. This should cover prohibited substances, prescribed medication and the status of over the counter medication .

The European Model

The general European model provides sculling racing for ages as young as 8 through to 14 years. Sweep oar rowing begins in the 15/16 year old group. The full program of all boat classes is available to all at the age of 16. Under the rules of the Amateur Rowing Association of the UK there is no sweep oar racing for women under 15 (under 15 at the commencement of the season in September). The same applies to males under 14 years.

Training Duration

For 12/13 to 16/17 year groups an athlete can sustain 5 to 9 sessions of 90 to 120 minutes duration per week. This advice is contained in "Guidelines for Children in Sport"

ASMF 1989. These go on to say that training should be a mixed bag with long distance workouts and strength training using own bodyweight complemented by sessions of stretching and emphases on flexibility and skill. They also say that it should be fun.

Clearly the five sessions will apply to the 12/13 year group working up to 9 sessions for the 16/17 year groups. It would be rare that any crew spent more than 120 minutes on the water in any one session.

NSW Guidelines

These guidelines apply to boys as well as girls.

Under 14 years:

- Primary activity is sculling with emphases on low intensity training in 1x, 2x, 4x.
- Secondary activity in gymnastics, ball games, running, cycling and swimming.
- Focus on flexibility and skill.
- Level 1 coaches to supervise the program.
- Strong parental involvement is encouraged.

14 to 15 years:

- Primary activity in sculling with an introduction to sweep oar rowing on both sides of the boat.
- Secondary activity on progressive resistance and endurance training.
- Cross training activity to form an integral part of the weekly schedule.
- Level 1 coaches to supervise the program.
- Provide adequate medical supervision and management.
- Organic and musculoskeletal screening to identify problems which may be adversely affected by continued participation in sculling/rowing development programs.

15 to 16 years:

- Sweep oar rowing with emphases on both sides of the boat for those athletes at an appropriate stage of physical development and who have completed the sculling apprenticeship.
- Strength and conditioning programs are an essential part of the training plan.
- Continued sessions of sculling and cross training to be part of the training plan.
- Coaches should be level 2 qualified or in the course of obtaining level 2 qualifications.
- Advice on health maintenance, personal care and nutrition to be available to all rowers and coaches.

16 to 17 years:

- Sweep oar rowing may now be the primary activity for those having completed the sculling apprenticeship and at the appropriate stage of physical development.
- Strength and conditioning programs are an essential part of the training program.
- Coaches should be level 2 qualified.
- Competition may be advanced to include participation at National title level.
- Continuing education on health maintenance and nutrition to be provided.

General

It is not possible to provide guidelines that cover every individual case and it is expected that these are read with common sense. NSW Rowing is available to provide assistance in interpreting these guidelines.

Further Reading

There is a wide variety of reading available on the issues raised in these guidelines. The Australian Coaching Council in conjunction with the National Sport Information Centre provides a Journal Documentation Service. The JDS is a listing of sport orientated articles which have been selected and indexed from Australian and overseas periodicals received by the National Sport Information Centre.

The articles are listed alphabetically under sport specific and sport disciplinary categories. The service encourages requests for copies of articles through completion of a request form contained in each issue of Sports Coach published quarterly by the Australian Coaching Council. They require a separate form for each article and charge \$5.00 per article. A copy of the form from the Autumn 1997 edition of the magazine is attached to these guidelines.

The following biography provides essential reading on the topic of training youth:

Redgrave, S. Complete Book of Rowing, Partridge Press, London 1995. See chapter 11 for a discussion on rowing injuries and steps rowers should take to treat them.

Herberger, Dr E. et al. Rowing-The GDR Text of Oarsmanship, Sports Books, Toronto 1990. pp 190 -194. This text contains a brief but focusses discussion on training with youth.

Taggart, J. Coaching Female Athletes Australian Sports Commission 1991 (P.O. Box 176, Belconnen ACT) This is an important and thoughtful examination of the special problems facing female athletes. Those involved in coaching young girls should write and obtain a copy of this booklet.

Draper, J.A. Growth, Development and the Junior Athlete published in "Better Coaching - Advanced coaches manual" Pyke, F.S. Australian Coaching Council. All Level 2 coaches will hold a copy of this manual.

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