

GROWING RUGBY PLAYERS



ARE THEY REALLY THAT DIFFERENT?

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KIDS ARE DIFFERENT



Kids are different

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Kids are different

You've already met young players experiencing the issues described in this document. In fact you've probably met 100s of them.

In the last team I worked with, was a fantastic player who was fast and powerful but just didn't have the endurance I thought he should have. He was a challenge and I wracked my brain trying to figure out how to improve him. He also desperately wanted to join in with the whole group.

The young athlete is an individual beast

But whenever he did endurance work the same as the whole group he would just never improve. I didn't really know what to do until

I thought that maybe he was different.

During your coaching career you've likely come across players like the one I just mentioned and many others who were different in their own way.

These players present many different challenges.

This book will show you how and why adolescents are different and

provide you some strategies to cater to the needs of these different players

and successfully navigate the challenges you will continue to face.

Age

Different ages, different types of ages

We all age and at different ages come different requirements.

When considering the athletic development of adolescents the coach and strength and conditioning coach should be aware of the age and maturational related differences of their players.

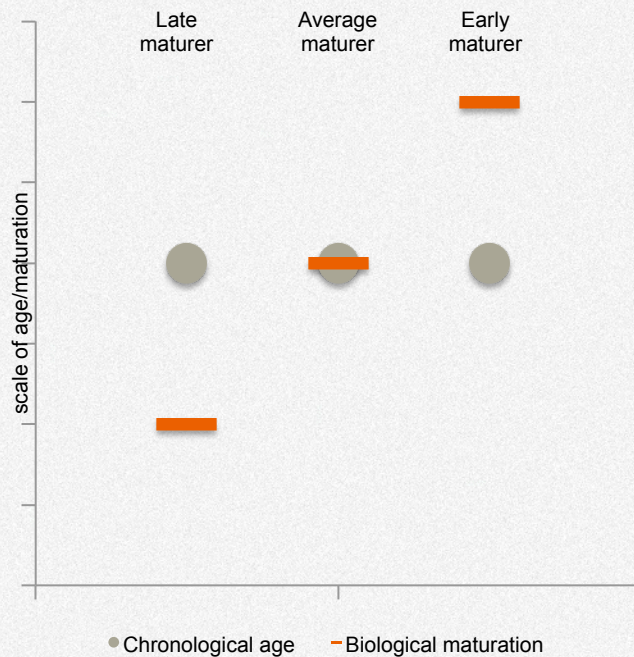
We already know that kids born early in the calendar year are more likely to be selected in talent development programs. This is known as the relative age effect. This effect has implications because not all our players will be the same. Within a squad of 30 each individual may be experiencing different stages of ageing.

Chronological age is a single time point away from the date of birth. While biological maturation is the progress towards mature or adult stature of bodily systems.



Maturation

Growth impacts performance



Physical performance and anthropometric characteristics are significantly affected by growth and maturational factors.

Maturity status is a significant contributor to aerobic fitness, anaerobic power, explosive power, sprinting and change of direction ability in athletes aged 11-17 years.

Early maturers perform better on physical performance tests than average and later maturers.

Early maturers are more likely to be selected in talent development programs.

Despite early maturers' initial advantage in physical performance tests, literature has demonstrated that during adolescence there is greater potential for later maturers to catch up and possibly exceed earlier maturers on physical performance variables.

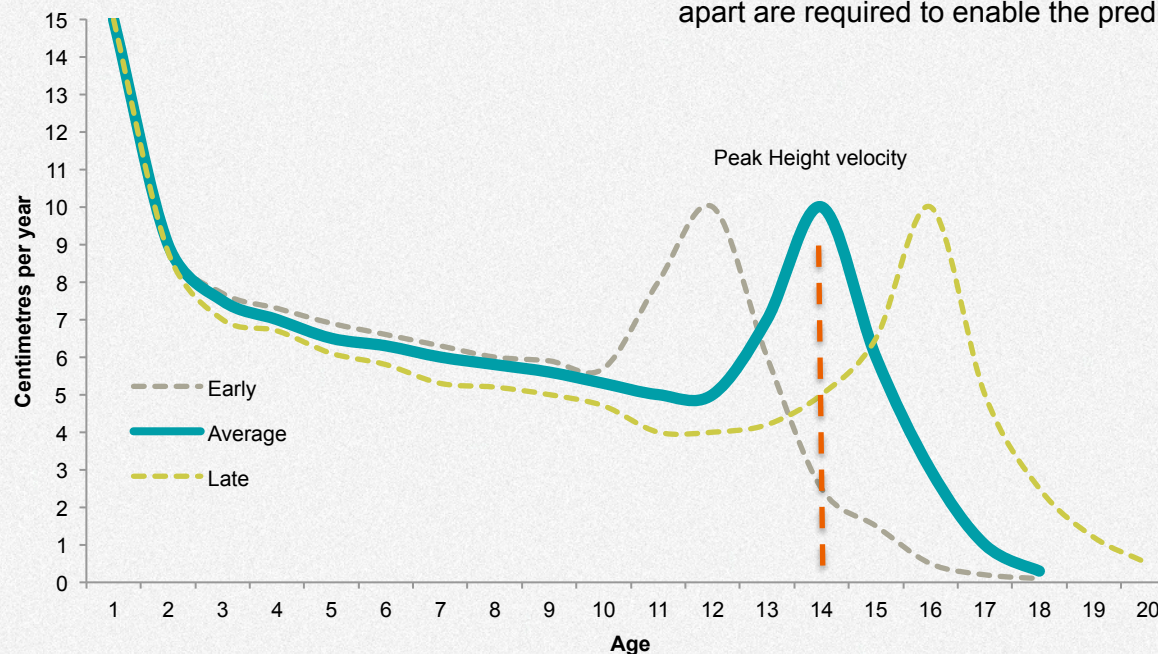
The “catch up” phenomenon demonstrates *the retention of highly skilled late maturers is imperative* for a successful talent development pathway.

Growing Speeds

During childhood and adolescence different speeds of vertical growth occur. The velocity of this growth can be used to determine maturational development. To do this the prediction of age at peak height velocity (PHV) can be performed. An athletes predicted age from PHV is then used to classify the individual as an early, average, or late maturer.

Peak height velocity (PHV) - the age at maximum rate of growth during the adolescent growth spurt

Equations to estimate PHV require: chronological age, body mass, standing height, and seated height. These equations have a standard error of 6 months. And, generally at least 3 measurements performed approximately 3 months apart are required to enable the prediction of PHV.

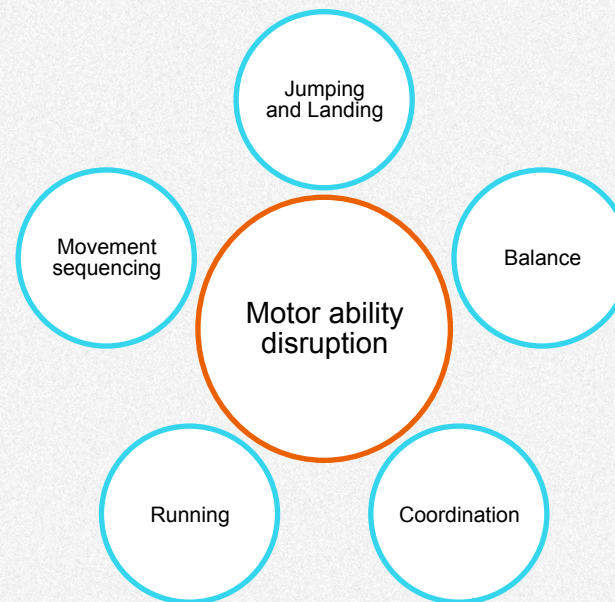
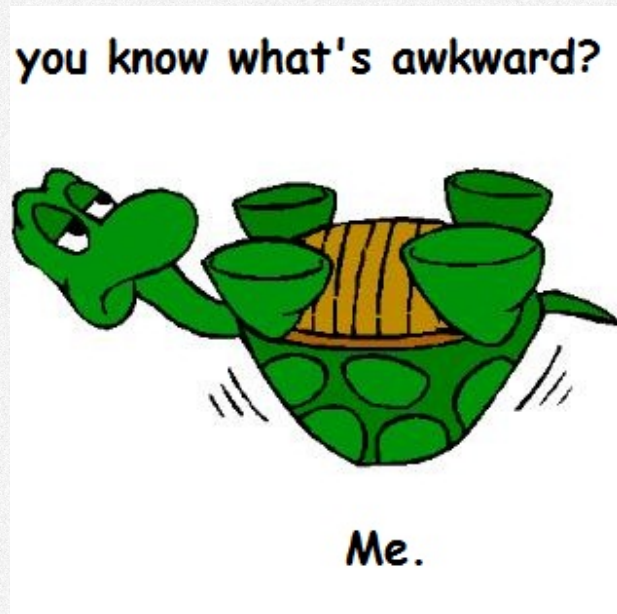


Tripping and Falling

A developmental period of “Adolescent Awkwardness”, typically occurring 6 months pre-PHV, is a temporary disruption and regression in coordination abilities resulting from the onset of the adolescent growth spurt.

Many players are likely to experience this. This period may also increase the susceptibility to injury.

During this period, training programs should focus on relearning and refining basic movement skills and landing skills. Training volumes may need to be modified during this period.



Training age

Past experiences influence future experiences

Each player brings with them certain experiences. In particular ***they will bring with them specific training backgrounds.***

Each player will have previously performed different types and quantities of physical activity. These backgrounds will also vary greatly between individuals.

We can quantify these backgrounds as a training age. Training age is measured in years.

A player with two years of resistance training experience would be classified as having a training age of two.

Importantly, a player can simultaneously have a rugby training age of eight, a resistance training age of two and a sprint training age of less than six months. All of which ***must be considered in the determination of appropriate training for this player.***

Additionally, there is also an increased prevalence of the number of adolescents specialising in a single sport.

They are often exposed to high volumes of ***sport specific training but with a narrow range of movement skills.***

Strength and conditioning for this type of player should focus on enhancing global movement skills, reducing imbalances and promoting self-confidence.

Appropriate Training

Training should fit the player
not the player fitting the
training

The chronological age, maturation status and training age of the individual must be considered in the design and implementation of training programs for adolescents.

The appropriateness of resistance training programs will vary with athlete maturation status.

Prior to the pubertal growth spurt, hypertrophy focused resistance training may result in negligible benefits due to limited concentration of anabolic hormones.

Instead resistance training prior to the pubertal growth spurt should focus on enhancing muscle strength, function and control because of the high responsiveness of neuromuscular function during this period.

THINKING LONG TERM



LTAD

Accelerated Adaptation

Models

Limits

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LTAD

Thinking long-term

Obvious differences exist in physical growth and stature between adolescents and adults. These differences must be considered when prescribing exercise and training interventions. Long-term athletic development (LTAD) models take maturational status into consideration and ***provide a more strategic approach to the athletic development of adolescents.***

A number of LTAD models exist, with each model identifying stages of athletic progression and theoretical recommendations for training children and adolescents.

A recent comprehensive LTAD model (Youth Physical Development Model) has been introduced addressing interactions between growth, maturation and training. It uses routine assessments of height and weight to identify peak height velocity (PHV) and peak weight velocity (PWV).

It suggests that adolescents can be trained according to biological status. And has identified ***the existence of naturally occurring periods of accelerated adaptation for a range of physical qualities.***

Models

The Youth Physical Development model highlights key periods of accelerated adaptation on physical qualities and *helps place emphasis within physical training programs.*

At all ages and maturation stages each physical quality is developed. It is the emphasis or importance placed on particular physical qualities that is and should be adjusted.

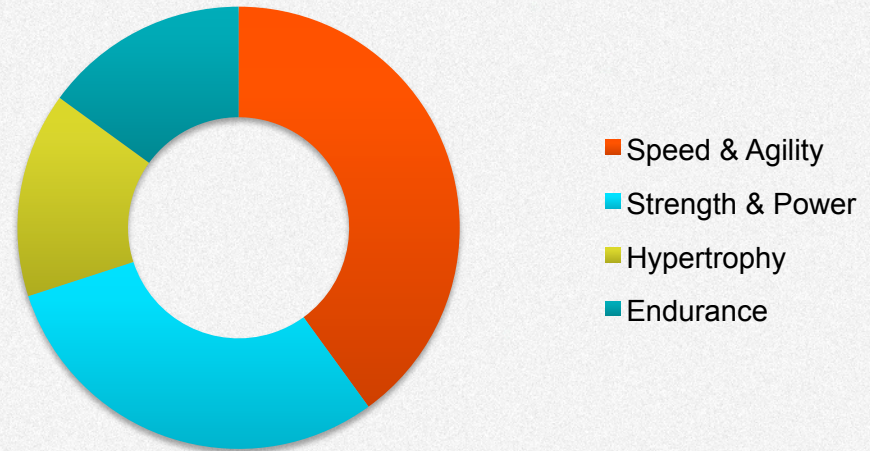
| Youth Physical Development Model for Males | | | | | | | | | | |
|--|------------------------------|----|------------------------------------|----------|------------------------|----|----|----|----------------|--|
| Chronological age (years) | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21+ | |
| Age Periods | Adolescence | | | | | | | | Adulthood | |
| Growth rate | Adolescent Spurt | | | | Decline in growth rate | | | | | |
| Maturation status | Years pre PHV | | PHV | | | | | | Years post PHV | |
| Physical qualities | Fundamental movement skills | | | | | | | | | |
| | Sport Specific Skills | | | | | | | | | |
| | Mobility | | | | | | | | | |
| | Agility | | | Agility | | | | | | |
| | Speed | | | Speed | | | | | | |
| | Power | | | Power | | | | | | |
| | Strength | | | Strength | | | | | | |
| | Hypertrophy | | Hypertrophy | | | | | | Hypertrophy | |
| Endurance & metabolic conditioning | | | Endurance & metabolic conditioning | | | | | | | |

Accelerated Adaptation

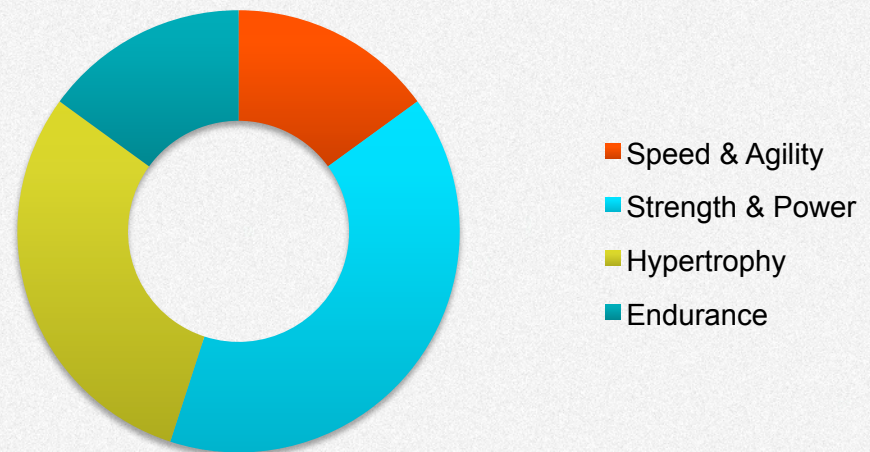
Practically applying periods of accelerated adaptation to the training of adolescent athletes should result in critical emphasis placed on speed and agility development, major emphasis on strength and power development and minor emphasis on hypertrophy and endurance with athletes aged 13-15 years.

While athletes aged 16-20 years require critical emphasis on strength and power development, major emphasis on hypertrophy, and minor emphasis on speed and agility and endurance development.

Training emphasis for 13 to 15 year olds



Training emphasis for 16 to 20 year olds



GETTING WHAT THEY NEED



Solid structures hold up
the world

Enlightenment

Recommendations

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Solid structures hold up the world

Talking is key

The structure of training across sessions, weeks and months is a key factor in the creation of successful and unsuccessful programs.

Successful programs are: fun; engaging; purposeful; challenging; and developmentally appropriate. There are endless ways of structuring skill based and physical development training to meet the needs of the players and the needs of the coaching staff.

The structuring of training is heavily influenced by the availability of the following resources: time; coaching expertise; and equipment. Each program will need to develop a structure to meet their specific needs.

Breakdown in the process of structuring training is usually the result of ineffective communication between coaching and strength and conditioning personnel.

Both parties should be proactive and work together to achieve the best outcomes for their players. A once weekly overview meeting and a 5min power meeting prior to each training session should be considered the minimum communication standard.

The 7 questions to training enlightenment need answering.

Enlightenment

Removing darkness

Answering these 7 questions in sequential order will naturally reveal the training requirements for the upcoming week(s) and hence make the structuring of training simpler.

1. What are the **objectives** for the week ahead?
2. What are the **needs** of the players?
3. What **content** will meet the needs and objectives?
4. How many **sessions** do we have or need?
5. What is the **duration** of each session?
6. What is the most effective **structure** of individual training sessions?
7. What specific **alterations** are required for individual players?



Recommendations

The following recommendations should guide the program planning process.

150-250 minutes of field based training per week. This includes sport specific skills and athletic development. Approximately 60% of this time dedicated to sport specific skills.

An additional **60-90 minutes of gym based strength and power development per week.** The above recommendations and time allocations might be split between supervised and non-supervised training sessions. If prescribing unsupervised training sessions a consideration of players' skill and athletic level, appropriateness and safety of activities, and equipment needs must be accounted for.

Importantly, **sport specific skills and athletic development do not need to be mutually exclusive.**

If planned and structured well the one activity can easily meet the objectives of both the skills coach and the strength and conditioner.

Field based sport specific skill

Field based athletic development

Gym based strength and power

PHYSICAL QUALITY



Movement rules all

Quick and the dead

Stronger foundations

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Movement rules all



Players of all ages need the ability to perform a variety of different movements in varying directions and at different speeds.

Imagine learning to juggle knives. This skill would be even more difficult (and dangerous!) without having the skills of throwing and catching well established beforehand. A well stocked movement vocabulary will make the learning of more complex skills easier in the future.

Videos of example exercises and activities to develop movement skills can be found in the list of [2014/2015 Junior Gold Cup Strength & Conditioning Videos](#)

Quick and the dead

The development of speed for a field based sport is very different compared to that of a track and field athletes. Additionally the development of speed and agility will be different between adolescents and adults.

Generally, adolescents should develop speed and agility by performing general non-specific drills over shorter distances and reduced durations.

For a range of activities to develop speed and agility with athletes aged 13-18 see videos found in the list of [2014/2015 Junior Gold Cup Strength & Conditioning Videos](#)



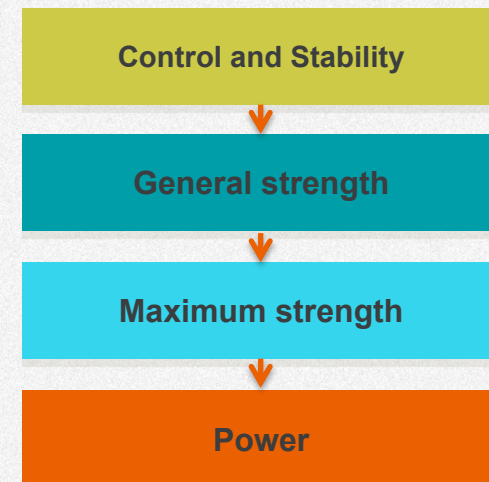
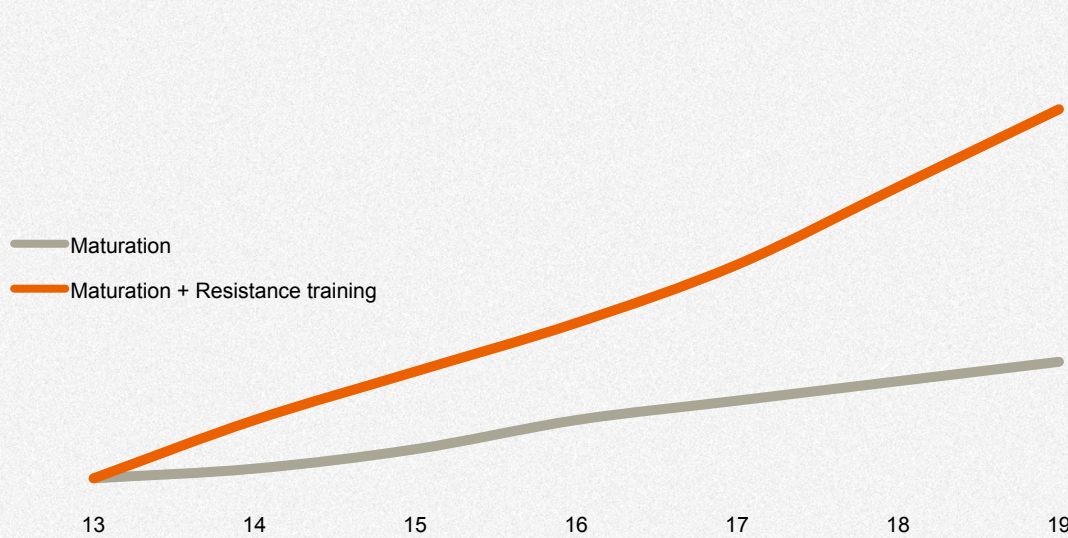
Stronger foundations

Huge improvements

Approximately 30% increases in strength are expected after short-term resistance training in adolescents. These increases could be up to and exceed 100%.

Resistance training for adolescents should focus on developing general strength abilities before focusing on maximum strength and power.

See a range of strength and power exercises and activities suitable for adolescents in the list of *2014/2015 Junior Gold Cup Strength & Conditioning Videos*



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