

A background image of female rugby players in a huddle, wearing dark jerseys with "HARTREE ESTATES" and "EE ESTATE" visible. The image is overlaid with a semi-transparent blue filter.

# WOMEN & GIRLS HEALTH AND WELLNESS

Puberty

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# WHAT IS FEMALE PUBERTY?

Puberty describes the time in a girl's life when the hormones of the reproductive system (oestrogen and progesterone) come to life. This big change in hormones produces physical, physiological and emotional changes in young rugby athletes.

One of the main signs of this hormonal change is the start of periods. Other changes which may happen include growth of body hair, growth of breasts, hips, increase in sweating emotional ups and downs, and acne.

## When does it happen?

The average age for the onset of puberty in girls is around 11 years of age, but this can happen two years earlier or later than this. The change in hormones in the body as puberty progresses will become noticeable through a series of physical changes.

Menstruation occurs in the later stages of puberty at an average age of 12 years, but it is important to recognise that there can be some variation in this age. In young rugby athletes undertaking regular training, periods can start a bit later. However, the latest periods should begin is the sixteenth birthday. If periods have not started by this age this is known as primary amenorrhoea and requires medical support to exclude an underlying medical cause.

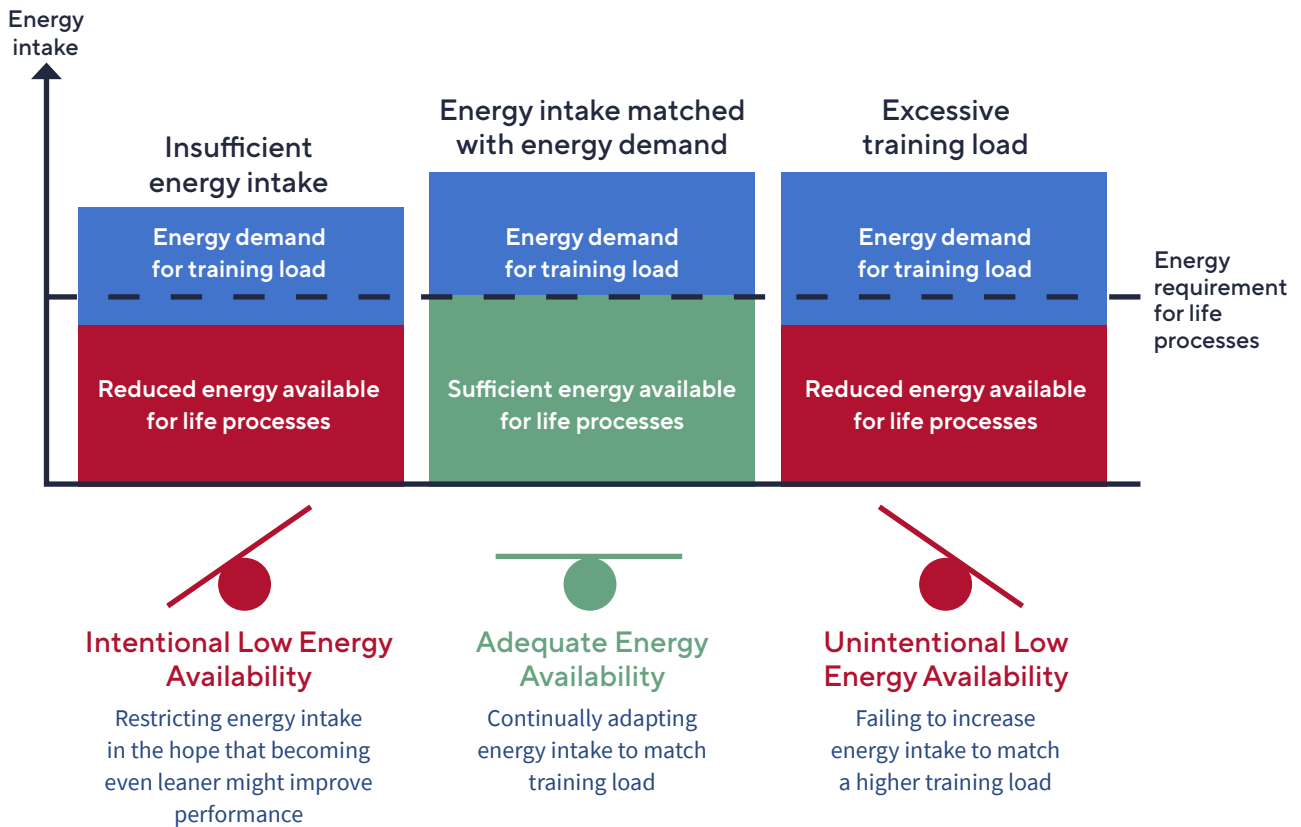
## When to Seek Support

If no underlying medical cause for primary amenorrhoea is found, then reviewing a rugby athlete's balance between their training load, nutrition and post-training recovery should be a priority.

# HOW CAN PUBERTY IMPACT ON PERFORMANCE?

## Energy Availability Concept

### Matching Energy Intake with Energy Demand



Low Energy Availability forces the body to trigger hormonal responses that adversely affect normal life processes, leading to negative health and performance consequences.

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## RED-S

If the balance of energy intake and training load is not right this means athletes may experience low energy availability which can lead to relative energy deficiency in sport (RED-S).

RED-S can have many adverse effects on a rugby athlete's health and performance. For example, a rugby athlete experiences a delay of puberty and primary amenorrhoea. We know that the increase in hormones which happens during puberty and the start of periods are essential for the accrual of peak bone mass. So, the impact on an athlete experiencing a delay in the start of puberty means there can be a negative effect on their bone health, which in turn increases the risk of sustaining bone stress injuries, including stress fractures.

# WHAT TO DO TO LOOK AFTER YOURSELF DURING PUBERTY

Hormones impact many areas of a rugby athlete's physical and mental health.

- Changes in body shape can present challenges to proprioception (awareness of where your body is in space). This can temporarily translate to loss of technique and spatial awareness.
- Hormonal driven changes in body tissues (muscles, ligaments) can increase injury risk if training load is not well managed.
- Change in body shape and body composition can be physically and psychologically.
- Change in hormones can impact how we think/make decisions.
- Confidence can be impacted due to all the hormone -driven physical and mental changes.

## Keeping activities in balance

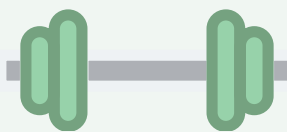
The most important thing to bear in mind is that while puberty is a normal process, it can occur during a busy time in a rugby athlete's life. So, the key thing is to try and ensure that you are keeping all your activities in balance.

## The 3 key areas to think about are:



### NUTRITION

Consistent nutrition is vital to stay on top of all your energy demands from activity, exercise, and changes related to puberty.



### TRAINING

Good quality training is more valuable than quantity of training. You may be doing sport in school as well as outside school. Over training can lead to mental and physical burn out.



### SLEEP

Prioritise getting quality and quantity of sleep. Remember that it is actually when you are asleep that you get fitter. Hormones released while you are asleep drive the positive work from your training.

# WHAT YOU CAN DO AS A COACH OR SUPPORT STAFF



For coaches or support staff working with rugby athlete's going through puberty here are 8 things to be mindful of:

Remember that education on puberty is important for you and the athletes you are working with.

Encourage your players to value good quality sleep and nutrition as a part of their regular routine.

Be aware that each of the athletes you work with is an individual and their age is not the only factor to consider when understanding their individual needs.

Focus on technique and enjoyment is a good strategy for rugby athletes going through puberty.

Each rugby athlete will have a different age when they enter and complete puberty.

Create a culture where your athlete's are able to speak up if they have any questions or concerns about how they are feeling.

Young athletes are not physiologically able to train like adults. So, it is important to manage the volume of high intensity training they are completing.

If you are concerned that an athlete might be at risk of RED-S, involving a senior female player or another experienced coach can be helpful to seek the right balance in their training load and nutrition. It may also be necessary to seek medical support.

# REFERENCES & ADDITIONAL RESOURCES

## References:

Nicola Keay and Gavin Francis. Br J Sports Med doi: 10.1136/bjsports 2019 - 100611

## Additional Resources

“Hormones, Health and Human Potential” Dr N. Keay. This book covers changes in hormones over the lifespan, including puberty and adolescence. Available on Amazon [rb.gy/aaw9oi](https://www.amazon.co.uk/dp/B089Y9Y9Y9)

Optimizing Your Health, Fitness & Performance

[nickykeayfitness.com/](https://nickykeayfitness.com/)

British Association of Sport and Exercise- Endorsed courses for young female athletes

[sportreadyacademy.com/p/working-with-high-performing-female-athletes](https://sportreadyacademy.com/p/working-with-high-performing-female-athletes)

British Association of Sport and Exercise Information website on RED-S for athletes, parents, coaches and health care professionals

[health4performance.co.uk](https://health4performance.co.uk)

NICE guideline for management of primary amenorrhoea

[cks.nice.org.uk/topics/amenorrhoea/management/primary-amenorrhoea](https://cks.nice.org.uk/topics/amenorrhoea/management/primary-amenorrhoea)

Food for Rugby - England Rugby guidance on nutrition for rugby athletes

[englandrugby.com/participation/playing/food-for-rugby](https://englandrugby.com/participation/playing/food-for-rugby)

Research Paper: Relative Energy Deficiency in Sport (RED S): Scientific, Clinical, and Practical Implications for the Female Athlete

[ncbi.nlm.nih.gov/pmc/articles/PMC9724N09/](https://ncbi.nlm.nih.gov/pmc/articles/PMC9724N09/)

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