MANAGING THE FEMALE ATHLETE

FREE STATE
ACADEMY OF SPORT

INTRODUCTION

Female athletes compete for different reasons than males. Females react to all stimuli differently, i.e. training, recovery, preparation, motivation, psychology, nutrition, competition, the works. But, we as coaches are not always clued up or in sync with what female athletes are going through or experiencing. Often times, male coaches are coaching female athletes and teams but are reluctant to deal with female issues. Female coaches dive right in and understand the situations, but often times even they are not that informed.

It is for these reasons that we will concentrate on the female athlete's development in sports. If you can understand some of the differences in what female athletes are experiencing and what makes them tick, you'll go a long way successfully implementing training and motivation techniques. This will allow you to try different modalities and not get stuck along the way.

In addition to varying from male athletes, female athletes are different at different ages of puberty as well. Physical growth and development, mental development, psychosocial development and the impact of these on sport participation are some of the variables we will discuss. We will also touch on early and late female developers and how to handle these situations. Lastly a look at the female hormonal system, will add some clarity on many questions.

1. GROWTH, MATURATION AND DEVELOPMENT OF FEMALE ADOLESCENT ATHLETES

Growth, maturation and development are concepts which are often used interchangeably, but these are concepts which mean different things.

Growth refers to the **increase in size of the body as a whole and of its body parts**. Growth refers to girls becoming taller and heavier, as they grow. There is an increase in fat tissue and organs also increase in size, almost to adult size. It is also seen that body parts grow at different rates and at different times. An example of this is when heart volume and mass increase when weight increases and in contrast to this, lung size and bone mass increase again with height increases.

The *average weight* gain during puberty for females is between 5.5 – 10.5kg per year. Growth spurts always occur in the following sequence: (1) Height (2) Weight (3) Muscle Mass. When we look at height, it is seen that peak height velocity (PHV) is reached at 12 years already (figure 1). Average growth in height of 8cm per year is seen (range of 6 – 10.5cm range). Height will only increase up to a maximum of 7.5cm after menstruation has started. During early to middle adolescence (10-16 yrs) there are increases in fat mass. This is even seen throughout PHV. As the end of adolescence is reached, fat accumulation increases in the lower body.

Maturation refers to the **progress towards a biologically mature state**. Biological systems mature at different rates, but girls reach the same endpoint and eventually become fully matured. Maturation is guided by timing and tempo, where timing refers to the age when breast development takes place and menstruation subsequently follow. Tempo refers to the rate at which maturation progresses – i.e. how quickly the athlete progresses from the initial stages of puberty to the mature stage. The onset of menstruation and PHV is linked, in that menstruation usually starts 6 – 12 months after PHV has been reached.

Development refers to the **acquisition of behavioural competencies**. It is the learning of appropriate behaviours as expected by society. It refers to the process of how athletes experience life at home, sport, school, recreational activities etc. They develop socially, emotionally, cognitively and morally.

There are certain factors that influence bone mass acquisition: appropriate nutrition and physical activity (including weight bearing and loading exercises) are essential contributors to optimal bone growth. Other factors such as genetics and hormones determine peak bone mass. If one or more components are lacking, the bone mass acquisition will be affected. If athletes partake in drastic weight loss methods during this phase, it might lead to impaired bone mass accumulation – this often leads to an increased risk for fractures.

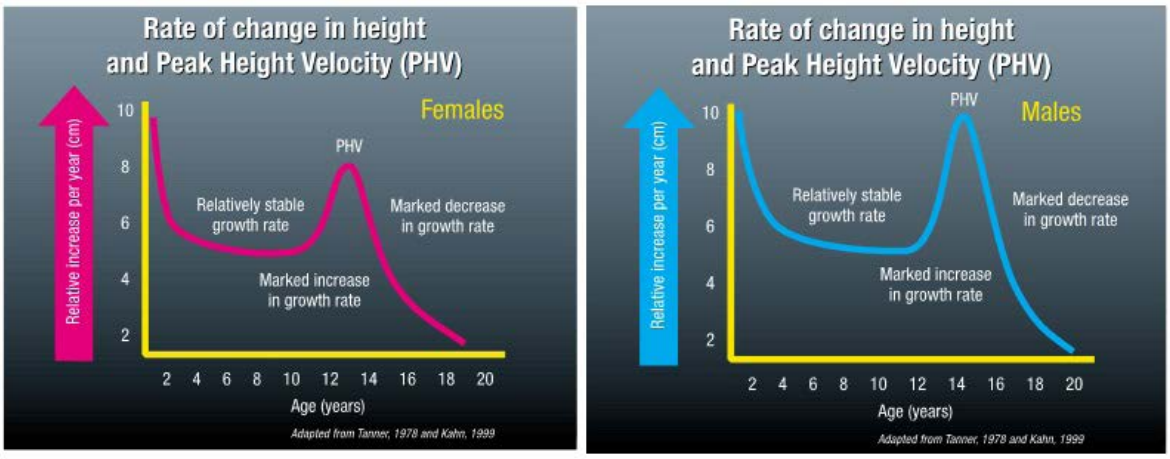

Figure 1 - Peak Height Velocity of females (left) vs males (right) (http://athleticperformanceacademy.co.uk/2017/04/peak-height-velocity-maturity-estimation-calculation/)

If exercise-related menstrual dysfunction is seen, it may negatively affect growth velocity and peak bone mass acquisition.
If we look more towards the sport development side, it is often seen that females are more flexible than males. It increases slightly during early adolescence (10-13 yrs) and then plateaus by age 14-15 yrs. Muscle strength gains are seen from the age of 15 years onwards. Strength training is optimal between the ages of 15 and 18 years.

2. PHASES OF ADOLESCENCE

Adolescence can be divided into 3 phases, i.e. early, middle and late adolescence.

- Early adolescence – 10-13 years – **rapid** changes take place
- Middle adolescence – 14-16 years – **continued growth** and development
- Late adolescence – 16-20 years – **full physical maturity** is reached

	GROWTH & DEVELOPMENT	MENTAL DEVELOPMENT	PSYCHOSOCIAL DEVELOPMENT	IMPLICATIONS FOR SPORT PARTICIPATION
EARLY ADOLESCENCE 10 – 13 YEARS	**Rapid changes** in growth & development. Muscles & bones grow fast & they are prone to injuries	Improved **reasoning abilities**. Develop abstract thinking, analytical abilities & **problem solving skills**	Merging of **body image** and motor skills occur	Exposure to and **participation** in a **variety** of **sports**
	Healing is quick	Understand and remember **complex strategies**	Sport participation provides an early opportunity for a **sense of independence and freedom**	And the end of this phase, the athlete can **START** with the **specialization phase** (entry into the phase, not being a specialist already)
	Training muscles will develop faster than bones & can put **stress on skeleton** in those areas	Understand the concepts and basic theories behind how a sport is played	A lot of time is spent **comparing the self to peers** and worrying over perceived physical differences	**Behaviour of the coach, parents & teammates** directly influences the behaviour of the adolescent
	Temporarily **heavier** and taller than boys	They will use **symbols / signs / coded words** to remember complex tactics / plays	While peer acceptance is important, **family approval and support** are substantial guiding forces	**Bullying and teasing** have negative psychosocial and mental health effects – should be discouraged
	Body awareness starts	**Often argue with parents** as cognitive reasoning abilities become more sophisticated – could lead to arguments with coaches, parents, peers, referees	The ability to enjoy and **take pride** in complex accomplishments in sports can assist with improved self-image	**Highly sensitive to criticism and negative comments** – this can lead to false beliefs that their coach / teammates / trainer "hates them"
	Increase in muscle mass, strength, **aerobic endurance**	They seek **approval** from peers		
	Motor incoordination during growth spurt at about 12-13 yrs	Will go to great lengths to **gain acceptance from peers**		

MIDDLE ADOLESCENCE – 14 – 16 YEARS	GROWTH & DEVELOPMENT	MENTAL DEVELOPMENT	PSYCHOSOCIAL DEVELOPMENT	IMPLICATIONS FOR SPORT PARTICIPATION
	Improvement in gross motor skills. Increase in **muscle mass**, **strength** & **aerobic endurance**	**Improved abstract thinking** – thinking about possibilities and solutions to problems	Levels of **independence** increases	In **weight-division sports**, athletes might find it difficult to fight against natural growth to control their weight
	Athletes may reach **physical maturity earlier than sedentary counterparts**	Improved ability to **understand behavioural consequences**	Improved **critical thinking skills**	They engage in **high-calorie burning sport** activities to fight normal pubertal weight gain
	Sport-specific activities will improve their **skill and strength**	In their sport they are able to be more **creative, implement tactics** and **understand technique** even better	**Multiple interpersonal relationships**	They might experience **pressure to increase muscle mass,** drop weight, improve strength, improve endurance to enhance performance ultimately
	Continued development of **agility, motor coordination, power and speed**	They are able to **observe their own behaviour** and **analyze** what was done correctly & what can be improved (**especially during competition**)	Rely more on **peers** as a **frame of reference** – i.e. "are my friends also doing it?"	Increasingly competitive sport participation leads to **additional pressure** on them to meet a specific body type or performance standard
	Females are better at **balance** than males during this phase	Are able to evaluate their **strengths and weaknesses**	**Peer feedback** is important to them to set goals and rules of conduct	**Sensitive to peer pressure** and a need to please significant adult figures
	Phase of motor incoordination may still be present in some, especially the late maturers	They are able to **understand training data,** determine what must change, develop a **plan** and **implement** it	The **coach** becomes a **significant role model** as they identify with non-parental adults (coach becomes the mentor)	This might lead to **unhealthy weight loss actions**
	This phase usually lasts **6 months**	Although they are more **independent**, they still value the input of the coach: "**What do you think I should do?"**	**Conflict with parents** and other authority figures as emotions become very intense	They understand the consequences of unhealthy weight loss methods but the **desire for peer and athletic recognition** may outweigh their knowledge of the negative effects
	The bigger the athlete, the bigger the lungs and better the cardiovascular function will be		**Risk taking** behaviour is seen	
	The young athlete will have a more limited ability to perform anaerobic type activities		**Media plays a significant role** – professional athletes exert a great influence on them – this might lead to unrealistic expectations	
	Maximum running pace is lower than older adolescents. Leg length and power will improve with age and size			

LATE ADOLESCENCE – 16-20 YEARS	GROWTH & DEVELOPMENT	MENTAL DEVELOPMENT	PSYCHOSOCIAL DEVELOPMENT	IMPLICATIONS FOR SPORT PARTICIPATION
	Full physical maturity is reached	They will establish more **realistic goals** about their sport abilities and participation	They are more **emotionally capable** with dealing with successes and failures	They can **manage the demands of the sport** as they have well-developed physical, cognitive, social, emotional, visual-motor and perceptual motor capabilities
	Gross motor skills will still continue to grow	They will think about a **continued career in sport**	They are able to **deal** with **potential pressures** from parents, coaches, society expectations and sport demands	The ability to engage in **high performance or elite sports** depends on the individual athlete and their ability to attain elite skills and remain psychologically motivated
	Skills continue to **specialize**	Other priorities like **academics**, dating, future career or education goals may take priority over sports participation	Previously, they were not able to handle these pressures	They are faced with the decision to make **sport** a priority in their lives
	Females continue to **accumulate fat mass** that can negatively affect performance	**Personal values** are more defined now	Adolescents with secure mental and physical health will demonstrate a **well-adjusted body image**	Instead of partaking at the highest level, they tend to choose sports for **recreation**
	Muscular strength and **aerobic endurance** will continue to improve into adulthood	**Intellectual capacity**, functional capacity and abstract thoughts are well developed	They understand and accept a **realistic view of the role of sports in their lives**	**Exercise and fitness** is also enjoyed by adolescents in this stage
		They are able to understand and remember **complex strategies in sport**		
		Late stage adolescents are fully **capable of competitive sports** and **specialization**		
		Most athletes in this phase prefer sports to be played at **recreational level**		

3. EARLY VS LATE MATURER

It is unrealistic to expect children at the same age to have the same physical development, motor skills and physical capacity. Some children have a slow growth spurt, while others grow very fast. One often see this on the playing field or court where two athletes of the same age group are playing against each other….the one a 'shorty' and the other girl tall and well-developed already. Not only does this create an imbalance on the sport field, but it can create significant health and safety risks. Some early bloomers are actually very tall for their age or heavier than normal. These characteristics make them 'attractive' to coaches where height and girth is an advantage. It is so important to remember that these early bloomers are still kids, which mean their bones are still immature and they are also susceptible to injury. Early bloomers enjoy advantages simply due to their early size advantage and strength in comparison to their peers. This will definitely cause late bloomers to get discouraged. Parents and coaches can emphasize to young athletes that success depends upon developing proper skills and not just relying on size. There are way too many talented young athletes who are late bloomers who quit far too soon due to their temporary lack of ability at these younger ages.

Figure 2 – Compilation of examples of early vs late bloomers

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LATE DEVELOPER		EARLY DEVELOPER
Likely to succeed in sports much later OR many will drop out before they can become better at the sport		More likely to **succeed in sports earlier**
Disadvantaged by **talent ID protocols**		**Favoured** by **talent ID protocols**
Coach should not eliminate low maturing youngsters		**"The earliest light burns out first"**
These athletes are often **chosen last** by the coach – can lead to low self-esteem and many drop out of sport		25% chance of performing in primary and high school – **75% chance of dropping out in high school**
Michael Jordan, basketball icon, was a late developer		Certain sports favour the early maturer – i.e. **hockey** – the early maturer can be up to 30cm taller and up to 10kg heavier – this improves their speed, power and strength
Parents and coaches must **nurture late developers** to keep them in sport long enough to benefit from their eventual maturity		These athletes are favoured by coaches as they can contribute towards '**wins**' for the team
Towards the end of adolescence, **late maturers often surpass** and become better athletes than early developers		

4. FEMALE HORMONAL SYSTEM

The female hormonal system is governed by **two major hormones**, i.e. **estrogen and progesterone.** These hormones increase and decrease in secretion during the menstrual cycle as they have different and opposing functions in the female body. Two other supporting hormones are **LH** and **FSH.**

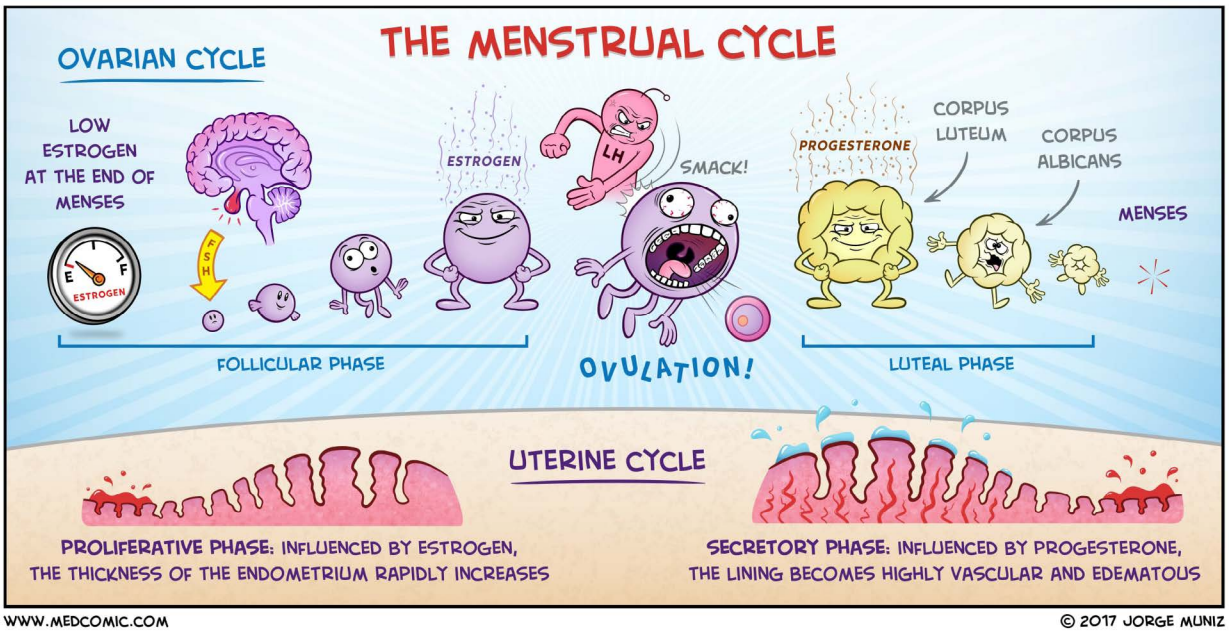


Figure 3 – The female menstrual cycle – two main hormones, estrogen and progesterone (https://medcomic.com/medcomic/the-menstrual-cycle/)

Estrogen

Estrogen is found in **3 types in the body**, i.e. Estrone, Estradiol and Estriol. It is produced in the **ovaries**, **fat cells** and **adrenal glands**. It gives a young girl her **female characteristics** and regulates her menstrual cycle. Estrogen is essential in bone growth, together with vitamin D, calcium and other hormones. Too much estrogen can also increase the risk of ligament injuries, lead to endometriosis and even forms of breast cancer later. Endometriosis is where there are abnormal tissue growths outside of the uterus. It can occur in the ovaries, abdomen, bladder and fallopian tubes. Blood from these growths cannot escape the body and backs up in the body.

Progesterone

The function of **progesterone is opposite to that of estrogen**. It prepares the body for menstruation and get the uterus ready for pregnancy. It is released by a **temporary gland in the ovaries called the corpus luteum** and is secreted after ovulation (day 14 of the menstrual cycle). It helps the athlete to use fat for energy and acts as an antagonist to estrogen.

If progesterone levels are <u>low</u> there are certain symptoms that will stand out:

- Headaches
- Migraines
- Anxiety
- Depression
- Irregular menstrual cycles

Without progesterone to complement estrogen the following will be seen:

- Weight gain
- Mood swings
- PMS
- Breast tenderness
- Fibroids
- Gallbladder problems

As you can see it is a fine balance between hormones, to keep the menstrual cycle regular and on time for the female athlete.
Figure 5 illustrates this rollercoaster of hormones very well. There is however one hormone which is regarded as a male dominating hormone which also plays a role in the female menstrual cycle, i.e. testosterone. It peaks on day 14 and has specific effects.

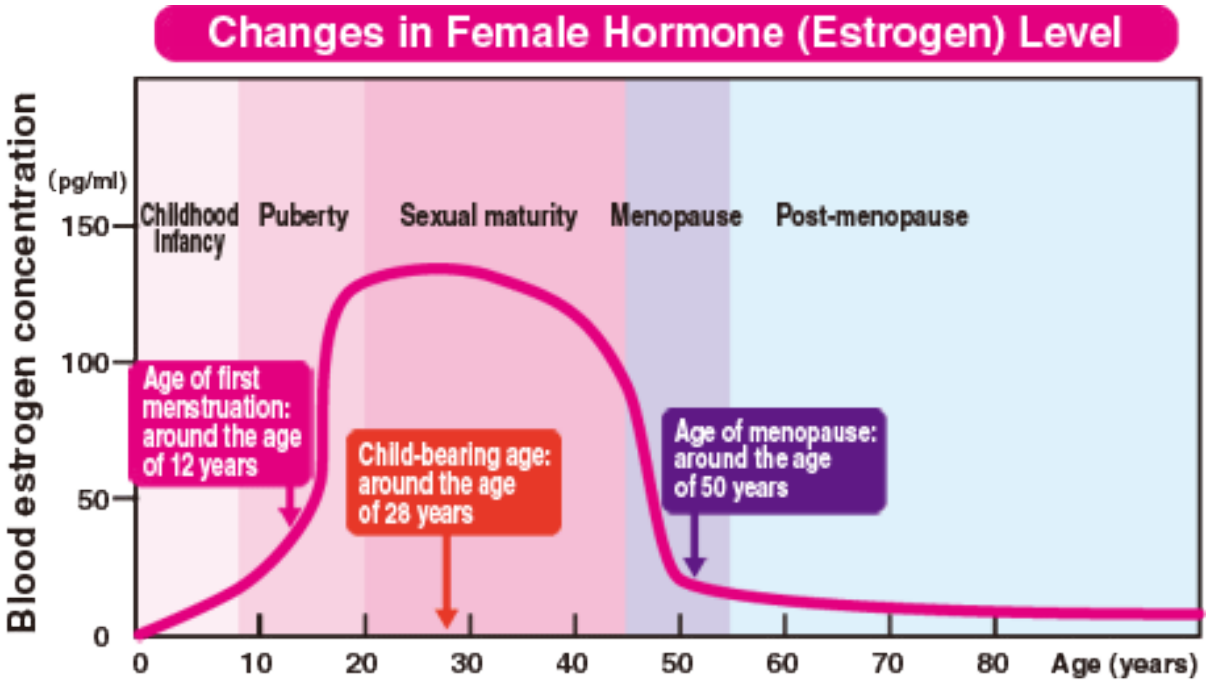


Figure 4 – Change in Estrogen during a female's lifespan (https://www.otsuka.co.jp/en/nutraceutical/about/nutrition/womens-health-and-nutrition/menopause/)

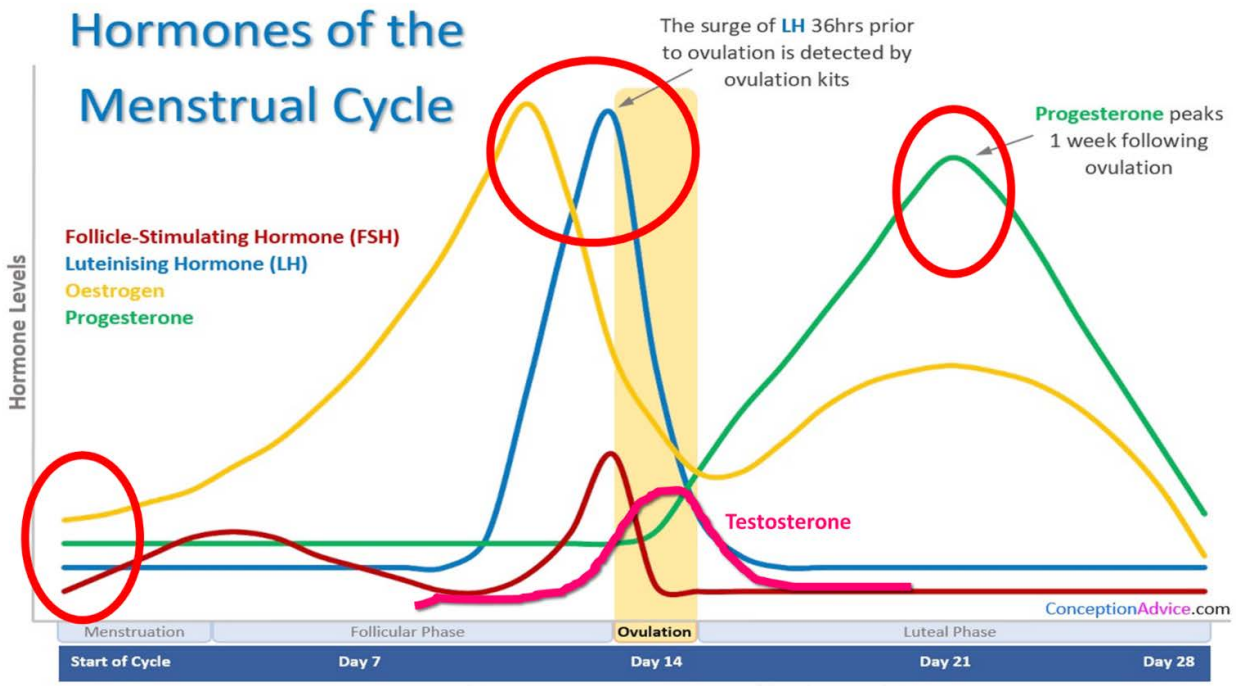


Figure 5 –Hormones of the menstrual cycle (https://www.conceptionadvice.com/menstrual-cycle-calendar-phases/)

Let's start by understanding how the system actually works and what effects it will have on the female athlete and how to get the most out of them during training sessions

There are 4 phases during the entire menstrual cycle:

- Menstruation
- Follicular phase
- Ovulation
- Luteal phase

During each of these 4 phases, there is a blend of hormones to achieve hormonal homeostasis.

Menstruation Phase: Day 1-5

During menstruation there is a **break in all the hormones**. **Estrogen is low** and this might causes feelings of depression and feeling low. There is an overall lack of energy and the athlete might feel overwhelmingly tired. The athlete can experience dizziness, nausea, legs ache, headaches, backache and pain in lower abdominal area. Overall the athlete might be emotional and tearful.
In elite athletes, heavy bleeding is often seen. This is termed **menorrhagia**. It is characterized by more than 80ml of blood loss over the period. It affects 25% of the female population and 54% of all female athletes. Diagnosis is very difficult, very subjective. It has a negative impact on physical, emotional and social quality of life and may reduce exercise capacity. Over the long term it might lead to iron deficiency and anaemia. The oxygen carrying capacity is compromised.

Follicular Phase: Day 5 – 13

The primary hormone here is **estrogen**, but **FSH and LH** is also released from the brain and travel to the ovaries. FSH and LH stimulate the growth of about 15-20 eggs in the ovaries, each in its own follicle. FSH and LH also trigger an increase in the production of estrogen. As this phase progresses, one follicle in one ovary becomes dominant and continues to mature. This dominant follicle continues to produce estrogen.
The athlete will be more **energetic, physically and emotionally strong, inspired and happy**. Estrogen levels are high until ovulation (day 14) is reached. Estrogen dampens the effects of cortisol and adrenaline, which are the stress hormones. Closer to ovulation, LH increases and reach maximal secretion on ovulation.

Ovulation: Day 14

This phase starts at about day 14 and is the **midpoint of the menstrual cycle**, with the next menstrual period starting about two weeks later. **Estrogen, LH, FSH and testosterone** are now at maximal levels. These hormones cause the dominant follicle to release its egg from the ovary. This process is called ovulation. The egg then moves to the fallopian tubes for fertilization.
During this time there is an increase in **metabolic and muscular functioning**. There is also a **greater tolerance to pain**. This is the time where the athlete will **feel her best and the intensity of exercise can be upped**.

Luteal phase: Day 15-25/28

Once the follicle releases its egg, the empty follicle will transforms into a new structure called a corpus luteum (see figure 3). This new structure (corpus luteum) secretes the hormone **progesterone**. This is the dominant hormone during this phase. The function of progesterone is to prepare the uterus for the fertilized egg so that pregnancy can occur. If the egg is not fertilized, it passes through the uterus. The lining of the uterus breaks down and the next menstrual period will begin.

During this phase, the classic PMS kicks in. Some of the symptoms of PMS includes:

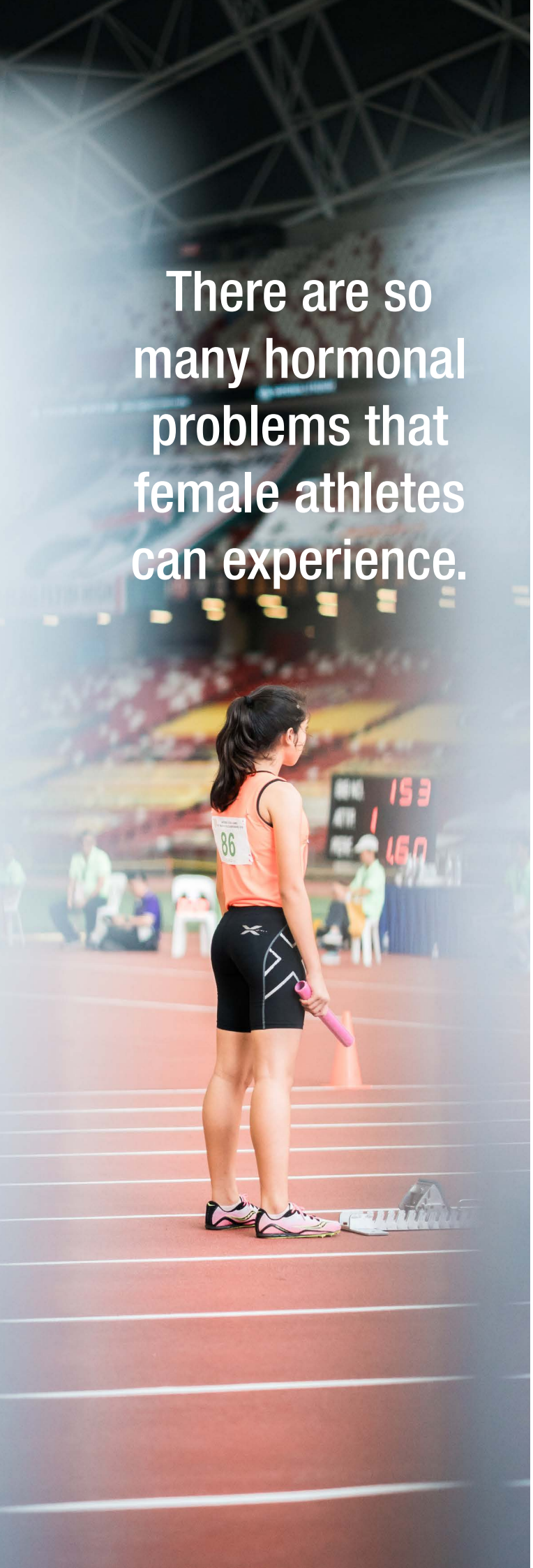
- Breast tenderness
- Bloating – water retention
- Headaches
- Mood swings
- Binge eating
- Tension
- Trouble concentrating
- Sleep disturbances
- Disinterest in activities / sport

5. HORMONAL PROBLEMS

There are so many hormonal problems that female athletes can experience. This article will focus on two aspects: **estrogen dominance** and **dysmenorrhea** (menstrual cramps).

Estrogen dominance:

When one hormone is secreted excessively in the female's intricate endocrine system, there is an overall imbalance and problems will develop. When the body has too much estrogen and not enough progesterone to counteract it, it is called **estrogen dominance**.
If we look at pubertal girls nowadays, one often see girls who have a high degree of fat



accumulation. This is partly due to the type of foods which are consumed nowadays. This excessive fat accumulation leads to excessive estrogen secretion at a very young age. This is one of the reasons why girls, aged 9, start with menstrual cycles. In addition to increasing the total number of periods these girls will experience, high levels of estrogen will also make periods early in life extremely difficult and painful. This is often times rectified by birth control pills.

Estrogen dominance can occur later in life as well. These are often times driven by poor food choices. **Other conditions are related to estrogen dominance, i.e.**

- Insulin resistance
- Fibrocystic breast disease
- PMS
- Cellulite
- Endometriosis
- Migraines
- Fatigue
- Weight gain
- Mood changes
- Anxiety and depression
- Cold hands and feet
- Difficulty sleeping
- Memory problems
- Menstrual disturbances – irregular or heavy
- Uterine fibroids
- Ovarian cysts
- Breast cancer

There are other causes of estrogen dominance besides food:

- Personal care items
- Gut dysbiosis – imbalance of micro-organisms in intestines
- BPA and other plastics
- Heavy metals
- Increased body fat levels
- Hormone Replacement Therapy
- Birth control
- Chronic stress
- Certain antibiotics
- Some herbal and natural remedies

Dysmenorrhea:

Dysmenorrhea is also known as **menstrual cramps**. There are two types, i.e. primary and secondary dysmenorrhea.

Primary dysmenorrhea starts soon after a girl gets her first period. This usually lasts throughout her life, but may get better over time. It is caused by abnormal tightening of the uterus muscles (contractions). It is due to a change in hormones (estrogen and progesterone) and is controlled by **prostaglandin** (hormone).

Secondary dysmenorrhea is usually caused by another health problem such as a **growth or an infection**. Usually starts later in life, i.e. in her 20s. It is often caused by **endometriosis**, which is internal bleeding and pelvic pain due to abnormal tissue growth outside the uterus. Other causes might be infection of the reproductive organs, benign growths in the uterus (**uterine fibroids**), infections of the pelvis and growths in the pelvis (**polyps**)

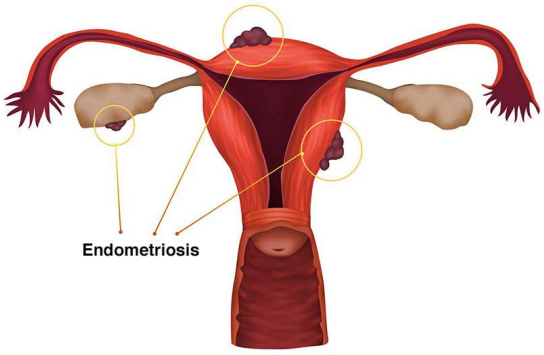


Figure 6 – Example of growths outside of the uterus as is seen in endometriosis (https://www.healthdirect.gov.au/endometriosis)

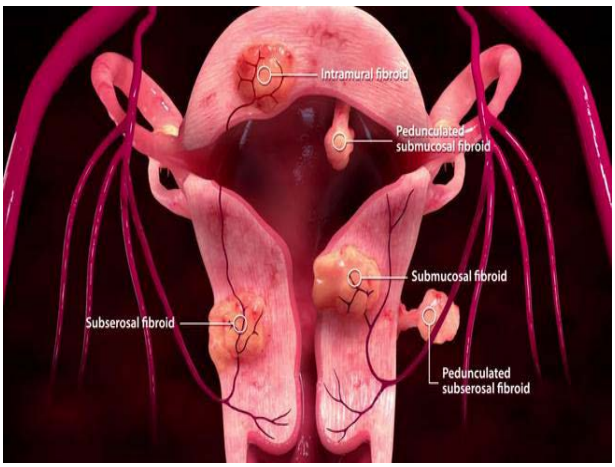


Figure 7 – Example of different uterine fibroids (https://www.informativemedicaldispatches.com/best-treatments-for-fibroids/)

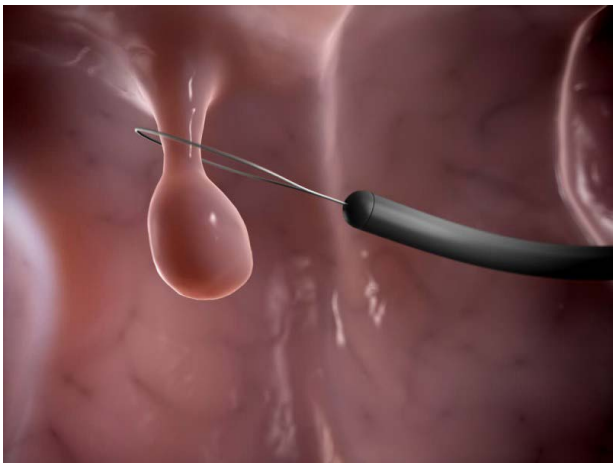


Figure 8 – Endometrial polyp (https://pinkycloud.com/endometrial-polyps-reasons-of-development-methods-of-treatment)


“There are some other more natural treatments that the athlete can also consider...”

Symptoms of dysmenorrhea:

- Cramping and pain in the lower abdomen
- Lower back pain
- Pain spreading down the legs
- Nausea
- Vomiting
- Diarrhea
- Tiredness
- Weakness
- Fainting
- Headaches

The treatment of dysmenorrhea can assist in alleviating some of the discomfort. Pain medication can block the contractions hormone prostaglandin, i.e. **Nurofen Period Pain** is an excellent pain medication. Paracetamol can also assist. The following are other ways in which it can be managed:

- Oral contraceptives – can assist in managing hormone levels for a more mild period
- Good diet – especially vegetables, cinnamon, ginger, dark chocolate
- Enough sleep
- Regular exercise
- Heating pad
- Hot bath / shower
- Acupuncture
- Abdominal massage

6. SOLUTIONS TO EVERYDAY MENSTRUAL PROBLEMS

Dealing with everyday menstrual problems can be somewhat of a challenge if the athlete doesn't use all the tools available to them. The most obvious treatment would be pain medication, which works very well, but there are some other more natural treatments that the athlete can also consider if they experience pains and discomfort during a period:

- Easier **training** on period days – especially days 1 – 3
- **Heat** – good old hot water bottle / electric blanket / Thermacare heat patches
- **Diet** – decrease sugar intake 7 days before and during period. Increase the intake of free fatty acids such as oils and nuts.
- **Vitamins** – B-vitamins and iron are essential all throughout the menstrual cycle. During a period, there is a natural depletion of iron
- **Homeopathic** products – Natura Feminon
- **Acupuncture** or low back massage from a physiotherapist works wonders
- **NSAIDS** – such as Ibuprofen or Diclofenac (Voltaren pills, patches, gels). For extremely heavy cramps the dosage of ibuprofen can go up to 2400mg per day. Start with 800mg and then 600mg every 8 hours.
- DO NOT USE **ASPIRIN** (DISPRIN) AS THEY HAVE ANTI-CLOGGING EFFECTS AND WILL MAKE THINGS WORSE
- **Tranexamic acid** – Lysteda – Type of amino acid (Lyseine) that decreases bleeding. More effective than NSAIDS. It may cause headaches, tiredness, muscle cramps. In South Africa it is sold as Morwak 500mg
- **Hormones** – the use of oral contraceptives / hormone pills works well to stabilize the menstrual cycle and to alleviate PMS symptoms
- **Intrauterine devices** – Mirena – will cause lighter periods or even stop for a period of time
- **Omega 3** - breast tenderness is due to fluctuations in hormone levels. Excess fluids in breast tissue cause sensitivity and pain. Drink omega 3 tablets daily
- **Water** – for bloating / water retention, avoid salty foods the week before period and drink enough water during period
- **Mental strategies** – combat sadness, moodiness, anxiety with internal motivation a couple of days before period and continue during period
- **Sleeplessness** during period – 30% of females report sleeplessness during a period – things like a warm shower before bed, cool bedroom, meditation, stretching or calming medication.

7. IRREGULAR PERIODS

Female athletes often wonder if their periods are normal and would often times just keep quiet about any irregularities. In contrast with this view, athletes are exactly the population who should be worried about irregular periods as their activity levels often cause periods to cease for months on end.

Here are some common "Is this normal?" questions:

1. **My cycle was 25 days last month, now I'm 5 days late……."**

- Irregular periods are very common in the beginning stages – it can differ between 24 days and 45 days
- This is called irregular periods and will ease out eventually (usually 2-3 years (75%) but can take up to 6 years)
- It is also normal to skip periods (if all other variables are constant)

2. **"My period is usually 5 days….. Now it is only 2 days……OR It is already 7 days……"**

- In the beginning of menstruation, the body is producing different amounts of hormones each cycle and this is the reason why the length of the period differs.
- This usually settles after 2 – 3 years / max 6 years

3. **"If I have irregular periods, how will I know when it will come?"**

- The body gives clues:
- Back cramps or stiffness; heavier or tender breasts, uncommon headaches, acne breakouts, disturbed sleep patterns, mood swings, bloating

4. **"I had my period 4 months ago….. Should I be worried?"**

- Irregular periods can be a problem is they were skipped for 3 – 4 months
- Causes: intense training; low energy intake; certain medications; low body weight / body fat %; stress/anxiety; PCOS; endometriosis
- Thyroid hormone levels – too low or too high can cause problems with the cycle
- Extra Androgen (cause hair on face, acne on chin & jaw) – cause girls to gain a lot of weight & have problems with their cycles
- Pregnancy

When should female athletes then worry?

- Athlete had normal, regular periods for a while, then all of a sudden became irregular
- Athlete stopped having a period
- Athlete starts to notice extra hair growth on face, chin, chest and abdomen
- Athlete starts having periods that last longer than 7 days, are heavy and coming more often than 21 days
- Athlete's period comes less often than 45 days, i.e. every 60 or 90 days
- Athlete has severe cramping or abdominal pain
- Athlete has bleeding in between periods
- Athlete has irregular periods for more than 3 years

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