

SESSION OBJECTIVES:

IDENTIFY TRAINING
CONSIDERATIONS FOR...

1. THE MENSTRUAL CYCLE
2. BONE DENSITY ISSUES
3. KNEE INJURY RISK
4. PRE/POST NATAL
5. MENOPAUSE
4. A FEMALE'S MOTIVATION



The Menstrual Cycle: A Biology Review

Changing hormone levels during the menstrual cycle.

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The diagram illustrates the hormonal and physiological changes during the menstrual cycle. It shows the hypothalamus releasing GnRH, which stimulates the anterior pituitary to release FSH and LH. FSH levels rise during the follicular phase, while LH has a sharp peak (ovulation) around day 14. The diagram also shows the growth of follicles in the ovary, ovulation, and the subsequent corpus luteum. Blood levels of estrogen and progesterone are shown, with estrogen peaking just before ovulation and progesterone peaking during the luteal phase. Menstruation occurs at the end of the cycle, around day 28.

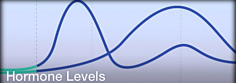
**Every BODY is Different
Every WOMAN is Different**

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A group of 15 female athletes in various sports uniforms (track, soccer, basketball, volleyball, tennis, etc.) standing in a line. Below them are their names and statistics:

Aliyona	Yekaterina	Lisa Leslie	Christine	Amelie	Steph	Jennifer	Christa	Lorena	Melody	Tasha	Amy	Steph	Jessie
16' 00 in.	16' 00 in.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.	5'7" 125 lbs.

Phase 1: Menstruation

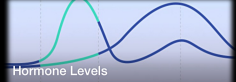


Hormone Levels
Oestrogen and progesterone levels are at their lowest during your period.



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Phase 2: Follicular to Ovulation

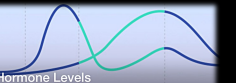


Hormone Levels
Oestrogen levels are rising to a peak (just before ovulation) and progesterone levels are still very low.



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Phase 3: Ovulation & Luteal Part 1

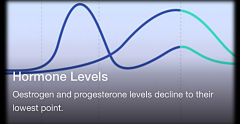


Hormone Levels
Oestrogen levels initially drop off as ovulation occurs, then both oestrogen and progesterone start to rise and remain high.



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Phase 4: Premenstrual & Late Luteal



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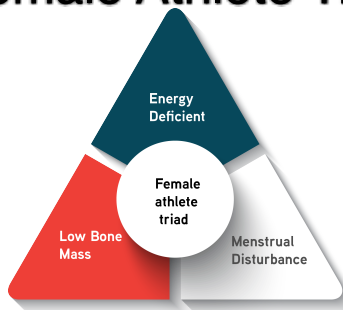
Causes of Amenorrhea

- Various Contraceptives
- Certain Medications
- Mental Stress
- Hormonal Imbalance (PCOC, Thyroid malfunction, Pituitary tumor, & Premature menopause)
- Structural Problems (Uterine Scarring, lack of reproductive organs, structural abnormality of the vagina)
- Breastfeeding
- Menopause
- Pregnancy

and...

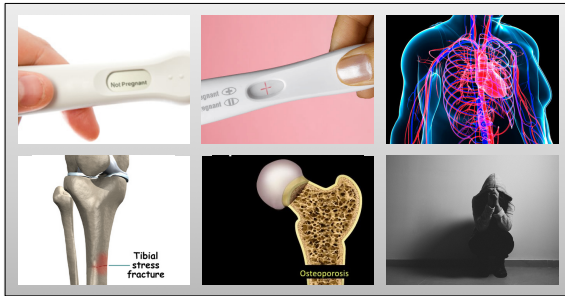
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Female Athlete Triad



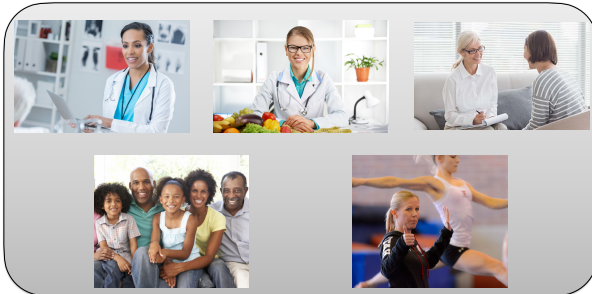
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Serious Triad Risks

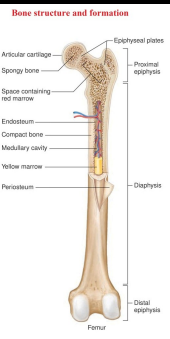


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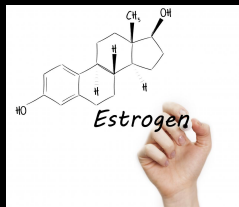
Triad Treatment



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BONE DENSITY: Role of Estrogen



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**BONE
DENSITY:
A Fitness
Approach**



**BONE
DENSITY:
CAREFUL!**

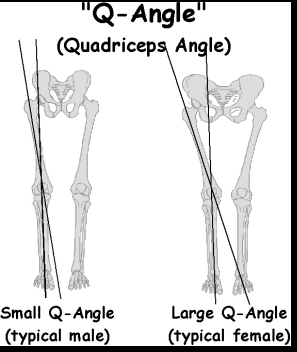




**KNEES:
ACL Tears &
The Terrible
Triad**



"Q-Angle"
(Quadriceps Angle)



Small Q-Angle
(typical male)

Large Q-Angle
(typical female)

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**Why Women
and Knees?**

The diagram shows two skeletal figures. The left figure is labeled 'Small Q-Angle (typical male)' and shows a vertical line from the hip to the knee and another vertical line from the knee to the ankle, with a small angle between them. The right figure is labeled 'Large Q-Angle (typical female)' and shows a similar setup but with a significantly larger angle between the two lines, indicating a greater inward lean of the knee.

Neuromuscular Control:
Landing Mechanics



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The left photo shows a man in a squatting position, demonstrating proper landing mechanics with a neutral spine and aligned feet. The right photo shows the same man standing upright, demonstrating a landing from a jump with a soft, controlled posture.

**Posterior Chain
Development**



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The four photos show a man using TRX straps to perform exercises that target the posterior chain. The top-left photo shows him lying on his back with feet in straps, pulling them towards his chest. The top-right photo shows him in a similar position but with knees bent and feet pulled up towards his hips. The bottom-left photo shows him lying on his back with feet in straps, pulling them up and over his head. The bottom-right photo shows him lying on his back with feet in straps, pulling them up and over his head while also pulling the straps towards his chest.

Hip Abduction





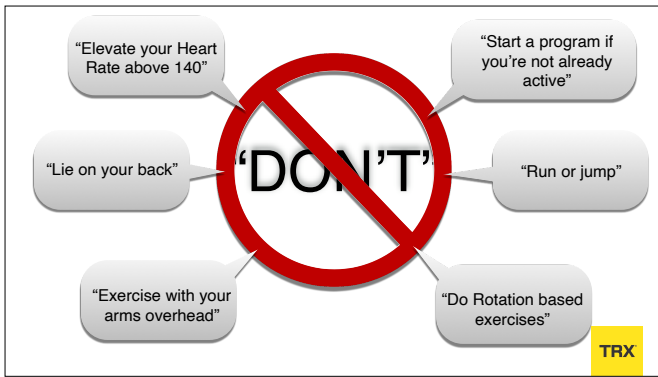
The Pursuit of Better
TRXtraining.com

Training for Pre and Post Natal

"Motherhood happens asymmetrically, in less than optimal positions, with ever-increasing, non-compliant load"
~Farel Hruska


Common Misconceptions Overview







Physiology and Training Considerations (T1)



- Relaxin: Joints loosened and vascular underfill
- Reduced Work Capacity (vascular underfill)
- Psychological Changes (not just about her)
- Core & Upper Back Strength

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Trimester #2



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The Journal of Fitness
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Physiology and Training Considerations (T2)



- Relaxin
- 40% - 50% increase in blood volume
"Pregnancy Performance" "Blood Doped"
- Heartburn
- Balance
- Weight Increases Anteriorly: Kyphosis & Lordosis
- Honor Pre-Pregnancy ROM & Avoid Hyperextension

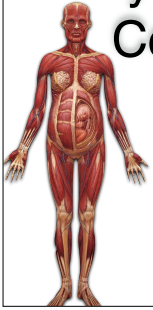
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Trimester #3



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Physiology and Training Considerations (T3)



- Relaxin (Honor Pre-Pregnancy ROM & Avoid Hyperextension)
- Weight Shifts affecting balance
- Round Ligament Pain
- Diastasis Recti
- Reduced Venous Return- edema in ankles
- Focus on Stability
- Kyphosis & Lordosis
-

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Exercise Options

Cat Cow



Seated abdominal compressions



TRX resisted heel taps



Seated or Standing Spinal Flexion



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Exercise Options

Standing Scapular Retraction With a Foam Roller



Pelvic Tilts (Supine or Standing)



Side-lying Clam Shell




Assisted Lunges





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Physiology and Training Considerations




- Relaxin (Stays in body up to 12 months)
- Change in Identity
- Healing from Delivery
- Lack of Sleep
- Nurse/Feed, Carry/Hold, Car Seat, Roll, Crawl, Walk, Run




Post Natal: 6 to 12 weeks

TRX Standing Plank




TRX Chest Stretch w Torso Rotation



TRX Core Brace



TRX Squat



Post Natal: 3 to 6 months

TRX Standing Roll Out



TRX Single Leg Squat w heel down



TRX Low Row



TRX Resisted Heel Taps



Post Natal: 6 to 12 months

TRX Plank



TRX Single Leg Squat



TRX Straight Leg Raises



TRX Inverted Row





Menopause

Physiology and Training Considerations

- Hot flushes
- Night sweats
- Sleep interruption
- Insomnia
- Biological stress (muscle aches and pains, cardiovascular disease, type 2 diabetes, metabolic syndrome) due to increase in inflammation
- Recovery capabilities are delayed or impaired
- Osteoarthritis is an issue, usually due to previous ACL injuries
- Women have a 30% higher rate of osteoporosis due to rapid decrease of estrogen
- Muscle and joint pain is increased
- Leg strengthening exercises are very important
- Balance, agility and coordination are VERY important

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Female Motivation: Mind AND Body

Her “Super powers” lie in both!

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The Media



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How can we be a positive influence ABOVE the media?

- Women are emotive creatures... which great power can be derived from!
- Channel that power and her performance can sky-rocket


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Through Knowledge & Empathy

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Credits & Research

FITR WOMAN






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