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- TRX MASTER INSTRUCTOR
- ACE MASTER INSTRUCTOR
- UNDER ARMOUR TRAINING TEAM MEMBER & AUTHOR
- ATHLETE WHO GETS PERIODS, MOTHER, SURVIVED AN ACL TEAR

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 promotes follicle growth, while LH triggers ovulation. The diagram also shows the levels of estrogen and progesterone in the blood, and the changes in the ovary and endometrium of the uterus. The cycle is divided into the follicular phase and the luteal phase.

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

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A group of 15 female athletes in various sports uniforms standing in a line. Below them are their names and statistics:

Aliyona	Tara Lipinski	Lisa Leslie	Cheryl Haworth	Amelie Thibault	Steph Powers	Jennifer Parke	Cheryl Dwyer	Lorraine Natanson	Melby Officer	Tatiana Totterman	Amy Audof	Stacy Spence	Justine Hesse
Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating	Figure Skating
167 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 lbs	117 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

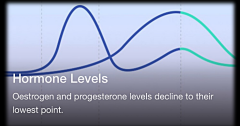


Hormone Levels
Oestrogen levels initially drop off as ovulation occurs, then both oestrogen and progesterone start to rise and remain high.



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Phase 4: Premenstrual & Late Luteal



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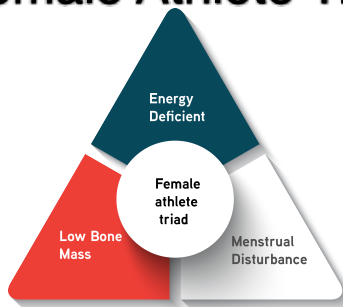
Causes of Amenorrhea

- 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...

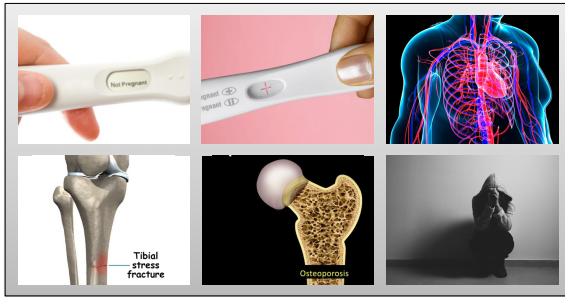
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Female Athlete Triad



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Serious Triad Risks

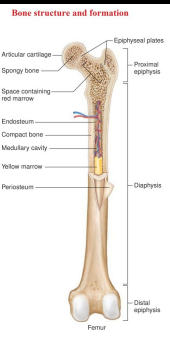


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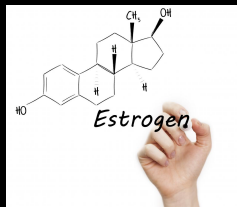
Triad Treatment



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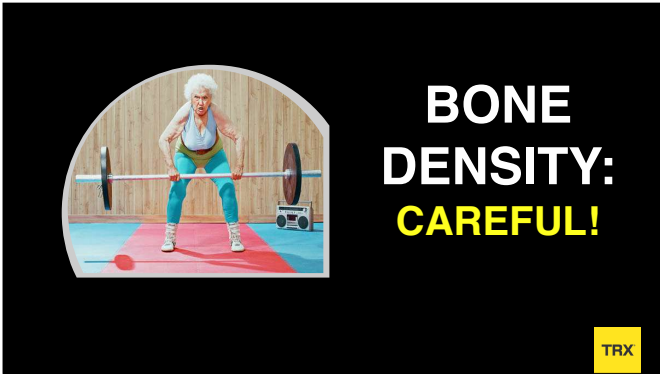
BONE DENSITY: Role of Estrogen



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**BONE
DENSITY:
A Fitness
Approach**



**BONE
DENSITY:
CAREFUL!**

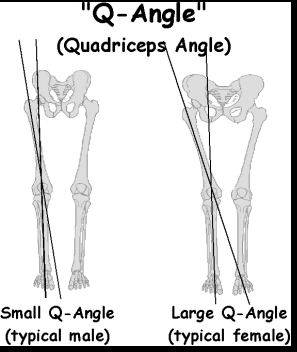
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**KNEES:
ACL Tears &
The Terrible
Triad**

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"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 line from the hip 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.

**Neuromuscular Control:
Landing Mechanics**



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The left photo shows a man in a squatting position, leaning forward with his knees bent. The right photo shows the same man standing upright, having just landed from a jump, with his feet flat on the ground and knees slightly bent.

**Posterior Chain
Development**



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The four photos show a man using TRX straps to perform exercises: 1) lying on his back with feet in straps and knees bent; 2) lying on his back with feet in straps and legs straight; 3) lying on his back with feet in straps and knees bent, leaning back; 4) lying on his back with feet in straps and legs straight, leaning back.

Hip Abduction



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The Pursuit of Better
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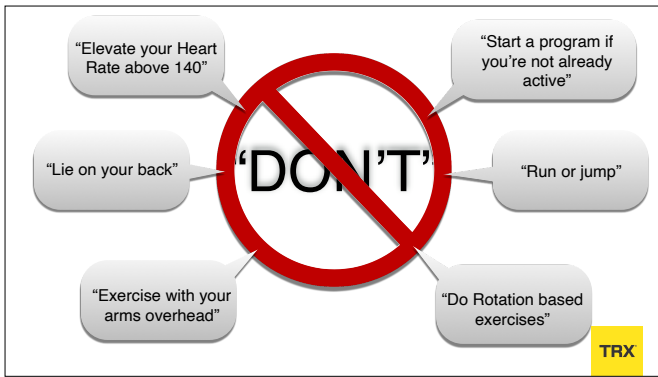
Training for Pre and Post Natal

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

Common Misconceptions Overview




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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

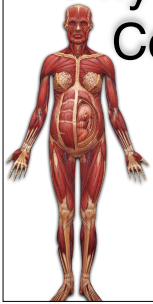
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Trimester #2



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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

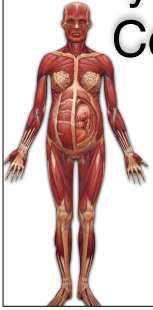
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Trimester #3



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The Journal of Fitness
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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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