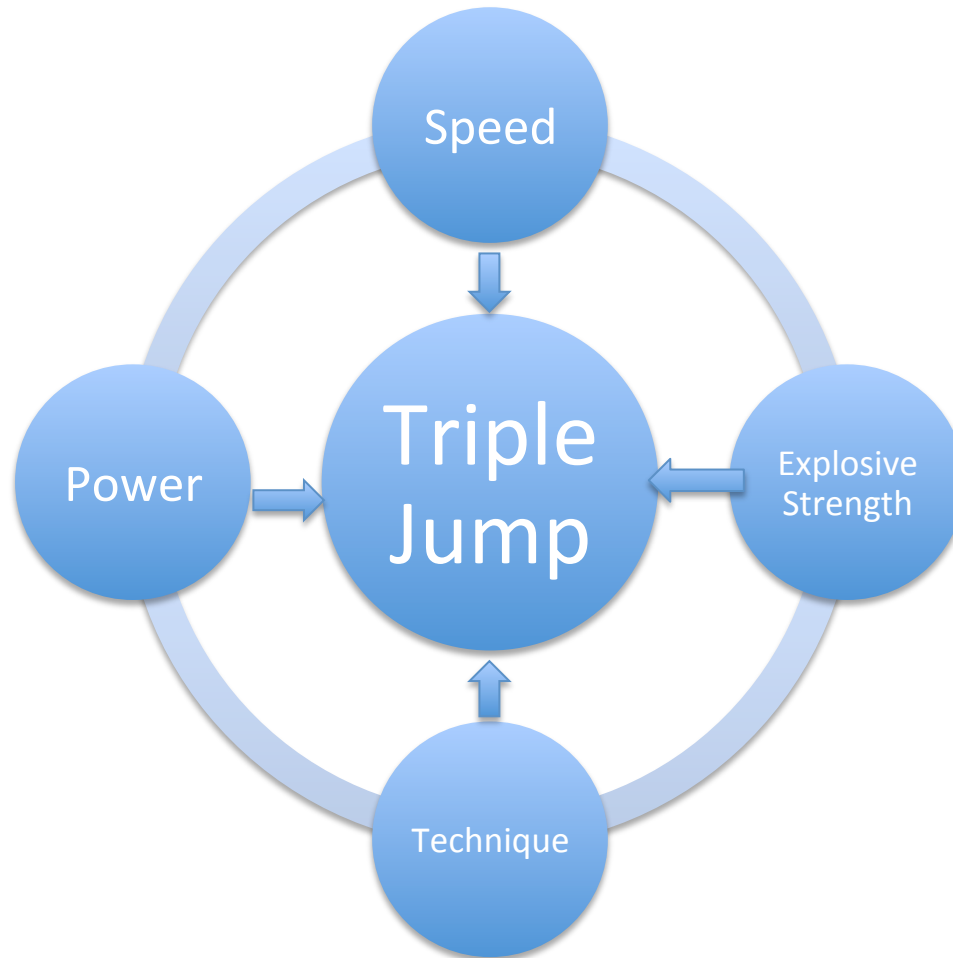


# Different Characteristics Between Male and Female Triple Jumpers

Iliyan Chamov



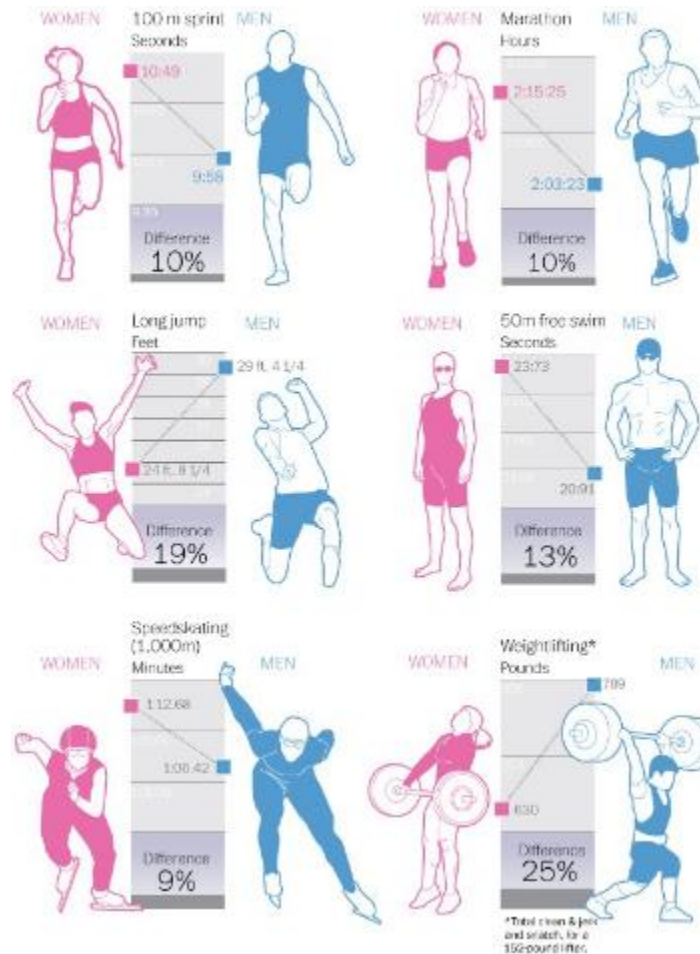
# Triple Jump Requirements



# Triple Jump Requirements

<b>Investigated parameters</b>	<b>Season 2009-2010</b>	<b>Season 2010-2011</b>
40m. Sprint	4.98 sec.	4.75 sec.
Back Squat	65 kg.	75 kg.
Single leg Quintuple Jump (Left leg/Right Leg)	18.00 m./17.53 m.	18.92 m./18.53 m.
Technique (Number of jumps 6-14 strides)	63	114
Triple jump result	12.66 m.	13.14 m.

# Triple Jump Requirements





# Gender Differences in Triple Jump

Anatomical

Physiological

Neuromuscular

Psychological



# Anatomical Differences

- Bones
- Ligaments
- Center of Mass
- Body Fat %



# Anatomical Differences

## Bones and Ligaments

- Male athletes have longer and larger bones
- wider frame on which to support muscle
- Female ligaments are generally more lax and fragile
- Wider pelvis- lower center of gravity



# Anatomical Differences

## Center of Mass

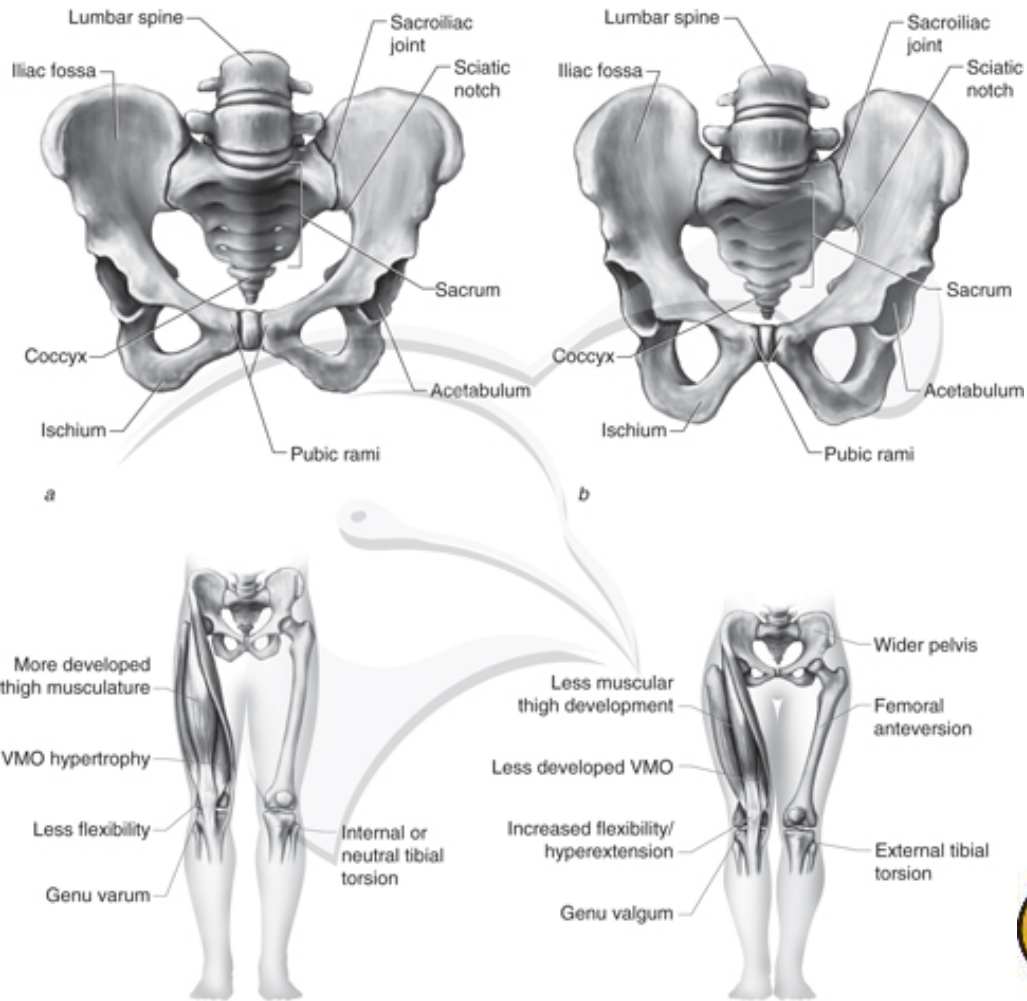
- Male- higher center of gravity  
longer strides
- Female- lower center of gravity  
lower weight distribution

increased ROM

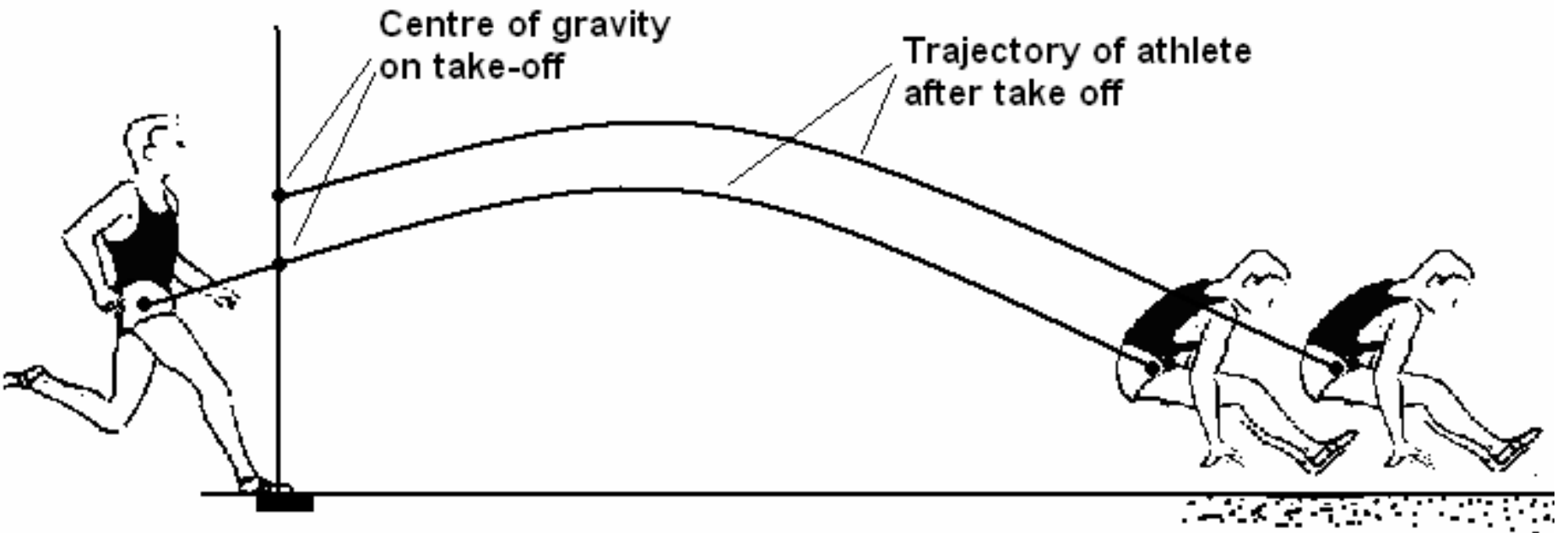
increased injury risk.



# Anatomical Differences



# Anatomical Differences



Distance traveled as a result of a higher centre of gravity at take-off in long jump



# Anatomical Differences

## Body Composition

### Women

Body Fat  $\pm$  20%

Muscle Mass  $\pm$  35%

Muscle development per week  $\pm$  4%

14 years old grown to  $\pm$  97%

Full grown women spine  $\pm$  14%  
shorter

### Men

Body Fat  $\pm$  10%

Muscle Mass  $\pm$  41%

Muscle Development per week  $\pm$  6%

14 years old grown to  $\pm$  85%



# Physiological Differences

- Hormonal level
- Menstrual cycle





# Physiological Differences

## Hormonal Level- testosterone

Male		Female	
Age:	T Level (ng/dL):	Age:	T Level (ng/dL):
<b>0-5 months</b>	75-400	<b>0-5 months</b>	20-80
<b>6 mos.-9 yrs.</b>	<7-20	<b>6 mos.-9 yrs.</b>	<7-20
<b>10-11 yrs.</b>	<7-130	<b>10-11 yrs.</b>	<7-44
<b>12-13 yrs.</b>	<7-800	<b>12-16 yrs.</b>	<7-75
<b>14 yrs.</b>	<7-1,200	<b>17-18 yrs.</b>	20-75
<b>15-16 yrs.</b>	100-1,200	<b>19+ yrs.</b>	8-60
<b>17-18 yrs.</b>	300-1,200		
<b>19+ yrs.</b>	240-950		
<b>Avg. Adult Male</b>	270-1,070	<b>Avg. Adult Female</b>	15-70
<b>30+ yrs.</b>	-1% per year		



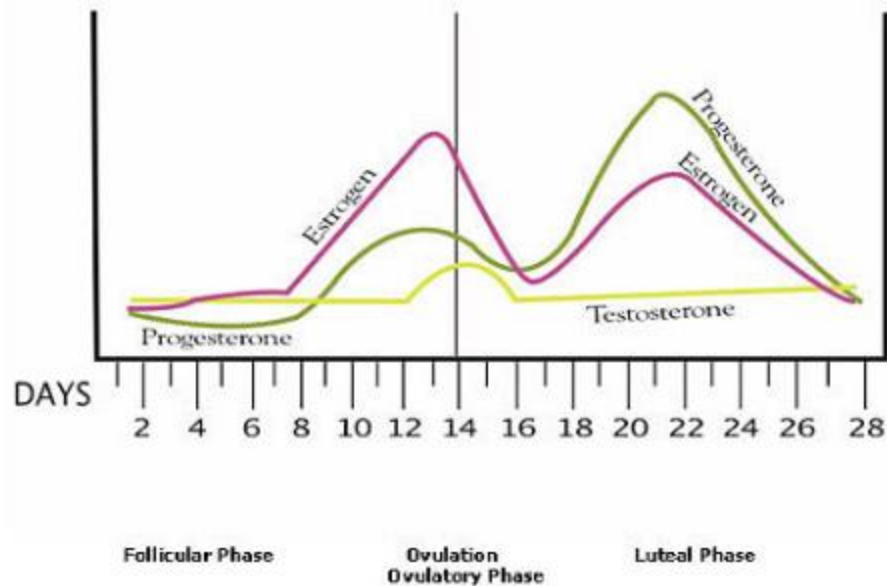
# Physiological Differences Menstrual Cycle

- Hormonal levels during menstruation
  - Estrogen, Progesterone, Relaxin
- Weight variation of between 0.5 – 3 kg (1-6lb) may be experienced during menstruation.



# Physiological Differences

- Menstrual Cycle



- Speed and strength loads – High progesterone levels
- Alactic- anaerobic loads – Low estrogen level
- Power loads – Consistent Testosterone levels
- Glycolytic loads – it doesn't affect jumpers



# Physiological Differences

- Progesterone levels are higher in the morning
  - Lift in the morning
- Testosterone has been found to enhance memory recall in men.
  - Lift in the morning
- Estrogen enhances memory and learning in women
- OC Increase the risk of injuries due to stimulating Relaxin secretion.



# Neuromuscular Differences

- Women
- Decreased neuromuscular control of the trunk and lower extremity –  
Dynamic neuromuscular training.
- Electromechanical delay in women (44.9 ms) is significantly longer than in men (39.6 ms) EXPLOSIVE STRENGTH  
use Quadruple jump –men/ Quintuple jump Women to develop ES  
- stretch shortening cycle- eccentric motion followed by concentric-  
avoid amortization phase in the triple jump















# Psychological Differences

## Females

Advantage on processing speed

Better object location memory

Better at verbal learning

Care-based morality

## Males

Accepting goal route

Justice-based morality



# Psychological Differences

## Emotion

- Women - more embarrassment, guilt, shame, sadness, anger, fear, and distress.
  - Reported greater fear in imaginary frightening situation.
  - Happier with current situation- difficult to motivate
- Men- expressing pride more frequently. More optimistic about the future



# Technique

## Single Arms vs Double Arms



# Technique

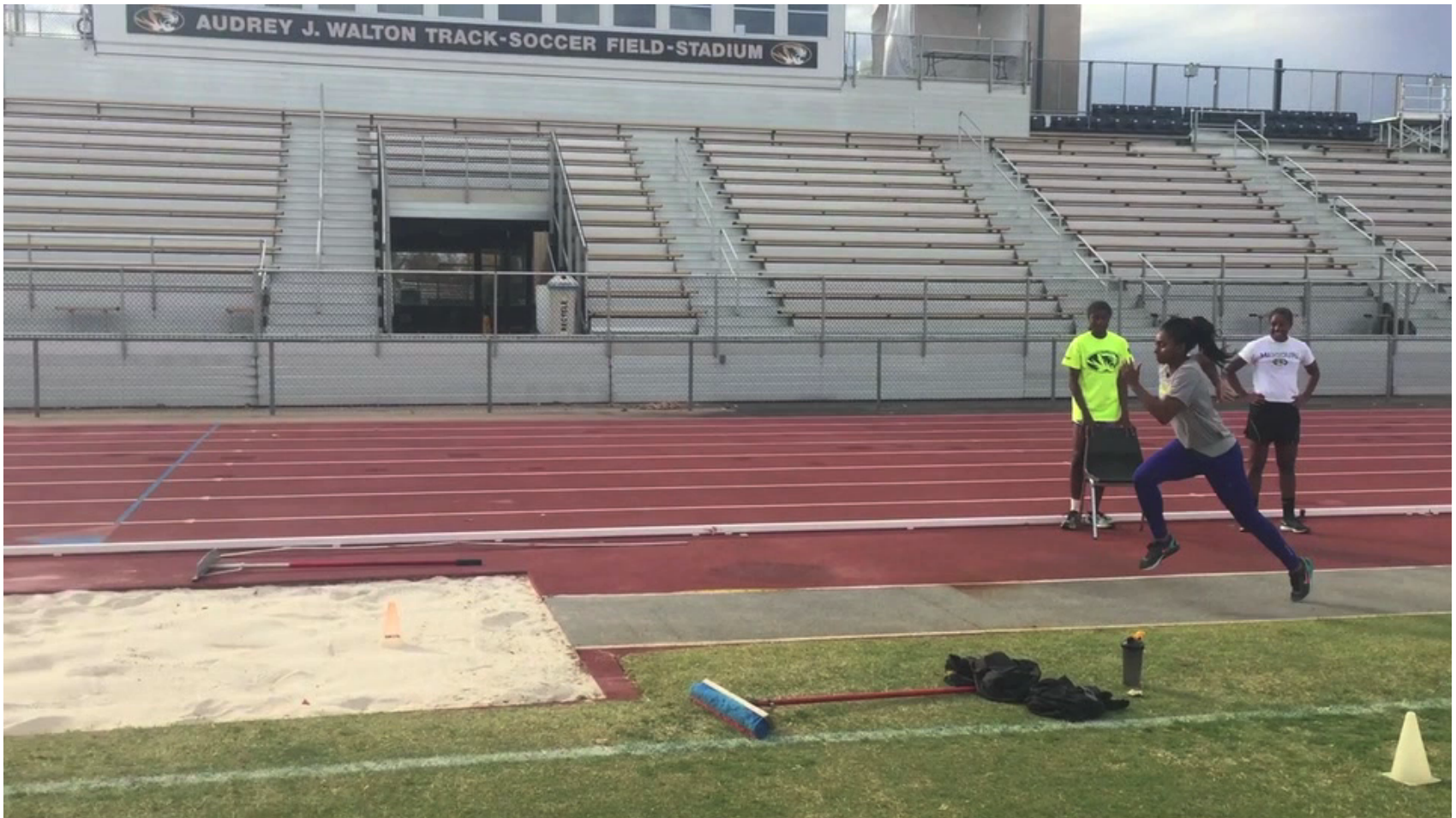


# Technique





# Technique



# Technique





# Questions!

Why Do We Coach Males and Females Same

