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## Training Adam, Training Eve

Orr, Rob Marc

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*Training*

*Adam,*

*Training*

*Eve*

Rob Orr

# Overview

- Anatomical Variations
- Metabolic Variations
- Sociological Variations
- Menstruation
- Programming
- What this means to you

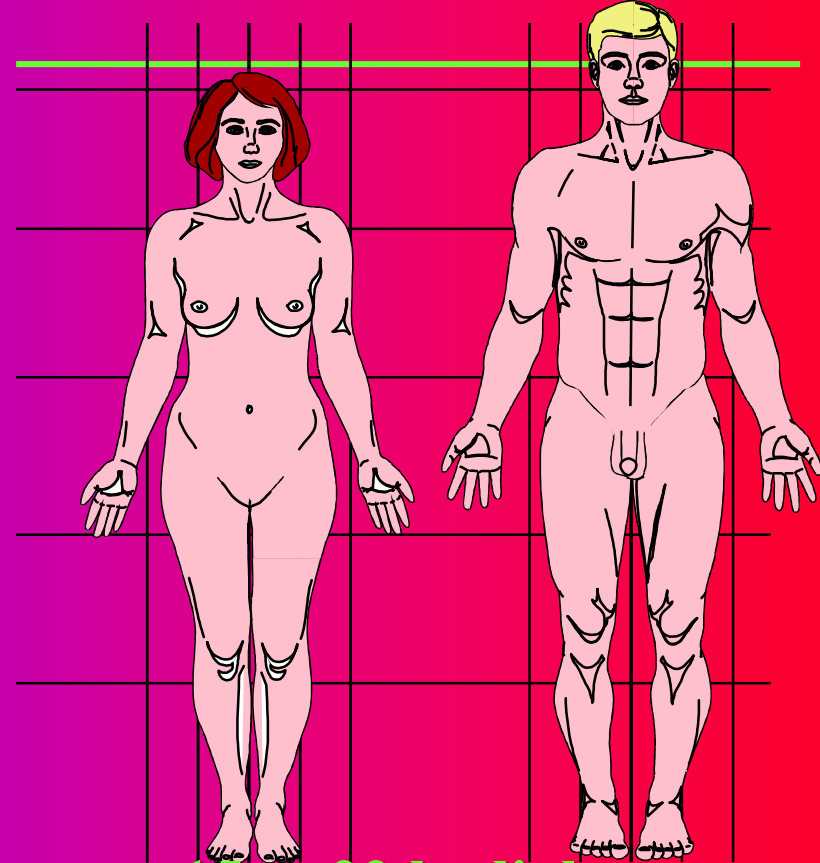


# Anatomical Variations

## Musculoskeletal structure

- Height and Weight

10 to 13 cm shorter



15 to 22 kg lighter

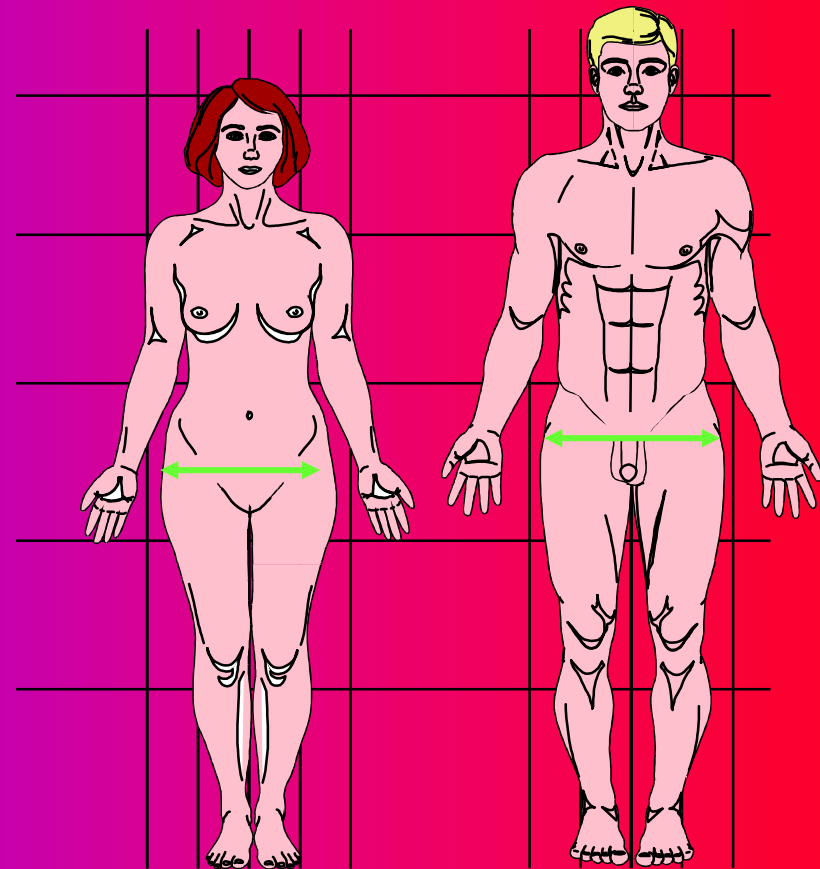
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# Anatomical Variations

## Musculoskeletal structure

- Height and Weight
- Pelvis Width



Male

Female

**Sacrum**

**Long / Narrow**

**Broad / Flat**

**Ishial Tub**

**Turned Inward**

**Turned Outward**

**Pelyic Inlet**

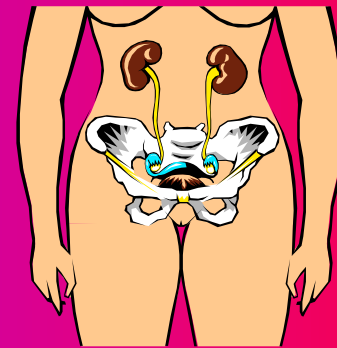
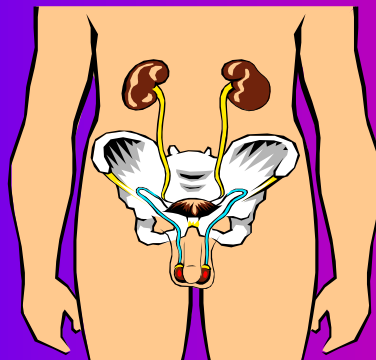
**Small**

**More Oval**

**Pubic Arch**

**Less 90\***

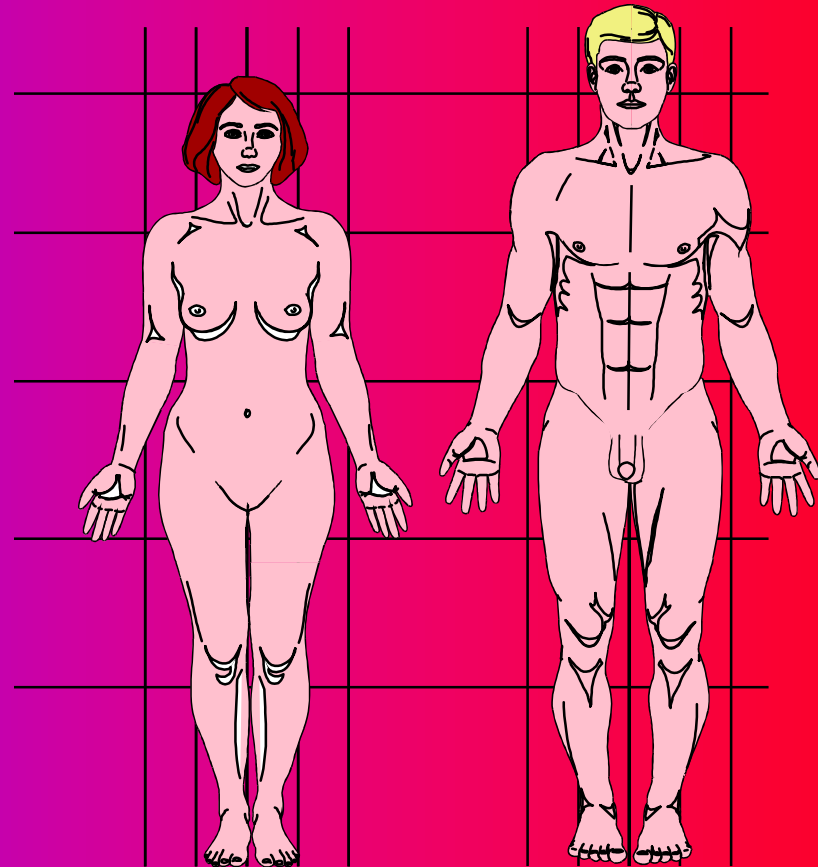
**More 90\***

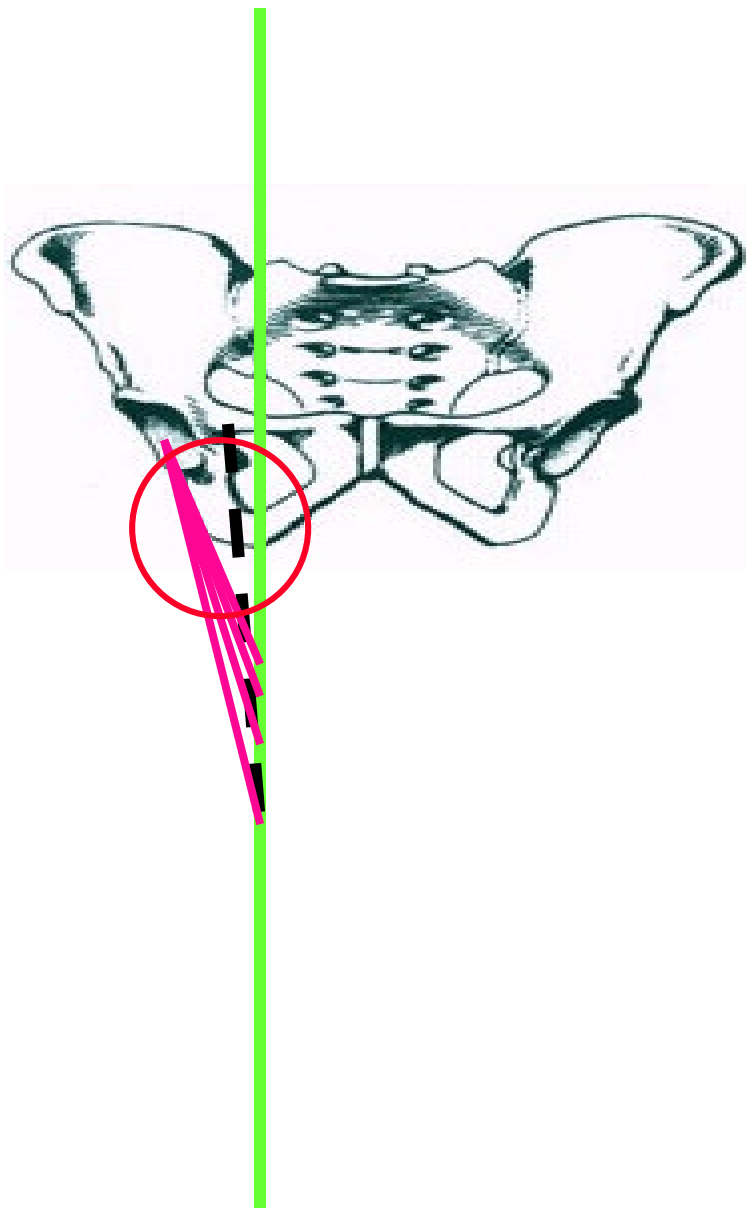


# Anatomical Variations

## Musculoskeletal structure

- Height and Weight
- Pelvis Width
- Levers





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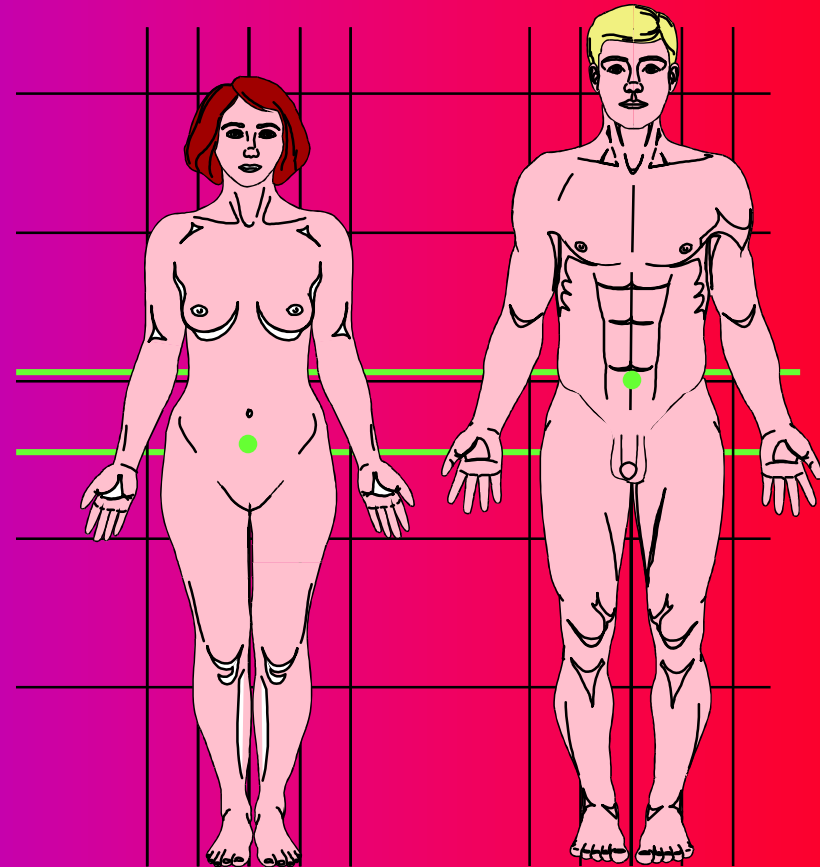




# Anatomical Variations

## Musculoskeletal structure

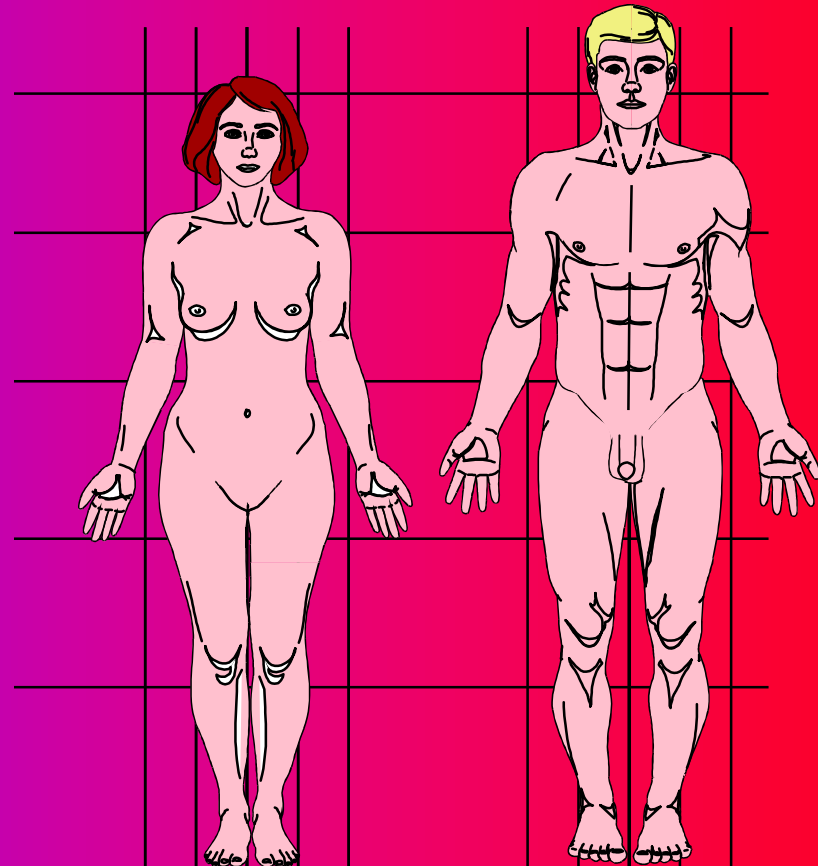
- ▣ Height and Weight
- ▣ Pelvis Width
- ▣ Levers
- ▣ Centre of gravity



# Anatomical Variations

## Musculoskeletal structure

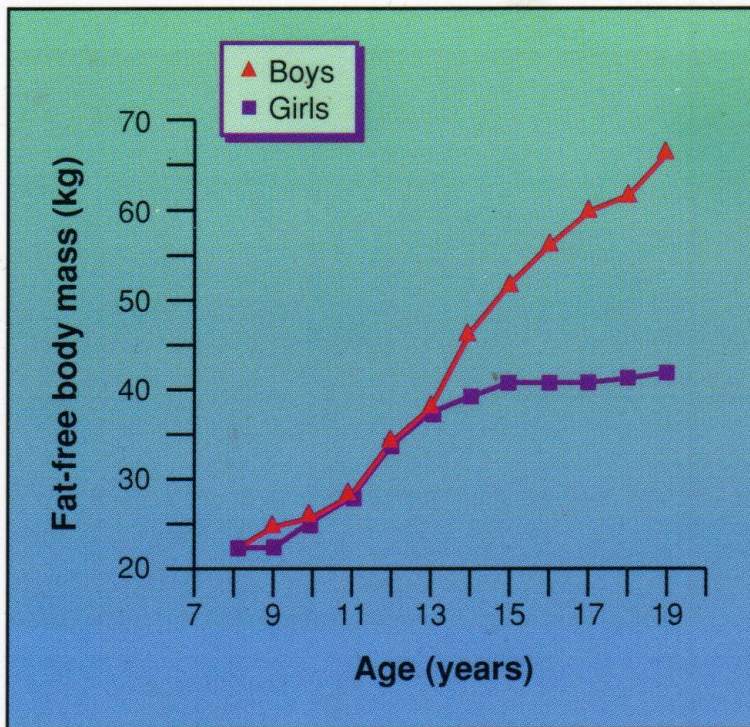
- ▣ Height and Weight
- ▣ Pelvis Width
- ▣ Levers
- ▣ Centre of gravity
- ▣ Flexibility



# Anatomical Variations

## Hormonal Differences

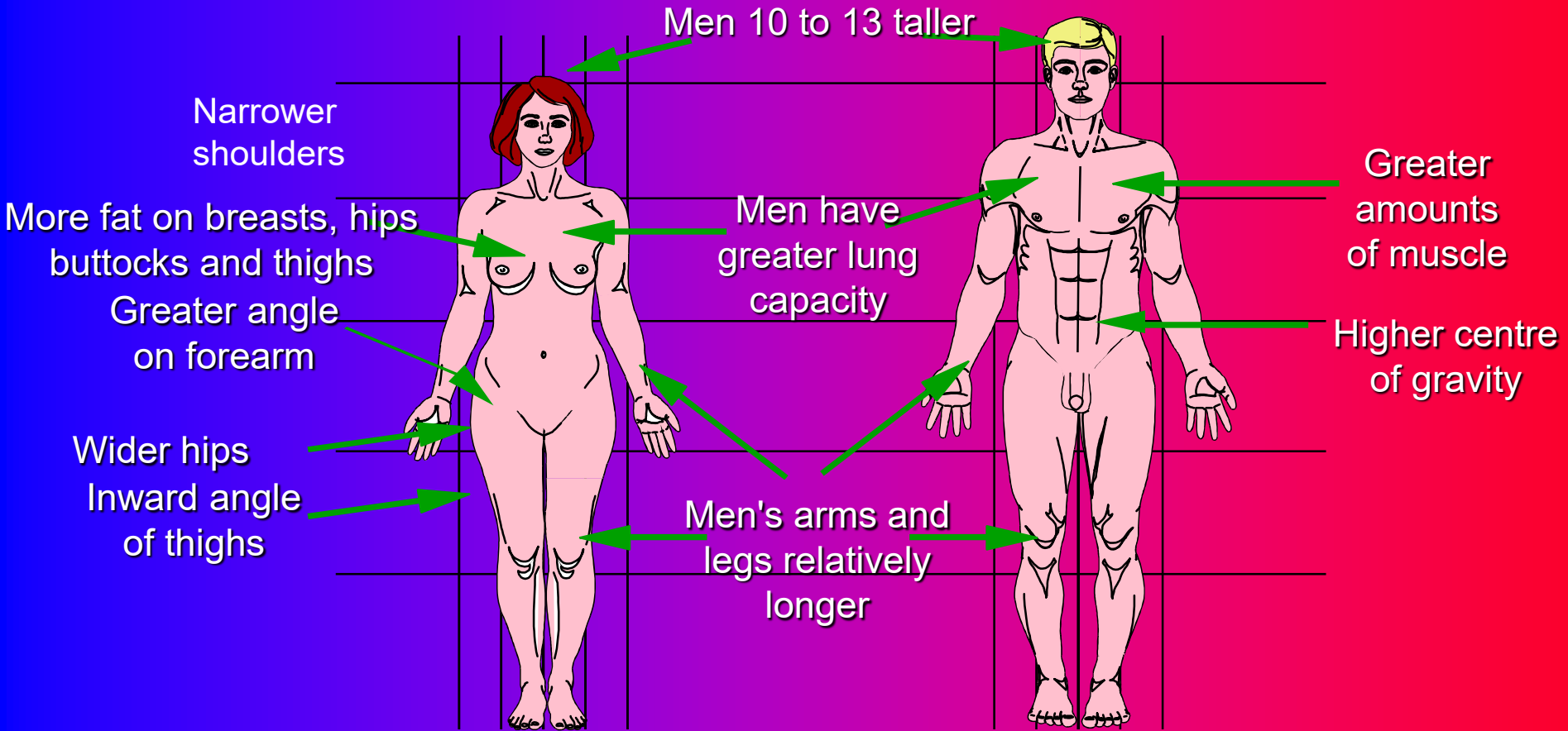
- Testosterone
- Oestrogen



**Gender differences with aging in fat-free body mass changes.**

Data from Forbes (1972).





## Snap Shot





# Anatomical Variations

## Impact On Strength

	Ebben et al. (1998)	Wilson (1995)	Wilmore & Costill (1994)
Upper Body	40 - 60 %	60 %	43 - 63 %
Lower Body	25 - 30 %	30 %	25 - 30 %



# Anatomical Variations

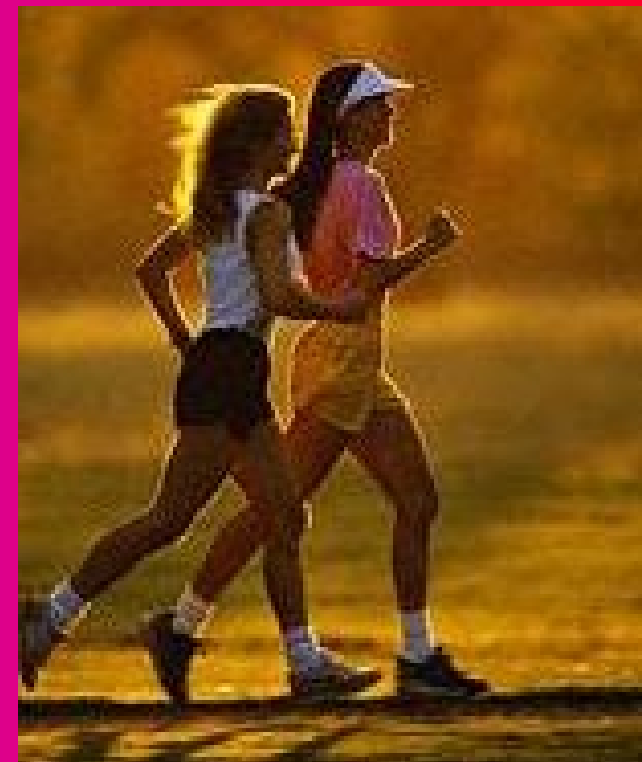
## Cardio Respiratory Differences

- Heart size
- Hb



# Metabolic Variations

VO2 Max



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<b>SPORT</b>	<b>Vo<sub>2</sub> max, ml.kg<sup>-1</sup>.min<sup>-1</sup></b>
<b>MALES</b>	
<b>Cross-Country Skiers</b>	<b>70-94</b>
Long distance Runners	60-70
Collegiate runners	55-62
Average Runners	70-75
Elite Marathon Runners	76-84
Elite Middle Distance Runners	58-75
<b>Rowers</b>	<b>58-75</b>
Bicyclists	55-70
<b>Long-distance Swimmers</b>	<b>48-68</b>
Gymnasts	48-64
Speed Skaters	50-75
Ice Hockey Players	50-60
Football Players	45-64
<b>Baseball Players</b>	<b>45-55</b>
Tennis	42-56
<b>FEMALES</b>	
<b>Cross-Country Skiers</b>	<b>56-74</b>
Average Marathon Runners	50-55
Olympic Distance Runners	55-62
National Class Distance runners	58-72
Pentathletes	43-52
<b>Rowers</b>	<b>41-58</b>
<b>Distance Swimmers</b>	<b>45-60</b>
Speed Skaters	40-52
Sprinters	38-52
<b>Basketball Players</b>	<b>35-45</b>





# Metabolic Variations

**VO2 Max**

**Lactate Thresholds**



# **Sociological Variations**

**Social Barriers**

**Conformity or Achievement**

**Female or athlete**

**Homophobia**



# Sociological Variations

**Social Barriers**

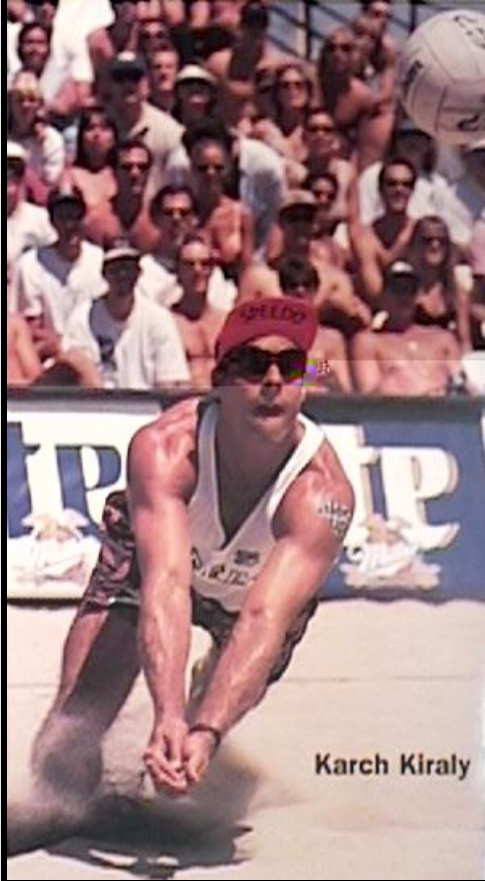
**Conformity or Achievement**

**Female or athlete**

**Homophobia**

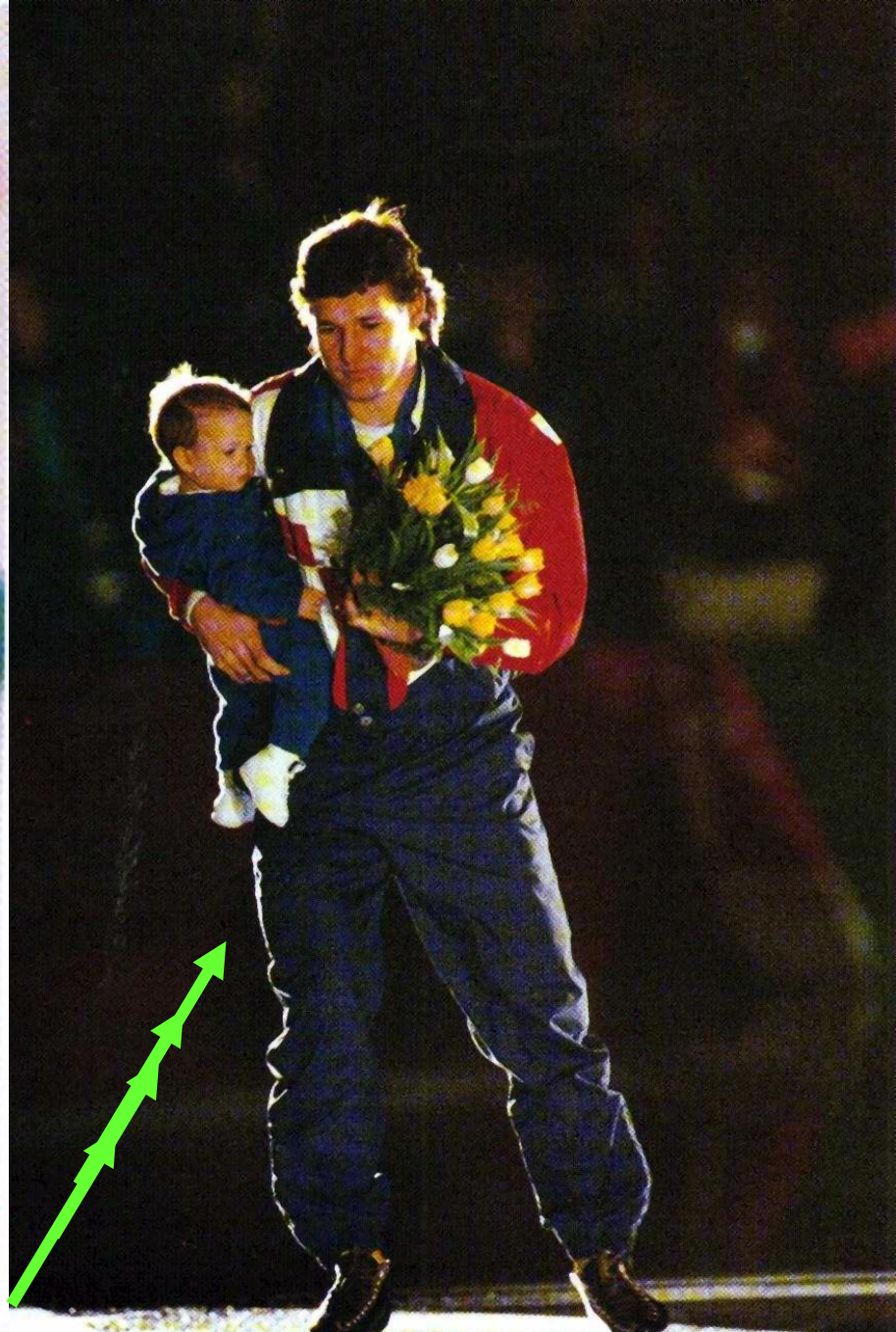
**Media Coverage**





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# **Sociological Variations**

**Social Barriers**

**Conformity or Achievement**

**Female or athlete**

**Homophobia**

**Media Coverage**

**Funding and Salaries**



# Menstruation

Cycles

Disorders

- Amenorrhoea
- Oligomenorrhoea
- Dysmenorrhoea

Effects of Exercise

- Dysmenorrhoea
- Amenorrhoea

Performance

Participation

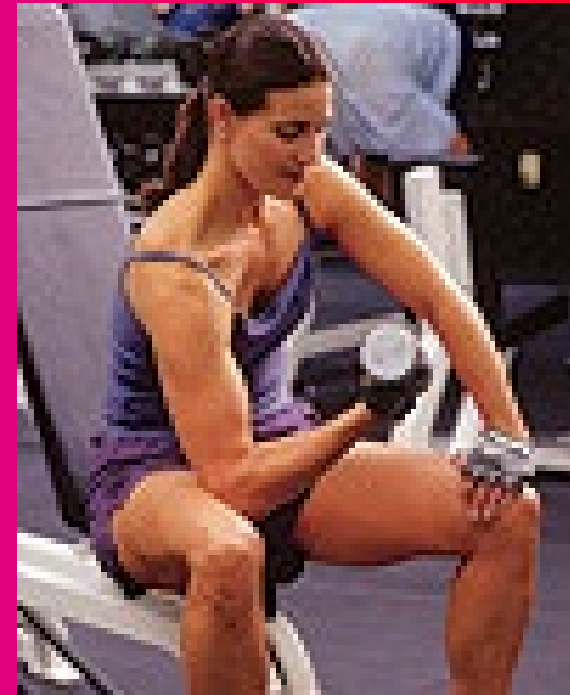




# Programming

Resistance Training Programming

Anaerobic / Aerobic Conditioning





# What This Mean To You

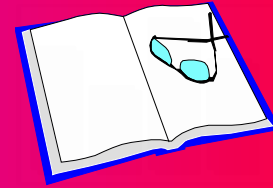
- Programs should be based on individual factors.
- Females are meant to have a higher fat percentage than males.
- Just because a female is not keeping up with the main group in an activity it does not mean that they are not trying or are unfit.
- Avoid reinforcing negative social ideals (Eg. 'You hit like a girl' or 'Are you going to let her beat you?').
- The menstrual cycle is a normal healthy bodily response and it should be treated as such (by both parties).



# In conclusion....



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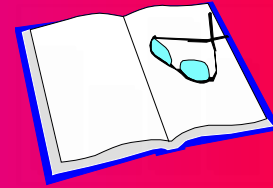
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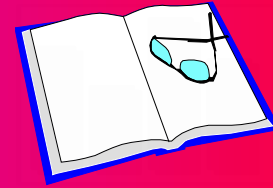
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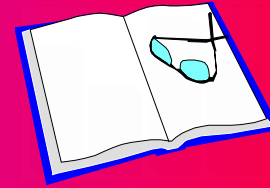
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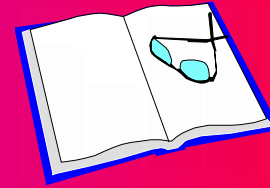
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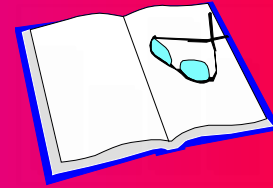
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