Training the Age Grade Athlete

Our Goal As Coaches?

Maximize the Development of Players

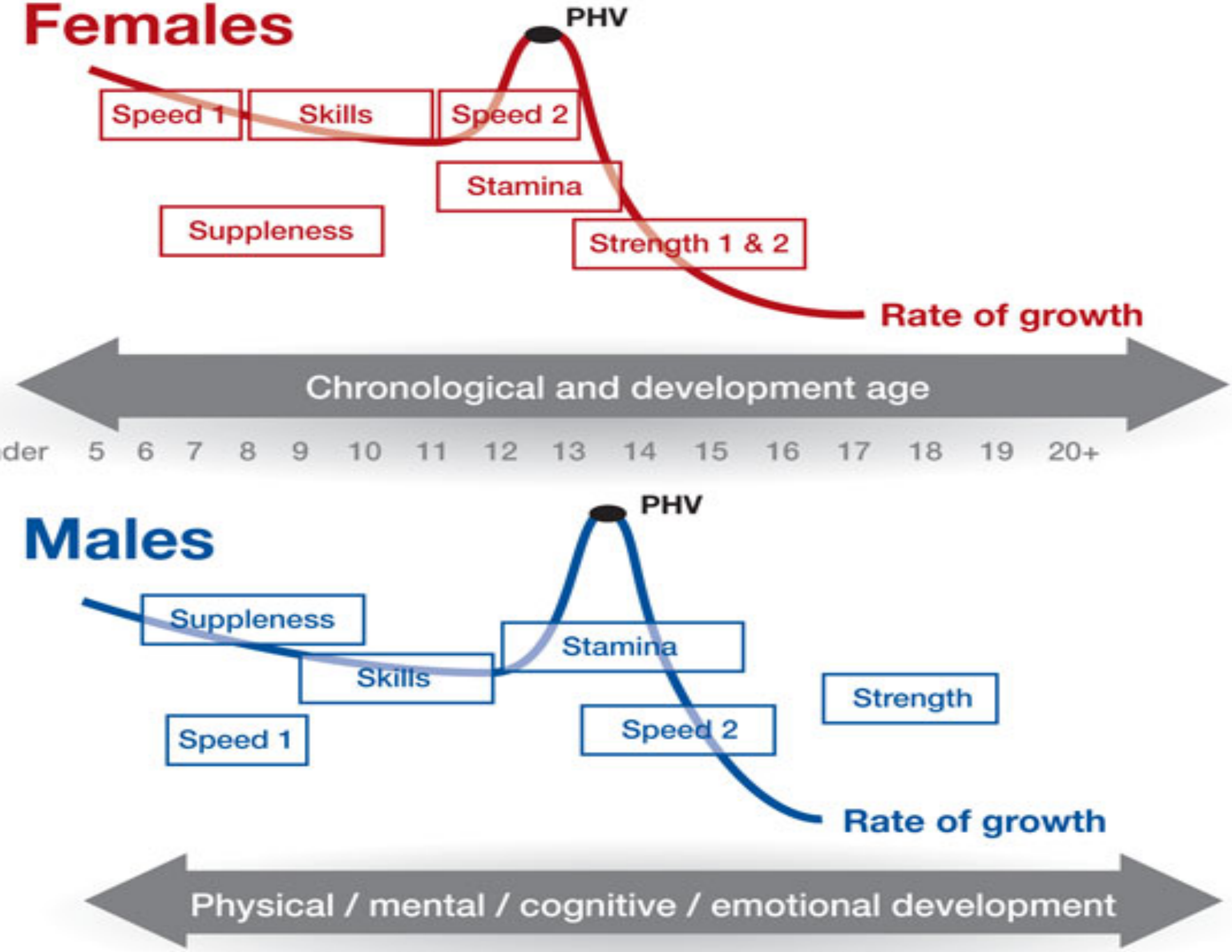
Development is Multidisciplinary

biological, social, psychological etc..

Long-Term Athlete Development

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
FUNdamental Phase	Learn to Play & Practice	Train to Train	Learn to Compete	Train To Win
4 - 8	8 - 12	12 - PHV	Post PHV - 20	20 - Adult
FMS Balance Co-ordination & Manipulation Locomotion & Speed Agility & Awareness Fundamental sports Skills	FMS Balance Co-ordination & Manipulation Locomotion & Speed Agility & Awareness Flexibility & Mobility Learn to Lift Fundamental sports Skills	FMS Anatomical adaptation Stability Mobility Speed Acceleration Sports specific endurance Sports specific skills	Fundamental Skills Anatomical adaptation Advanced strength & power Stability Mobility Speed Acceleration Sports specific endurance	Strength Power Mobility Speed Acceleration Sports position specific endurance

Females



Males

Misconceptions of Resistance Training in Children & Adolescents

- Strength Training causes damage to developing growth plates – leading to stunted growth
- Strength training causes individuals to become muscle-bound, slow and inflexible
- Strength training causes injury

- Study 1 – Hamill, 1994 (Overall rate of injury per 100 participation hours)
    - Rugby – 0.800
    - Strength training – 0.012
    - Weightlifting – 0.0013
- Study 2 – Pierce, 1999 (70 boys and girls, 7-16 years old)
    - No loss of training days
- Study 3 – Byrd, 2003 (athletes aged between 12 and 15)
    - Over 534 competitive lifts and all training sessions – no injuries reported that required medical attention or resulted in missed training

Benefits of Resistance Training in Children & Adolescents

- Performance Benefits
    - Increased muscular strength
    - Increased power production
    - Increased running speeds
    - Increased change of direction speed
    - Improved general motor performance
    - Reduced incidences of ACL injuries

- Health Benefits
    - Improved body composition
    - Reduced abdominal and trunk fat
    - Improved insulin sensitivity in overweight adolescents
    - Enhanced Cardiac function in obese children

Training to Train

- Disproportionate growth rates of muscle and skeletal tissues
- Potential breakdown in motor co-ordination
- Focus should remain on technical competency
- Brain and neuromuscular system maturation rates are high
- Children may experience rapid changes in non-liner growth

Training to Compete

- Post PHV – rapid increases in muscle mass
- 12-18 months post PHV = PWV (peak weight)
- Increased force production capabilities
- Introduction of greater external loading
- Muscle size and structure adapts to training stimulus
- Technique never compromised for more resistance

Systematic Approach

- We must use a structured and logical approach
    - Start with BW
    - Progress to PVC Pipe
    - Progress to BW with varied leverages
    - Progress to light DB’s
    - Progress to heavier DB’s
    - Progress to BB with Wooden Discs
    - Progress to BB with Bumper Plates
    - Progress to Continuous Progressive Bar Methodology

Level 1

Aim

To improve players overall functional control, promote stability and range of motion through major joints. There should be no emphasis on weight lifted but all emphasis on technique and control. To improve players multi directional movement skills and understanding of conditioning.

'How Well, not How Much!'

Level 2

Aim

To improve the players' strength while maintaining the high standard of functional competence achieved in Level 1. Power development is not a priority at this stage because the player has limited training experience and limited strength through range.

How Well and How much!

Level 3

Aim:

To continue to improve the players strength levels. To introduce the player to more advanced power training and to improve the players power output

'How Well, How much and How Fast!'

Summary

- Resistance training is safe when done in the correct manner
- Technique always comes before load
- Coaches should be aware of the LTAD model
- Resistance training has far more benefits than risk when supervised correctly
- If you cant coach it don’t have it in the programme

References

1. Lloyd et al. *Long-term athletic development and its application to youth weightlifting.* Strength and Conditioning Journal.
2. *Fitness foundation programme.* IRFU recourse's.
3. Lloyd et al. *Long-term athletic development and trainability during childhood.* UK Strength and Conditioning Journal.
4. Faigenbaum et al. *Youth resistance training: updated position statement paper from the national strength and conditioning association*. Journal of Strength and Conditioning Research.
5. Lloyd et al. *The natural development and trainability of plyometric ability during childhood.* Strength and Conditioning Journal.
6. Lloyd et al. *UKSCA position statement: youth resistance training*. UK Strength and Conditioning Journal.
7. Rumpf et al. *Effect of different training methods on running sprint times in male youth.* Pediatric Exercise Science.
8. Byrd et al. *Young weightlifters performance across time*. Sports Biomechanics.
9. O'Callaghan. F. *Training the Age Grade Athlete.* Munster Rugby