

# MICROCYCLE PLANNING

Volker Herrmann, 2020



go

Which

to

?

way

Single- / Double- /  
Triple-Periodisation

Time from 1<sup>st</sup> week of  
general prep towards  
main competition

General / Special /  
Specific Preparation

Pre-Competition /  
Competition

Consists of diff. mesocycles

Normally one  
training week

Consists of different  
sessions

Each unit is  
supposed to fulfill a  
specific purpose



Macrocycle

Period

Phase

Mesocycle

Microcycle

Session

Unit

Preparation /  
Competition /  
Transition

Within one macrocycle

Loading and recovery phases

Usually 3/1 (general, slightly longer  
for endurance events) or 2/1 (specific)

Consists of different microcycles

Maximum of 2  
units per session

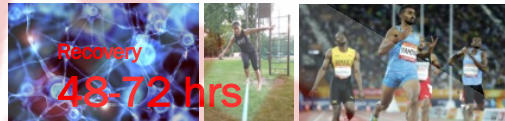
In line with load  
distribution



# LOAD MANAGEMENT

## Central Nervous System

Speed, Coordination, Technique,  
Max. Strength (Inter- + Intramuscular)



## Structural

Volume-orientated (e.g. endurance events)  
Plyometrics, Hurdling

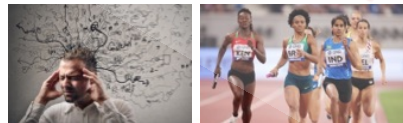


## Metabolic

Energy production  
(e.g. endurance, speed endurance)



## Mental





# PLANNING TRIANGLE

Objectives  
Training Phase



Athletes  
Predisposition

Performance  
Limiting Factors

# PLANNING TRIANGLE

## Athletes' profile / predisposition



- Gender
- Training Age
- Adaptability
- Recovery
- Strengths
- Weaknesses
- Mentality
- ...

# AGE-RELATED TRAINING

Training has to become more specific with increasing (training) age

Work on fundamentals to enable specific training

There's no shortcut and a fundamental base is essential for long-term development

General contents provide an appreciated and necessary alternative to more specific contents and allows more recovery in between intensive sessions.

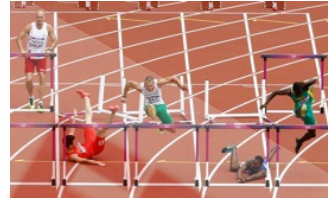
Recovery becomes the critical factor when it comes to the density of intensive sessions

	Age	14-15	16-17	18-19	20-22	23+
Sessions	General	3-4	3-4	3-4	3-4	3-4
	Specific	1	2	3	4	4-5



# PLANNING TRIANGLE

## Performance Limiting Factors



- Speed
- Strength
- Endurance
- Flexibility
- Coordination
- Technique
- Tactics
- ...

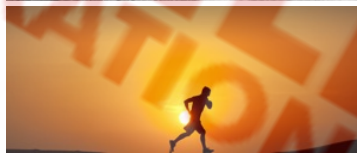
## BIO-MOTOR ABILITIES



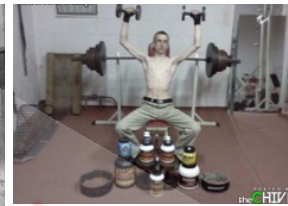
SPEED



STRENGTH



ENDURANCE



FLEXIBILITY

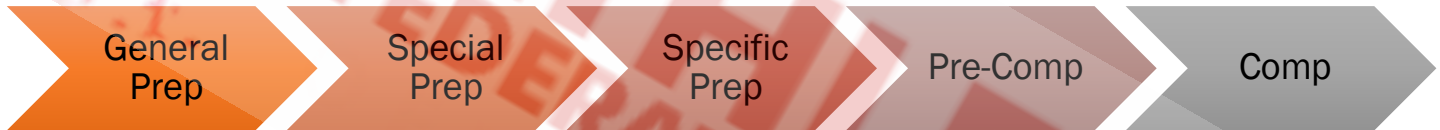


MOTOR-SKILLS



# PLANNING TRIANGLE

## Training Phase

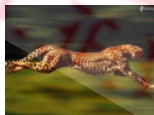


- Objective
  - Development
  - Maintenance
  - Duration
- Volume
  - Intensity
  - Recovery
  - ...



# PROGRESSION

Different bio-motor abilities require a specific progression throughout the season and from one phase to the next.



Acceleration

Submax. Velocity

Maximal Velocity



Simple / Details

Complex / Sequences

Fine model



Maximum Strength

Power / Speed Strength

Reflective Strength



Isometric Landing

Repetitive vert. / hor.

React. Depth / Speed Bound



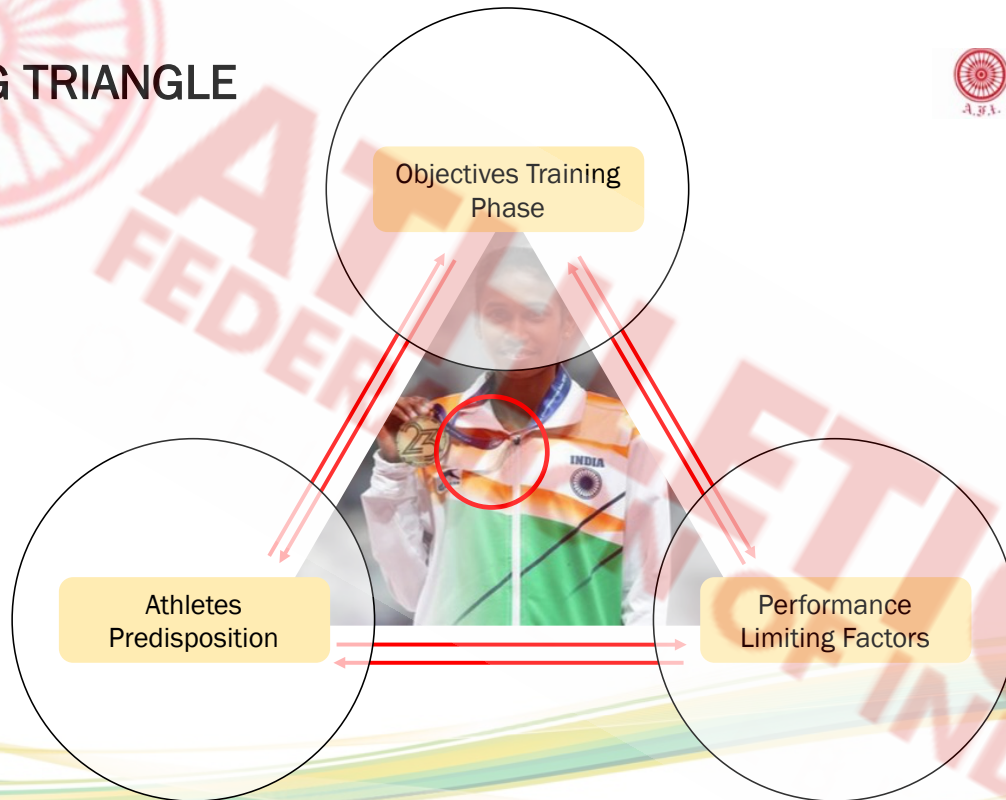
Aerobic

(Special Endurance)

Speed (Endurance)

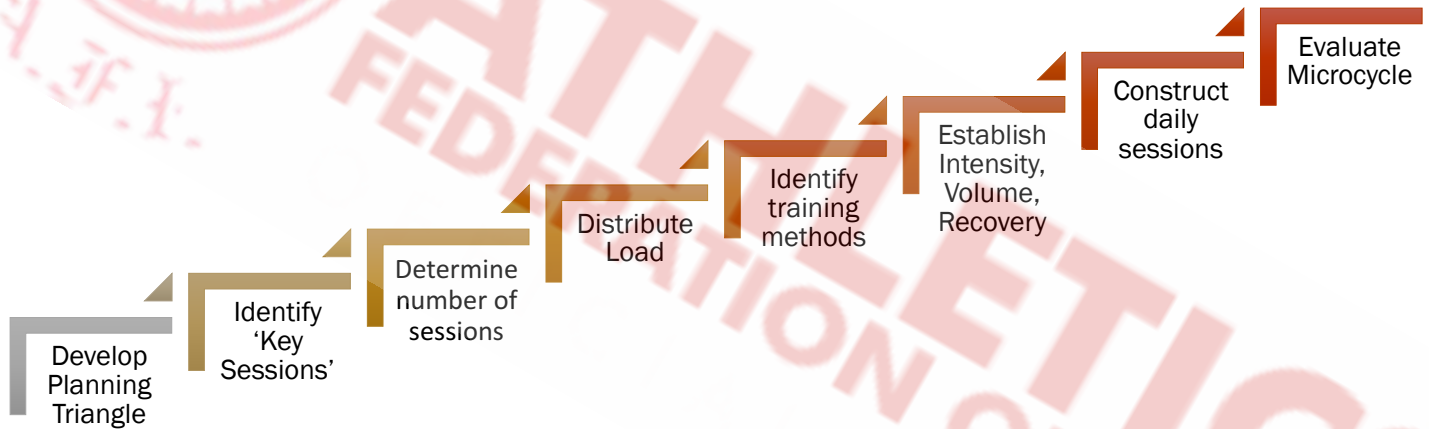
Dates		TW	Phase	Objective	Load	Test	Competition / Camps	Main content / Methods
04/11/19	10/11/19	1	General Preparation	Maximum Strength	2			Maximum Strength (Hypertrophy - 1st mesoc. / Intramuscular - 2nd mesoc.) Acceleration (up to 30m - 1st mesoc. / 45m - 2nd mesoc.) incl. sled-towing Core-Strength + Mobility + Ankle Joint stability Extensive Interval + Fartlek Technique - Details (Posture, Dorsiflexion, Hip Extension) Asymmetric single leg runs over 30-60m, baton exchange Isometric Jumps + Intro Repetitive Jumps (2nd mesoc.) + Drop Jumps (2nd mesoc. onwards)
11/11/19	17/11/19	2			3			
18/11/19	24/11/19	3			4			
25/11/19	01/12/19	4			1			
02/12/19	08/12/19	5		Acceleration (short)	3			
09/12/19	15/12/19	6		Aerobic Endurance	4			
16/12/19	22/12/19	7			4			
23/12/19	29/12/19	8			1	Speed / Power		
30/12/19	05/01/20	9	Special Preparation	Maximum Strength	3			Maximum Strength (Intramuscular + Eccentric) Power (Speed Strength) Acceleration (up to 60m) incl. sled-towing baton exchange (max. 45m run-up) Repetitive horizontal jumps + drop jumps Special Endurance (60s + I/O) Extensive Intervals Technique -combined sequences over 30-40m Asymmetric single leg runs over 45-60m Maintenance of Core + Mobility + Ankle Joint Stability
06/01/20	12/01/20	10			4			
13/01/20	19/01/20	11			1	Speed / Power		
20/01/20	26/01/20	12			4			
27/01/20	02/02/20	13		Acceleration (long)	4			
03/02/20	09/02/20	14		(Special Endurance)	1	Speed / Power		
10/02/20	16/02/20	15	Pre-Competition	Speed	2			Speed (flying 30m - 45m) Acceleration up to 60m Power / Speed Strength Horizontal repetitive jumps + vertical depth jumps Special Endurance (60s + Intensive endurance), baton exchange Extensive Intervals Maintenance of Max Strength, Core + Mobility + Ankle Joint stability
17/02/20	23/02/20	16			3			
24/02/20	01/03/20	17			2			
02/03/20	08/03/20	18			1			
09/03/20	15/03/20	19	Competition Phase 1	Speed / Speed Endurance				Maintain all abilities Fine-tune due to competitions / ind. Requirements
16/03/20	22/03/20	20					Indian GP (tbc)	
23/03/20	29/03/20	21					Indian GP (tbc)	
30/03/20	05/04/20	22						
06/04/20	12/04/20	23					Federation Cup (tbc)	

# PLANNING TRIANGLE





# MICROCYCLE CONSTRUCTION



Dates		TW	Phase	Objective	Load	Test	Competition / Camps	Main content / Methods
04/11/19	10/11/19	1	General Preparation	Maximum Strength	2			Maximum Strength (Hypertrophy - 1st mesoc. / Intramuscular - 2nd mesoc.) Acceleration (up to 30m - 1st mesoc. / 45m - 2nd mesoc.) incl. sled-towing Core-Strength + Mobility + Ankle Joint stability Extensive Interval + Fartlek Technique - Details (Posture, Dorsiflexion, Hip Extension) Asymmetric single leg runs over 30-60m, baton exchange Isometric Jumps + Intro Repetitive Jumps (2nd mesoc.) + Drop Jumps (2nd mesoc. onwards)
11/11/19	17/11/19	2			3			
18/11/19	24/11/19	3			4			
25/11/19	01/12/19	4			1			
02/12/19	08/12/19	5		Acceleration (short)	3			
09/12/19	15/12/19	6		Aerobic Endurance	4			
16/12/19	22/12/19	7			4			
23/12/19	29/12/19	8			1	Speed / Power		
30/12/19	05/01/20	9	Special Preparation	Maximum Strength	3			Maximum Strength (Intramuscular + Eccentric) Power (Speed Strength) Acceleration (up to 60m) incl. sled-towing baton exchange (max. 45m run-up) Repetitive horizontal jumps + drop jumps
06/01/20	12/01/20	10			4			
13/01/20	19/01/20	11			1	Speed / Power		
20/01/20	26/01/20	12		Acceleration (long)	4			Special Endurance (60s + I/O) Extensive Intervals Technique -combined sequences over 30-40m Asymmetric single leg runs over 45-60m Maintenance of Core + Mobility + Ankle Joint Stability
27/01/20	02/02/20	13		(Special Endurance)	4			
03/02/20	09/02/20	14			1	Speed / Power		
10/02/20	16/02/20	15	Pre-Competition	Speed	2			Speed (flying 30m - 45m) Acceleration up to 60m Power / Speed Strength Horizontal repetitive jumps + vertical depth jumps Special Endurance (60s + intensive endurance), baton exchange Extensive Intervals Maintenance of Max Strength, Core + Mobility + Ankle Joint stability
17/02/20	23/02/20	16			3			
24/02/20	01/03/20	17			2			
02/03/20	08/03/20	18			1			
09/03/20	15/03/20	19	Competition Phase 1	Speed / Speed Endurance				Maintain all abilities Fine-tune due to competitions / ind. Requirements
16/03/20	22/03/20	20					Indian GP (tbc)	
23/03/20	29/03/20	21					Indian GP (tbc)	
30/03/20	05/04/20	22						
06/04/20	12/04/20	23					Federation Cup (tbc)	

Day		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Date		27/01/20	28/01/20	29/01/20	30/01/20	31/01/20	01/02/20	02/02/20
Main objective session		Speed - Acceleration						
Warm-Up								
MORNING	Content (volume / Intensity / recovery)	SPEED	POWER	SPECIAL ENDURANCE (SHORT)	AEROBIC CAPACITY		SPECIAL ENDURANCE (MEDIUM)	
Main Load								
Main objective session						Speed		
Warm-Up								
AFTERNOON	Content (volume / Intensity / recovery)	MAX STRENGTH				SPEED		
Main Load								



# TRAINING METHODS

## **Speed**

Short acceleration / long acceleration / Ins and Outs / submax. speed / max. speed / resistance / supramaximal / ...

## **Strength**

Hypertrophy / intermuscular / intramuscular / isometric / eccentric / power / ...

## **Plyometrics**

Isometric / rep. Vertical / rep. Horizontal / vertical depth jumps / speed bounding / ...

## **Endurance**

Continuous runs / fartleks / extensive intervals / special endurance 1 or 2 / speed endurance / ...

## **Coordination / Technique**

Details (chaining) / sequences / actual technique / ...

## **Flexibility**

Static / dynamic / PNF / ...

# LOAD NORMATIVES

Intensity, Volume (Duration) + Recovery / Frequency = Density

Higher  
**Intensity**



requires more  
**Recovery**



and reduced  
**Volume**



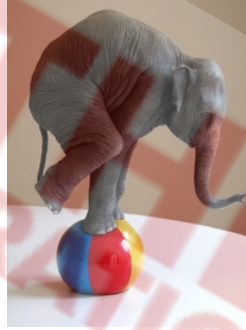
as well as reduced  
**Frequency**





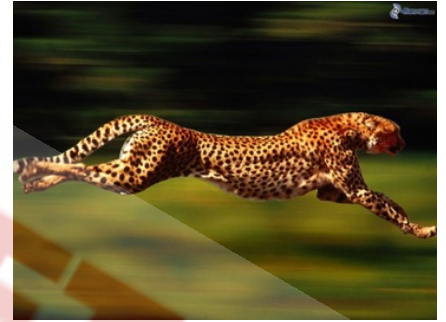
strength

X



coordination /  
technique

=



speed /  
power

Day		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Date		27/01/20	28/01/20	29/01/20	30/01/20	31/01/20	01/02/20	02/02/20
Main objective session		Speed - Acceleration	Power / Reactive Strength	Spec. Endurance	Aerobic Capacity		Reactive Strength / Special Endurance	
Warm-Up		Abs / Obliques / Back-Ext. / Hamstring / Gluteaus Activation	Balance / Light Core	Resistance Core w. partner using diff. Plank positions	2x80m backward running		Balance / Light Core	
MORNING	Content (volume / Intensity / recovery)	2x12 Tibialis strengthening 4x(4 drop jumps in comb. with drills)  <b>Starts</b> 2x(2x20m with 5kg sled, r. 2', 30m block start, r. 3', 50m block start), sr. 10'  4x10m block start, r. 2'	<b>Power-Clean</b> 3/2/2-3x4 (3/2 max, 4 in 60-70%)  <b>Plyos</b> 4x(2x6 Hurdle Bounds), sr. 2-4'  2x40m speed bounding, r. 4'	<b>Kaveri + Daneshwari</b> 2x(2x60m in 90-95%), r. 3', sr. 9' 1-2x 120m I/O, r. 8-12'  <b>Archana / Hima / Hina / Diandra / Sneha</b> Special Endurance (95%) 3-5x 120m I/O (40/40/40), r. 8-12'	<b>Core (2x6')</b>  <b>Extensive Intervals</b>  <b>Archana / Himashree / Kaveri / Sneha</b> 3x(200m in 31-32s, r. 2', 150m in 21.5-22.5s, r. 90s, 120m in 17.0-17.5s, r. 75s, 100m in 14.0-14.5s) sr. 6'  <b>Hina / Diandra</b> 4x(150-120m) in 14-15s		<b>Plyometrics (hor.)</b> 2x Isom. Take Off 5' 1x Isom. Single 2x easy	
	Main Load	CNS	CNS				CNS / Metabolic	
Main objective session		Max Strength	Technique / Special End.			Special Strength		
Warm-Up		Light Core	Individual			Abs / Obliques / Back-Ext. / Hamstring / Gluteaus Activation		
AFTERNOON	Content (volume / Intensity / recovery)	<b>Max. Strength</b> 6/4/3 Single Leg Press + 3x6 LAT-PULL-OUT  Med ball throw, 10 hurdle bounds (from small box)  2x easy striding 30-40m  Speed Strength Utilisation	<b>Hina / Diandra / Sneha</b> Technique / Frequency downhill, 2x 30m  <b>Special Endurance Track</b> 2x(2-3x 60m at 90-95%) r. 3', sr. 9-12'		Voluntary: Foot strength & recovery beach	4x(4 drop jumps in comb. with drills)  <b>Speed</b> 2x passing, sr. 8' 2x receiving  2-3x 30m flying, r. 15'  <b>Special Strength</b> 3x(16 lunges 30-40kg, 25m skip for height, 16 flat lunges (sled) 25kg, 25m skip for distance, 16 straight lunges, 25m fast skips)		
	Main Load	CNS	CNS / Metabolic			CNS		

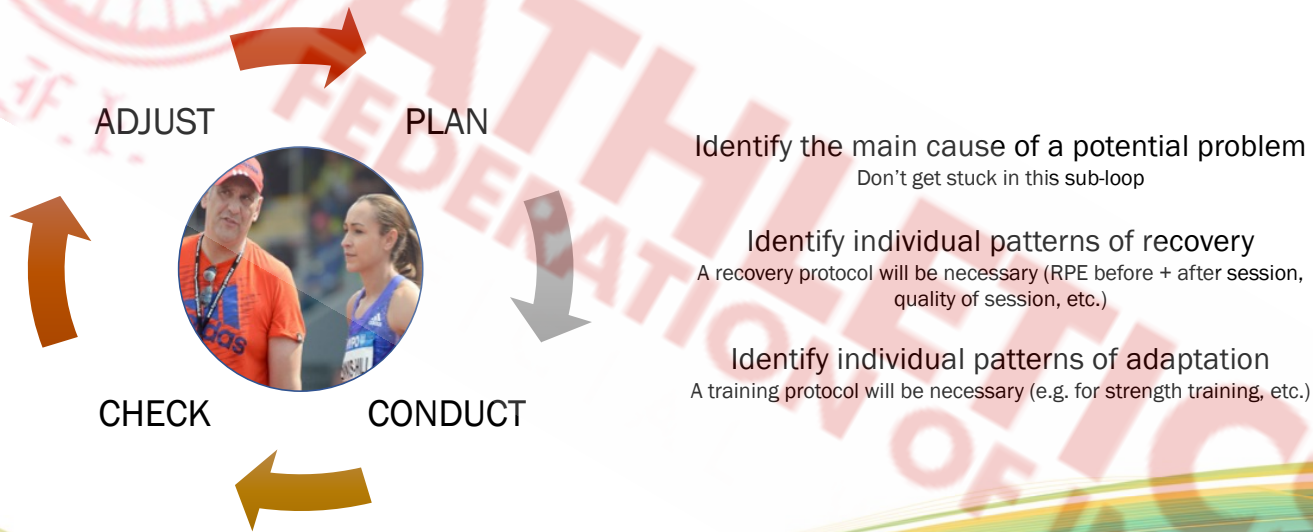
When training sessions with different objectives and varying demands follow each other, it may not be necessary to wait for complete recovery.

# MICROCYCLE CONSTRUCTION RULES

- Avoid accumulated fatigue (same / similar demands in successive units)
- Keep variation high (choose different exercises) and avoid monotony
- Provide sufficient recovery (will change throughout the career)
- Improve recovery mechanisms during an athletes' career
- Only affect CNS when fully recovered
- Avoid intensive sessions the day after anaerobic-lactic loads

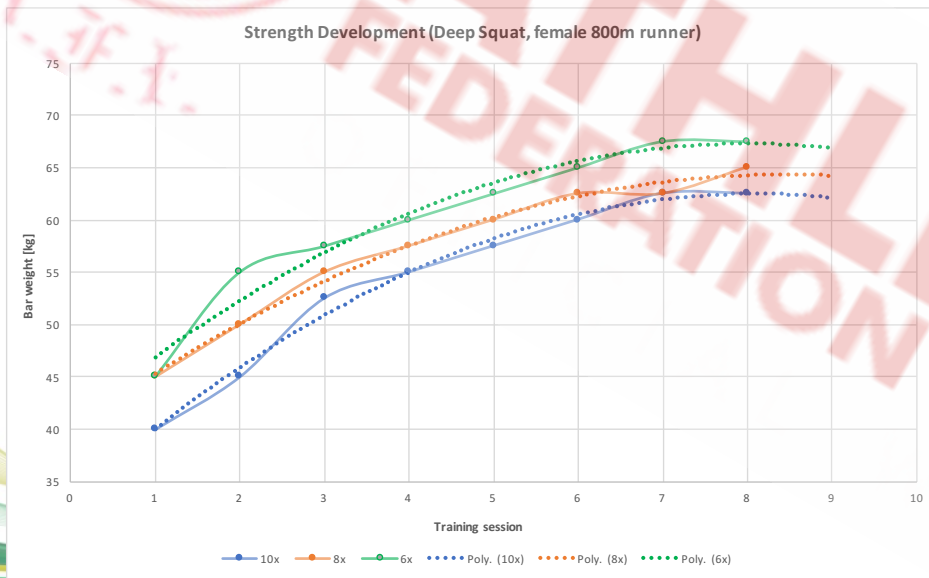


# CONDUCT / CHECK / ADJUST



# AVOID MONOTONY

How long does it take you to develop the necessary capability?



# MICROCYCLE CHECKLIST

1. Is the content and structure appropriate for the stage of athlete development?
2. Is the content appropriate for the period?
3. Is the content appropriate for the phase?
4. Is the loading level appropriate?
5. Is there a balance of load / recovery and sufficient time for adaptation?
6. Are loadings appropriately specific to achieve the objectives?
7. Is there variety within and between sessions?
8. Are the various bio-motor abilities integrated?
9. Has utilisation and interference been taken into account?

According to World Athletics, CECS L2

# TAPERING & PEAKING



The purpose is not to 'train' any longer, but to wait for the accumulation of bio-motor abilities

## Volume

- Reduce volume (number of training) sessions by approximately 10-15%
- Reduce volume (duration of a single session) by approximately 30-40%

## Intensity

- Adjust intensity according to athlete (gender and age differences)
- Follow 9/10-day rule

# TAPERING & PEAKING

## 9/10-day rule (for speed related events)

**Table 5** Charlie Francis' 10-day tapering plan

Days to competition	Training prescription
10 days before	Spikes on track: 4 × 30 m from blocks with full recovery, 80-100-120-150-m flying sprints with maximal intensity, full recovery (i.e., 20–35 min between sprints)
9 days before	Trainers on grass: 10 × 200 m tempo runs with 100-m walking in between
8 days before	Spikes on track: 4 × 30 m from blocks and 1 × 120 m at 95% intensity, full recovery
7 days before	Trainers on grass: 2 × 10 × 100 m tempo runs with 100-m walking in between
6 days before	Spikes on track: 4 × 30 m from blocks and 1 × 150 m at 95% intensity, full recovery
5 days before	No training
4 days before	Spikes on track: 4 × 30 m from blocks and 1 × 80 m at 95% intensity, full recovery
3 days before	Trainers on grass: 10 × 100 m tempo runs with 100-m walking in between
2 days before	Spikes on track: 4 × 30 m from blocks at 95% intensity, full recovery
1 day before	No training

Haugen, 2020

**Last intensive 'lactic' session** (9 or 10 days before comp)

**Followed by aerobic ,maintenance'** (6 to 8 days before comp)

**Last short ,speed' session** (4 to 6 days before comp)

**Followed by power ,maintenance'** (3 to 4 days before comp)

**Pre-tensing** (1 or 2 days before comp)

Volker Herrmann, 2020



# TAPERING & PEAKING

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
16/03/20	17/03/20	18/03/20	19/03/20	20/03/20	21/03/20	22/03/20
Block Starts Relay	Power (Clean) Plyos (react. Depth jumps)	Core Extensive Intervals (short)				
Power / Speed Strength			Pre-tensing	1st Grand Prix		
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
23/03/20	24/03/20	25/03/20	26/03/20	27/03/20	28/03/20	29/03/20
	Pre-tensing (strength)	2nd Grand Prix		Pre-tensing		3rd Grand Prix