

# **“AM I TRAINING CORRECTLY”**

**Dave Sunderland**

# TRAINING ENVIRONMENT?

- ◆ WHAT ARE YOUR AIMS?
- ◆ ARE YOU GOING TO TRAIN ALONE WITH YOUR HOME COACHES SCHEDULE?
- ◆ ARE YOU GOING TO DO THE UNIVERSITY TRAINING SESSIONS WHERE APPROPRIATE?
- ◆ ARE YOU GOING TO BUY COMPLETELY INTO THE THE UNIVERSITY TRAINING PROGRAMME?



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# TRAINING ENVIRONMENT?

- ◆ IF YOU TRAIN INDEPENDENTLY YOU NEED TO INDICATE AVAILABILITY FOR TEAM SELECTION.
- ◆ IF YOU ARE JUST GOING TO DO CERTAIN SESSIONS YOU MUST INFORM JENNY BEFOREHAND WHICH SESSIONS?
- ◆ IF YOU ARE DOING SOLELY THE UNIVERSITY TRAINING PLAN YOU MUST INFORM JENNY AND YOUR COACH?
- ◆ BUT WHATEVER YOUR DECISION YOU MUST COMMUNICATE! (weekly diary by email)



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# WHAT ARE YOU TRYING TO ACHIEVE WITH YOUR TRAINING PLAN?

- ◆ DEVELOP AND PROGRESS
- ◆ IMPROVE BOTH PERFORMANCE AND FITNESS LEVELS
- ◆ ACHIEVE REALISTIC GOALS



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# AIM OF A SESSION?

- ◆ WHAT ARE WE TRYING TO ACHIEVE?
- ◆ WHY DO WE WANT TO ACHIEVE THIS EFFECT?
- ◆ HOW DO WE AIM TO ACHIEVE IT?
- ◆ WHERE IN THE TRAINING CYCLE SHOULD IT BE?
- ◆ DO WE NEED TO DO THIS OFTEN TO ACHIEVE LASTING RESULTS?
- ◆ WHO BENEFITS FROM THIS SESSION?



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# WHAT ENERGY PATHWAYS ARE WE TRYING TO TRAIN?

- ◆ ALACTATE – ATP-PC System – Start up system
- ◆ ANAEROBIC – Acidosis Tolerance
- ◆ AEROBIC – Oxygen System



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# Energy Pathways

## Mixers



Alactate

Anaerobic

Aerobic

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# “What Adaptation are we After?”

- ◆ ALACTATE – Pure Speed
- ◆ ANAEROBIC – Speed Endurance
- ◆ AEROBIC – Oxygen Transportation/Utilization



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# WHAT EVENT ARE WE TRAINING FOR?

- ◆ 400m/800m
- ◆ 800m
- ◆ 800m/1500m
- ◆ 1500m
- ◆ 1500m/5k
- ◆ 5k
- ◆ 5k/10k/XC
- ◆ Marathon



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# ENERGY PERCENTAGES

<u>DISTANCE</u>	<u>ATP/CP</u>	<u>ANAEROBIC-LACTATE</u>	<u>AEROBIC</u>
100m	25%	70%	5%
200m	15%	60%	25%
400m	12%	43%	45%
800m	10%	30%	60%
1500m	8%	20%	72%
3000m	5%	15%	80%
5000m	4%	10%	86%
10000m	3-2%	12-8%	85-90%
Marathon	0%	5-2%	95-98%

- Shares of energy supply mechanisms during different track events. (According to Mader)

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Using these energy systems, training can be broadly split into 6 zones based around key physiological landmarks:-

**Lactate Threshold (LT) Lactate Turnpoint (LTP) and Maximal Oxygen Uptake (VO2 Max)**



## Description of the Training Zones

Zone	1	2	3	4	5	6
Description	Recovery	Easy	Steady	Tempo/Extensive Aerobic Intervals	Intensive Aerobic Intervals	Speed Endurance (Anaerobic Speed)
Perceived Exertion	Very easy	Easy	Comfortable	Uncomfortable	Very stressful	Maximal
Breathing reference	Very easy to talk	Easy to talk	Ok to talk	Hard to talk	Cannot talk	NA
Typical %HRmax	<60%	<80%	81-89%	90-95%	96%-Max	NA
Typical [La] range (mM)		<2.0	1.0-4.0	4.0-9.0	9.0-12.0	12.0-22.0

Coaches working with younger athletes should ensure that they plan sessions targeting all the different training zones as training at different levels of intensity is important and coaches must, particularly, appreciate the dangers of excess in both volumes and intensity – whilst also realising just how much can be possible with appropriate constraints and good sense.

# Other Requirements in the Training Programme

- ◆ Technique – Running Efficiency/Economy
- ◆ Core – Underpins Technique
- ◆ Physical Preparation – Stabilises Technique
- ◆ Mobility – Range of Movement/Injury Prevention
- ◆ Power – Explosive Speed (Speed at Strength)
- ◆ Strength Endurance – Durability
- ◆ Tactics
- ◆ Nutrition



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# WHEN IN THE SEASON TO USE?

- ◆ ALACTATE – ALL YEAR
- ◆ ANAEROBIC – END OF SPECIFIC PREPARATION PHASE >  
(March > September)
- ◆ AEROBIC – ALL YEAR



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# WHAT DETERMINES THE TRAINING EFFECT?

- ◆ VOLUME – Number of Repetitions/Sets
- ◆ RECOVERY – Duration
- ◆ INTENSITY – Speed of the repetitions
- ◆ ADAPTATION



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# BALANCE



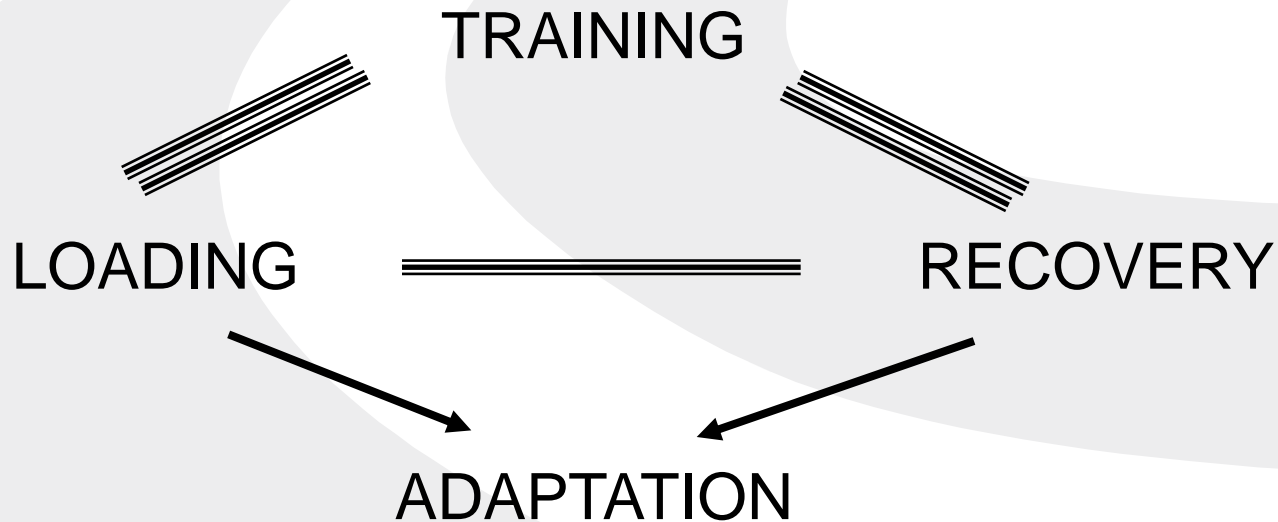
**VOLUME**  
(Endurance)

**V**

**INTENSITY**  
(Speed)



# LOAD/RECOVERY BALANCE

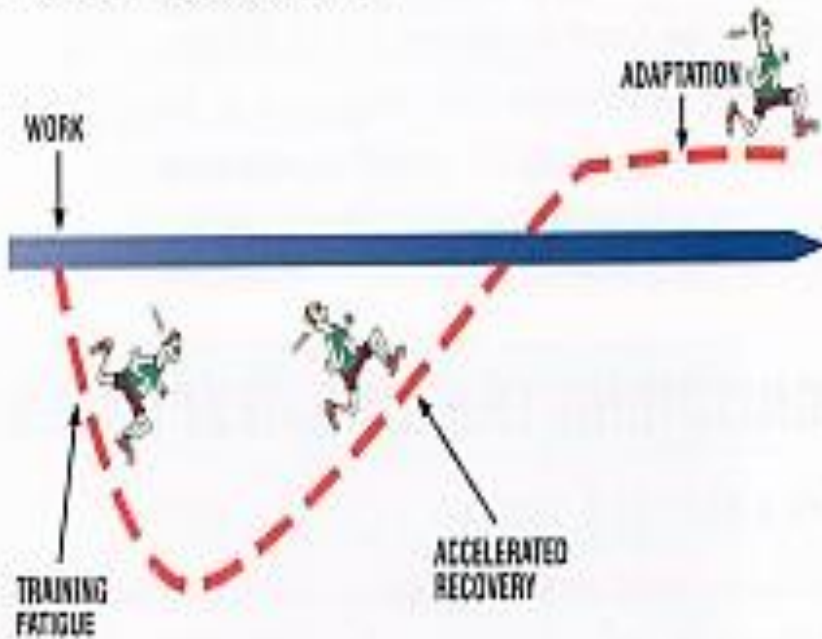


Increased training load require increased recovery to ensure appropriate adaptation

**Failure to restore homeostasis results in  
OVERTRAINING**

# REGENERATION

RECOVERY ACTIVITIES SPEED-UP  
TRAINING ADAPTATIONS



Work Optimally  
+ Recover Well  
=  
Best Adaptation

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# HOW TO USE IT

- ◆ Mixers
- ◆ Balance
- ◆ Event Specific Training
- ◆ Adaptation
- ◆ Young Athlete
- ◆ Developing Athlete
- ◆ Mature Athlete



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# RECOVERY FROM INTENSE TRAINING

Area of Recovery	Time Required
Creatine Phosphate (CP)	4 – 6 minutes
Heart Rate and Blood Pressure returns to Normal	20 minutes
Blood Glucose improves after Carbohydrate intake	20 – 30 minutes
Homeostasis and lactate below 3mmols	30 minutes – 1 Hour
Neuromuscular/sensor motor recovery of muscle	2 Hours
Restoring of Glycogen stores in the Liver <sup>[3]</sup>	1 Day
Refill of Glycogen in high loaded Muscles <sup>[3]</sup> Together with muscle glycogen it can be replenishes in a Day with optimal carbohydrate intake.	2 – 7 Days
Refill of Fat in the muscles Can be earlier (1 day) following optimal fat intake	3 – 5 Days
Regeneration of proteins in muscle fibres.	3 – 10 days

# THE KEY AREAS OF A TRAINING PLAN

- ◆ All Athletes are Individuals
- ◆ Strengths/Weaknesses of Athletes
- ◆ Event
- ◆ Planning & Preparation are Key
- ◆ Supplementary Training
- ◆ Support Systems
- ◆ Balance
- ◆ Regeneration
- ◆ Competition Programme



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**ANY QUESTIONS!**