Realização

ENDURANCE SUMMIT OUTUBRO 2023

07 de Outubro | Transamerica Expo Center

11º NE SPORTS NUTRITION EXPO 2023

SPORTS MEDICINE SUMMIT 23

ARENA CLINIC EXPERIENCE

Realização

ENDURANCE SUMMIT OUTUBRO 2023

07 de Outubro | Transamerica Expo Center

TREINAMENTO POLARIZADO OU PIRAMIDAL, QUAL É MELHOR NO ENDURANCE?

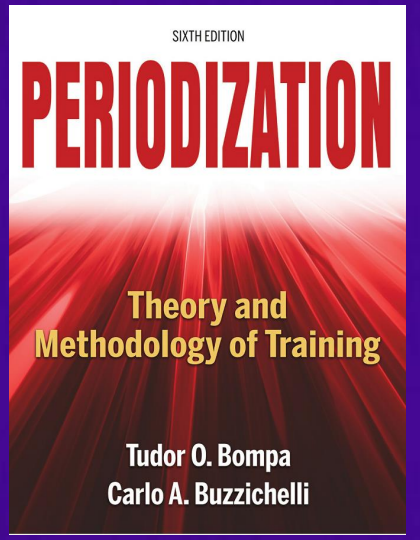
Prof Ms. Carlos Eduardo Polazzo Machado - Cadu Polazzo

PERIODIZAÇÃO

OBJETIVOS:

1) ESTAR NA MELHOR PERFORMANCE NO PERÍODO DESEJADO

2) EVITAR O EXCESSO DE TREINO



PERIODIZAÇÃO

Chart of the Annual Plan

Athlete's name

Training objectives

		Performance	Tests/Standards	Physical prep	Technical prep	Tactical prep	Psych prep

		Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
Dates	Months													
	Weeks	18 25 1	8 15 22	1 8 15 22	29 5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27	4 11
Competitions	Domestic				X X X			X X X			X X X			
	International													
	Location				Toronto Toronto Toronto Calgary			Toronto Toronto Montreal N.Y.			Toronto Toronto Toronto Frankfurt		Amsterdam	
Periodization	Training phase	Preparatory 1			Competitive 1	T	Preparatory 2	Competitive 2	T	Preparatory 3		Competitive 3		T
	Subphase	GP		SS sp train	PC Comp	T	GP SP	PC Comp	T	GP SP		PC Comp		T
	Strength	AA	MxS		Power	T	MxS Power		T	MxS		Power		AA
	Endurance	Aerobic	Anaerobic	SS end		Anaerobic	SS end		Aerobic	Anaerobic		SS end		Aerobic
	Speed		SS sp train				SS sp train					SS sp train		
	Skill acquisition	Fund	Adv	Game simulation		Fund Adv	Game simulation		Adv			Game simulation		
	Psychological	Imag/Visual		Stress man		Visualization	Stress man		Visualization			Stress man		Relax
	Nutrition	Bal	Protein	Carbohydrate		Bal Protein	Carbohydrate		Bal	Prot		Carbohydrate		Bal
	Macrocycles	1	2	3	4	5	6	7 8	9 10	11	12	13	14	15
	Microcycles	1 2 3 4 5 6 7 8 9	10 11 12 13 14 15			16 17 18 19 20 21 22 23 24		25 26 27 28 29	30 31 32 33 34 35 36		37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52			
Peaking index		4	4	3	2	4	3	2 4	4	3	3	2	2 1	5
Testing dates														
Medical control dates														
Forms of prep	Club													
	Camp/Semicamp													
	Rest													

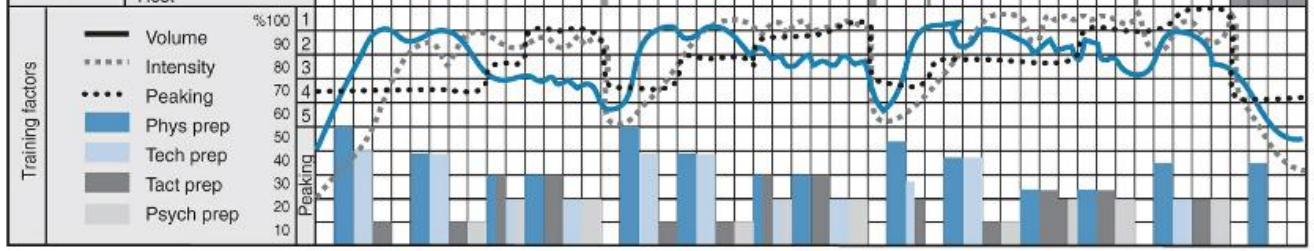
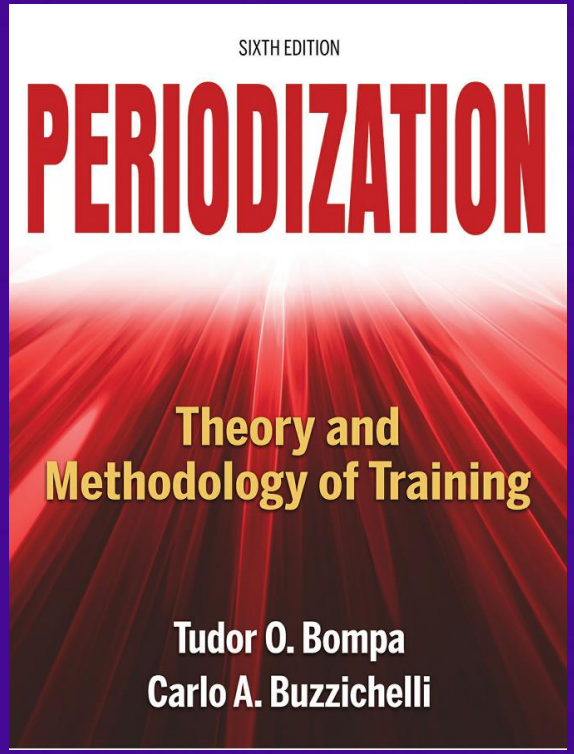


FIGURE 8.13 Tri-cycle annual training plan for martial arts.

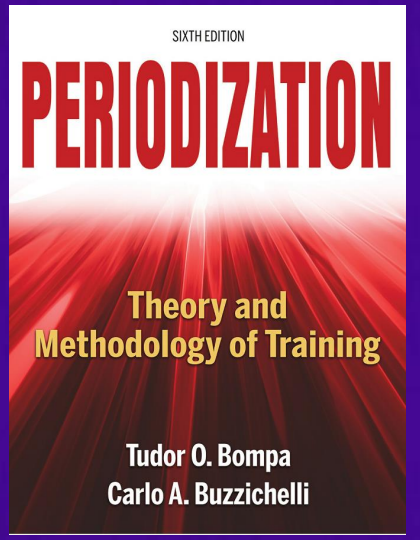
Prep. = preparations; comp. = competitive; T = transition; GP = general preparation phase; SS sp. train = sport-specific speed training; PC = precompetition phase; SP = specific preparation phase; AA = anatomical adaptation; MxS = maximum strength; SS end. = sport- specific endurance; fund. = fundamental; adv. = advanced; imag./visual = imagery and visualization; stress. man. = stress management; relax = relaxation; bal. = balanced.



PERIODIZAÇÃO

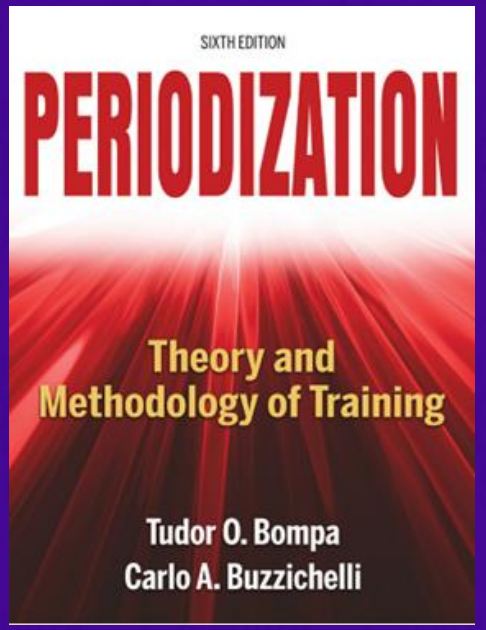
- COMO EVITAR O EXCESSO DE TREINO?

- COMO DISTRIBUIR O VOLUME E A INTENSIDADE NA PERIODIZAÇÃO?



PRINCÍPIOS BÁSICOS DO TREINAMENTO

- SOBRECARGA PROGRESSIVA
- ESPECIFICIDADE
- REVERSIBILIDADE
- INDIVIDUALIDADE



RELAÇÃO DOSE - RESPOSTA

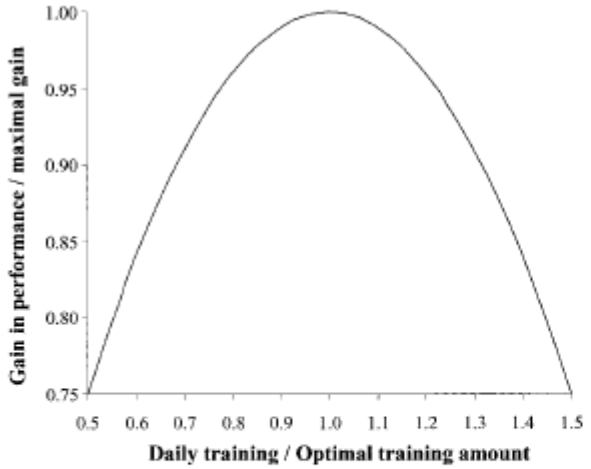


FIGURE 3—Gain in performance at steady state for a same training amount repeated each day. Performance gain was expressed according its maximal value. Training amount was referred to optimal training yielding maximal gain in performance. Computations were made with the model proposed in this study with $\tau_1 = 30$ d, $\tau_2 = 17$ d, $\tau_3 = 2$ d, $k_1 = 0.03$ arbitrary units, and $k_3 = 0.000035$ arbitrary units.

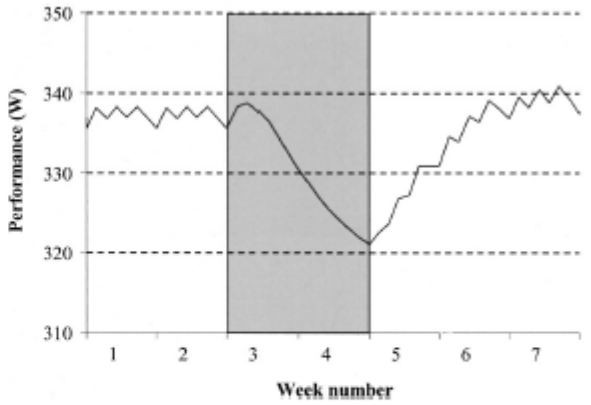


FIGURE 4—Variation over time in performance. Weeks 1 and 2: steady state with training doses of 450 t.u. 3× wk^{-1}. Weeks 3 and 4: overtraining with a daily training dose of 400 t.u. Weeks 5–7: recovery with training doses of 200 t.u. 3× wk^{-1}. Computations were made with the model proposed in this study with $\tau_1 = 30$ d, $\tau_2 = 17$ d, $\tau_3 = 2$ d, $k_1 = 0.03$ arbitrary units, $k_3 = 0.000035$ arbitrary units, and $p^* = 240$ W.

Variable Dose-Response Relationship between Exercise Training and Performance

THIERRY BUSSO
Research Group, Physiology and Physiopathology of Exercise and Handicap, University of Saint-Etienne, FRANCE

RELAÇÃO DOSE/RESPOSTA: SUPERCOMPENSAÇÃO

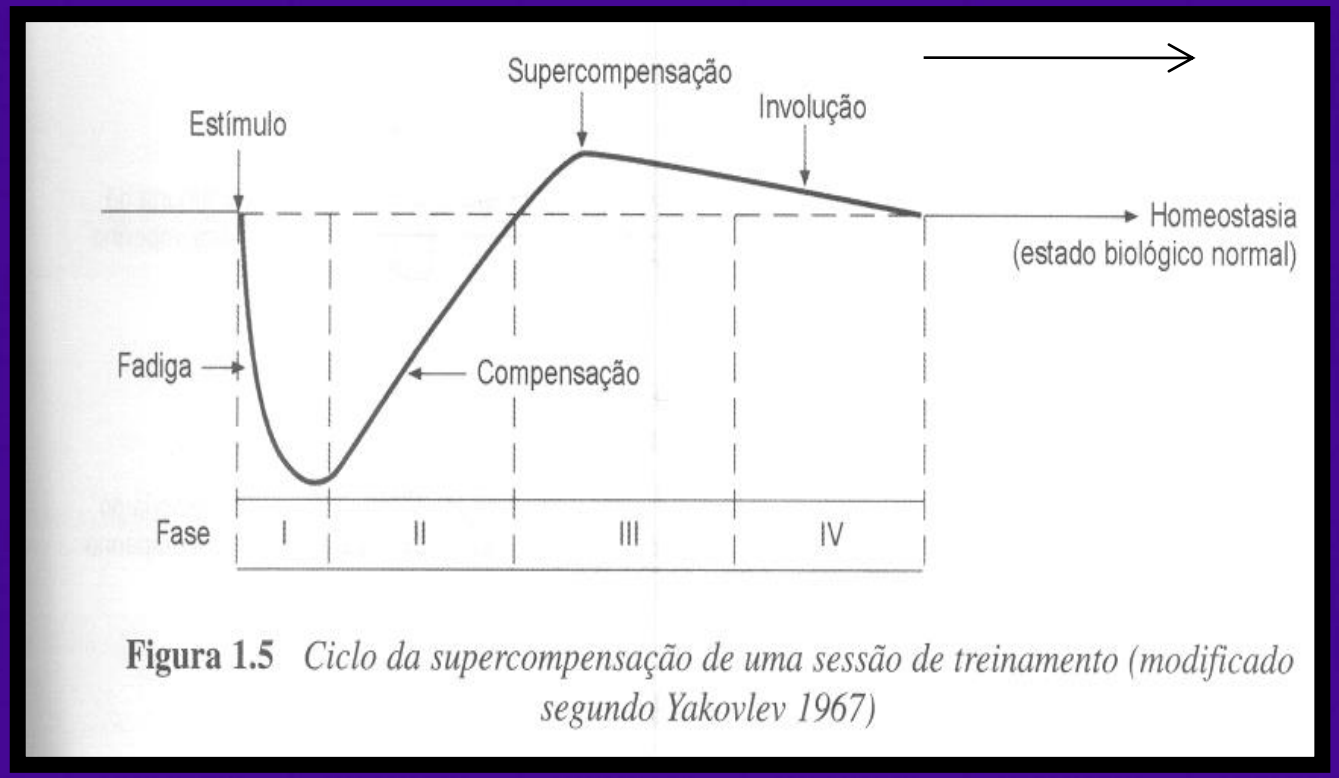
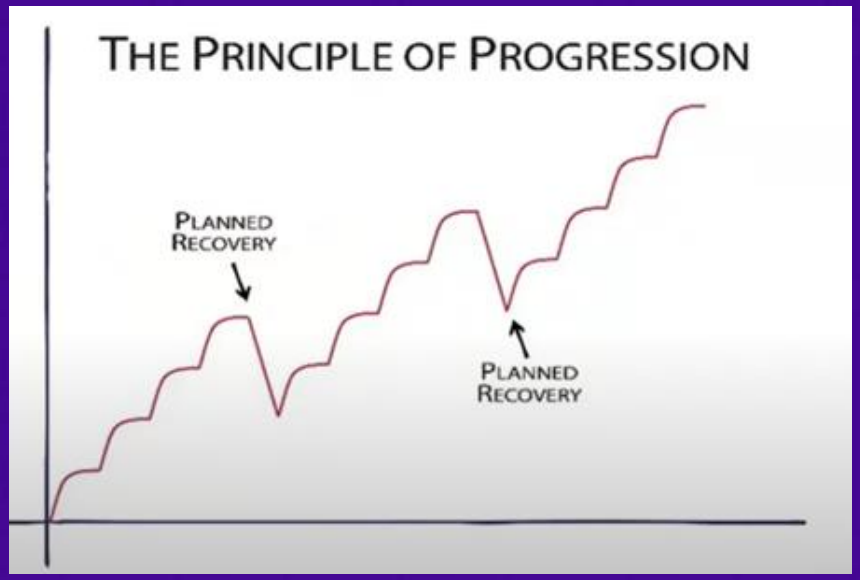
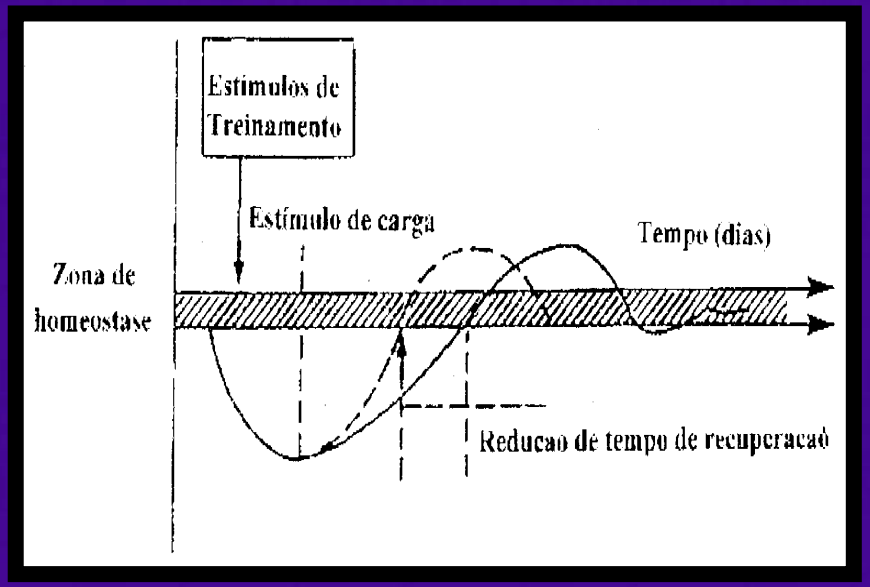


Figura 1.5 *Ciclo da supercompensação de uma sessão de treinamento (modificado segundo Yakovlev 1967)*

ESTÍMULOS E RECUPERAÇÃO ADEQUADOS





ESTÍMULOS SEM RECUPERAÇÃO ADEQUADA

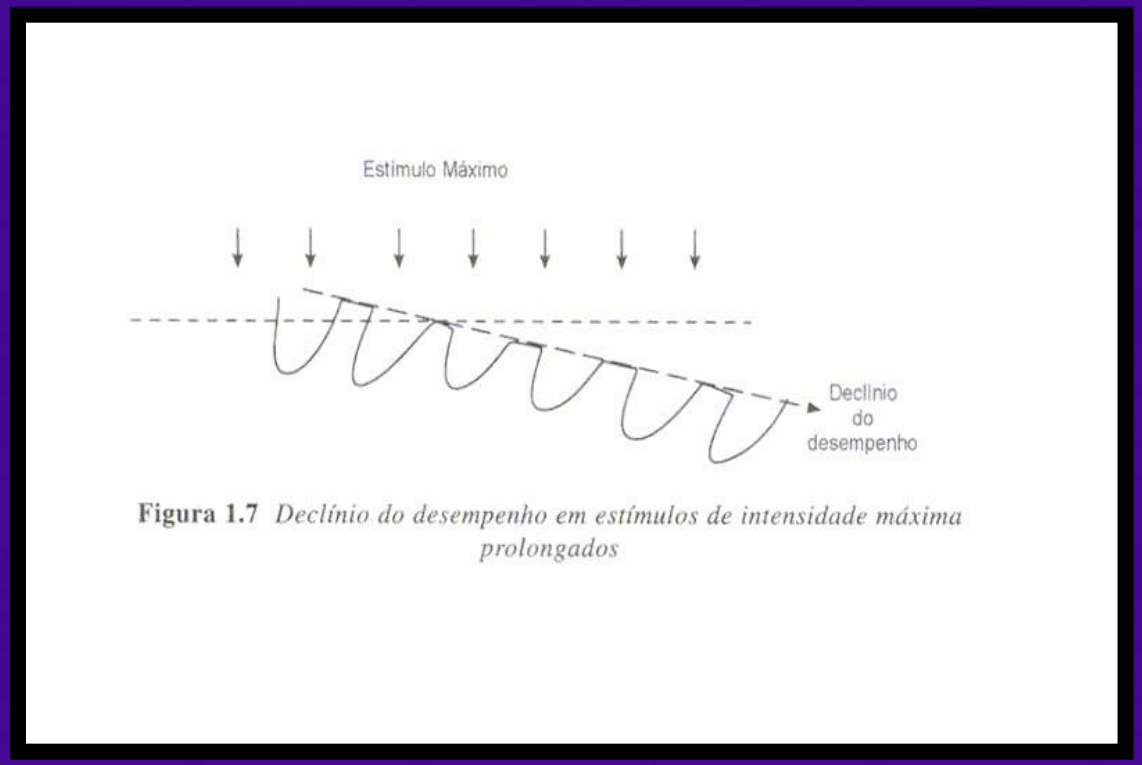


Figura 1.7 *Declínio do desempenho em estímulos de intensidade máxima prolongados*

DOSE E TEMPO DE RECUPERÇÃO

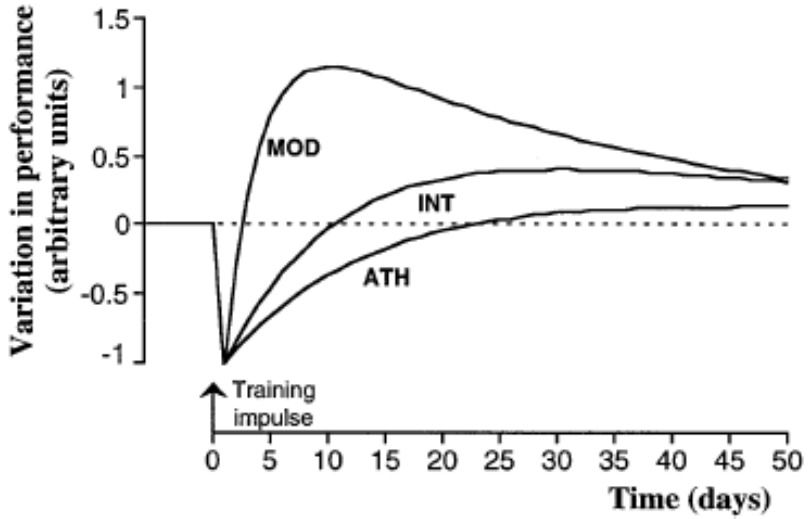


Fig. 1. Response of performance to a training dose leading to a decrease of 1 arbitrary unit 1 day after training completion. MOD, subject doing moderate training (data from Ref. 8); INT, subject doing intensive training (data from Ref. 20); ATH, athlete (data from Ref. 7).

Modeling of adaptations to physical training by using a recursive least squares algorithm

THIERRY BUSSO, CHRISTIAN DENIS, RÉGIS BONNEFOY, ANDRÉ GEYSSANT, AND JEAN-RENÉ LACOUR
Laboratoire de Physiologie-Groupement d'Intérêt Public Exercice, Faculté de Médecine Saint-Etienne, 42023 Saint-Etienne cedex 2; and Laboratoire de Physiologie-GIP Exercice, Faculté de Médecine Lyon-Sud, 69921 Oullins cedex, France

TEMPO PARA SUPERCOMPENSAÇÃO

Modeling of adaptations to physical training by using a recursive least squares algorithm

THIERRY BUSSO, CHRISTIAN DENIS, RÉGIS BONNEFOY, ANDRÉ GEYSSANT, AND JEAN-RENÉ LACOUR
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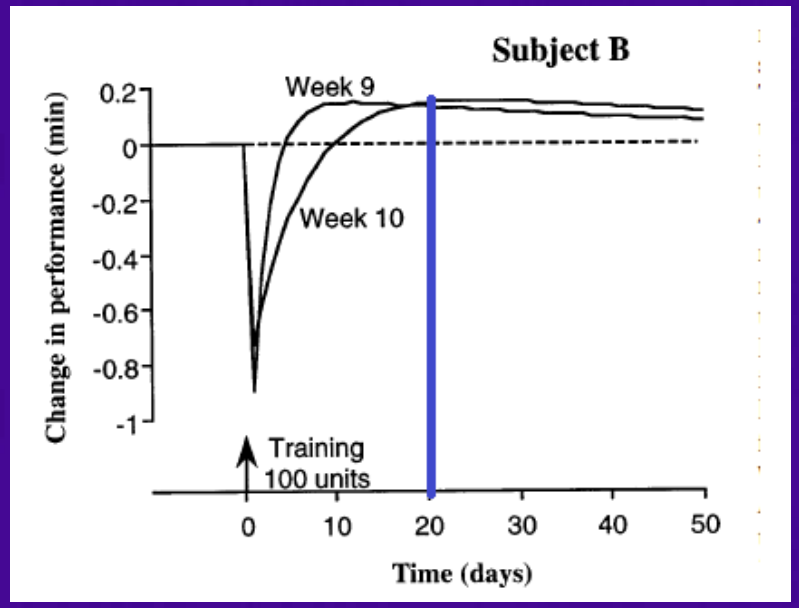


Fig. 8. Response of performance to a single training dose of 100 units computed from parameters estimated in *weeks 9* and *10* by using time-varying model.

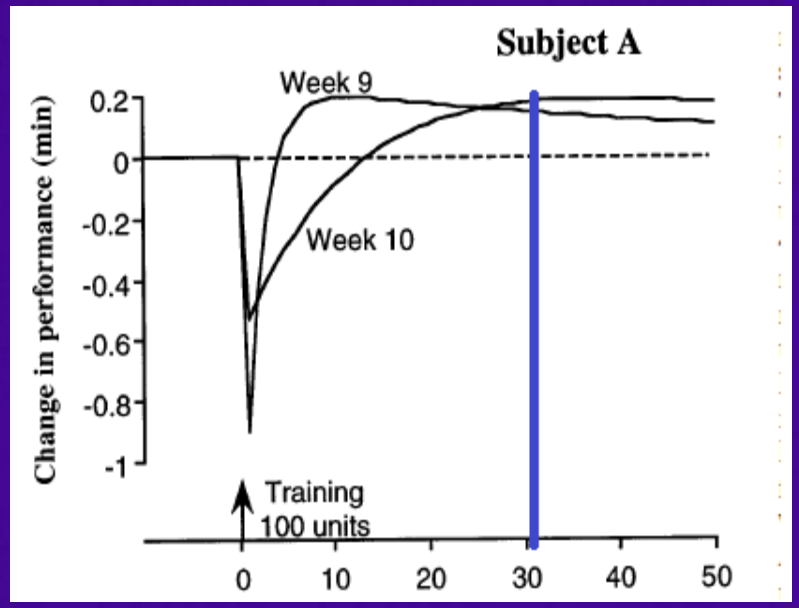


Fig. 8. Response of performance to a single training dose of 100 units computed from parameters estimated in *weeks 9* and *10* by using time-varying model.

PERIODIZAÇÃO EFICIENTE:

1- RELAÇÃO DOSE-RESPOSTA

2- TEMPO DE RECUPERAÇÃO ADEQUADOS ENTRE OS ESTÍMULOS

3 - SEGUIR OS PRINCÍPIOS BÁSICOS DO TREINAMENTO

PERIODIZAÇÃO EFICIENTE:

4 – OUTROS FATORES QUE INFLUENCIAM:

a) SONO, DESCANSO E METÓDOS DE RECUPERAÇÃO
b) NUTRIÇÃO E MEDICINA DO ESPORTE
c) PSICOLOGIA
d) ESTRESSORES: EMOCIONAIS, SOCIAIS E FINANCEIROS

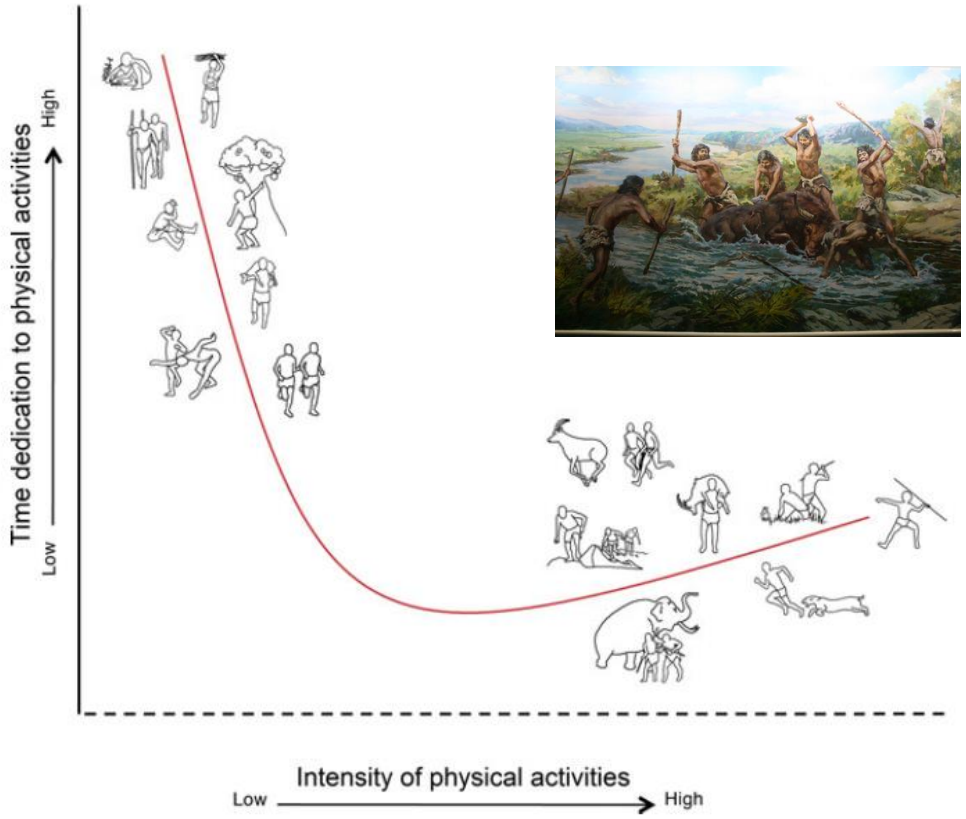
PERIODIZAÇÃO

COMO DISTRIBUIR AS INTENSIDADES DE TREINO?

COMO OS GRANDES ATLETAS TREINAM?

ATLETAS OLIMPÍCOS TREINAM COMO NA ERA PALEOLÍTICA?

Fig. 1 Hypothetical distribution of *Homo sapiens*' physical activities during the Paleolithic Era



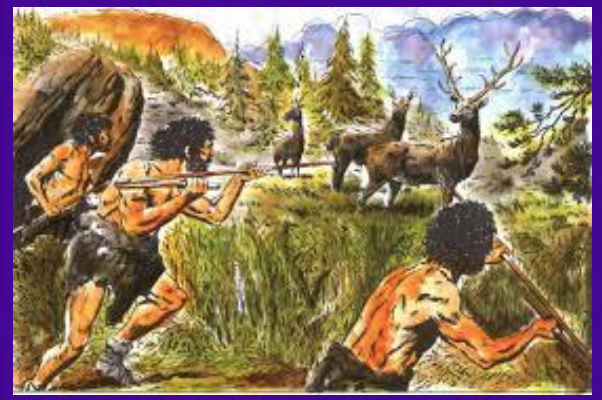
- Nômades
- Caça, pesca e colheita de frutos.
- 2,5mi a 12mil a.c.

Sports Med
DOI 10.1007/s40279-013-0086-1

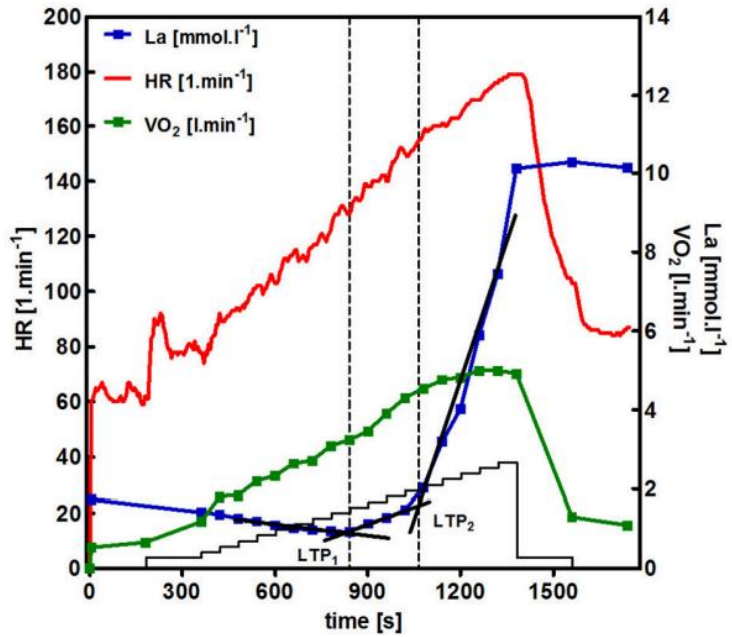
CURRENT OPINION

Do Olympic Athletes Train as in the Paleolithic Era?

Daniel A. Boullosa · Laurinda Abreu · Adrián Varela-Sanz · Iñigo Mujika

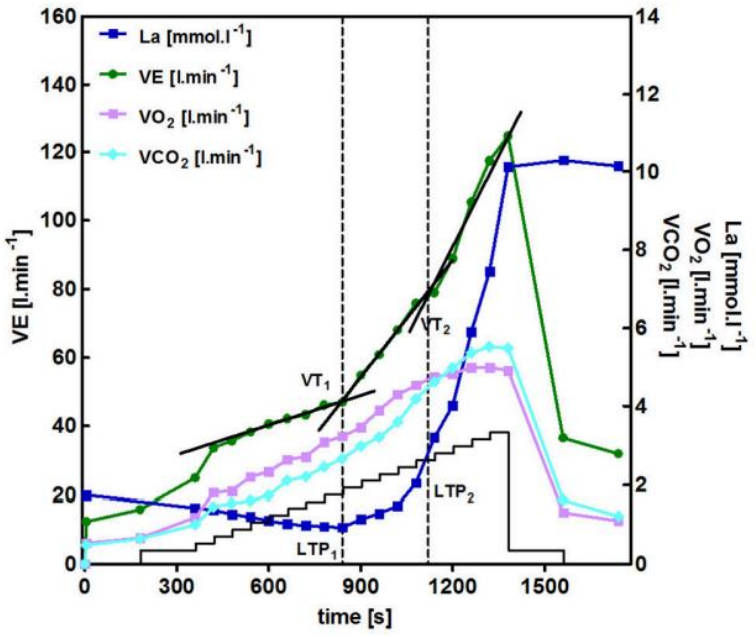


DETERMINAÇÃO DAS ZONAS DE INTENSIDADE



LTP_1:
P: 197 W (51.8% P_{max})
VO_2: 3.20 l.min^{-1} (64.0% VO_{2max})
HR: 129 min^{-1}
La: 1.5 mmol.l^{-1}

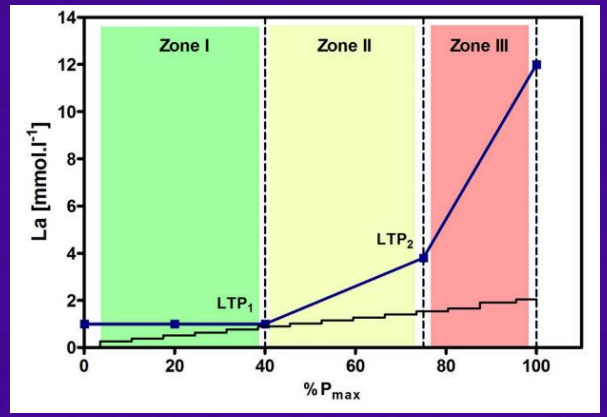
LTP_2:
P: 284 W (74.7% P_{max})
VO_2: 4.59 l.min^{-1} (91.8% VO_{2max})
HR: 159 min^{-1}
La: 2.5 mmol.l^{-1}



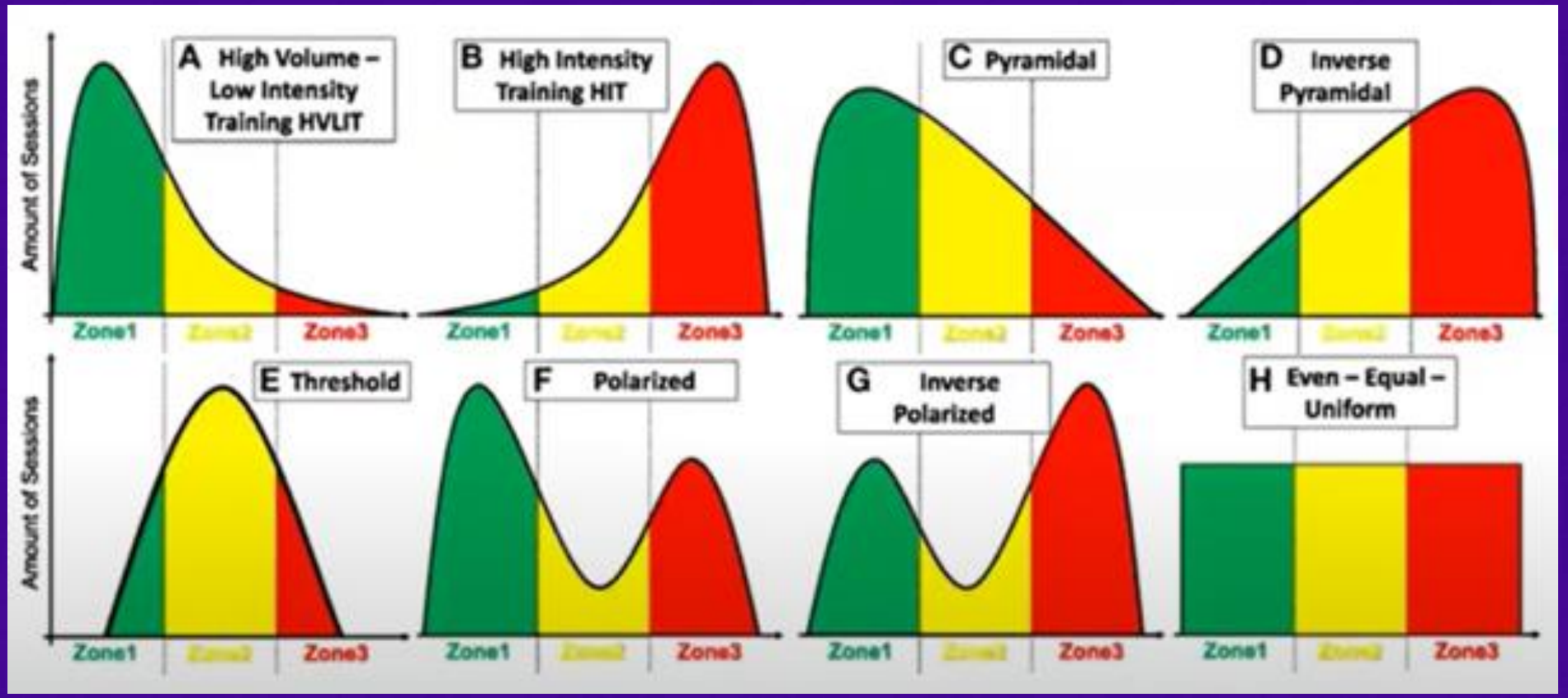
VT_1:
P: 200 W (52.6% P_{max})
VO_2: 3.23 l.min^{-1} (64.6% VO_{2max})
HR: 130 min^{-1}
La: 1.5 mmol.l^{-1}

VT_2:
P: 282 W (74.2% P_{max})
VO_2: 4.57 l.min^{-1} (91.4% VO_{2max})
HR: 159 min^{-1}
La: 2.4 mmol.l^{-1}

FIGURE 1 | Time course of heart rate (HR), oxygen uptake (VO_2), and lactate (La) as well as the first (LTP_1) and the second (LTP_2) lactate turn point during an incremental cycle ergometer exercise test in a well-trained cyclist (A). Time course of ventilation (VE), oxygen uptake (VO_2), carbon dioxide output (VCO_2), and lactate (La) as well as the first (VT_1) and the second (VT_2) ventilatory turn point during incremental cycle ergometer exercise in a well-trained cyclist **(B)**.

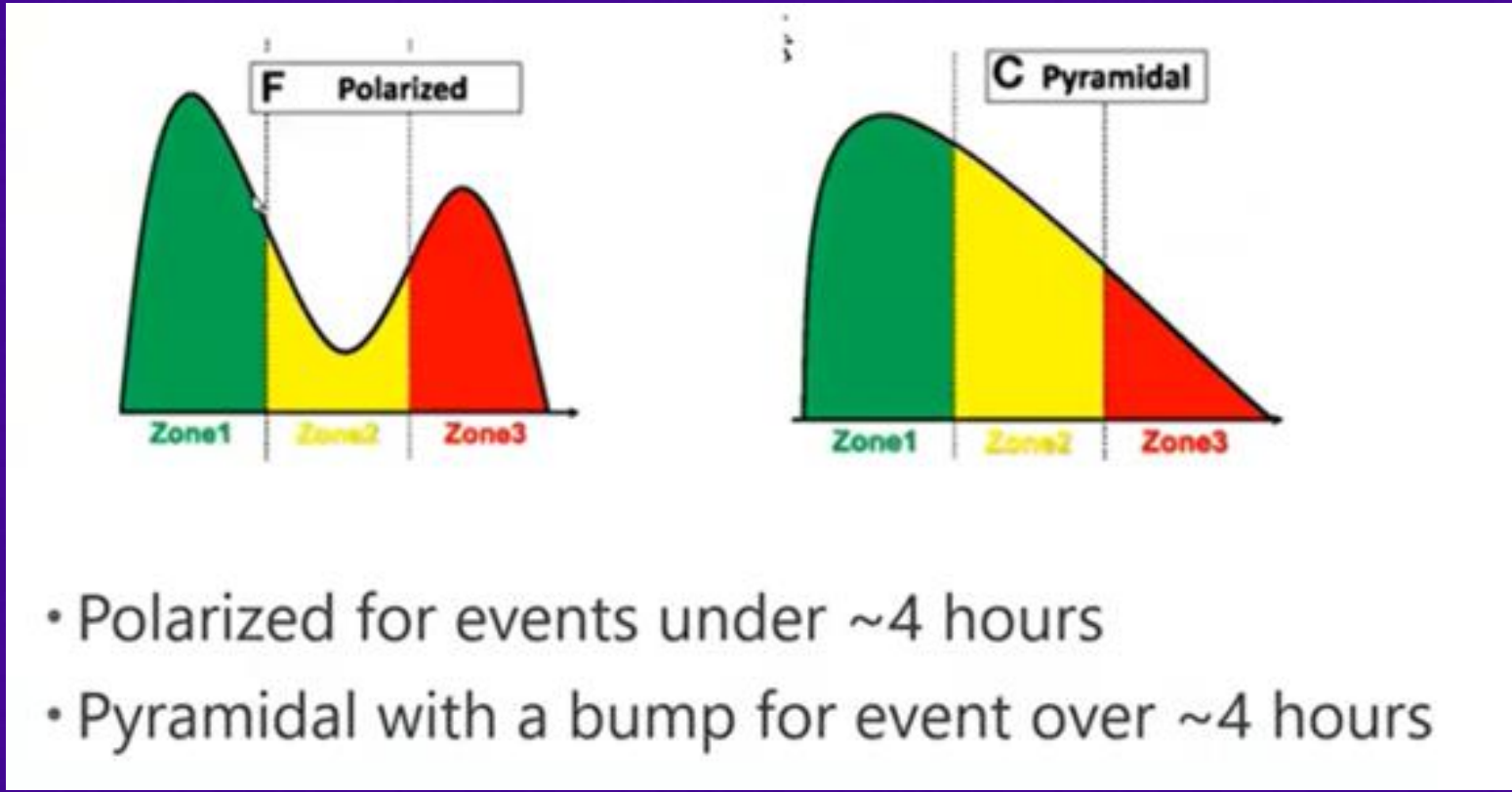


TIDOS DE DISTRIBUIÇÃO DE INTENSIDADE DE TREINO



Tim Cusick
TrainingPeaks WKO Product Leader
Master Coach, Velocious Endurance Coaching

TIDOS DE DISTRIBUIÇÃO DE INTENSIDADE DE TREINO



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COMO OS ATLETAS DE PONTA TREINAM?

The Road to Gold: Training and Peaking Characteristics in the Year Prior to a Gold Medal Endurance Performance

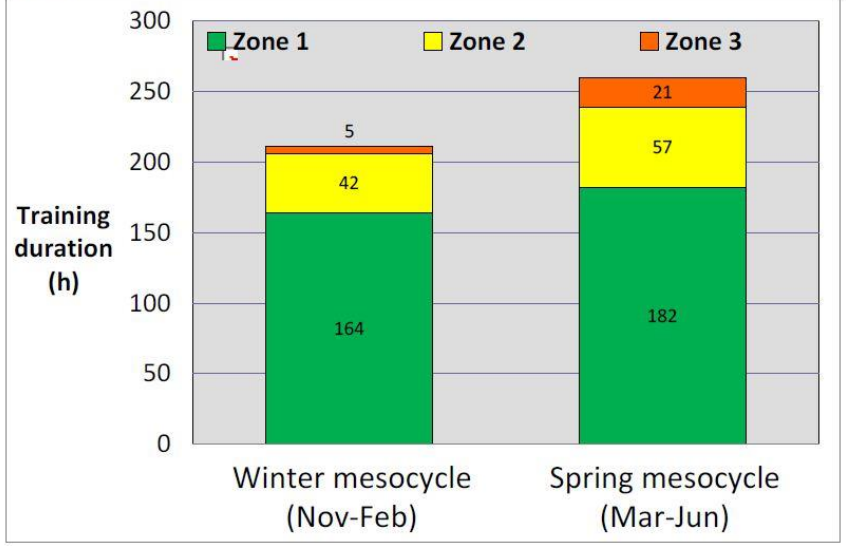
Espen Tønnessen[1]*, Øystein Sylta[2], Thomas A. Haugen[1], Erlend Hem[1], Ida S. Svendsen[3], Stephen Seiler[2]

1 The Norwegian Olympic Federation, Oslo, Norway, **2** Faculty of Health and Sport Sciences, University of Agder, Kristiansand, Norway, **3** School of Sport, Exercise and Health Sciences, Loughborough University, Leicestershire, United Kingdom

1) 90% DO VOLUME EM BAIXA INTENSIDADE (65 A 80% DA FCMÁX)

2) 10% DO VOLUME EM INTENSIDADE ALTA (81 A 100% FCMÁX)
   - 23% DAS SESSÕES SÃO DE INTERVALADOS (HIIT)

Figure 2. Cycling intensity and volume of elite Spanish U23 cyclists training in the period November to June. Data redrawn from Zapico et al. (Zapico et al., 2007).



DISTRIBUIÇÃO DAS INTENSIDADES DE TREINO

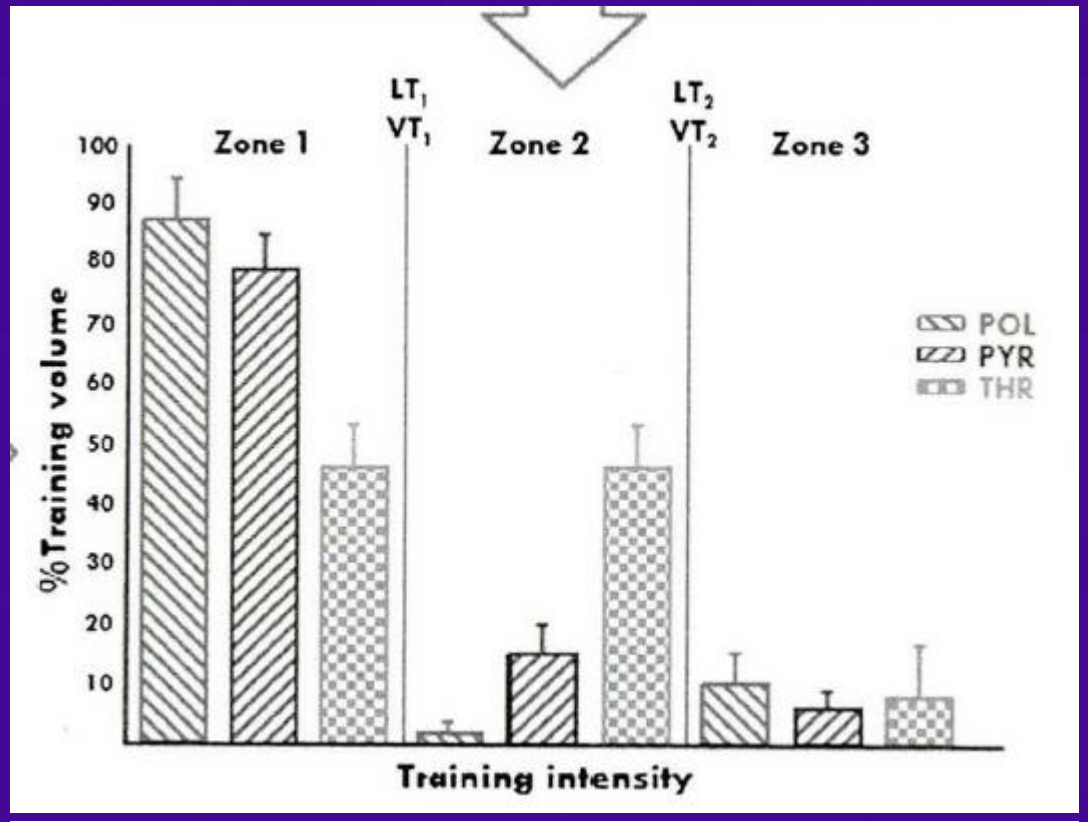


Figure 1 — Models of TID and overview of the variety of evidence-based (——) and influencing (- - - -) determinants for a POL or PYR TID in elite athletes. Mean and SD of the different TID models are obtained from literature.[7,8,10–15] LT_1 indicates first lactate threshold; LT_2, second lactate threshold; POL, polarized model; PYR, pyramidal model; THR, threshold model; TID, training-intensity distribution; VT_1, first ventilatory threshold; VT_2, second ventilatory threshold.

International Journal of Sports Physiology and Performance, 2019, 14, 1151-1156
https://doi.org/10.1123/ijspp.2018 0722

Human Kinetics
INVITED COMMENTARY

Perspectives and Determinants for Training-Intensity Distribution in Elite Endurance Athletes

Jan G. Bourgois, Gil Bourgois, and Jan Boone

DISTRIBUIÇÃO DAS INTENSIDADES DE TREINO

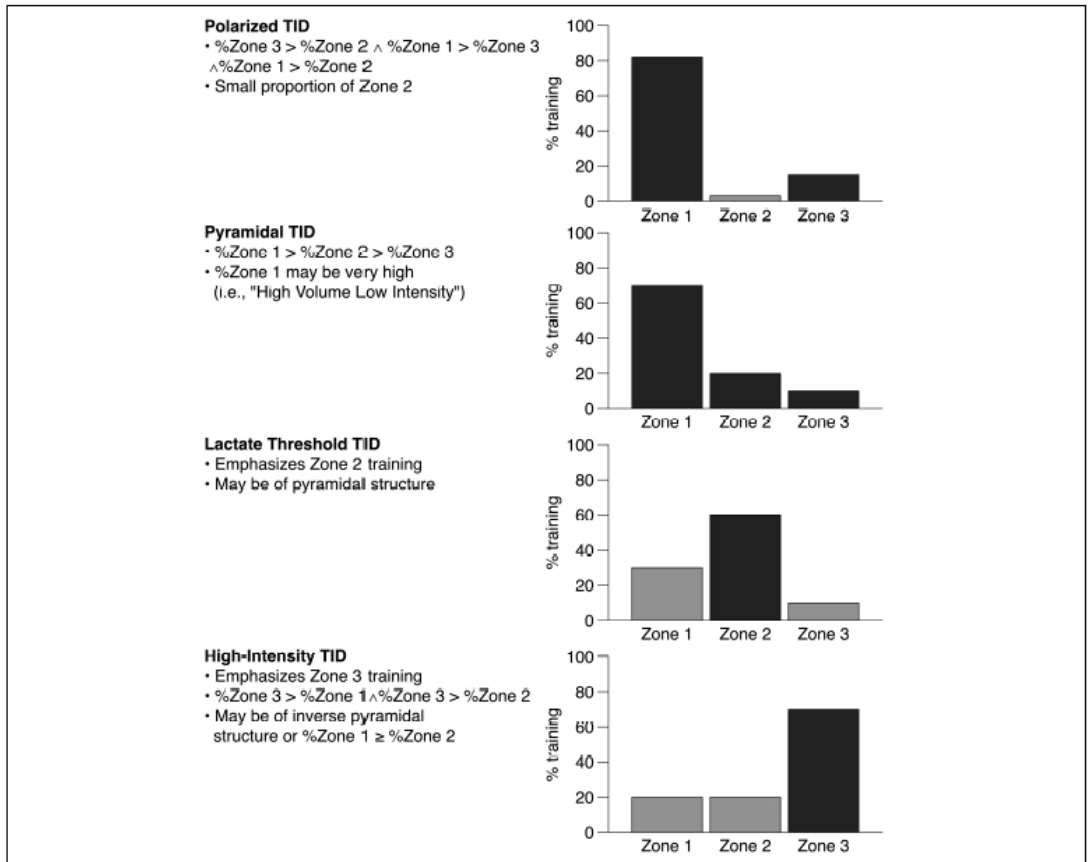


FIGURE 1 | Various training intensity distributions (TID), their schematic proportions, and key characteristics (indicated by black bars). Zones refer to following intensities: Zone 1 (basic endurance), ≥ 50% VO_{2max} and ≤ first lactate or ventilatory threshold; Zone 2 (lactate threshold), ≥ first and ≤ second lactate or ventilatory threshold; Zone 3 (high intensity), > second lactate or ventilatory threshold.

The Polarization-Index: A Simple Calculation to Distinguish Polarized From Non-polarized Training Intensity Distributions

Gunnar Treff[1], Kay Winkert[1], Mahdi Sareban[2], Jürgen M. Steinacker[1] and Billy Sperlich[3]*

[1] Division of Sports and Rehabilitation Medicine, Ulm University Hospital, Ulm, Germany, [2] Institute of Sports Medicine, Prevention and Rehabilitation, Paracelsus Medical University, Salzburg, Austria, [3] Integrative and Experimental Exercise Science and Training, Institute of Sport Science, University of Würzburg, Würzburg, Germany

PI = log 10 (zona1/zona2)*zona3*100)
PI = > 2,00 POLARIZADO
PI = ≤ 2,00 NÃO - POLARIZADO

TIPOS DE DISTRIBUIÇÃO DAS INTENSIDADES DE TREINO

- 48 ATLETAS:
  - CICLISMO
  - SKI CROSS COUNTRY
  - CORRIDA
  - TRIATHLON

- 9 SEMANAS DE TREINAMENTO

frontiers in PHYSIOLOGY

ORIGINAL RESEARCH ARTICLE
published: 04 February 2014
doi: 10.3389/fphys.2014.00033

Polarized training has greater impact on key endurance variables than threshold, high intensity, or high volume training

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[1] Department of Sport Science and Kinesiology, University of Salzburg, Salzburg, Austria
[2] Department of Health Sciences, Swedish Winter Sports Research Centre, Mid Sweden University, Östersund, Sweden
[3] Institute of Sport Science, University of Würzburg, Würzburg, Germany

TIPOS DE DISTRIBUIÇÃO DE INTENSIDADE DE TREINO

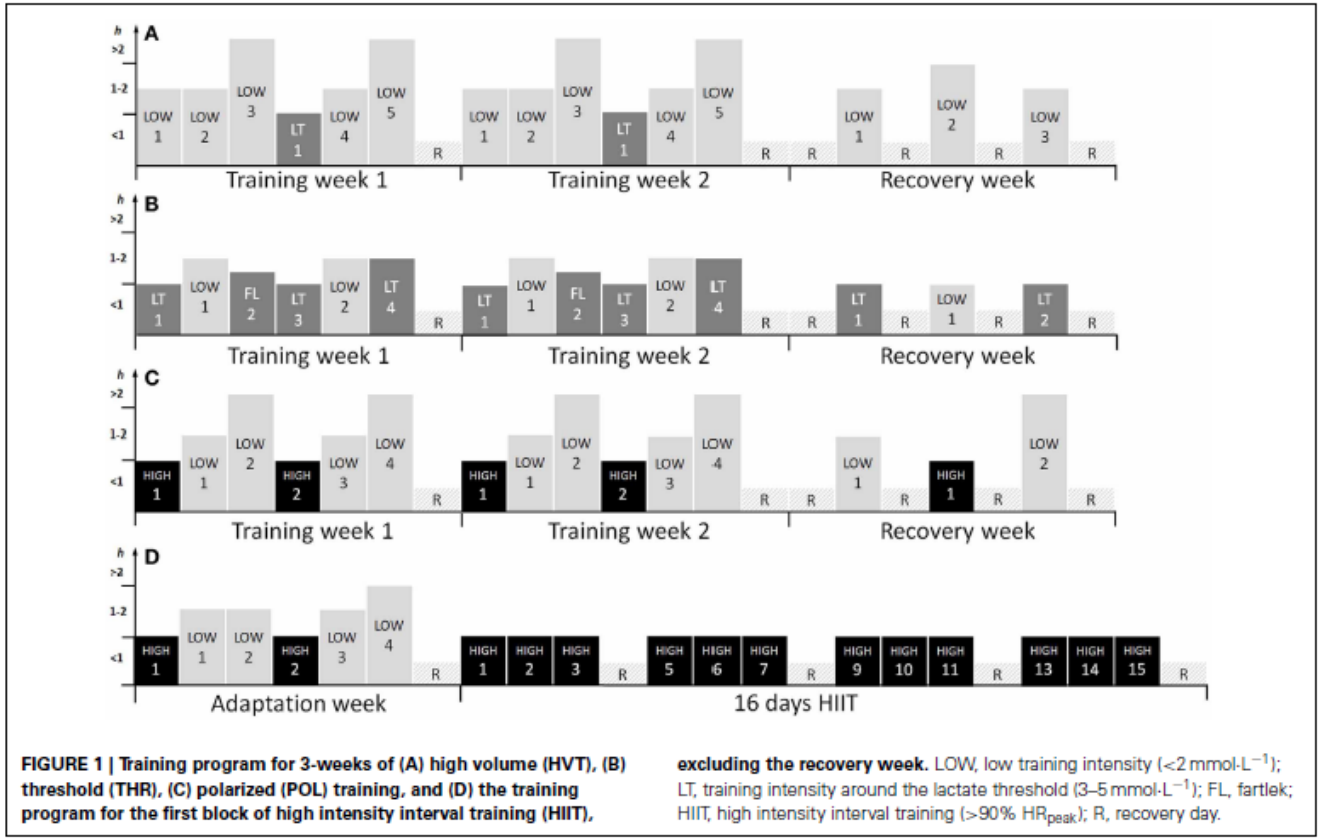

FIGURE 1 | Training program for 3-weeks of (A) high volume (HVT), (B) threshold (THR), (C) polarized (POL) training, and (D) the training program for the first block of high intensity interval training (HIIT), excluding the recovery week. LOW, low training intensity (<2 mmol·L^{-1}); LT, training intensity around the lactate threshold (3–5 mmol·L^{-1}); FL, fartlek; HIIT, high intensity interval training (>90% HR_{peak}); R, recovery day.

A) HVT (alto volume):

B) THR (L2 - VT2 - FTP):

C) Polarizado:

D) HIIT:

frontiers in PHYSIOLOGY
ORIGINAL RESEARCH ARTICLE
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Polarized training has greater impact on key endurance variables than threshold, high intensity, or high volume training

Thomas Stöggl[1,2]* *and Billy Sperlich*[3]

[1] Department of Sport Science and Kinesiology, University of Salzburg, Salzburg, Austria
[2] Department of Health Sciences, Swedish Winter Sports Research Centre, Mid Sweden University, Östersund, Sweden
[3] Institute of Sport Science, University of Würzburg, Würzburg, Germany

RESULTADOS

http://www.frontiersin.org/Exercise_Physiology

Table 3 | Per cent changes in velocity (V) and power (P) and at various lactate thresholds as well as peak velocity and power.

	POL	HIIT	THR	HVT	*F*-Value	*P*-Value
TTE	17.4 ± 16.1***	8.8 ± 8.6**	6.2 ± 9.0	8.0 ± 10.3	$^{a}F_{(3, 37)} = 2.0$	NS
V/P_2	9.3 ± 12.4	12.1 ± 8.8**	2.0 ± 13.8	0.8 ± 13.3	$^{a}F_{(3, 37)} = 1.9$	NS
V/P_4	8.1 ± 4.6**	5.6 ± 4.8*	1.4 ± 4.3†	1.2 ± 6.6†	$^{a}F_{(3, 37)} = 4.5$	<0.01
V/P_{peak}	5.1 ± 3.0**	4.4 ± 2.8**	1.8 ± 4.8	−1.5 ± 4.9††‡	$^{a}F_{(3, 37)} = 4.6$	<0.01

The values presented are means ± SD. F and P values were obtained by One-Way ANOVA (4 training groups) calculated over the per cent differences between pre- to post-training. POL, polarized training group; HIIT, High intensity interval training group; THR, threshold training group; HVT, high volume training group; TTE, time to exhaustion during the ramp test; V/P_2, velocity or power at 2 mmol·L^{-1}; V/P_4, velocity or power at 4 mmol·L^{-1}; V/P_{peak}, peak velocity or power in the incremental test; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ significant difference within groups from pre- to post-training.

$^{\dagger}p < 0.05$; $^{\dagger\dagger}p < 0.01$ significant different from POL training group.

$^{\ddagger}p < 0.05$significant different from HIIT training group.

^{a}Main effect between groups.

COMO CORREDORES DE PONTA TREINAM?

International Journal of Sports Physiology and Performance, 2022, 17, 820-833
https://doi.org/10.1123/ijspp.2021-0435

Human Kinetics
BRIEF REVIEW

Training Periodization, Methods, Intensity Distribution, and Volume in Highly Trained and Elite Distance Runners: A Systematic Review

Arturo Casado,[1] Fernando González-Mohíno,[2,3] José María González-Ravé,[2] and Carl Foster[4]
[1]Center for Sport Studies, Rey Juan Carlos University, Madrid, Spain; [2]Sport Training Lab, University of Castilla-La Mancha, Toledo, Toledo, Spain; [3]Facultad de Ciencias de la Vida y de la Naturaleza, Universidad Nebrija, Madrid, Spain; [4]Department of Exercise and Sport Science, University of Wisconsin, La Crosse, WI, USA

TID = DISTRIBUIÇÃO DAS INTENSIDADE DE TREINO:

1) MODELO PIRAMIDAL: 80% NA Z1; 20% DIVIDIDOS EM Z2 E Z3

2) MODELO POLARIZADO: 80% NA Z1; 20% EM Z3 E O MÍNIMO EM Z2

3) MODELO LIMIAR: 60 A 62% NA Z1; 35% NA Z2;

*TDI: TRAINING INTENSITY DISTRIBUTION

TIPOS DE PERIODIZAÇÕES

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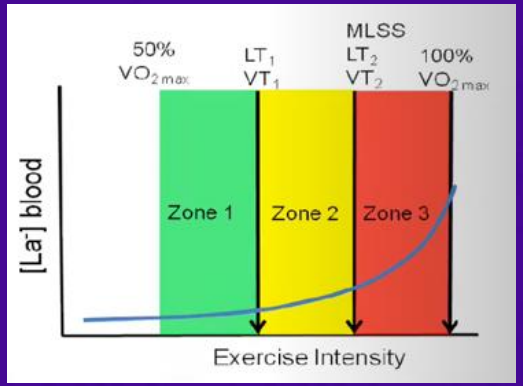
CONCLUSÕES:

1) ATLETAS DE PONTA: MODELO PIRAMIDAL, Z2 PERTO DO L2 (FTP);

2) NÃO REDUZEM MUITO O VOLUME DO PERÍODO DE PREPARAÇÃO PARA O COMPETITIVO

3) NO COMPETITIVO, PERTO DA PROVA: MODELO POLARIZADO.



PERIODIZAÇÃO

Received: 28 May 2021 | Revised: 8 November 2021 | Accepted: 12 November 2021

DOI: 10.1111/sms.14101

ORIGINAL ARTICLE

WILEY

Effects of 16 weeks of pyramidal and polarized training intensity distributions in well-trained endurance runners

Luca Filipas[1,2] | Matteo Bonato[1,3] | Gabriele Gallo[4,5] | Roberto Codella[1,2]

1) Piramidal
2) Polarizado
3) Piramidal para polarizado
4) Polarizado para piramidal

*corredores bem treinados

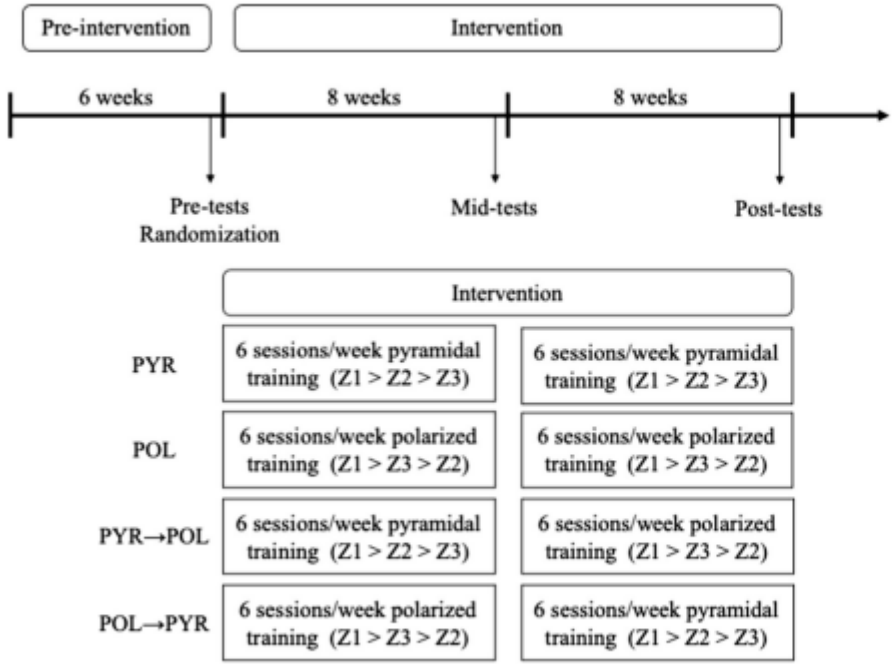


FIGURE 1 Schematic presentation of the experimental design. Z1, zone 1 (ie, volume below first ventilatory threshold); Z2, zone 2 (ie, volume between first and second ventilatory thresholds); Z3, zone 3 (ie, volume above second ventilatory threshold); PYR, pyramidal training intensity distribution; POL, polarized training intensity distribution; PYR → POL, pyramidal → polarized training intensity distribution; POL → PYR, polarized → pyramidal training intensity distribution

PERIODIZAÇÃO

CONCLUSÕES:

PIRAMIDAL PARA POLARIZADO MELHOROU MAIS A PERFORMANCE:

- ISSO FAVORECE O PICO DE PERFORMANCE

- RELATAM A IMPORTÂNCIA DE SE TREINAR NA Z1

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No Differences Between 12 Weeks of Block- vs. Traditional-Periodized Training in Performance Adaptations in Trained Cyclists

Nicki Winfield Almquist[1,2], Hanne Berg Eriksen[1], Malene Wilhelmsen[1], Håvard Hamarsland[1], Steven Ing[2], Stian Ellefsen[1], Øyvind Sandbakk[2], Bent R. Rønnestad[1] and Knut Skovereng[2]*

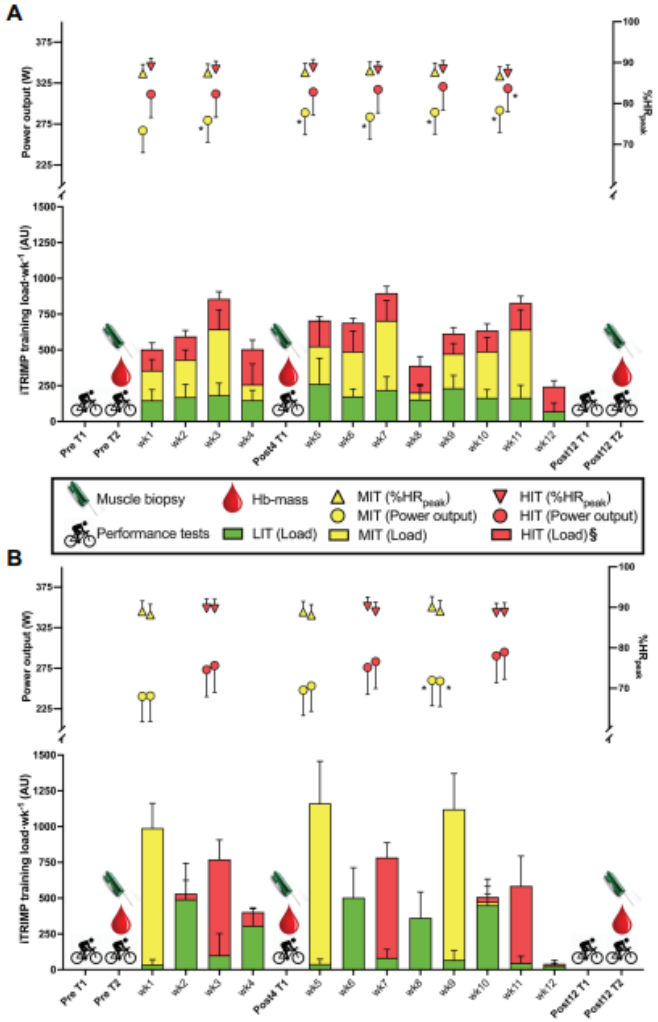

FIGURE 1 | Experimental design and training load (iTRIMP) during a 4-week (Post4) and 12-week (Post12) intervention of either traditional periodization (TP, panel **A**) or blocked periodization (BP, panel **B**) of endurance training among 26 trained cyclists. Test day 1 (T1) included a blood lactate profile test, a peak oxygen uptake (VO_{2peak})-test and a 5-min time-trial (TT) performance test. Test day 2 (T2) included muscle biopsies, a 40-min TT and measurement of hemoglobin mass. Mean power output (PO) and % of peak heart rate (%HR_{peak}) on the first and last moderate intensity training (MIT)- and high intensity training (HIT)-exercises of each mesocycle of 4 weeks are presented above the training load. Data are mean ± 95%CI. *Indicates a significant difference from the first MIT or HIT exercise ($p < 0.05$). § indicates a significant difference in HIT-load between TP and BP ($p < 0.05$). LIT, low-intensity training; MIT, moderate-intensity training; HIT, high-intensity training; Hb-mass, hemoglobin mass; and iTRIMP, individualized training impulse.

PERIODIZAÇÃO: BLOCO VS TRADICIONAL

PERFORMANCE IGUAL:

- CR 5MIN = + 8,9 +/- 8,9% (P<0,001)
- CR 40MIN = + 8,4 +/- 9% (P<0,001)
- PVO2MAX = + 6%
- OBLA (“FTP”) = + ~10%

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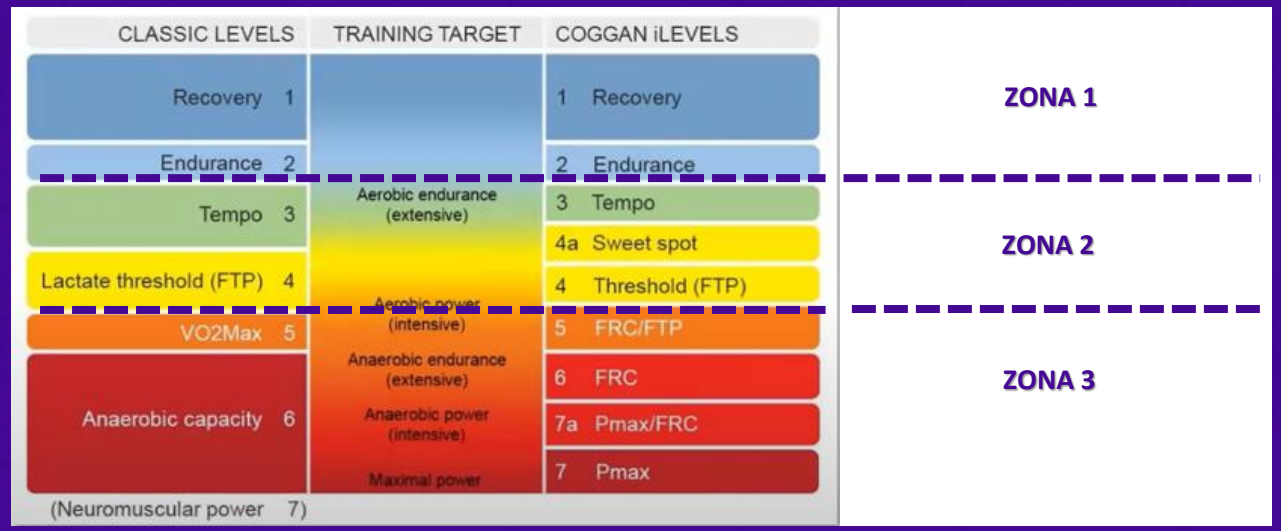
PERIODIZAÇÃO

OS AUTORES SUGEREM:

- MAIS TREINOS ENTRE OS LIMIARES: TEMPO E SWEETSPOT



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PERIODIZAÇÃO REVERSA

González-Ravé *et al. Sports Medicine - Open* (2022) 8:56
https://doi.org/10.1186/s40798-022-00445-8

Sports Medicine - Open

SYSTEMATIC REVIEW Open Access

Reverse Periodization for Improving Sports Performance: A Systematic Review

José M. González-Ravé[1], Fernando González-Mohino[1,2*], Víctor Rodrigo-Carranza[1] and David B. Pyne[3]

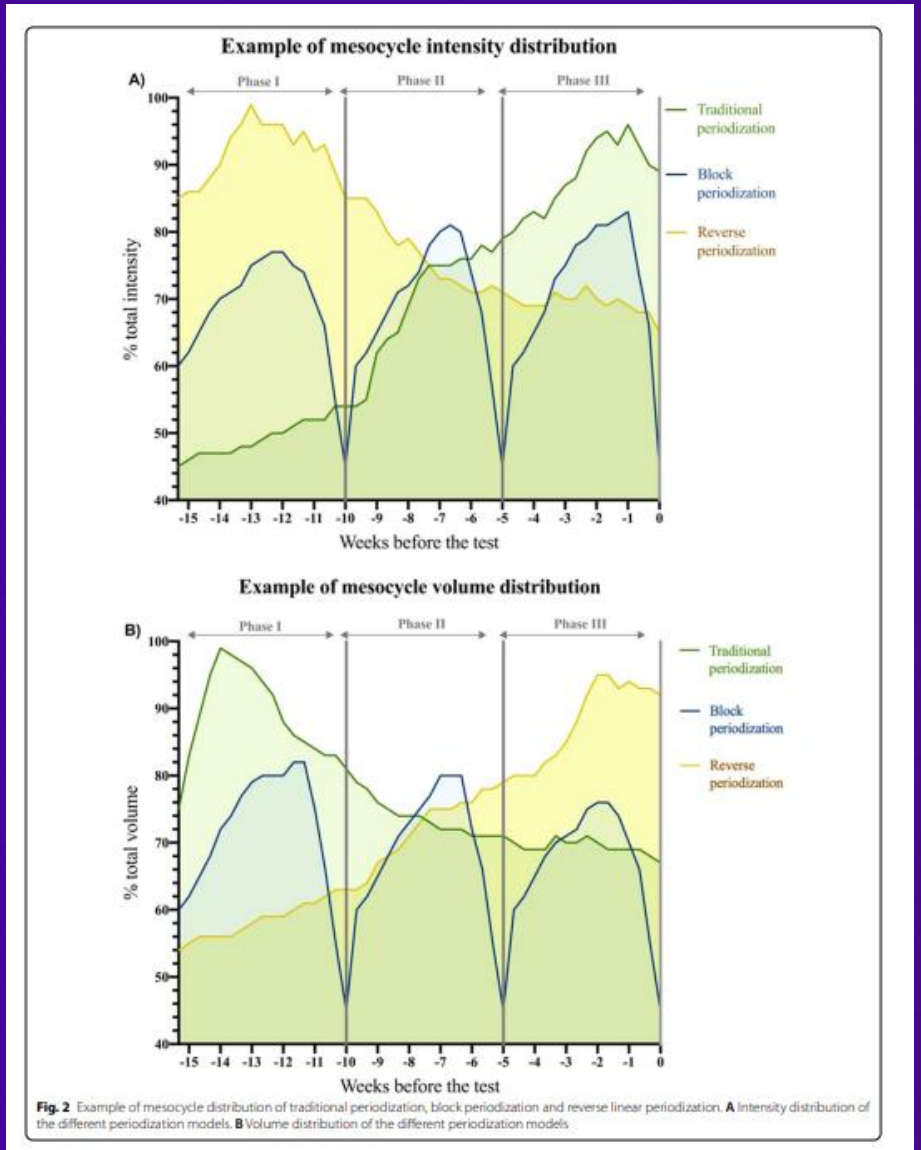

Fig. 2 Example of mesocycle distribution of traditional periodization, block periodization and reverse linear periodization. **A** Intensity distribution of the different periodization models. **B** Volume distribution of the different periodization models

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CONCLUSÃO:
- A REVERSA NÃO É MAIS EFETIVA DO QUE OS OUTROS MODELOS

PERIODIZAÇÃO

NA MÉDIA A MESMA MELHORA DE PERFORMANCE ENTRE OS 3 GRUPOS.

ENTRETANTO:
INC: 87% MELHORA >3% (CR:40KM)
DEC: 56% MELHORA >3% (CR:40KM)
MIX: 63% MELHOROU >3% (CR:40KM)

INC COM TENDÊNCIA A SER SUPERIOR.

The Effect of Different High-Intensity Periodization Models on Endurance Adaptations

ØYSTEIN SYLTA[1], ESPEN TØNNESSEN[2], DANIEL HAMMARSTRÖM[3], JØRGEN DANIELSEN[4], KNUT SKOVERENG[4], TROELS RAVN[1], BENT R. RØNNESTAD[3], ØYVIND SANDBAKK[4], and STEPHEN SEILER[1]

[1]Faculty of Health and Sport Sciences, University of Agder, Kristiansand, NORWAY; [2]The Norwegian Olympic Federation, Oslo, NORWAY; [3]Section for Sport Science, Lillehammer University College, Lillehammer, NORWAY; and [4]Centre for Elite Sports Research, Department of Neuroscience, Norwegian University of Science and Technology, Trondheim, NORWAY

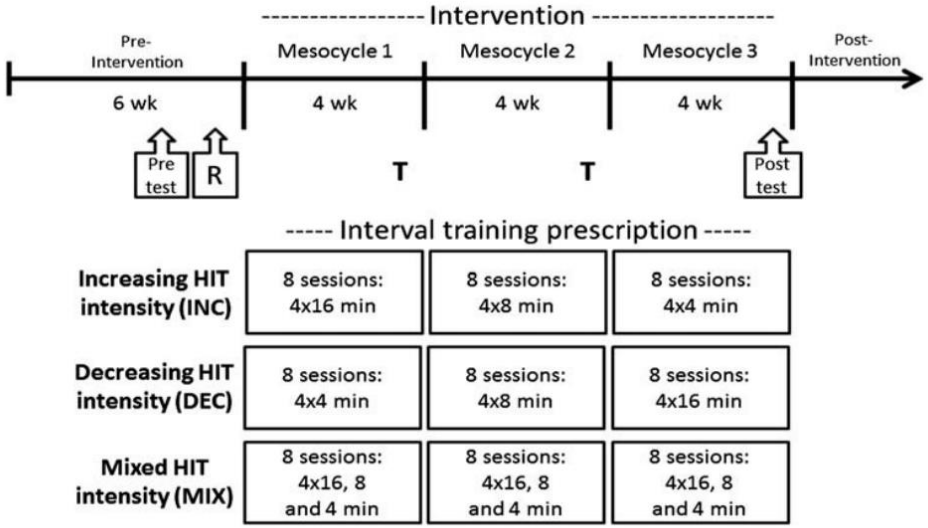

FIGURE 1—Study protocol. A 6-wk PIP, including familiarization to interval sessions, pretesting, and randomization (R), was followed by a 12-wk intervention period divided in three 4-wk mesocycles with different interval session prescriptions for each training group. All groups performed 24 supervised interval sessions, in addition to testing and *ad libitum* LIT. The INC group (n = 23) performed 8 interval sessions as 4 × 16 min in mesocycle 1 (weeks 1–4), 8 interval sessions as 4 × 8 min in mesocycle 2 (weeks 5–8), and 8 interval sessions as 4 × 4 min in mesocycle 3 (weeks 9–12). The DEC group (n = 20) performed interval sessions in the opposite mesocycle order as INC, and the MIX group (n = 20) organized all 24 interval sessions (8 in each mesocycle) in a mixed distribution; sessions 1 as 4 × 16 min, session 2 as 4 × 8 min, session 3 as 4 × 4 min, session 4 as 4 × 16 min, and so on. In total, during 12 wk, all subjects independent of group performed 8 interval sessions in each 4 × 16-, 4 × 8-, and 4 × 4-min prescriptions, respectively. All subjects were tested (T) in-between cycles during weeks 4 and 8 (results not presented). Posttesting was completed within 5 d postintervention period.

CONCLUSÃO:

1) PIRAMIDAL PARA POLARIZADO MAIS EFETIVO

2) BLOCO E TRADICIONAL SEM DIFERENÇAS SIGNIFICATIVAS

3) REVERSA NÃO FOI MAIS EFICIENTE

LEVAR EM CONTA O NÍVEL DE TREINAMENTO E INDIVIDUALIDADE

ENDURANCE SUMMIT OUTUBRO 2023

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