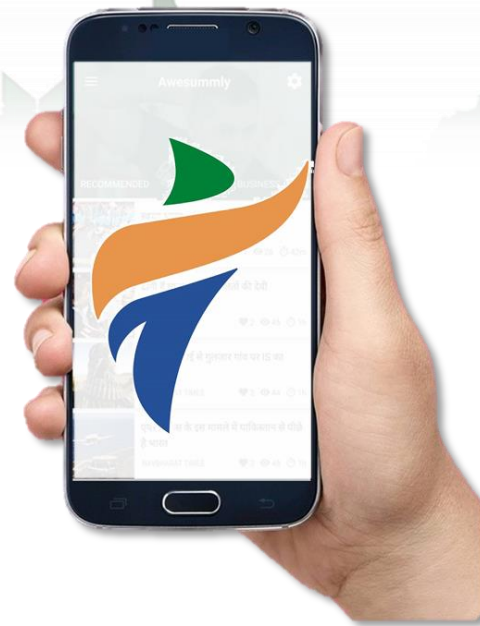


VI SEMINÁRIO INTERNACIONAL E X CURSO DE CAPACITAÇÃO TÉCNICA

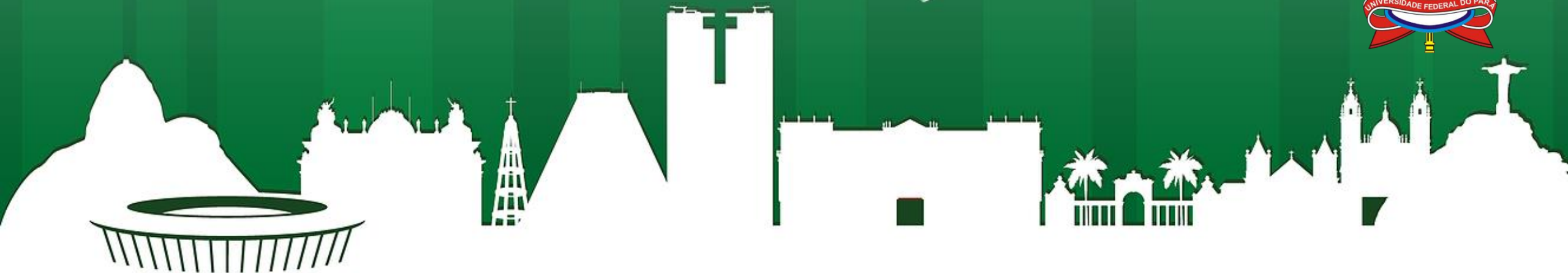


USO DE APLICATIVOS PARA CONTROLE DE TREINAMENTO

PROF. DR. VICTOR COSWIG



VI SEMINÁRIO INTERNACIONAL E X CURSO DE CAPACITAÇÃO TÉCNICA



BACHAREL EM ED. FÍSICA (ESEF/UFPEL - 2009)

ESPECIALISTA EM FISILOGIA DO EXERCÍCIO (UNIFOA - 2011)

MESTRE EM ATIVIDADE FÍSICA EM DESEMPENHO (ESEF/UFPEL - 2014)

DOUTOR EM METABOLISMO E DESEMPENHO HUMANO (ESEF/UFPEL - 2017)

MEMBRO DO '*NATIONAL STRENGTH AND CONDITIONING ASSOCIATION*' (NSCA)

GRUPO DE PESQUISA EM TREINAMENTO FÍSICO E ESPORTIVO (GET/UFPA)

DOCENTE UNIVERSIDADE FEDERAL DO PARÁ





NOSSO PAPO DE HOJE...

PERIODIZAÇÃO E MONITORAMENTO

POR QUE USAR APP's NO ESPORTE???

APP's PARA FISIOLOGIA E BIOMECÂNICA

APP's PARA PERFORMANCE

INDICAÇÕES GERAIS

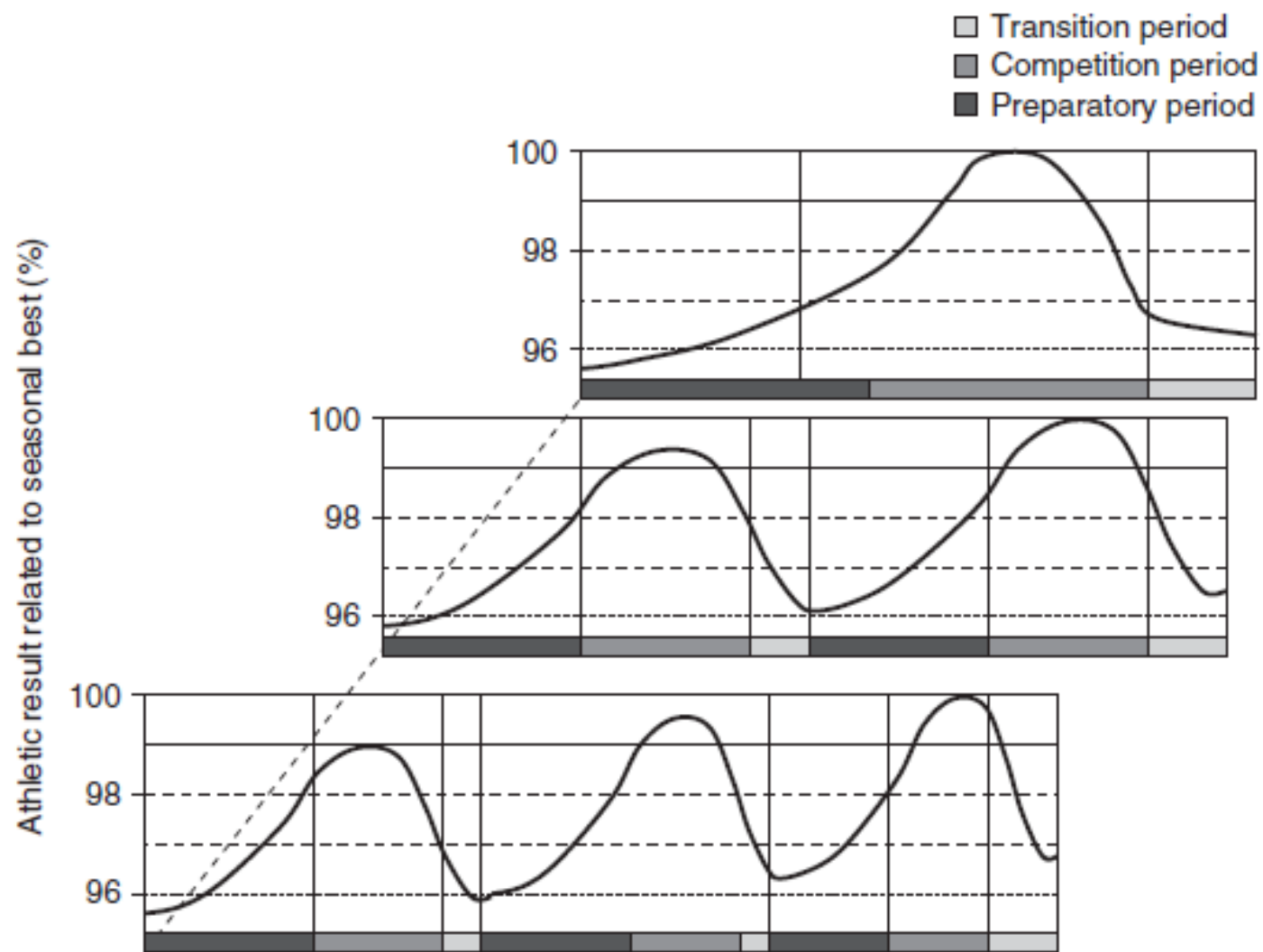


NOSSO PAPO DE HOJE...

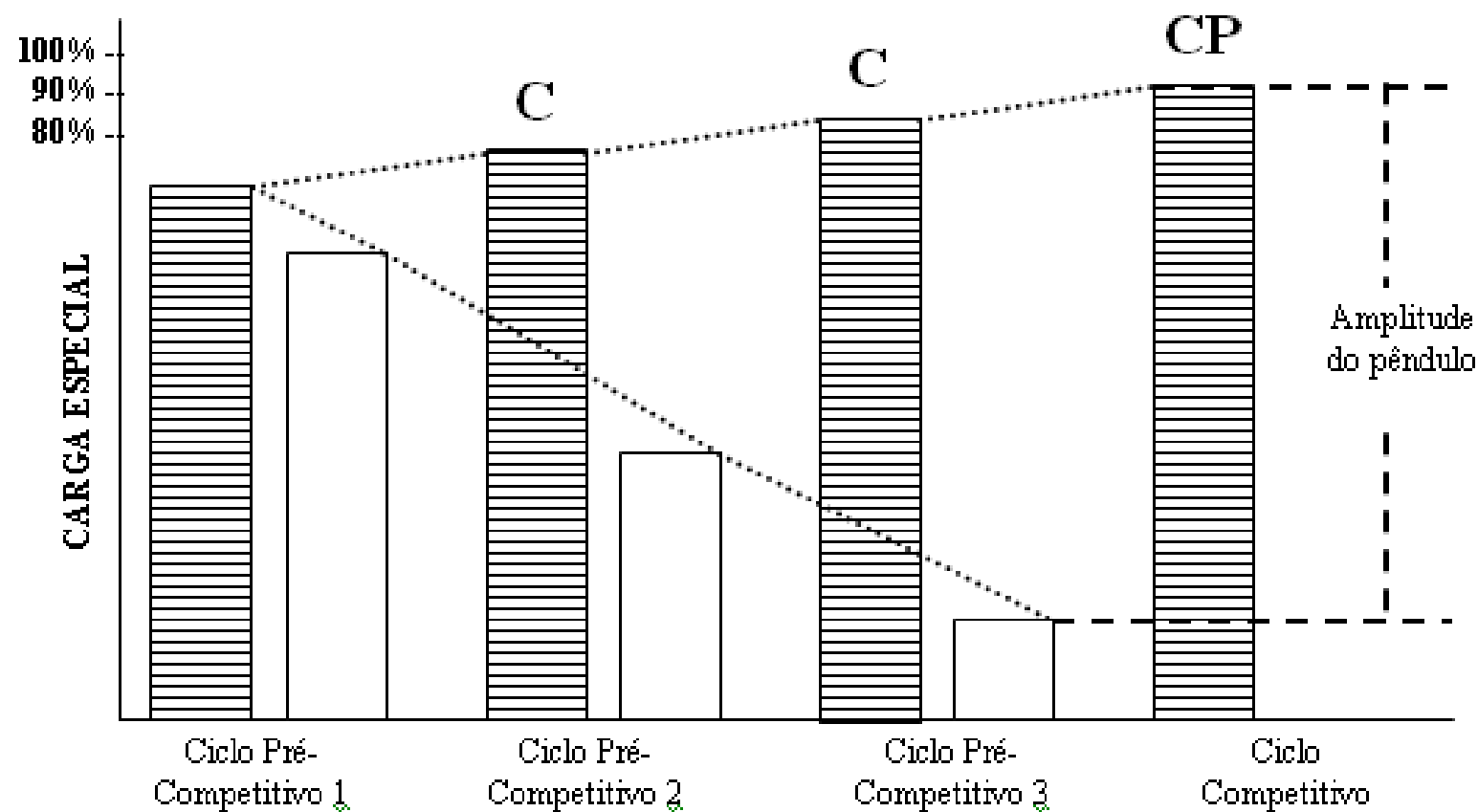
PERIODIZAÇÃO E MONITORAMENTO



MATVEYEV



MATVEYEV AROSIEV



 CARGA ESPECIAL

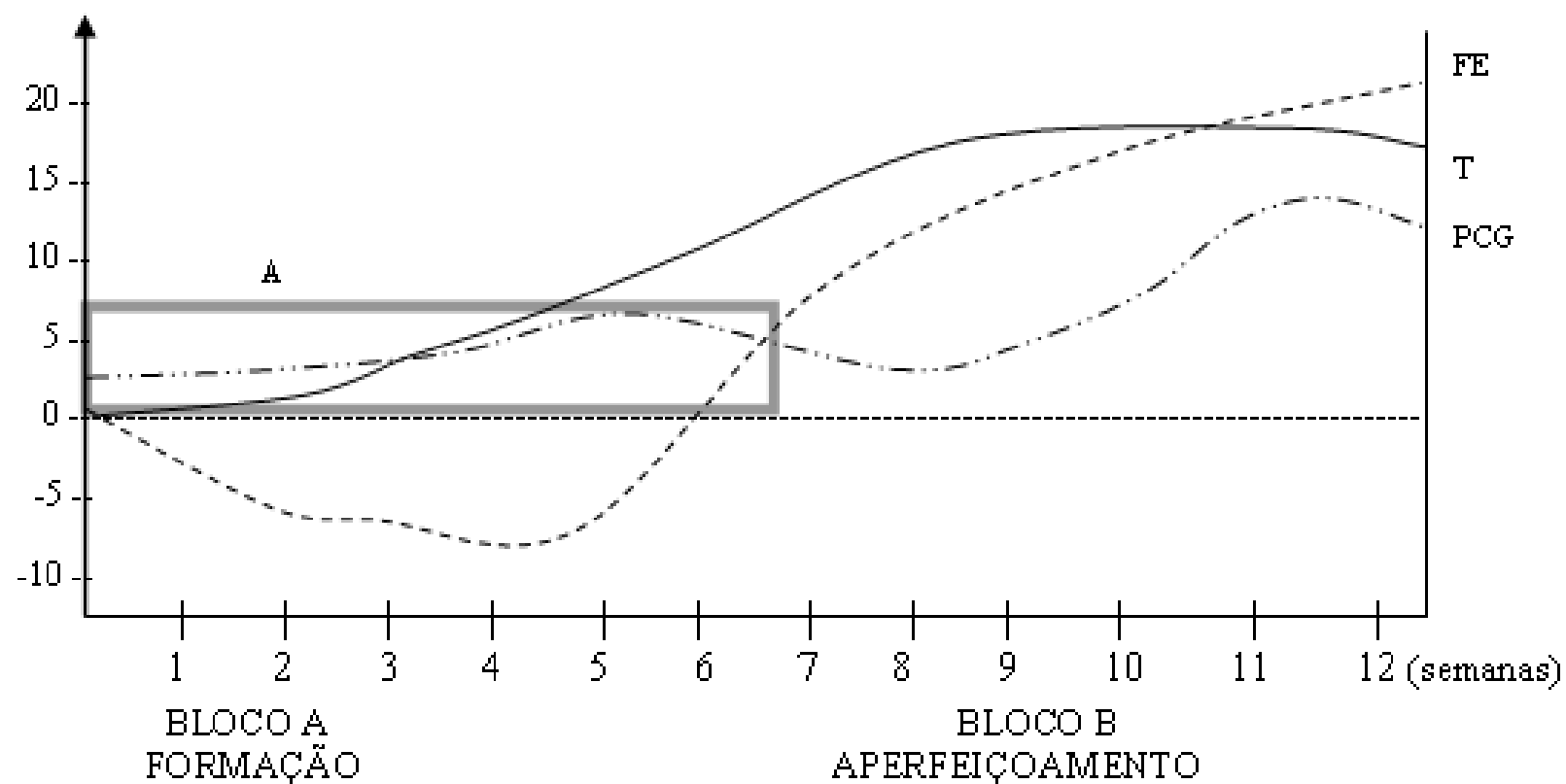
 CARGA GERAL

C COMPETIÇÕES PREPARATORIAS

CP COMPETIÇÕES PRINCIPAIS



MATVEYEV AROSIEV VERKOSHANSKY

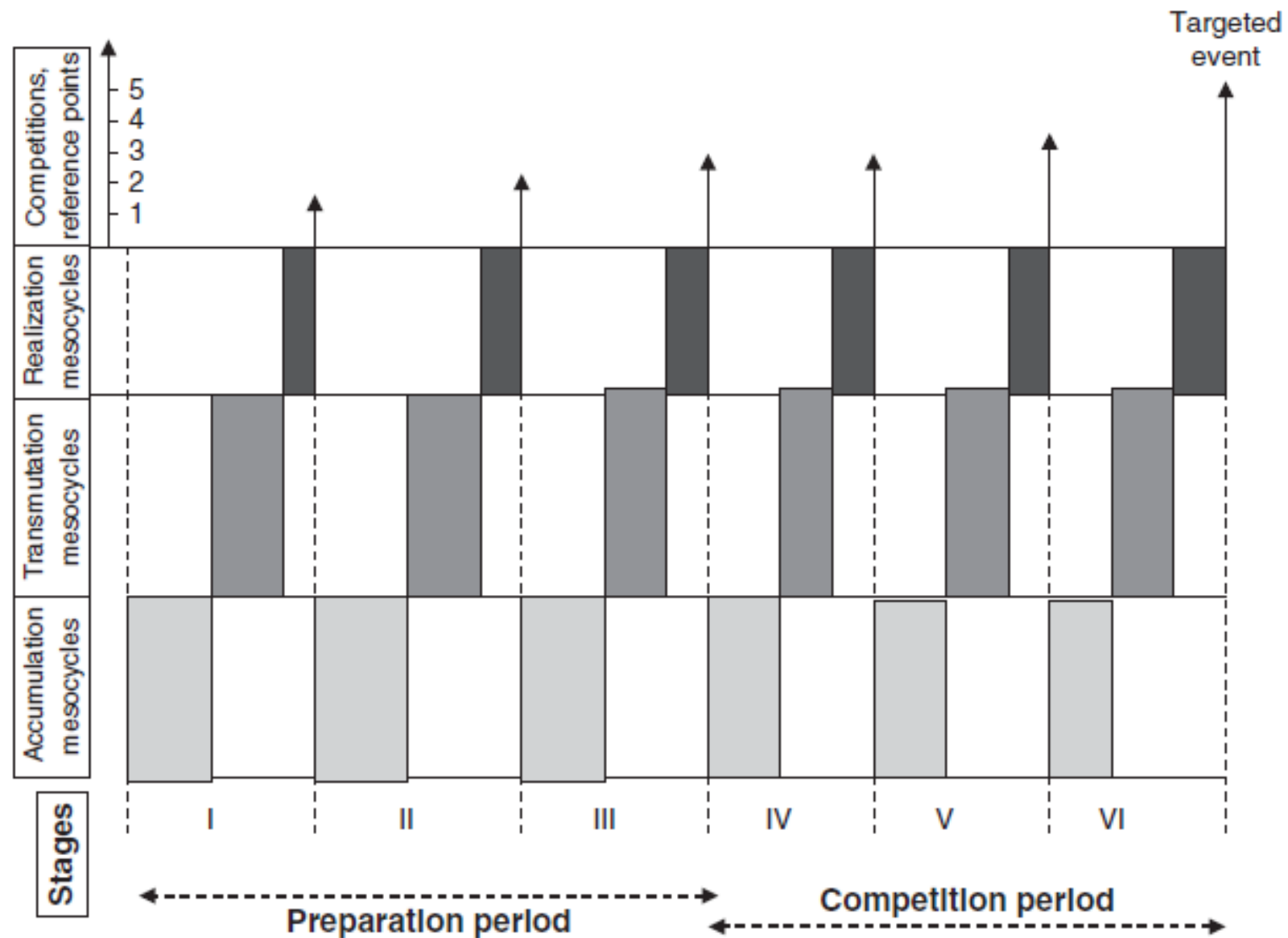


FE: Força Explosiva; PCG: Preparação Condiciona Geral; T: Técnica.

A: Acúmulo das Cargas Concentradas de Força, durando quase sete semanas.

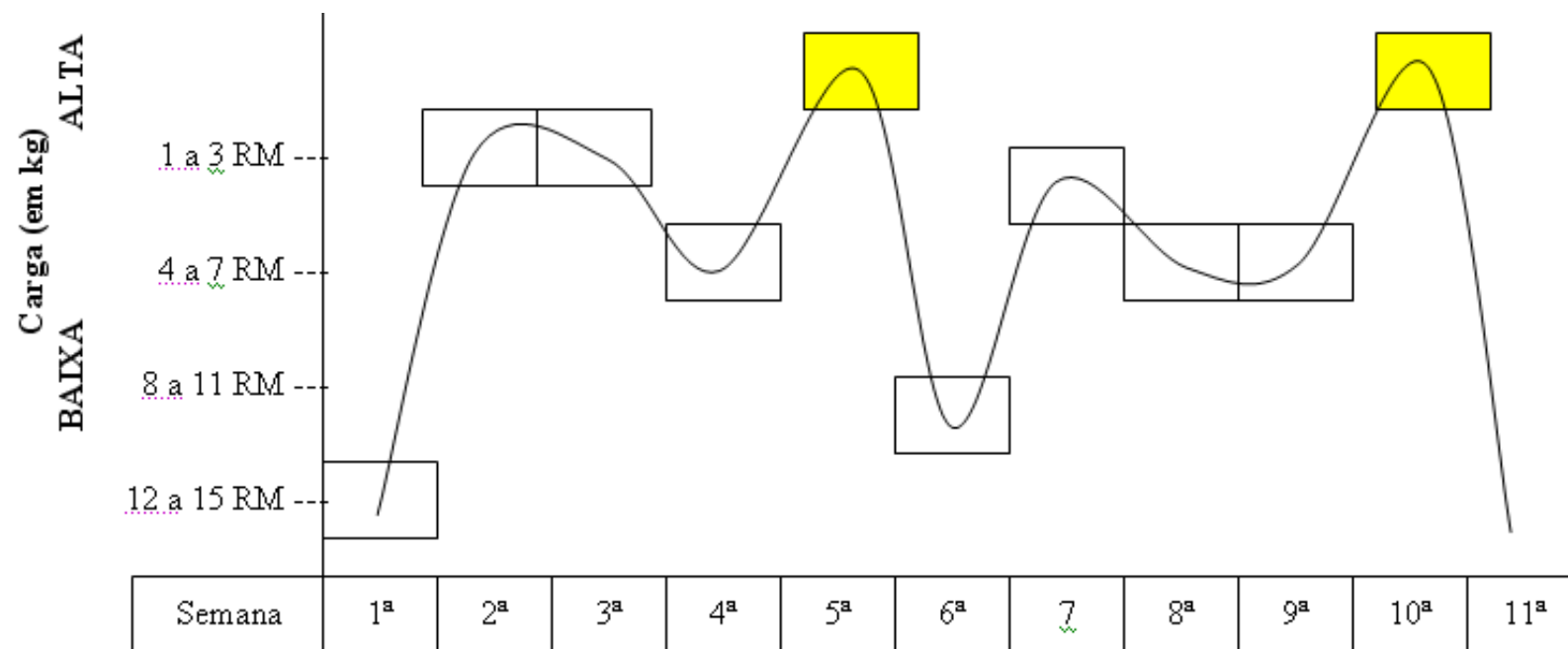


MATVEYEV
AROSIEV
VERKOSHANSKY
ISSURIN





MATVEYEV
AROSIEV
VERKOSHANSKY
ISSURIN
FLECK



rec: Período de recuperação; RM: Repetição Máxima.

TABLE 1

Event	Number of athletes	WC better than season PB	% EFF
<i>All throws (finalists)</i>			
<i>Men</i>	48	8	17
<i>Women</i>	36	9	25
<i>High jump</i>			
<i>Men</i>	33	6	18
<i>Women</i>	35	9	26
<i>Triple jump</i>			
<i>Men</i>	43	7	16
<i>Women</i>	32	8	25
<i>110m and 100m hurdles</i>			
<i>Men</i>	47	13	28
<i>Women</i>	32	8	25

Table 1: Effectiveness of the preparation for the World Track and Field Championships, 1995 in specific events: Championship results versus the best performance in the season. WC = World Championships result. PB = Personal best. EFF = Effectiveness.



25%

TRAINING PERIODISATION

AN OBSOLETE METHODOLOGY?

– Written by Irineu Loturco and Fabio Y. Nakamura, Brazil



TRAINING PERIODISATION

AN OBSOLETE METHODOLOGY?

– Written by Irineu Loturco and Fabio Y. Nakamura, Brazil

MONITORAR DESEMPENHO É *BEM* MELHOR
QUE SEGUIR MODELOS TEÓRICOS

TREINADORES SÃO ENCORAJADOS A BUSCAR MÉTODOS
PRÁTICOS DE MONITORAMENTO DIÁRIO, GUIADOS PELO
FEEDBACK DE MEDIDAS SIMPLES.



NOSSO PAPO DE HOJE...

~~PERIODIZAÇÃO E MONITORAMENTO~~

POR QUE USAR APP'S NO ESPORTE???

3 MONITORAMENTO

**CARGA ASPECTOS CARGA
ADAPTAÇÕES
EXTERNA MECÂNICO-TÁTICA INTERNA**



2016

- 1 Wearable technology
- 2 Body weight training
- 3 High-intensity interval training (HIIT)
- 4 Strength training
- 5 Educated, certified, and experienced fitness professionals
- 6 Personal training
- 7 Functional fitness
- 8 Fitness programs for older adults
- 9 Exercise and weight loss
- 10 Yoga





2017

1	Wearable technology
2	Body weight training
3	High-intensity interval training
4	Educated, certified, and experienced fitness professionals
5	Strength training
6	Group training
7	Exercise is Medicine®
8	Yoga
9	Personal training
10	Exercise and weight loss





2018	
1	High-intensity interval training
2	Group training
3	Wearable technology
4	Body weight training
5	Strength training
6	Educated, certified, and experienced fitness professionals
7	Yoga
8	Personal training
9	Fitness programs for older adults
10	Functional fitness





WEARABLE TECHNOLOGY



The Use of Mobile Applications to Collect Data in Sport, Health and Exercise Science: A Narrative Review

Peart, Daniel J.^{1,*}; Balsalobre-Fernández, Carlos²; Shaw, Matthew P.³

The Journal of Strength and Conditioning Research™
THE OFFICIAL RESEARCH JOURNAL OF THE NATIONAL STRENGTH AND CONDITIONING ASSOCIATION
Bridging the Gap between Science and Practical Applications

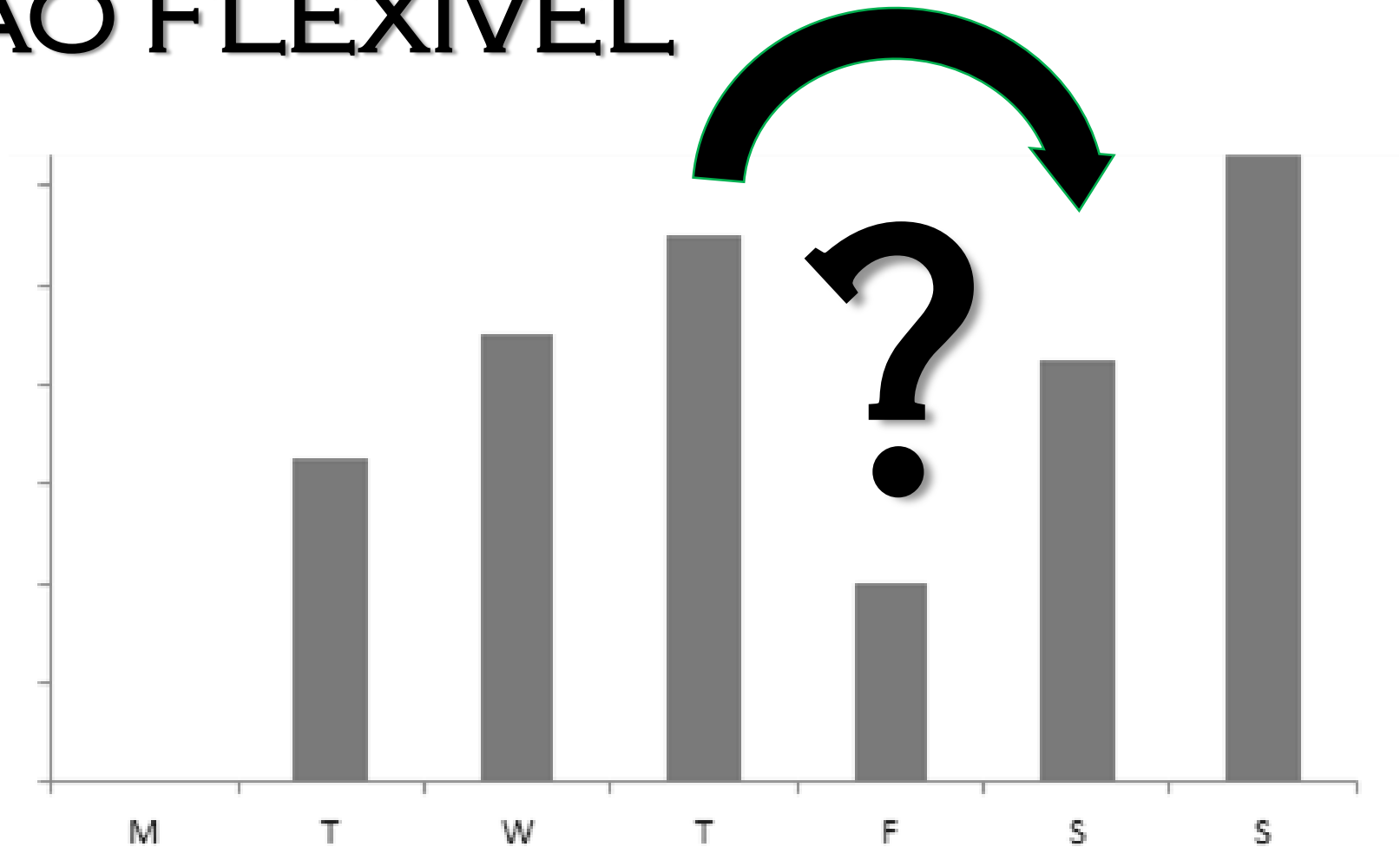




PERIODIZAÇÃO FLEXÍVEL

Table 1 Variables that can be used to monitor training load and subsequent fatigue

Variable	Units/descriptors
Frequency	Sessions per day, week, month
Time	Seconds, minutes, hours
Intensity	Absolute, relative
Type	Modality, environment
Maximal effort	Maximum mean power, jump height
Repeat efforts	Number of efforts, quality of efforts
Training volume	Time, intensity
Perception of effort	RPE
Perception of fatigue and recovery	Questionnaires; REST-Q, VAS
Illness	Incidence, duration
Injury	Type, duration
Biochemistry and hormone analysis	Baseline, response to exercise
Technique	Movement deviations
Body composition	Total body weight, fat mass, fat-free mass
Sleep	Quality, quantity, routine
Psychology	Stress, anxiety, motivation
Sensations	Hopeful, neutral, hopeless





PERIODIZAÇÃO FLEXÍVEL

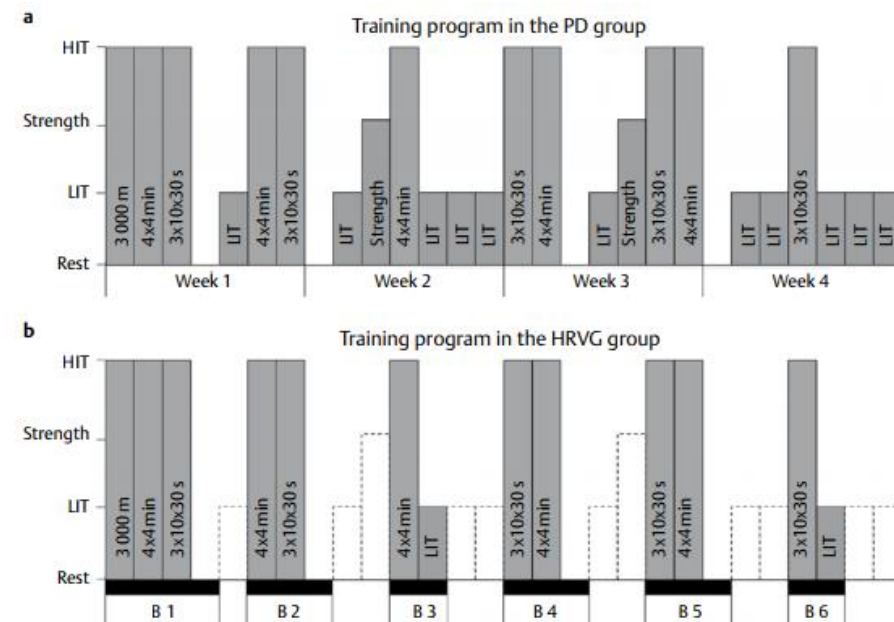
ENDURANCE RUNNING TRAINING INDIVIDUALLY-GUIDED BY HRV IN
UNTRAINED WOMEN

**Effects of HRV-Guided vs. Predetermined Block Training on
Performance, HRV and Serum Hormones**



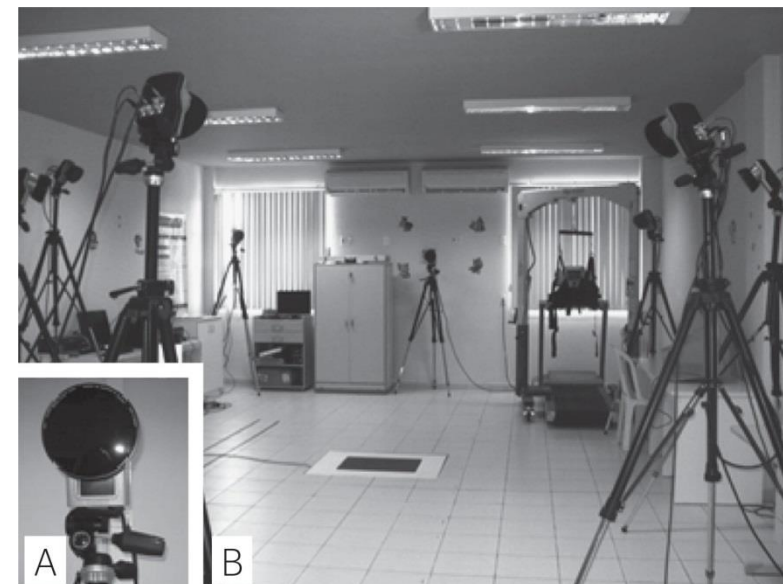
PERIODIZAÇÃO FLEXÍVEL

Heart Rate Variability

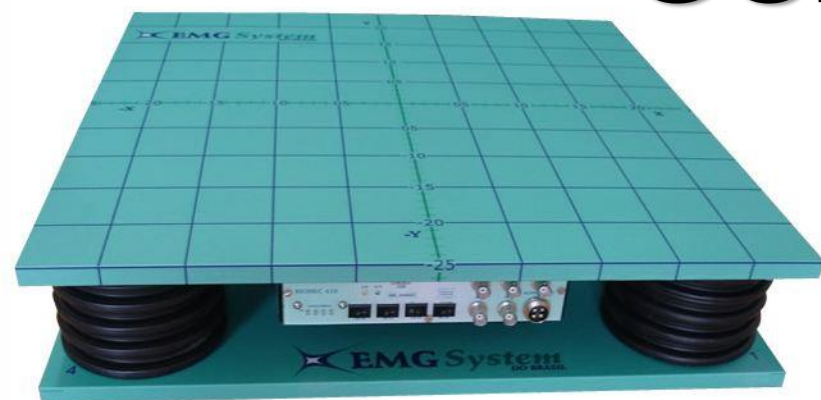




PERIODIZAÇÃO FLEXÍVEL

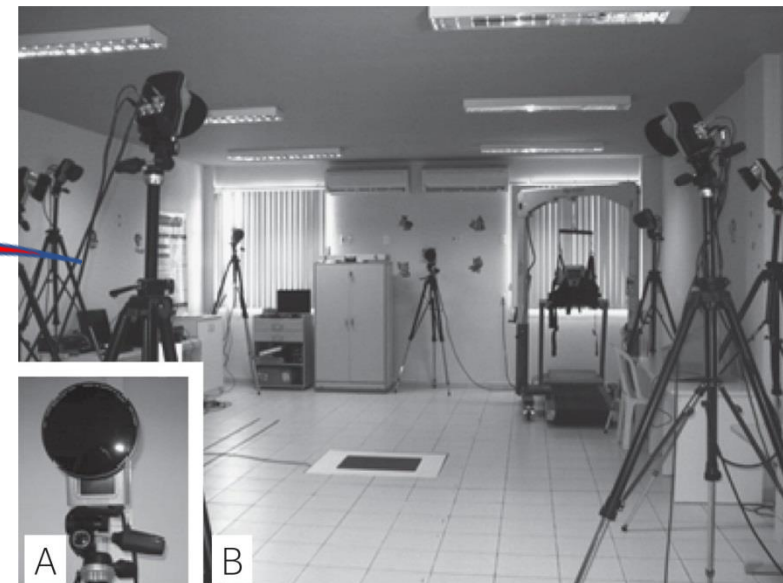
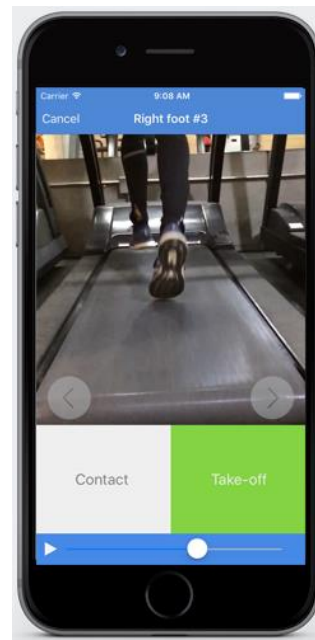
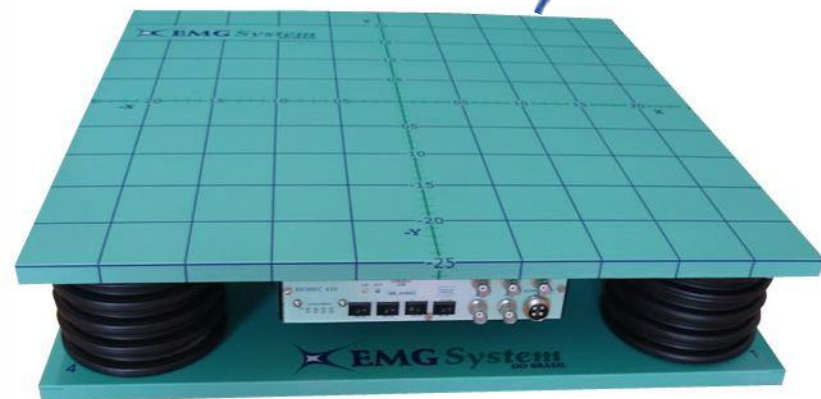


COMO FAZEMOS HOJE?





PERIODIZAÇÃO FLEXÍVEL





NOSSO PAPO DE HOJE...

~~**PERIODIZAÇÃO E MONITORAMENTO**~~

~~**POR QUE USAR APP'S NO ESPORTE???**~~

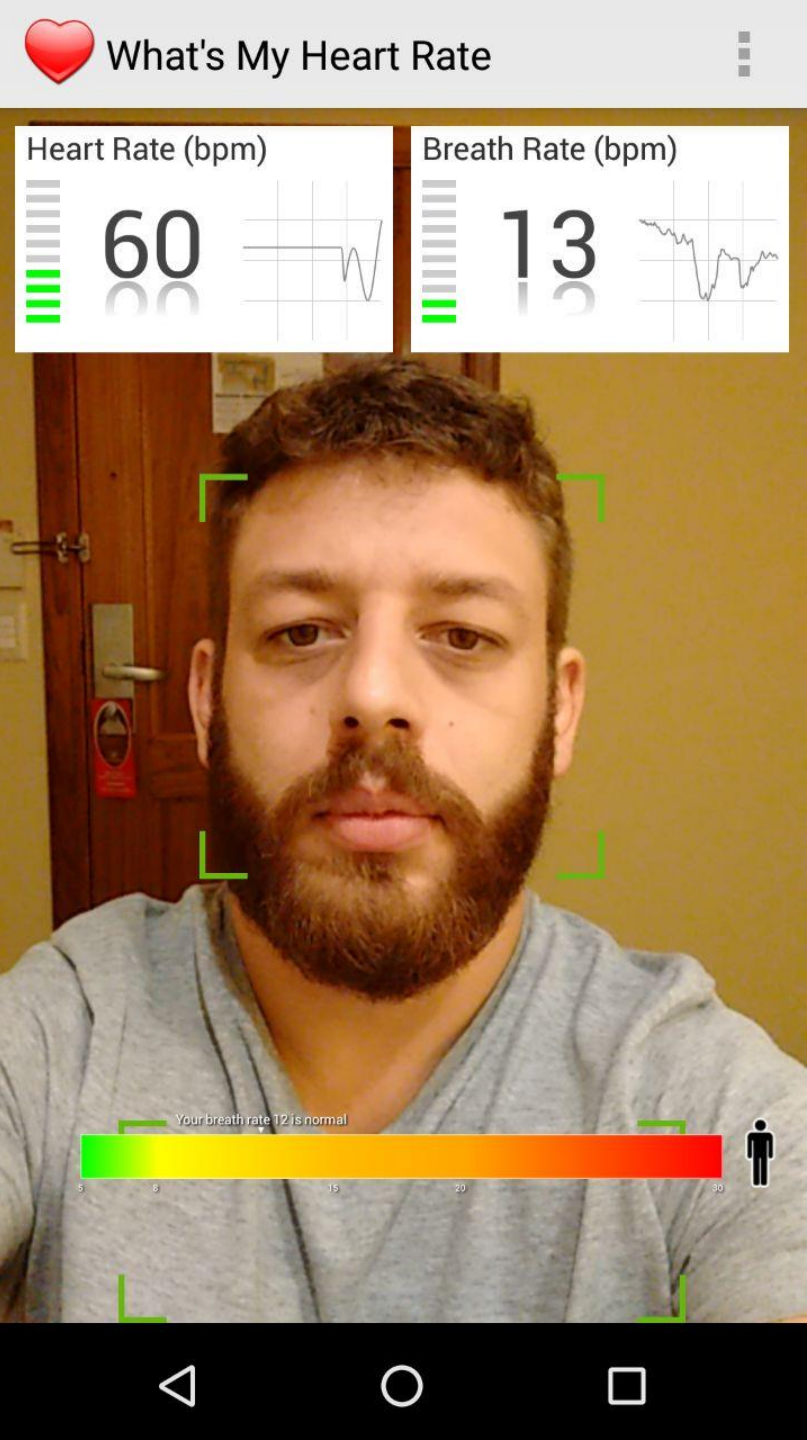
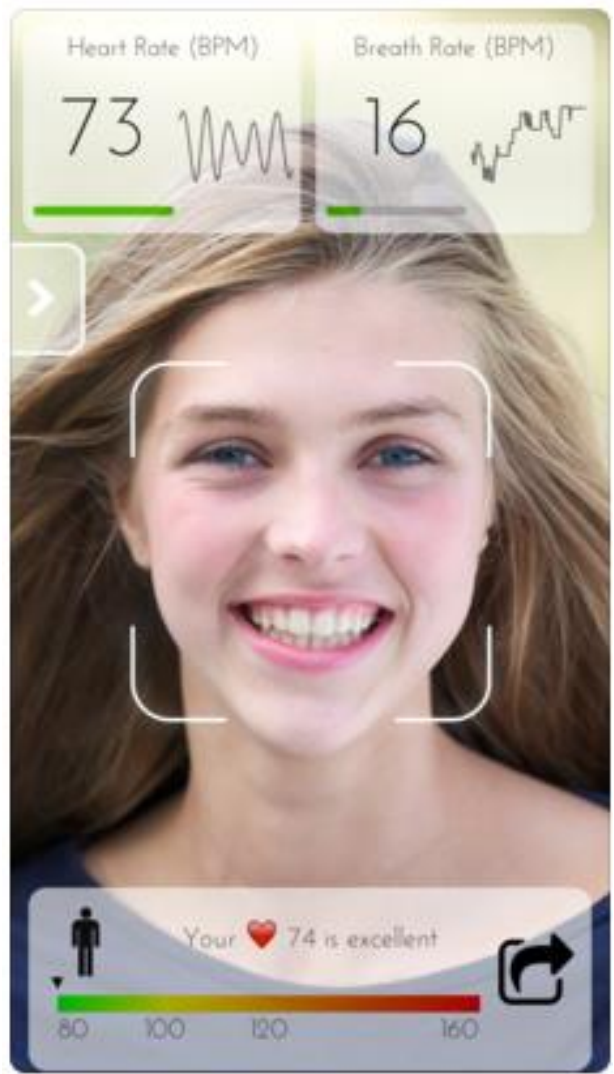
APP'S PARA FISIOLOGIA E BIOMECÂNICA



What's My Heart Rate

ViTrox Technologies

#198 in Health & Fitness
Free • Offers In-App Purchases









HRV4Training

4+

Alessandra Saviotti

R\$ 32,90





HRV4Training: Large-Scale Longitudinal Training Load Analysis in Unconstrained Free-Living Settings Using a Smartphone Application

Marco Altini¹ and Oliver Amft¹





PETRA ✓



BOCHA ✓



FUTEBOL 7 ✓



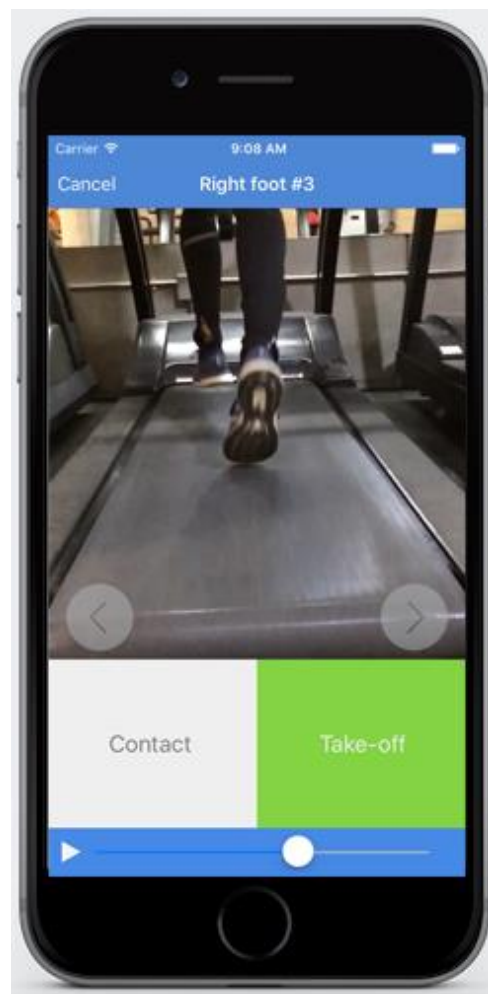


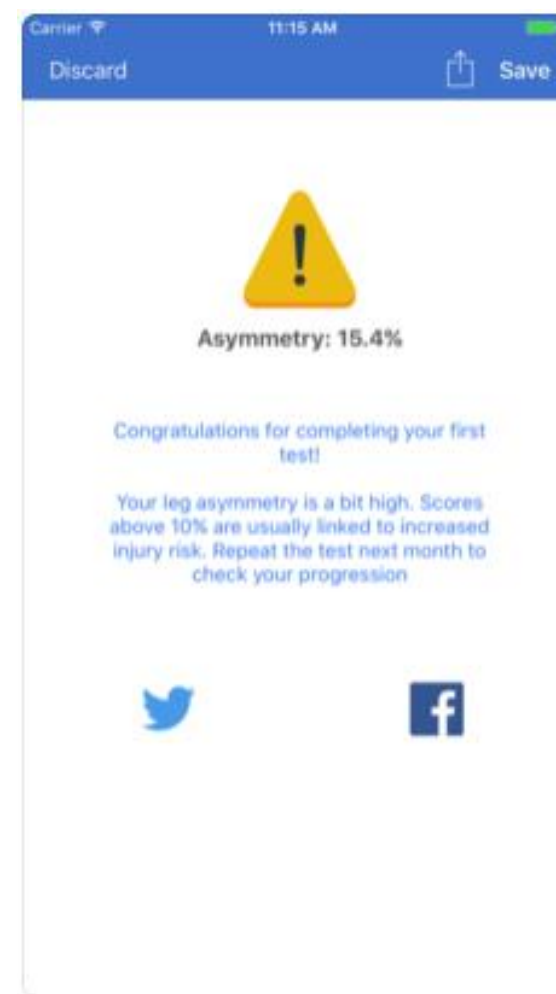
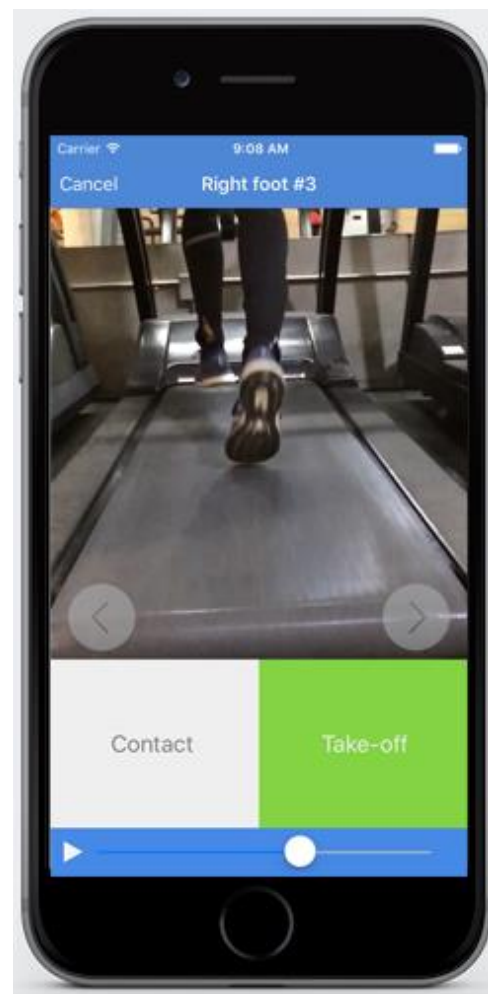
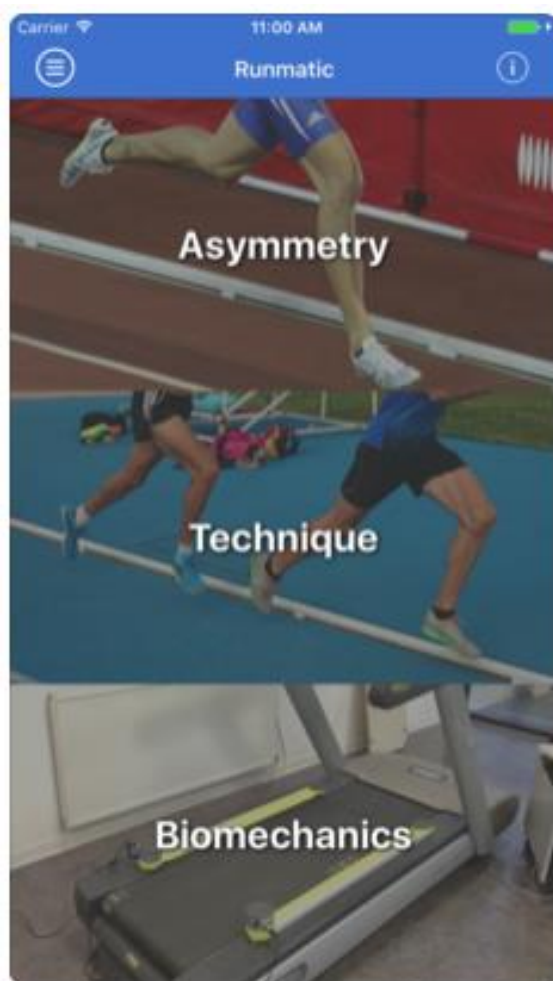
Runmatic 12+

Carlos Balsalobre

Nº 154 em Esportes

R\$ 32,90







PETRA ✓



BOCHA



FUTEBOL 7 ✓





DrGoniometer

17+

CDM S.r.L.

R\$ 39,90 • Oferece compras dentro







PETRA ✓



BOCHA ✓



FUTEBOL 7 ✓





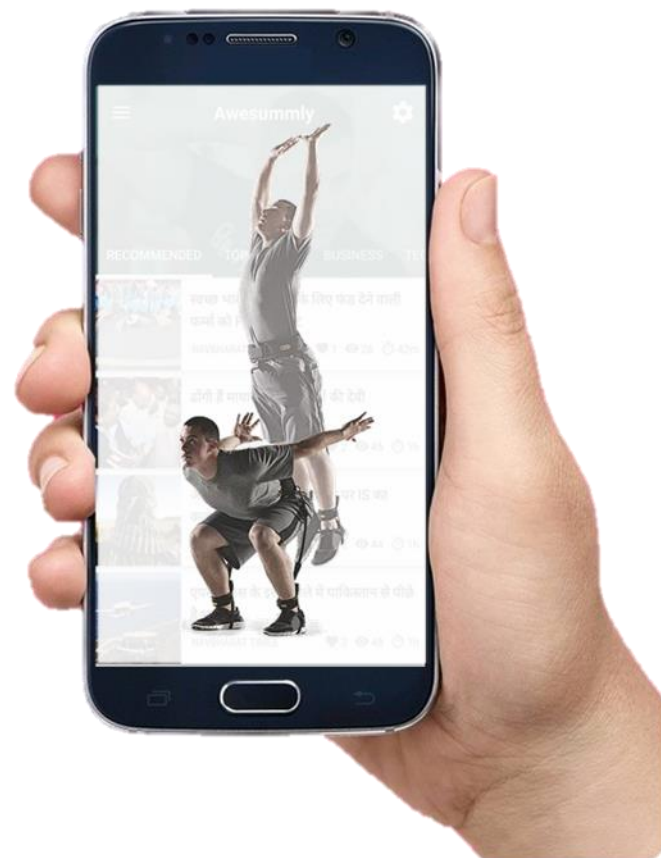
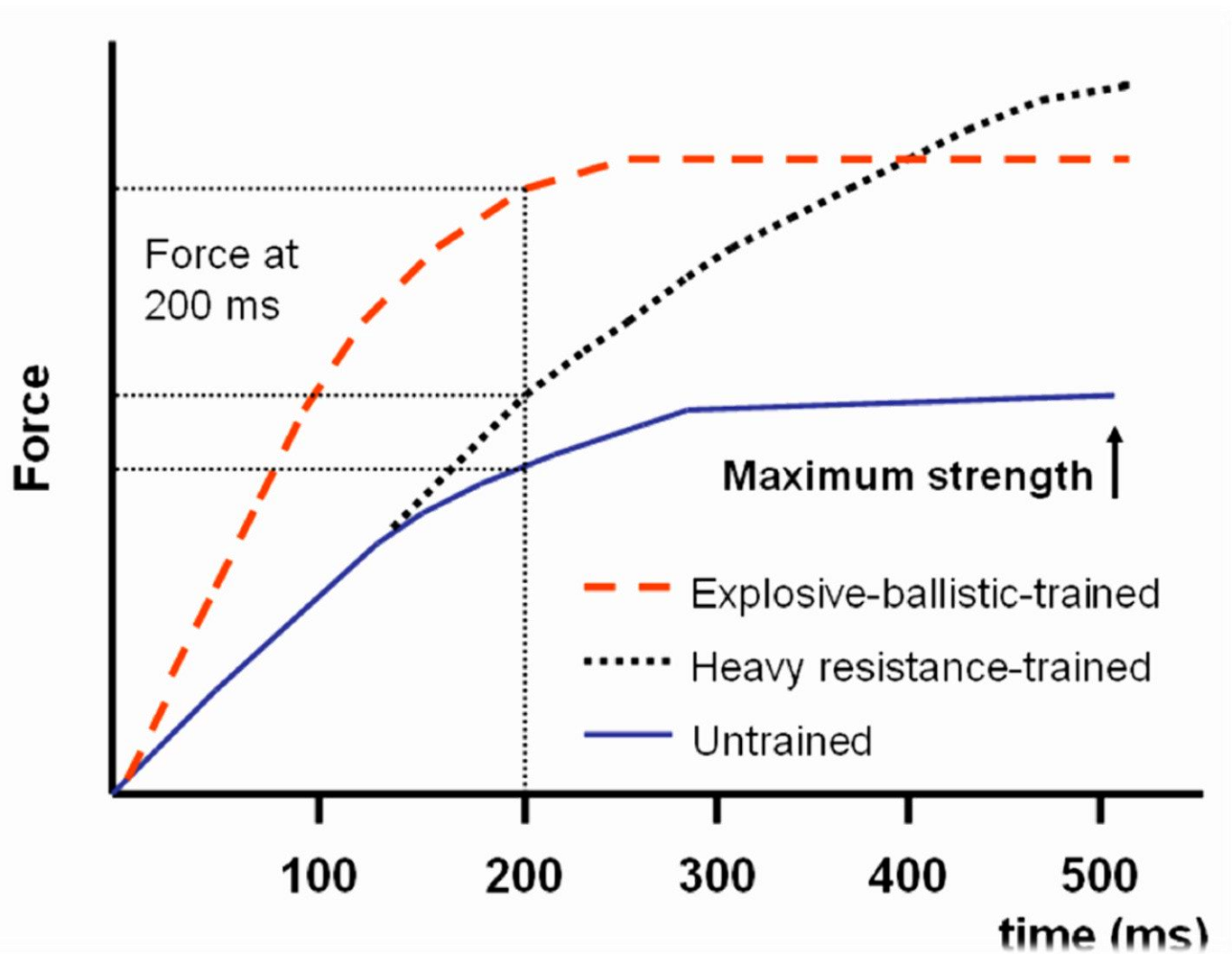
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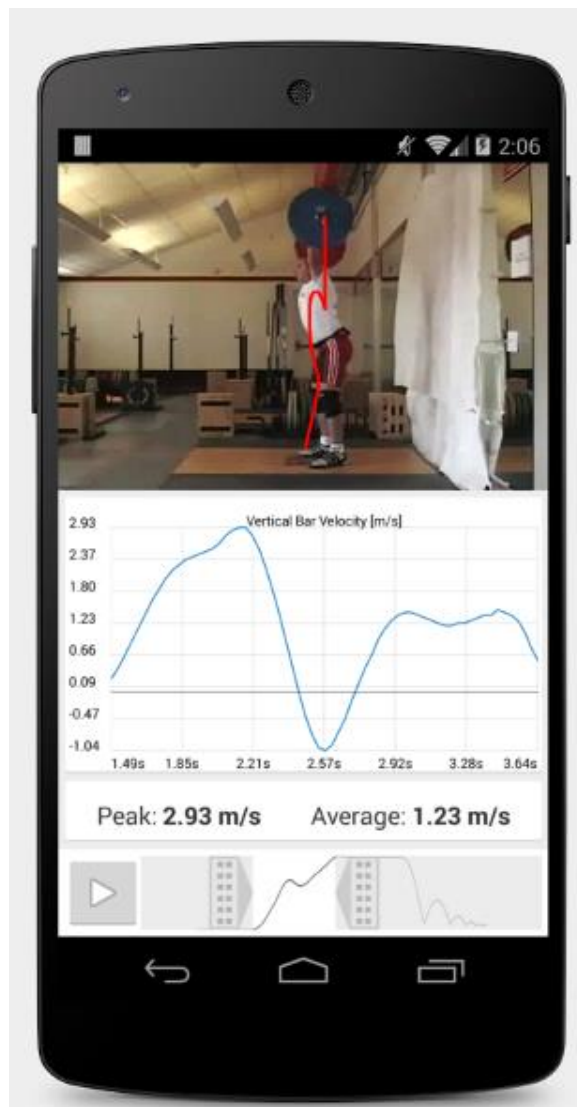
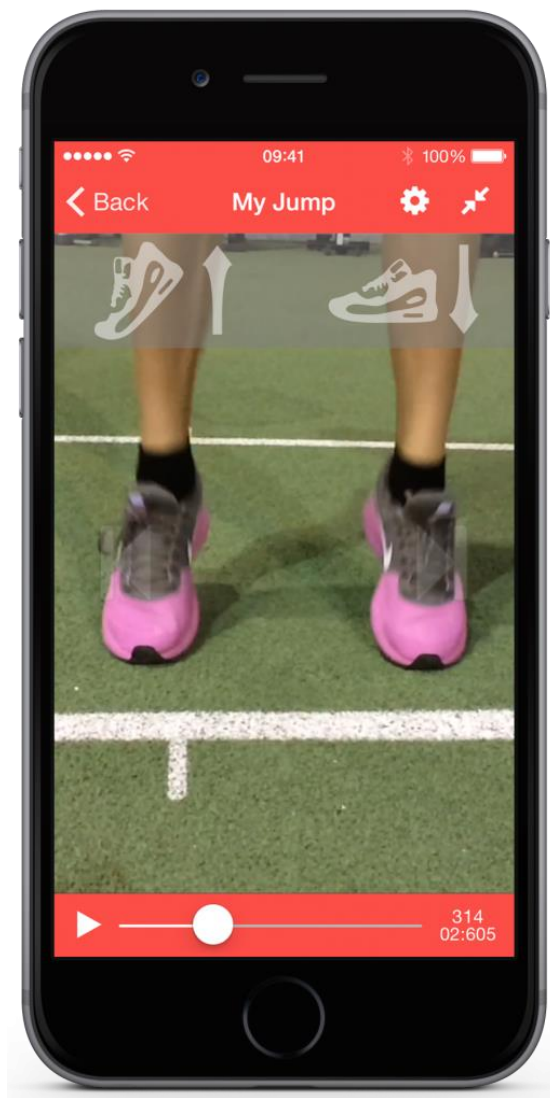
~~PERIODIZAÇÃO E MONITORAMENTO~~

~~POR QUE USAR APP'S NO ESPORTE???~~

~~APP'S PARA FISIOLOGIA E BIOMECÂNICA~~

~~APP'S PARA PERFORMANCE~~





 **BARSENSE**



My Jump 2

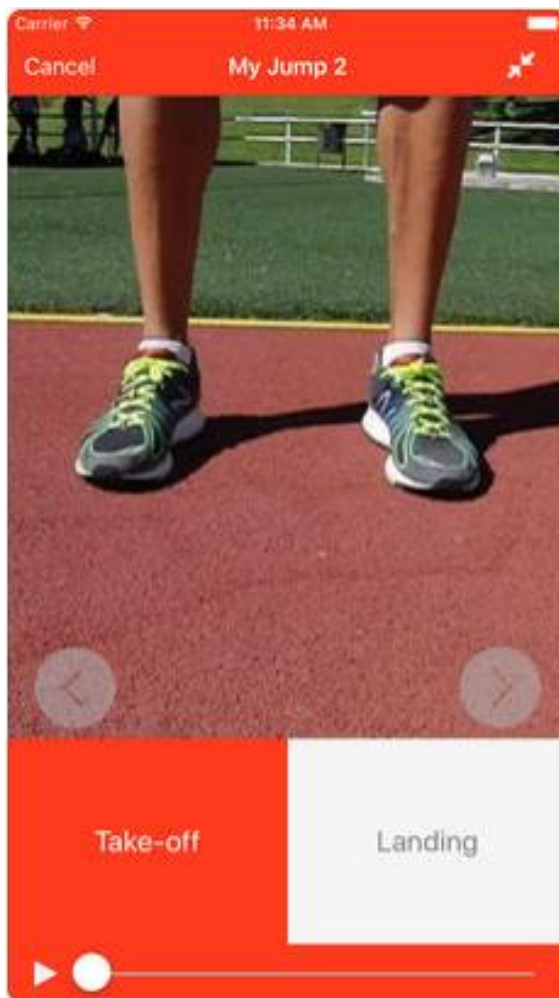
4+

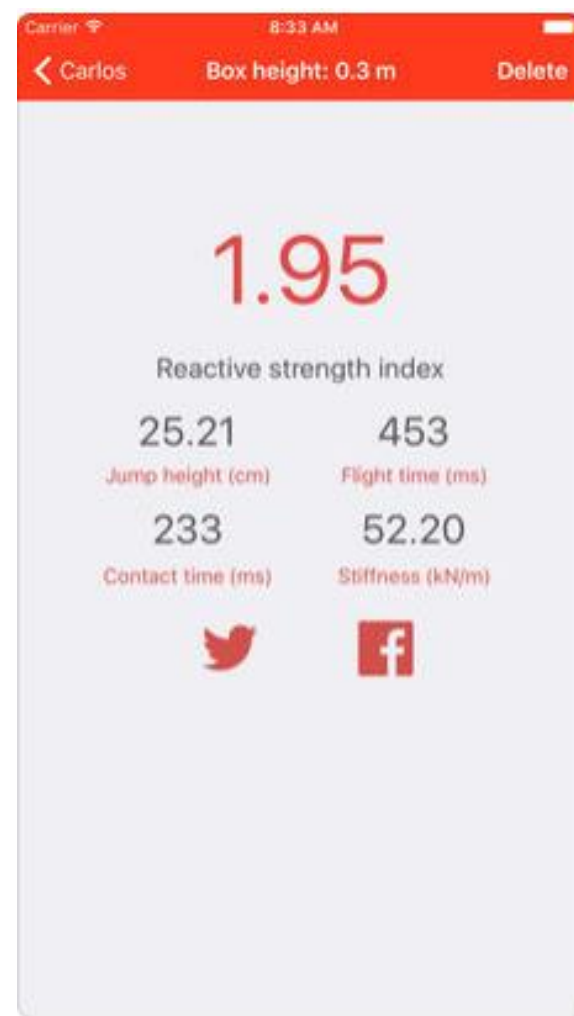
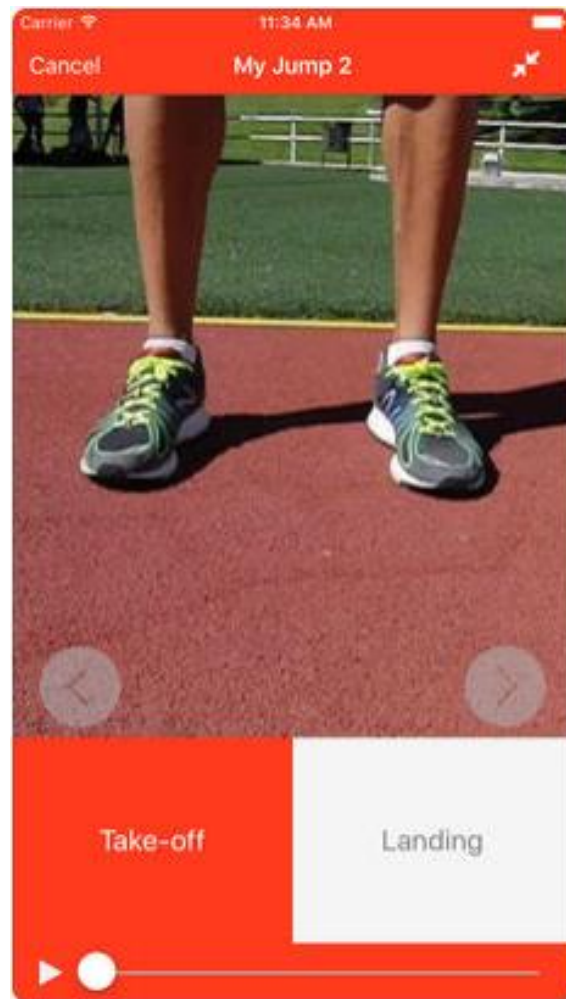
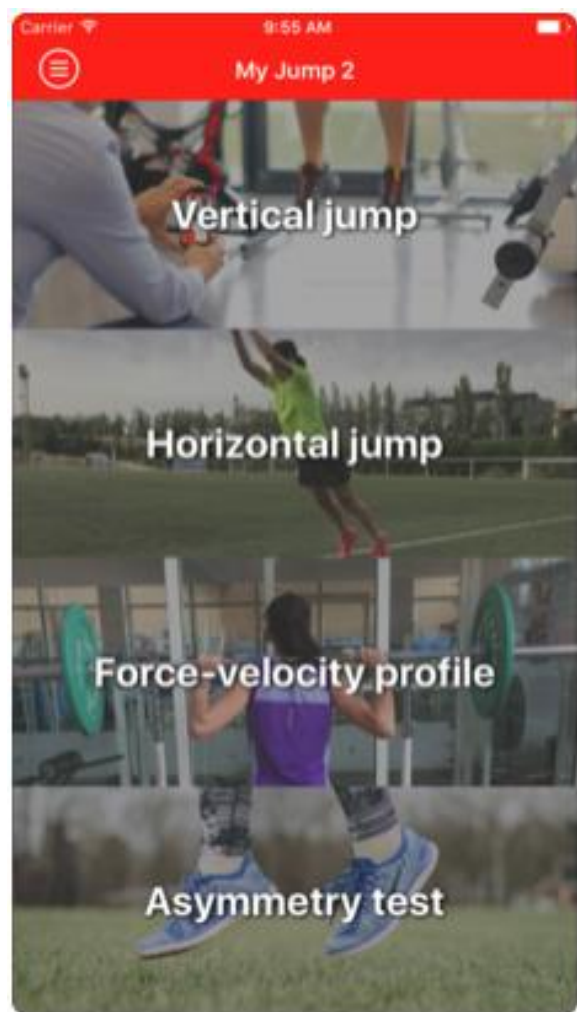
Carlos Balsalobre

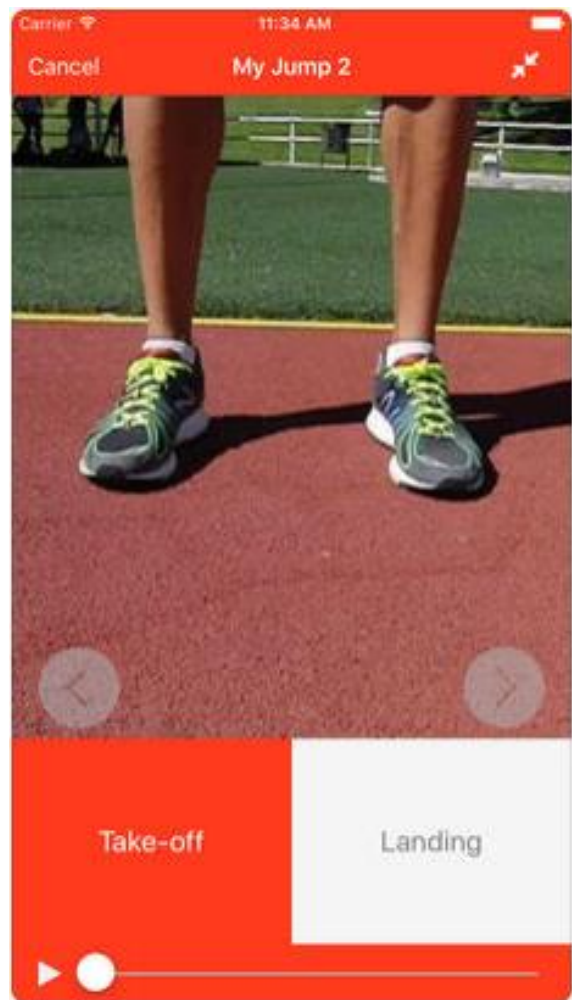
Nº 35 em Esportes

★★★★★ 24 avaliações

R\$ 32,90





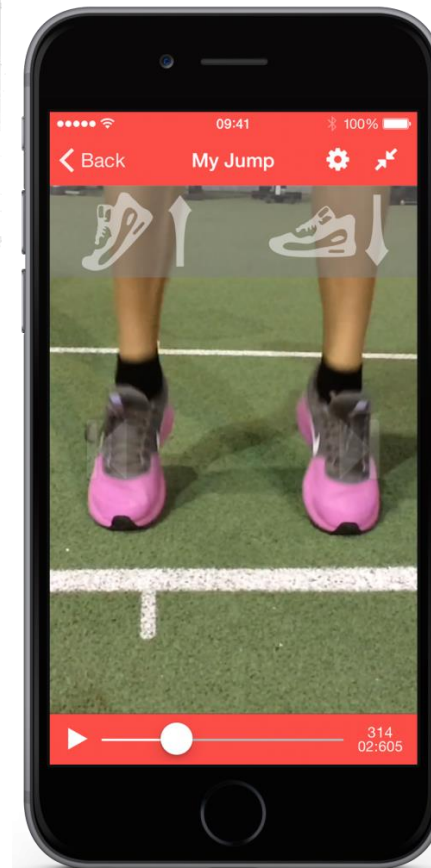
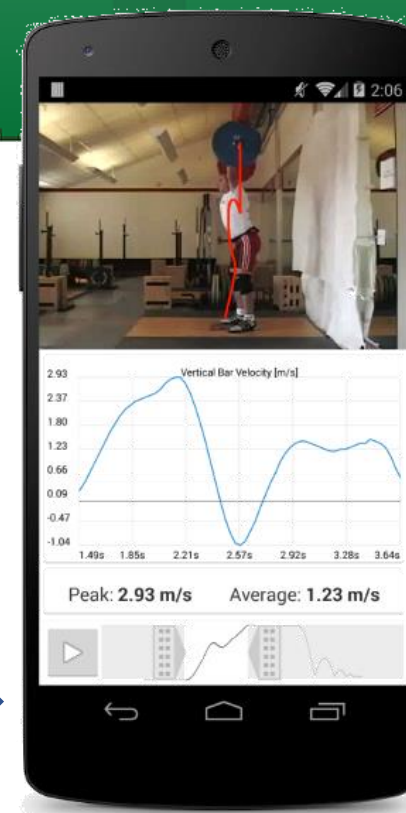


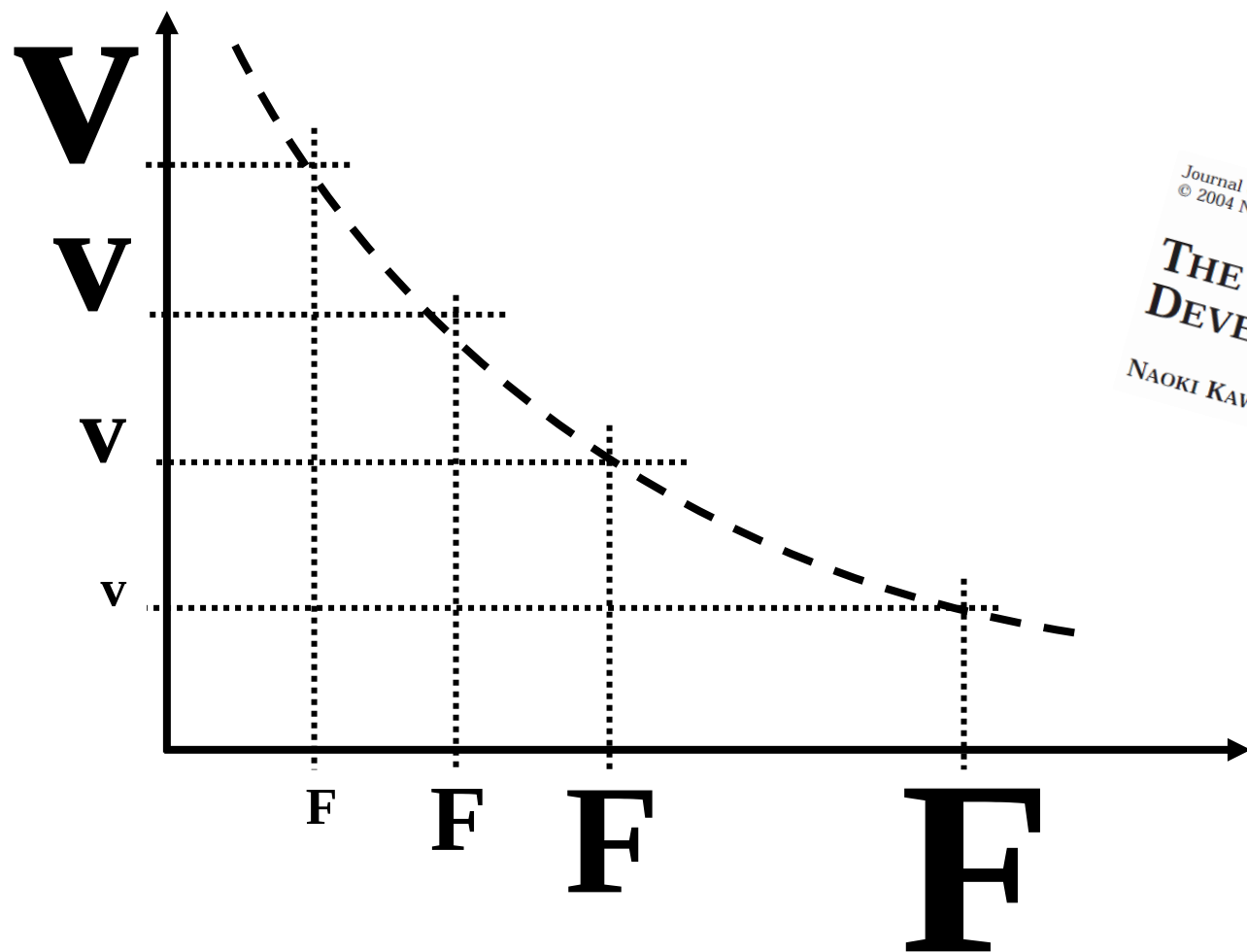
GEPAMA

0, 20, 40, 60, 80% MC

Até diferença < 5%

POTÊNCIA ÓTIMA



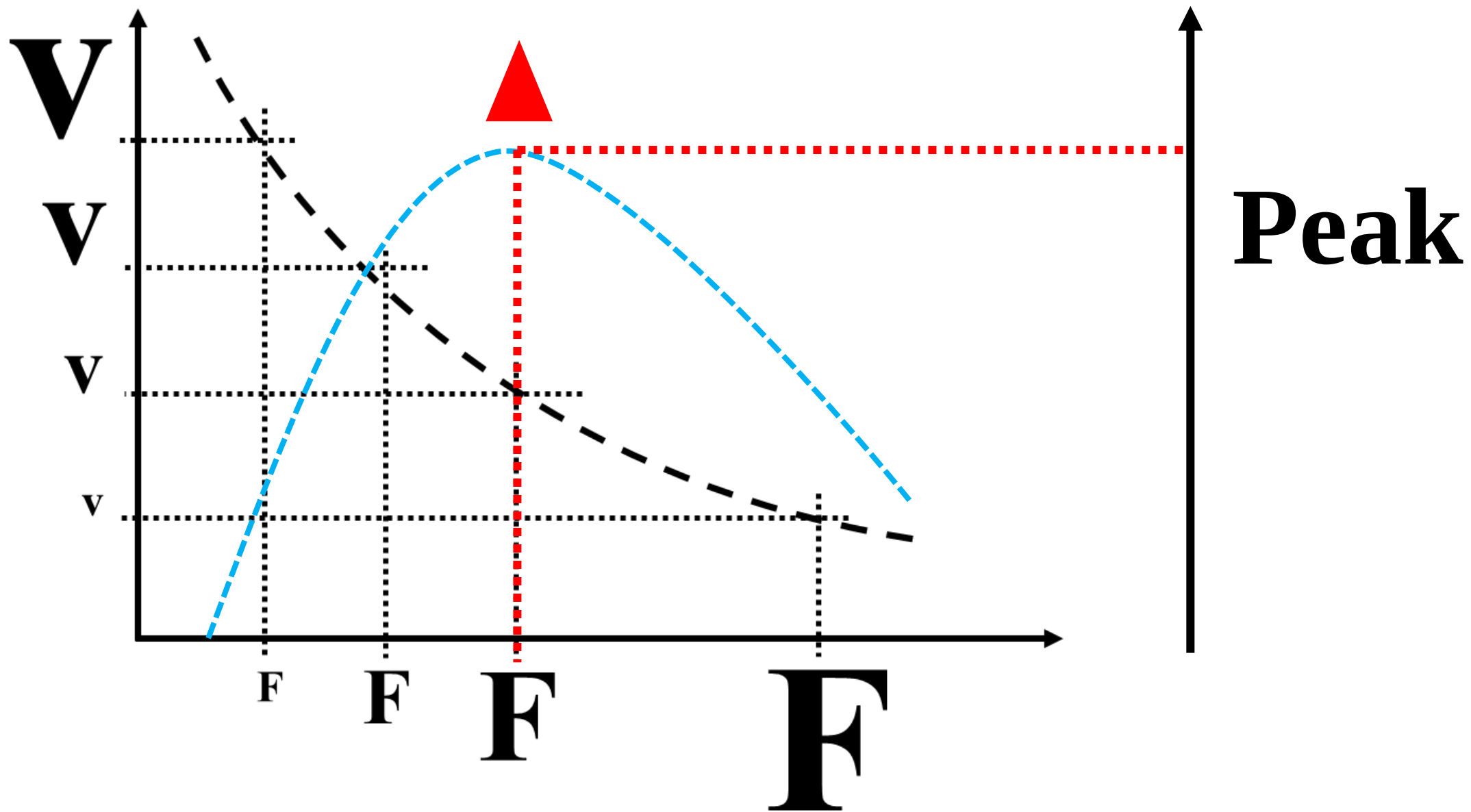


Journal of Strength and Conditioning Research, 2004, 18(3), 675-684
© 2004 National Strength & Conditioning Association

THE OPTIMAL TRAINING LOAD FOR THE DEVELOPMENT OF MUSCULAR POWER

NAOKI KAWAMORI AND G. GREGORY HAFF

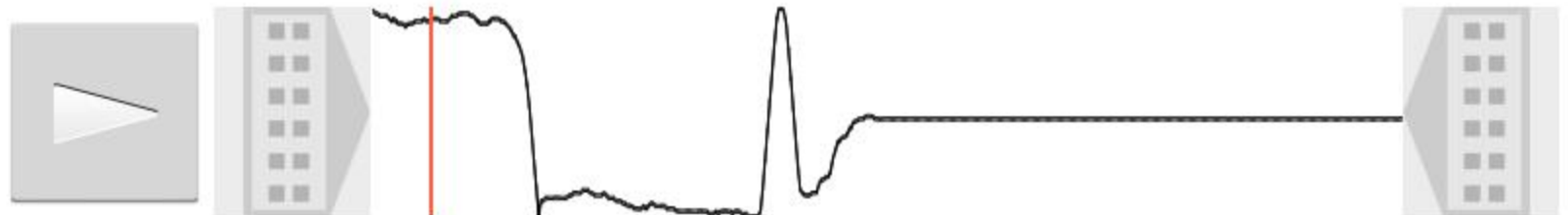
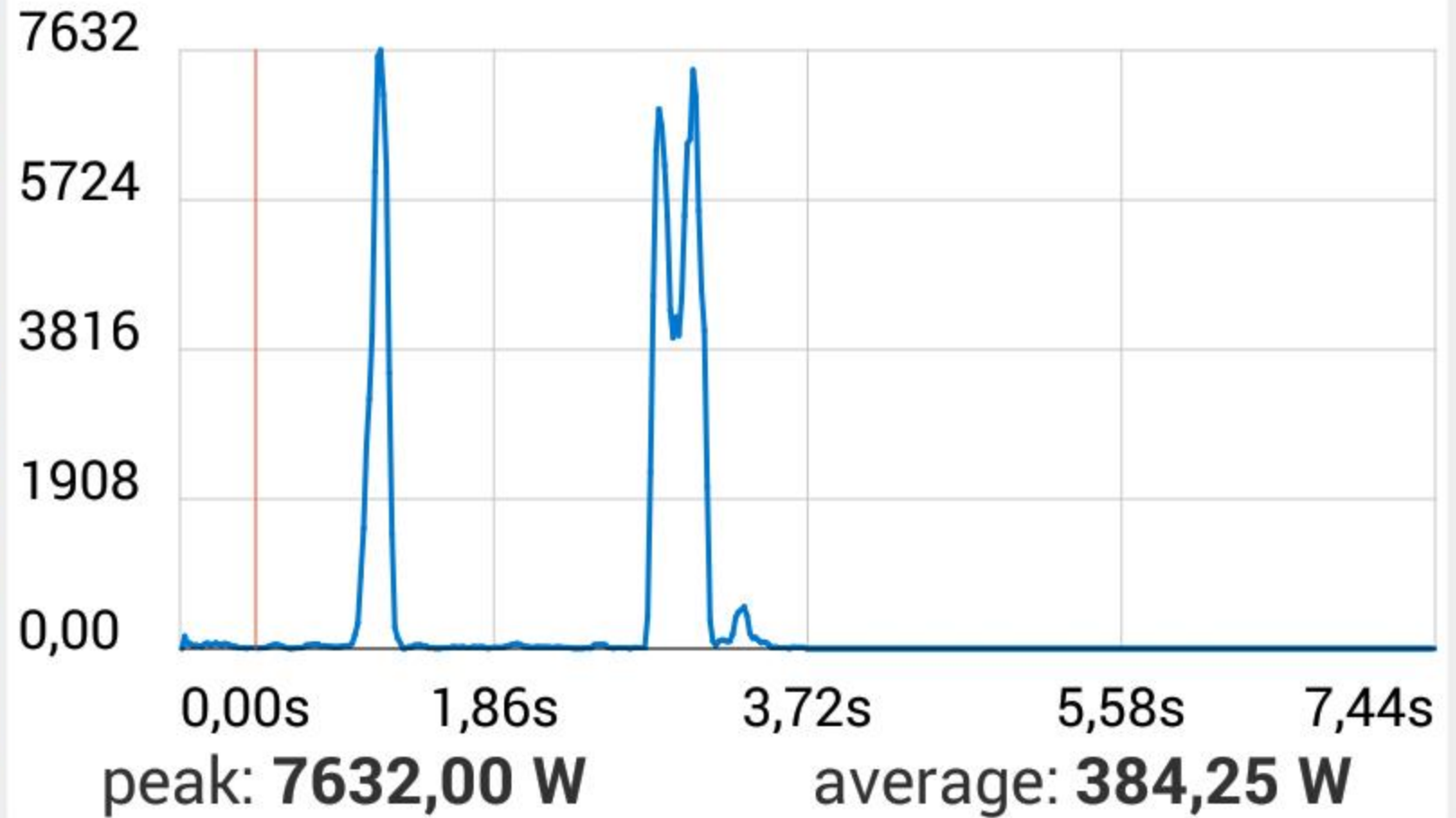
Brief Review







Force [N] Power [W] Vertical Distan





10Kg

Force [N]

Power [W]

Vertical Distan

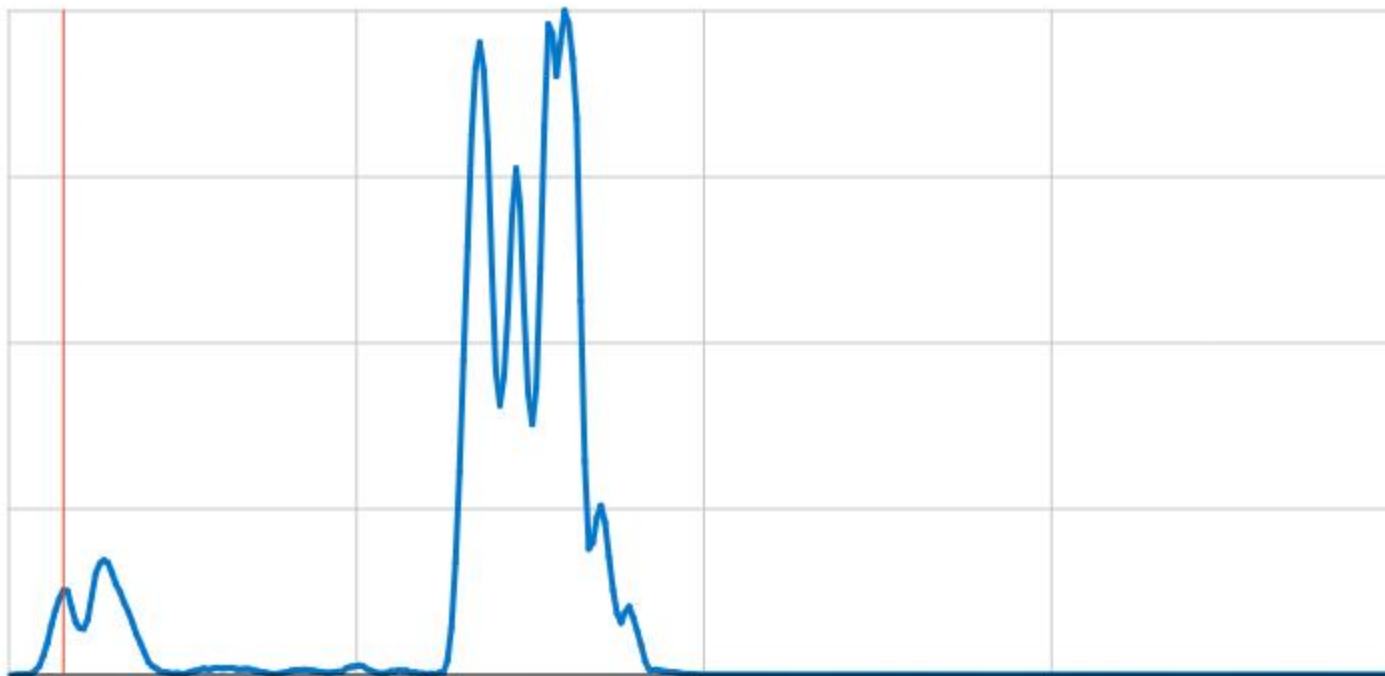
13772

10329

6886

3443

0,00



0,00s

1,45s

2,90s

4,35s

5,80s

peak: 13772,28 W

average: 1102,89 W





44%



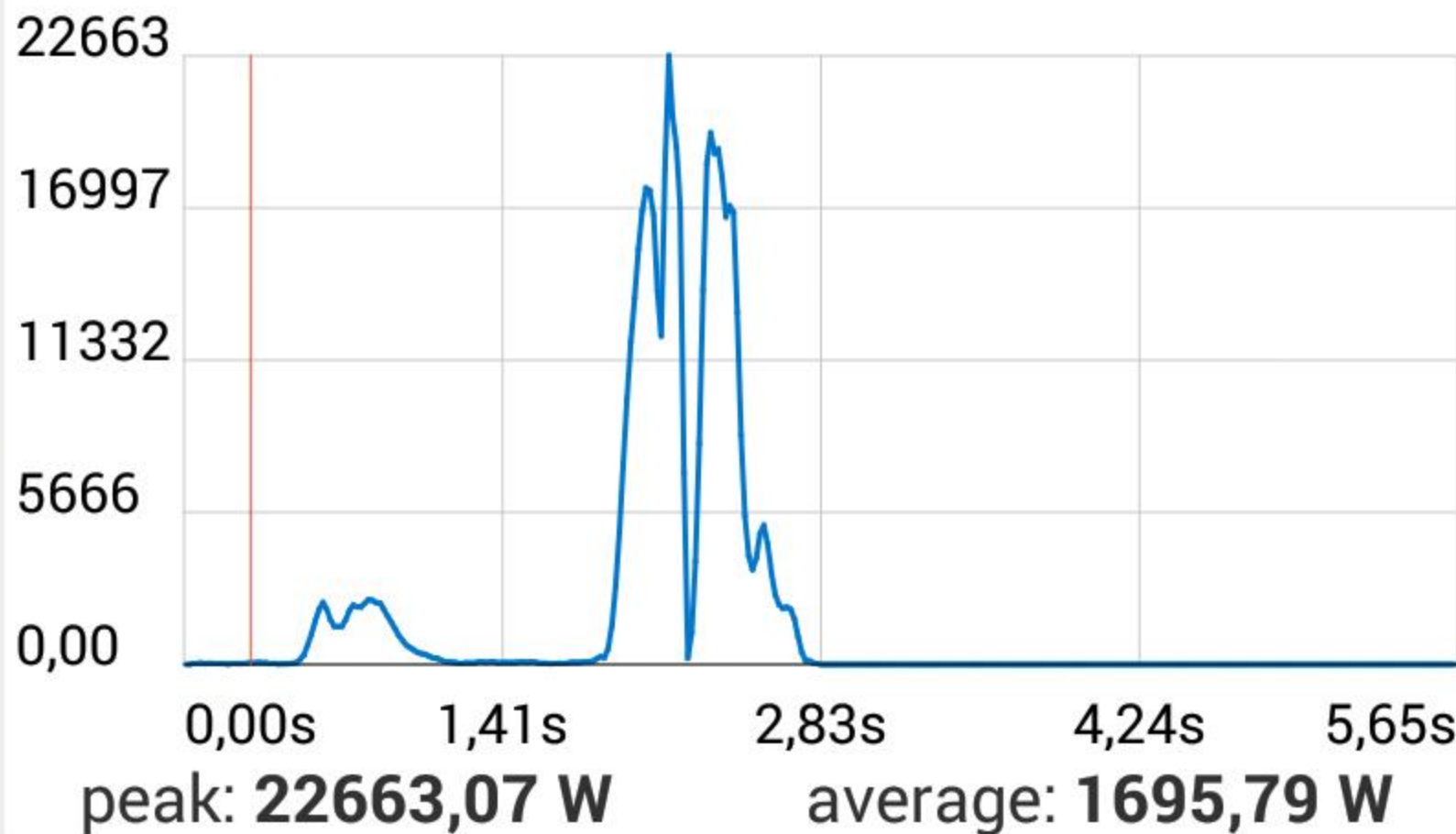
08:38



Force [N]

Power [W]

Vertical Distan





08:38

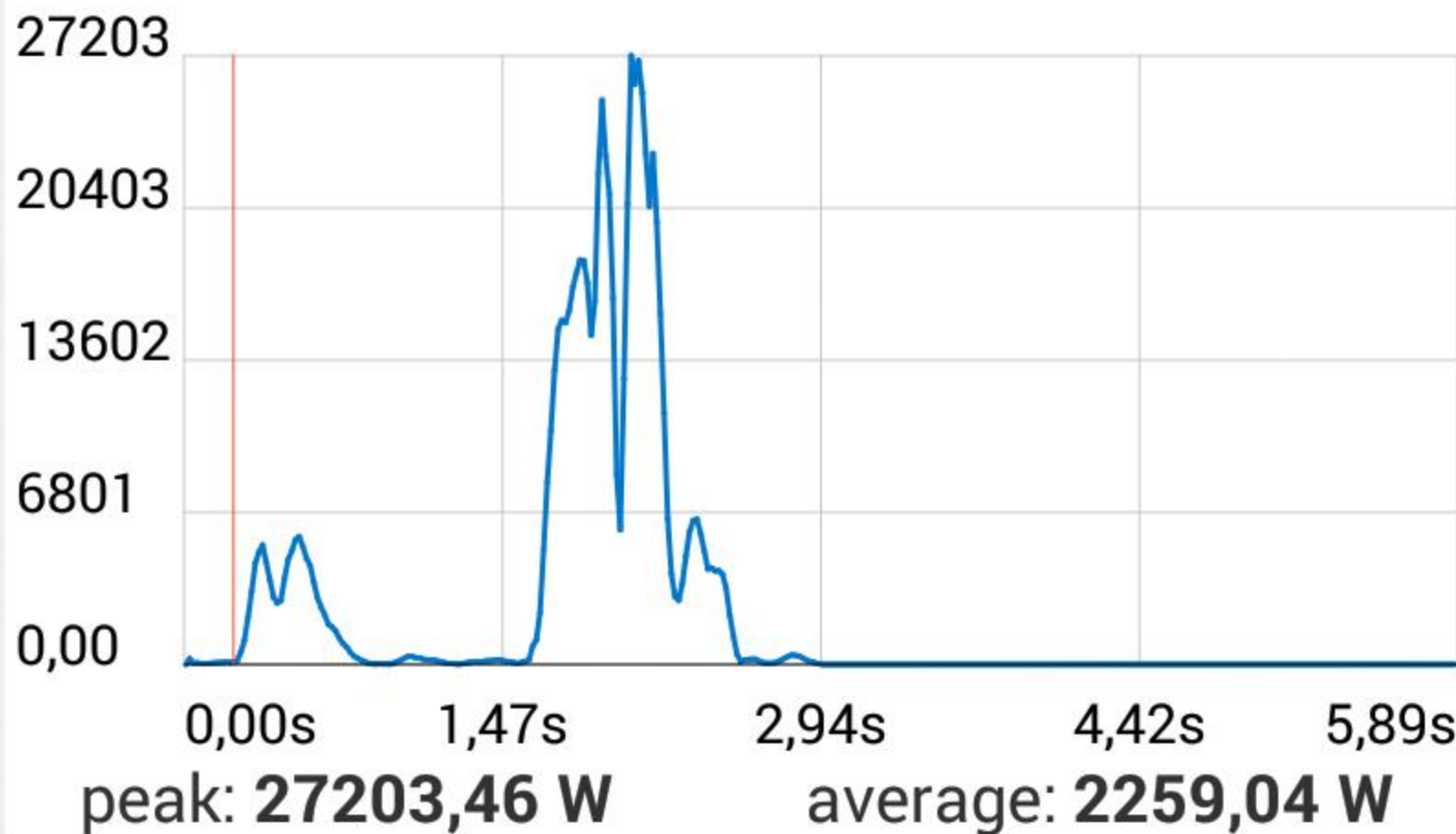


30Kg

Force [N]

Power [W]

Vertical Distan





43%



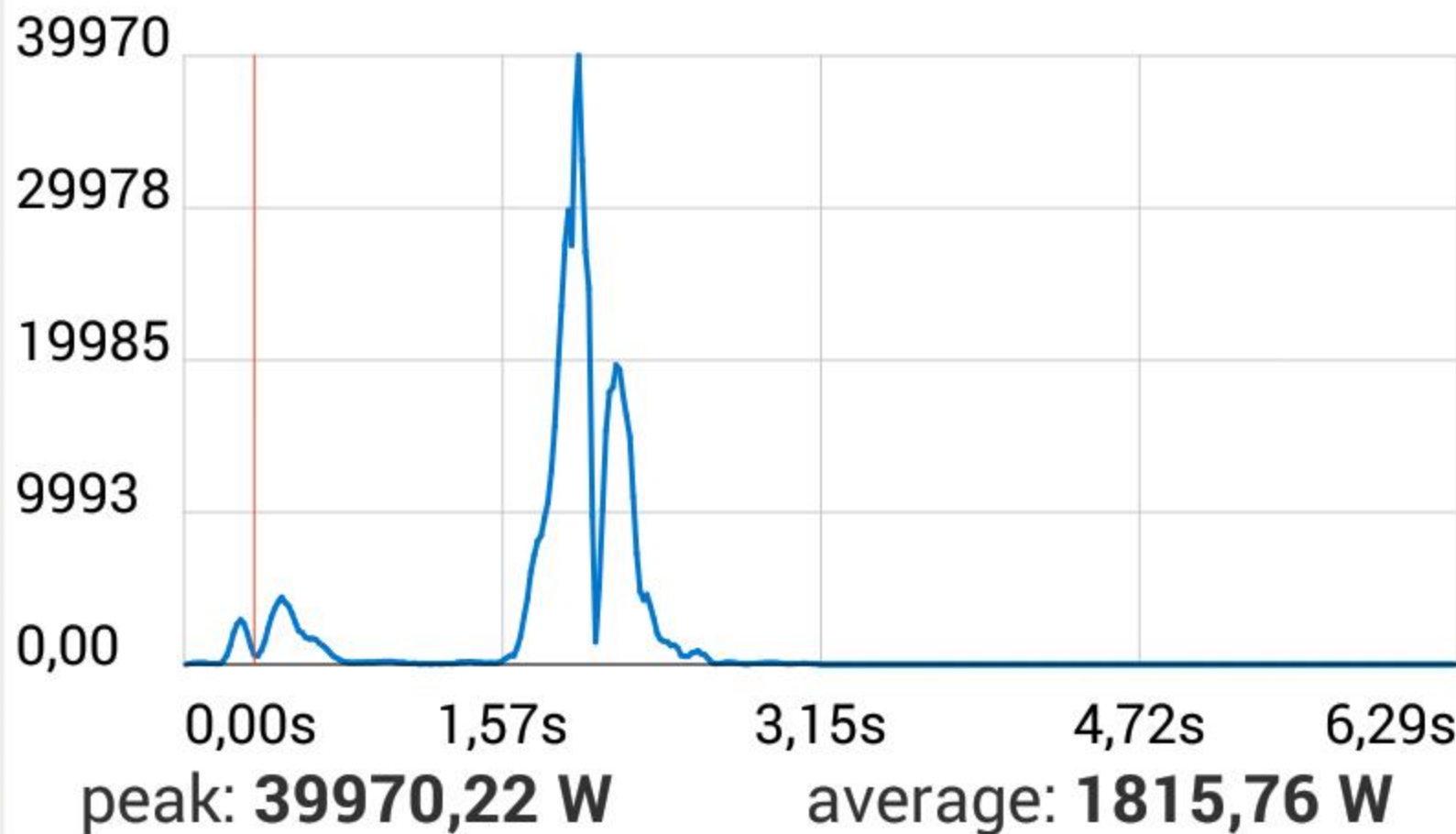
08:39



Force [N]

Power [W]

Vertical Distan





43%



08:39



50Kg

Force [N]

Power [W]

Vertical Distan

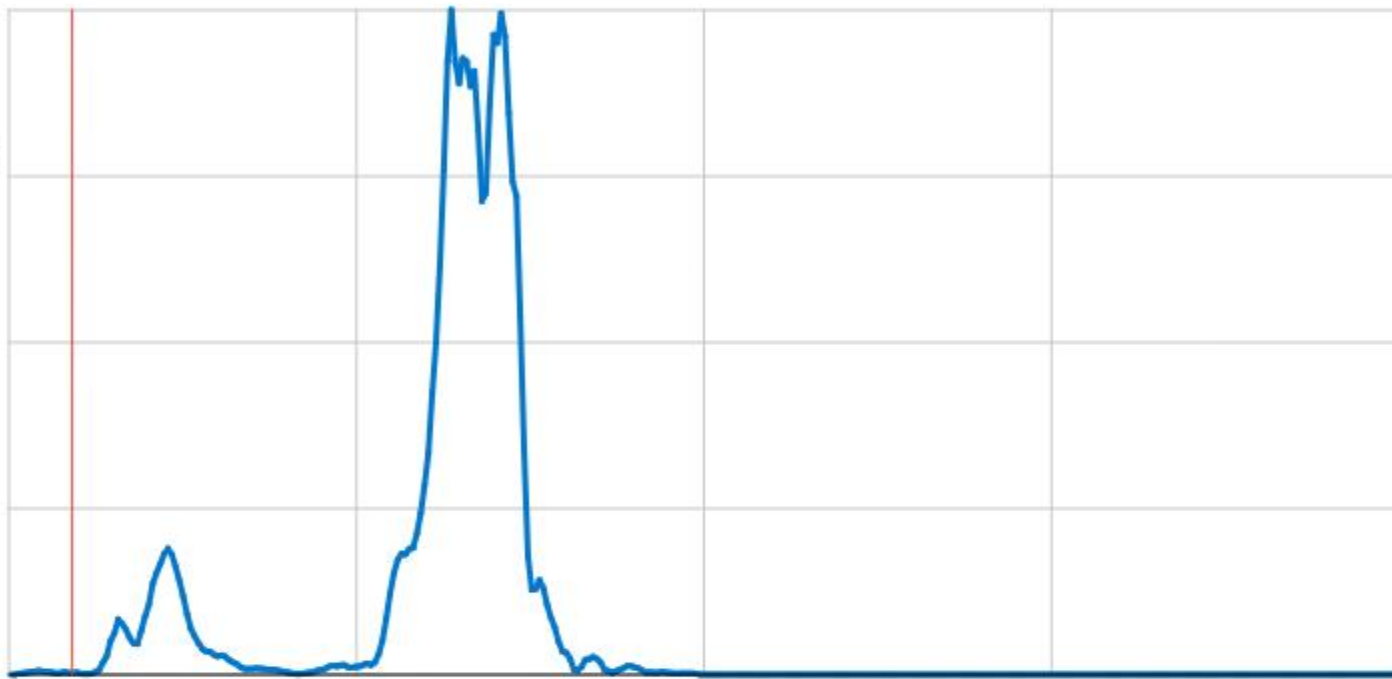
19005

14254

9503

4751

0,00



0,00s

1,53s

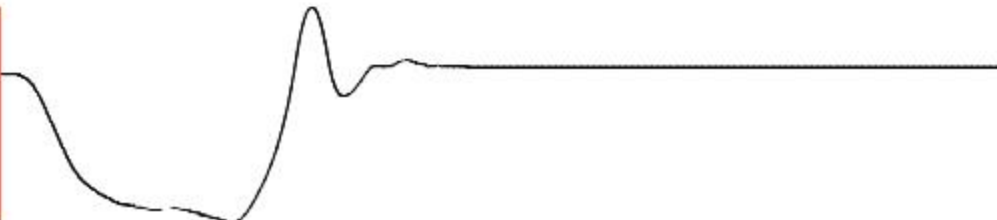
3,06s

4,59s

6,12s

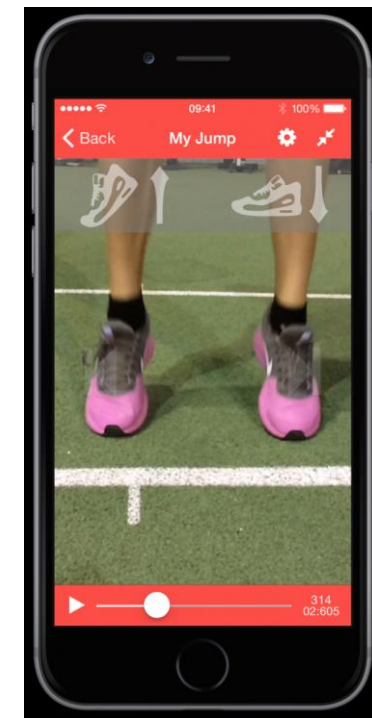
peak: **19005,12 W**

average: **1403,21 W**





Barsense
Android (Google Inc.)



MyJump
iOS (Apple Inc.)

Tabela 1: Valores de teste, re-teste, CV, CCI, EPM e MMD de potência pico e média com 40 e 80% da massa corporal a partir de diferentes instrumentos de medida (n=10)

		Teste			Re-teste			CCI	EPM	MMD
		X	dp	CV (%)	X	dp	CV (%)			
Potência Pico (w)										
40% MC	Tapete ^{a,*}	1346.00	439.76	32.67	1348.50	395.14	29.30	0.95	98.33	272.57
	MyJump [*]	2471.57	981.94	39.73	2296.14	888.79	38.71	0.95	219.57	608.61
	BarSense [*]	4167.12	857.76	20.58	5206.76	1669.34	32.06	0.73	445.70	1235.43
	PeakPower ^{a,*}	1043.53	460.02	44.08	1060.73	487.42	45.95	0.99	46.00	127.51
80% MC	Tapete ^{a,*}	962,00#	323.58	33.64	983.90#	325.50	33.08	0.98	45.76	126.85
	MyJump ^{b,*}	1849.99	782.52	42.30	1833.60	920.26	50.19	0.98	110.67	306.75
	BarSense [*]	5078.98	1750.64	34.47	5061.74	1321.98	26.12	0.85	678.02	1879.37
	PeakPower ^{a,b,*}	1441.06	502.17	34.85	1487.75	582.92	39.18	0.97	86.98	241.09

Letras iguais indicam que não há diferença entre os instrumentos de medida; # diferente da situação 40% no mesmo momento; * diferentes momentos de medida; ** diferentes instrumentos de medida; * e # indicados pelas letras

EXCELENTE
(FLEISS, 1981)



TABLE 2. Intrasection and interseccion reliability of both the *My Jump* app

	<i>My Jump</i> app		
	Intraseccion		Interseccion
	α	CV	<i>r</i>
Squat jump (cm)			
All	0.99	4.82–5.58	0.90
Men	0.97	5.35–5.63	0.82
Women	0.98	3.77–5.48	0.93
Countermovement jump (cm)			
All	0.99	4.63–5.46	0.95
Men	0.99	4.38–4.64	0.93
Women	0.99	4.59–7.60	0.86
40-cm drop jump (cm)			
All	0.98	6.06–6.13	0.87
Men	0.96	6.05–6.57	0.84
Women	0.94	5.20–6.06	0.76

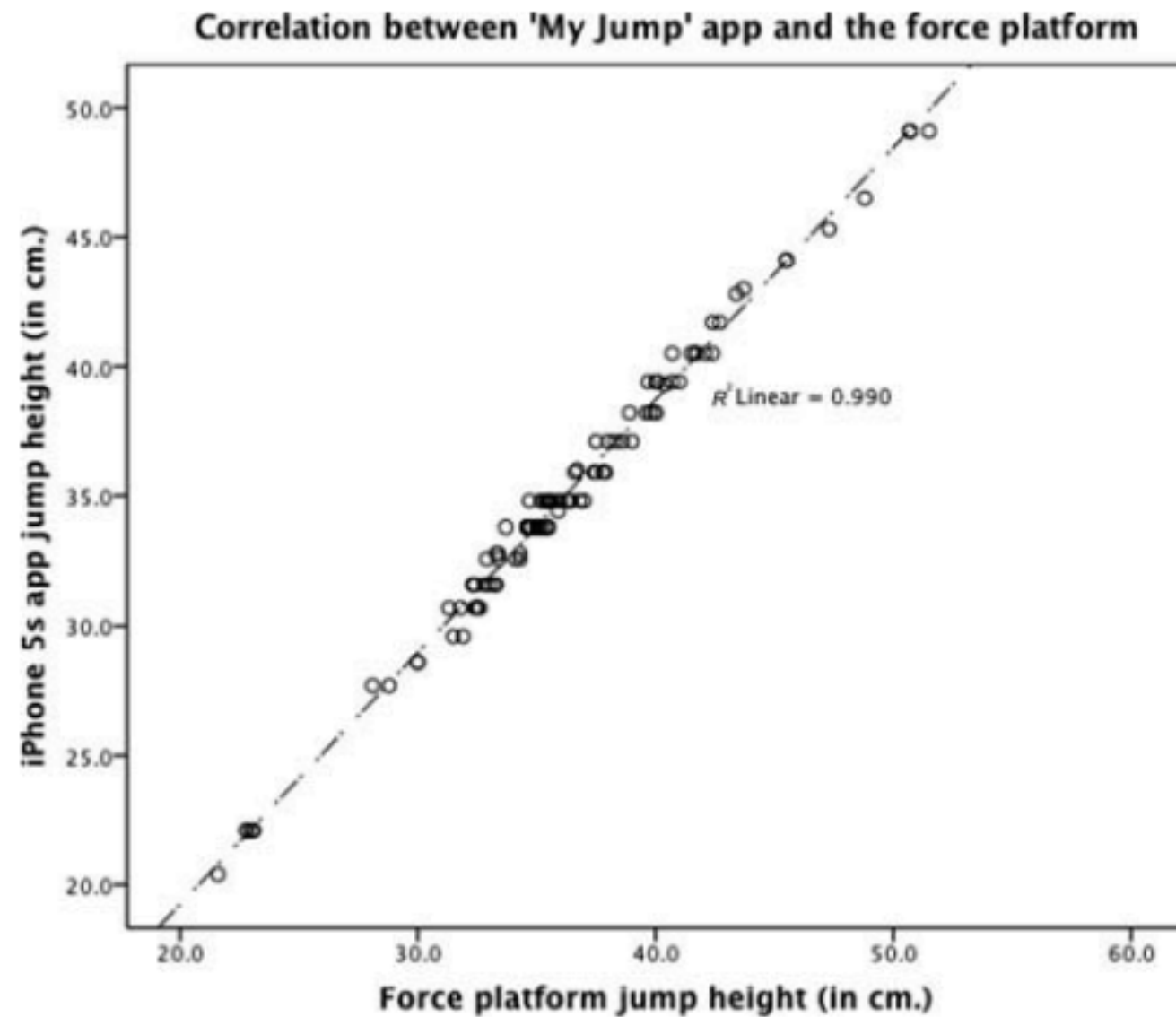


Figure 3. Concurrent validity between the force platform and *My Jump* app.



PETRA ✓



BOCHA



FUTEBOL 7 ✓



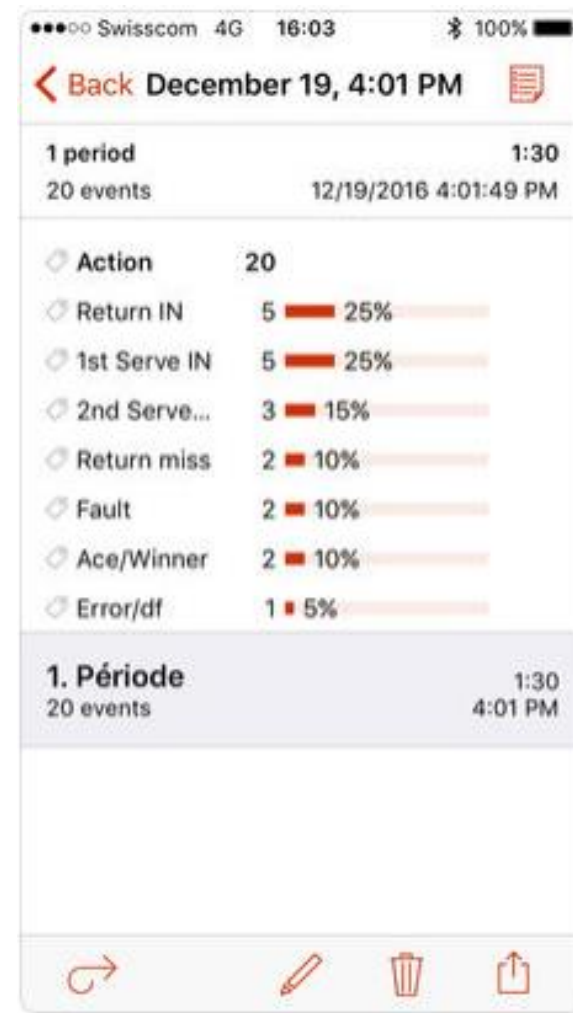
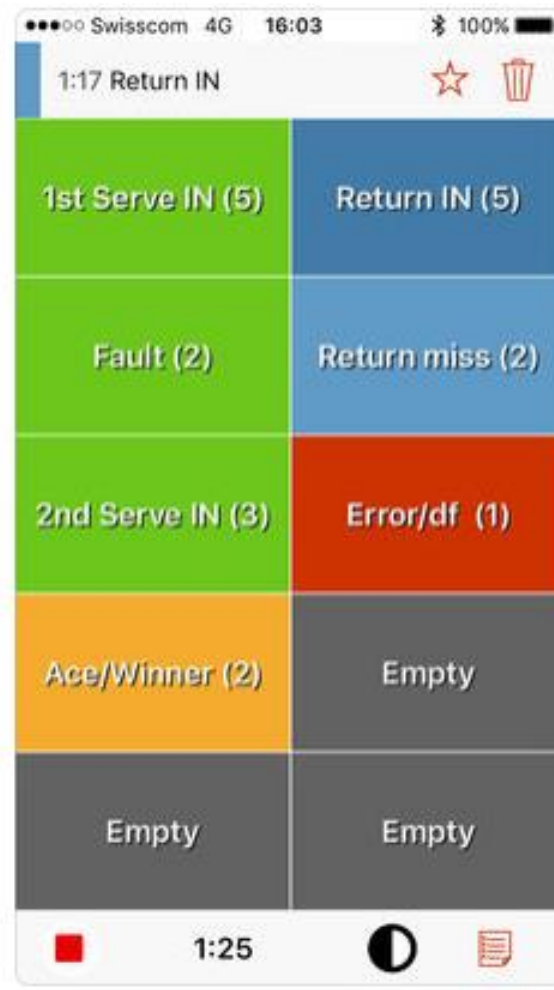


Dartfish EasyTag-Note

Dartfish

Nº 122 em Esportes

R\$ 16,90





19:50

0:01

TAGGING

NOTEBOOK



Início	PÉ	SOLO	Fim
Prepara	Imobiliza	Agarre	Passa
Tronco Braço	Tronco Pé	Choke	Punição
Braço Pé	Pé Braço	Chave	PAUSA
Comprim Costas	Comprim Frontal	Variação	PONTO





19:50

0:01

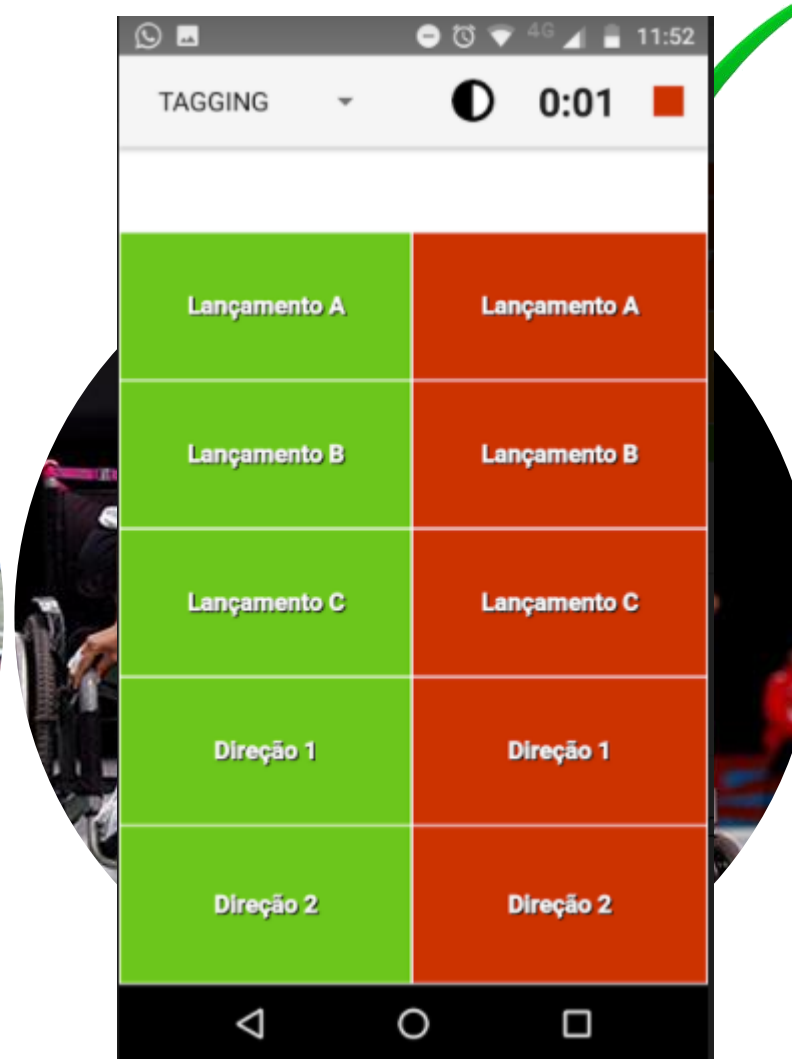
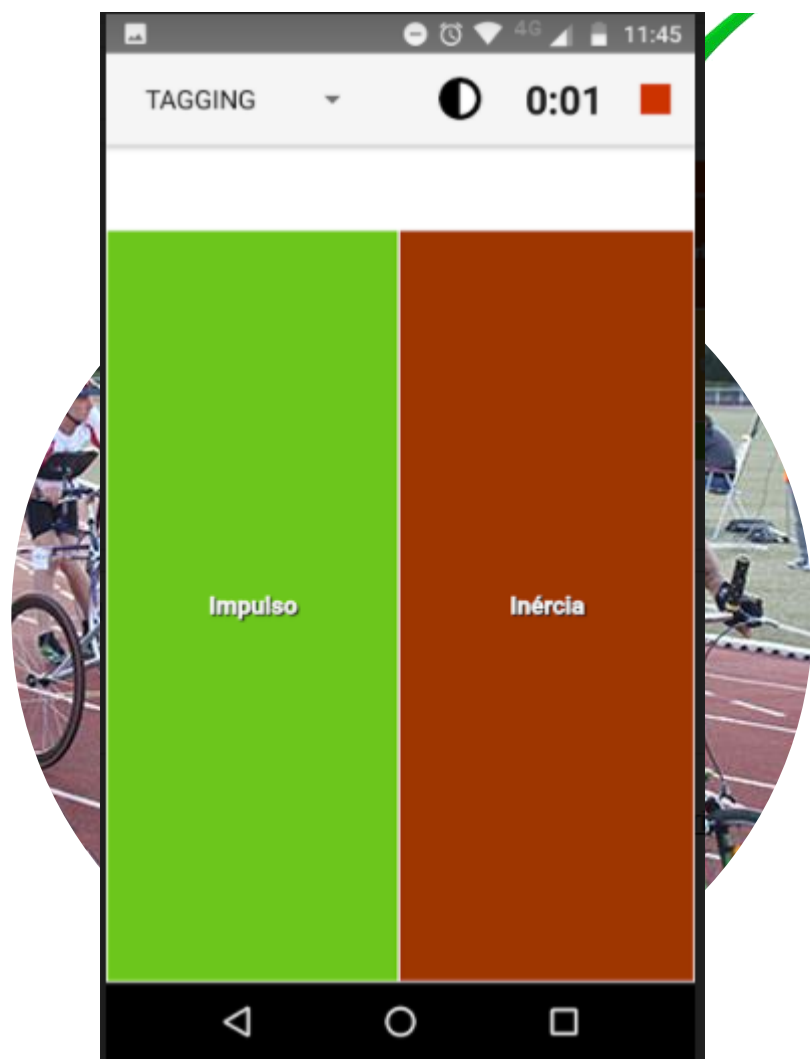
TAGGING

NOTEBOOK



Início	PÉ	SOLO	Fim
Prepara	Imobiliza	Agarre	Passa
Tronco Braço	Tronco Pé	Choke	Punição
Braço Pé	Pé Braço	Chave	PAUSA
Comprim Costas	Comprim Frontal	Variação	PONTO







NOSSO PAPO DE HOJE...

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~~POR QUE USAR APP'S NO ESPORTE???~~

~~APP'S PARA FISIOLOGIA E BIOMECÂNICA~~

~~APP'S PARA PERFORMANCE~~

INDICAÇÕES GERAIS



INDICAÇÃO GERAL

“EMBORA A HIPÓTESE DE **GENERALIZAÇÃO** DO TREINAMENTO SEJA **SEDUTORA**, À LUZ DA **COMPLEXIDADE BIOLÓGICA**, ESTE ENCANTO SE REVELA COMO **ILUSÓRIO**.”

Periodization Paradigms in the 21st Century:
Evidence-Led or Tradition-Driven?



Periodization Paradigms in the 21st Century: Evidence-Led or Tradition-Driven?

John Kiely

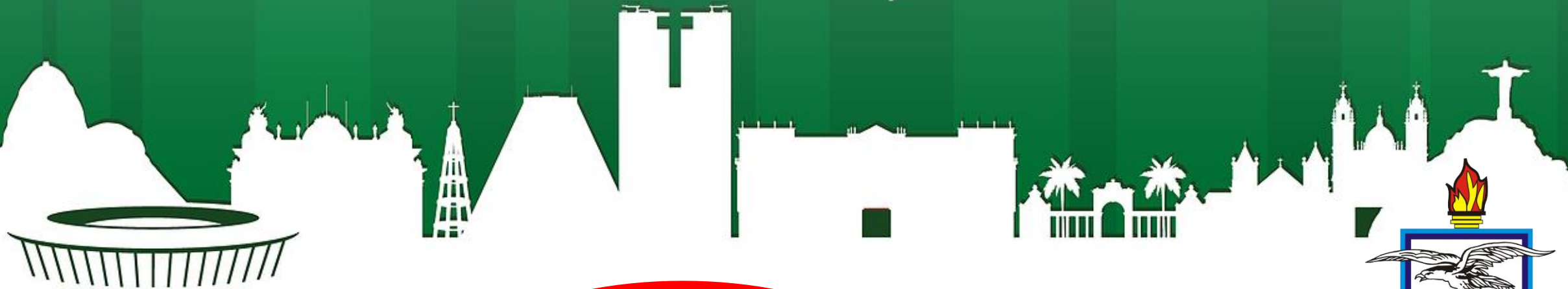
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