

Evaluación Física del Boxeador

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Preguntas iniciales

¿Por qué evaluamos?

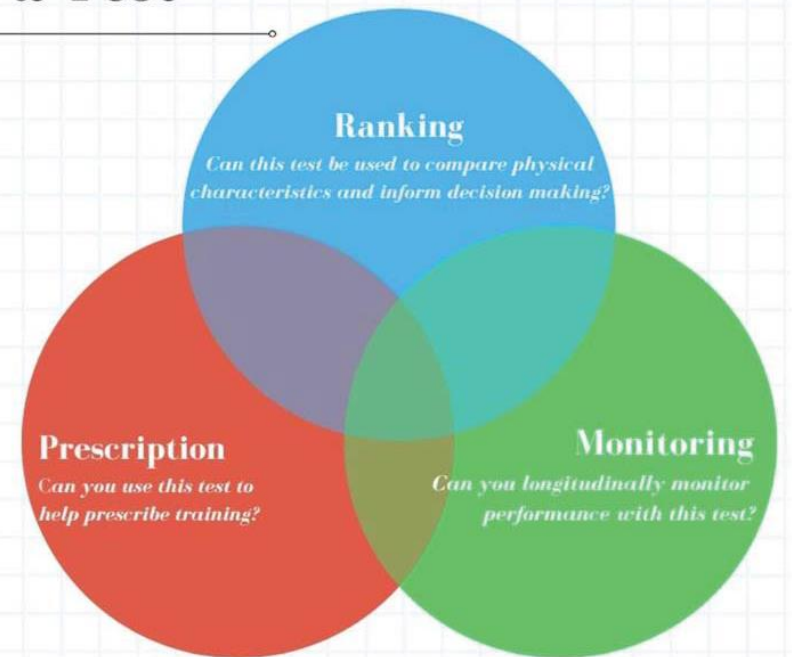
¿Qué evaluamos?

¿Cómo lo evaluamos?

¿Cuándo lo evaluamos?

Testing and Profiling Athletes: Recommendations for Test Selection, Implementation, and Maximizing Information

Considerations for Selecting a Test





Internal

Perception of effort (e.g., RPE, sRPE)
Heart rate parameters
Blood lactate concentration
Blood lactate to RPE ratio
HR variability
NIRS parameters
Psychometric tools (e.g., POMS, REST-Q)
Sleep quality
Biochemical assessments

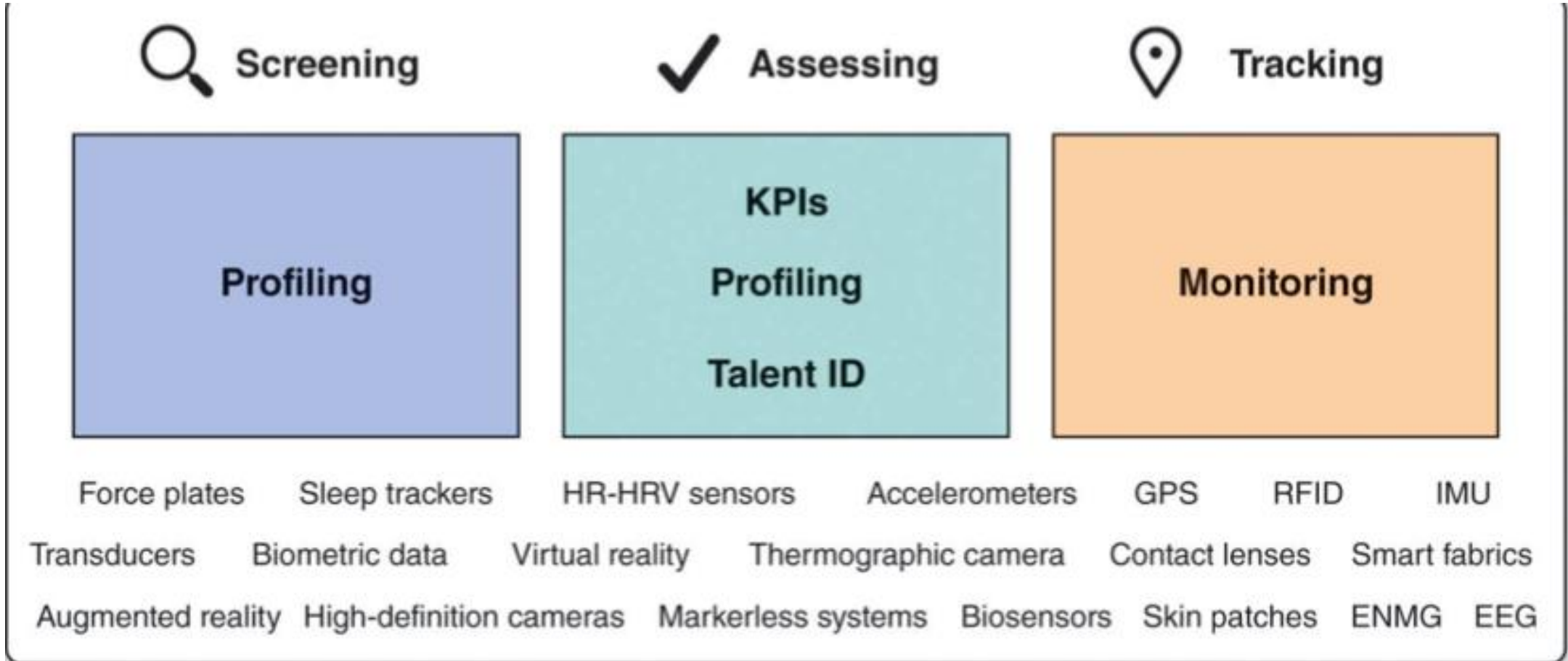
a

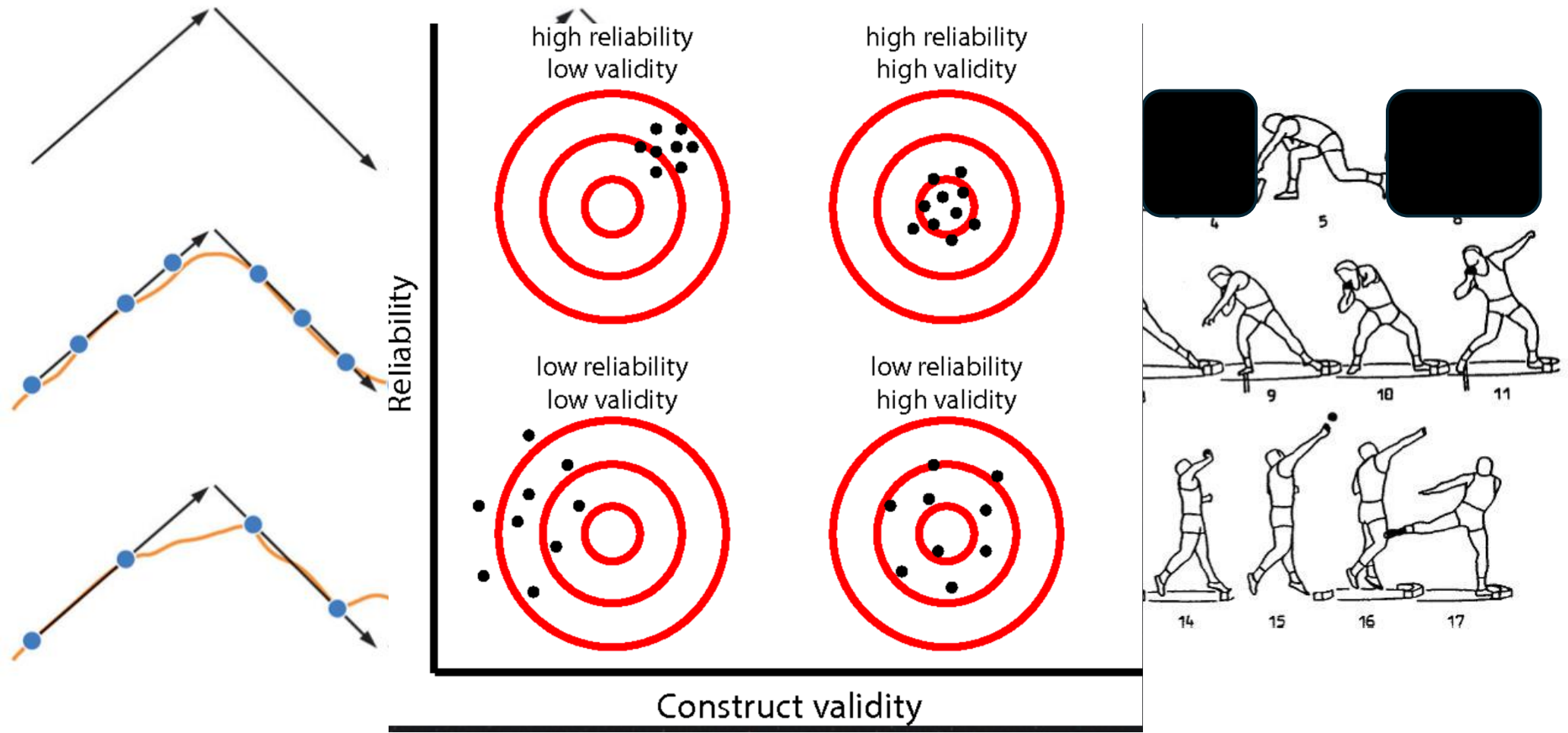


External

Time parameters (s/min)
Time-motion analysis (e.g., GPS)
Power output
Speed and acceleration
Distance covered
Weight lifted

b





Tores-Ronda, L. (2021). *Technological implementation*. Duncan French, Lorena Torres Ronda (Eds.). NSCA's Essentials of Sport Science. Human Kinetics. ISBN: 9781492593355

Table 2
Recommendations and considerations for improving test reliability in sports science

Recommendations for the improvement of testing reliability and outcomes

All equipment and recording forms are available and prepared.

All equipment is calibrated and operating correctly.

Testing conditions are similar. This includes environmental conditions and surfaces (e.g., running track).

Time of day is consistent.

All pretest protocols (e.g., warm-ups) have been specified and implemented consistently.

Testing order is consistent.

Testers are familiar and competent with all testing protocols.

Athletes are in good health, have had sufficient rest before testing, and are injury free.

Athletes are dressed appropriately (e.g., light and nonrestrictive clothing) and consistently (e.g., running spikes are not used on only 1 sprint occasion).

Athletes are familiar with testing protocols.

Similar levels of encouragement are provided on each occasion.

Ensure that biological and technological error are established and appropriately attributed to the correct source.

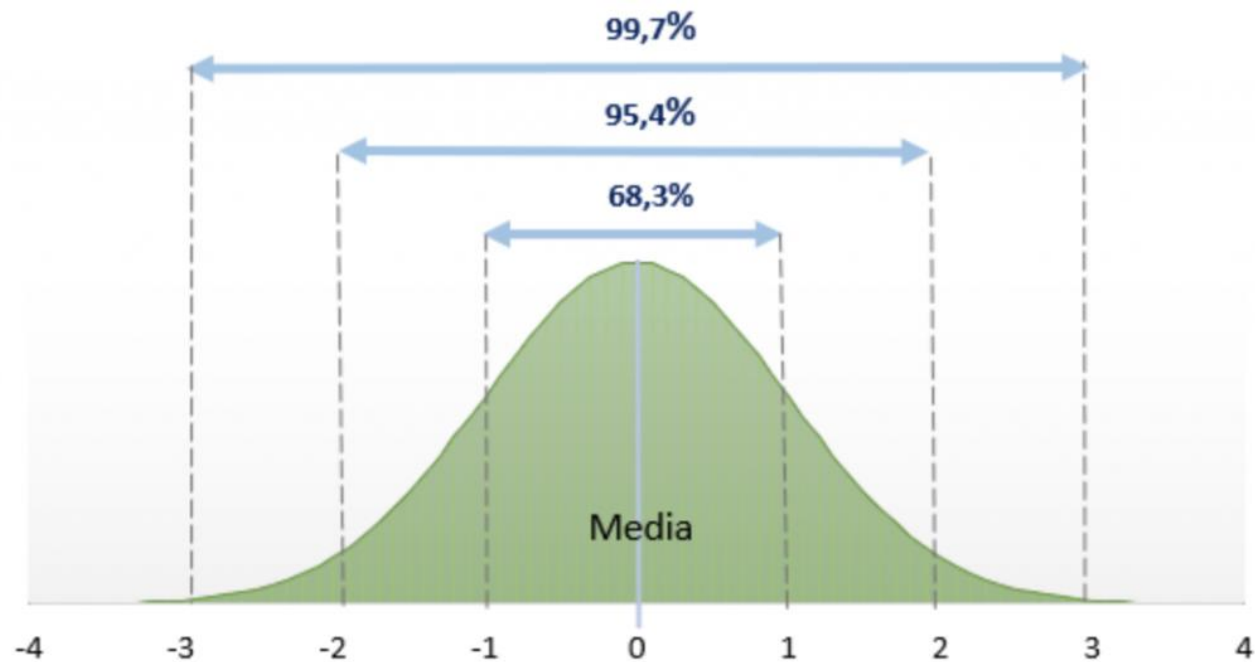
Normal dietary intake is consumed with alcohol and caffeine consumption limited before testing.

Based on Woolford et al. (102).

Table 3
Approximate between-day coefficient of variation (%) for commonly used measures of physical capacity

Test	Approximate coefficient of variation (%)	Reference
Strength measures		
Back squat	2.0	(2)
Front squat	2.5	(96)
Bench press	2.0	(96)
Chin up	3.5	(96)
Prone bench pull	2.5	(19)
Isometric midhigh pull peak force	3.5	(53,78)
Jump and jump-related variables		
CMJ height	3.5	(8,65,68)
CMJ concentric peak power	3	(8,65)
CMJ concentric mean power	4	(8,65)
CMJ concentric peak force	3	(8,65)
CMJ concentric mean force	2	(8,65)
CMJ concentric impulse	2	(52)
Squat jump height	5	(43,61)
Dynamic strength index (SJ:IMTP PF)	5	(78)
Reactive strength index (FT:GCT)	4	(6)

$$CV = \frac{s}{\bar{x}} \times 100$$



Intento	Altura (cm)
1	40
2	46
3	38
4	50
5	36
Promedio	42
SD	5.83

$$CV = \frac{s}{\bar{x}} \times 100$$

$$CV = \frac{5.83}{42} \times 100$$

$$CV = 13.9\%$$

Intento	Altura (cm)
1	45
2	46
3	45
4	47
5	46
Promedio	45.8
SD	0.84

$$CV = \frac{0.84}{45.8} \times 100$$

$$CV = 1.83\%$$

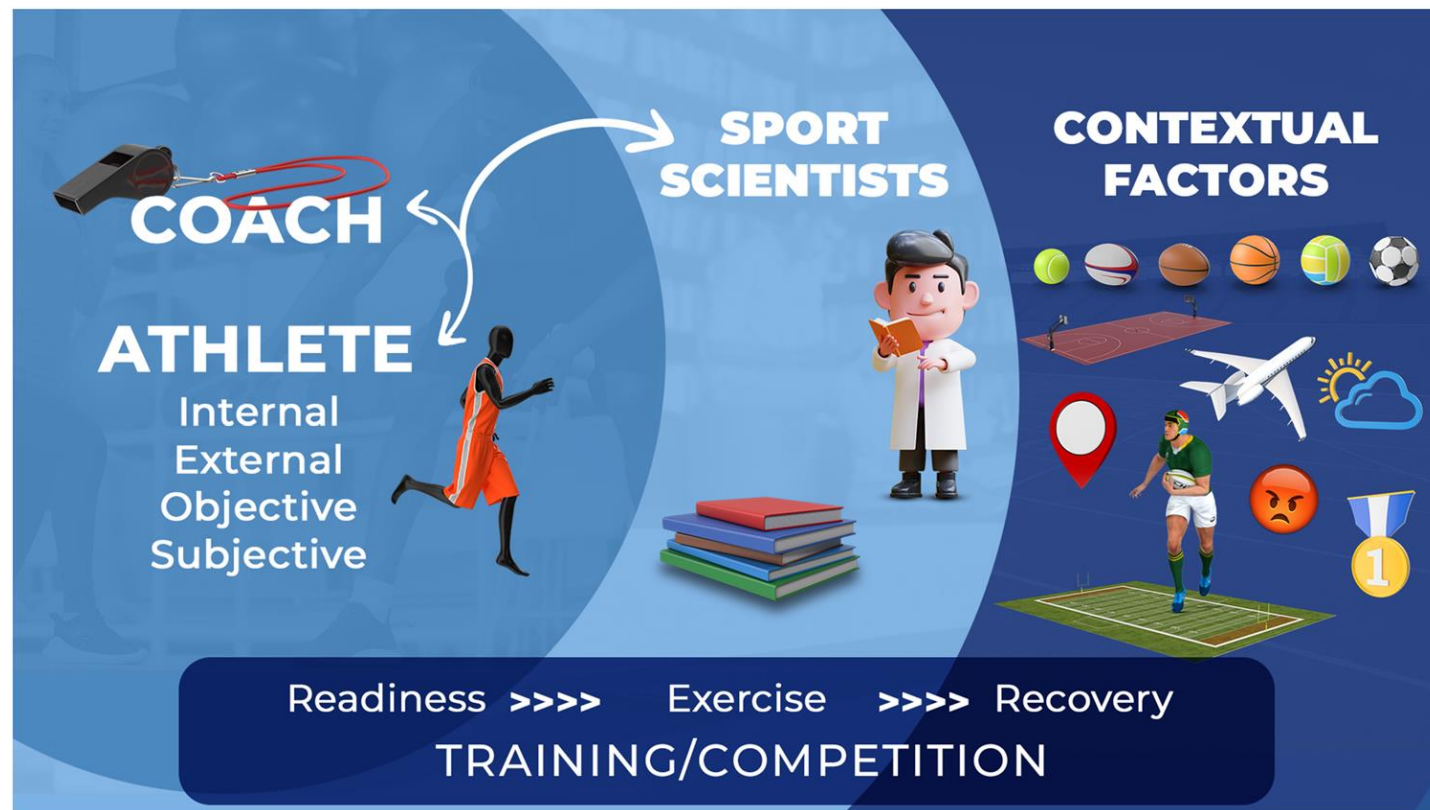
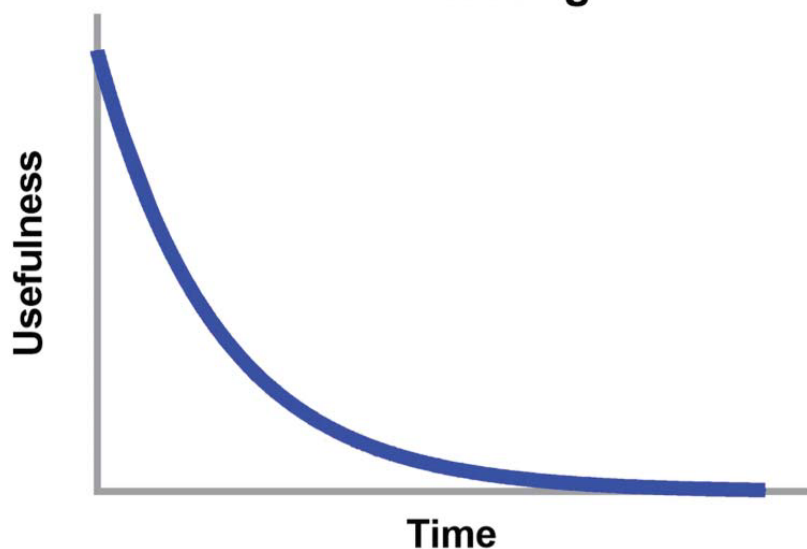
Testing and Profiling Athletes: Recommendations for Test Selection, Implementation, and Maximizing Information

The Fine-Tuning Approach for Training Monitoring

Daniel Boulosa,¹ João Gustavo Claudino,² Jaime Fernandez-Fernandez,¹ Daniel Bok,³ Irineu Loturco,⁴ Matthew Stults-Kolehmainen,⁵ Juan García-López,¹ and Carl Foster⁶

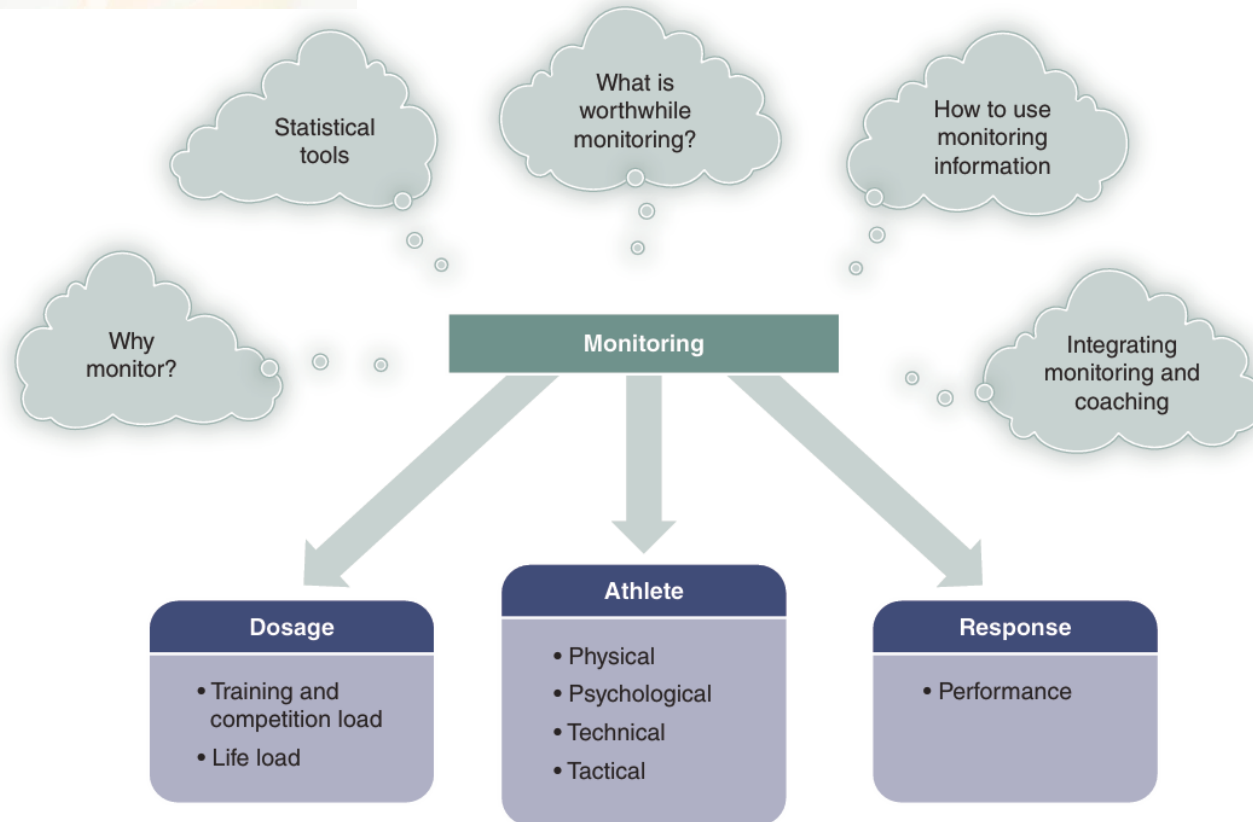
¹Faculty of Physical Activity and Sports Sciences, Universidad de León, León, Spain; ²Group of Research, Innovation and Technology Applied to Sport (GSporTech), Department of Physical Education, Center for Health Sciences, Federal University of Piauí, Teresina, PI, Brazil; ³Faculty of Kinesiology, University of Zagreb, Zagreb, Croatia; ⁴Nucleus of High Performance in Sport, São Paulo, SP, Brazil; ⁵Division of Digestive Health, Yale New Haven Hospital, New Haven, CT, USA; ⁶Department of Exercise and Sport Science, University of Wisconsin-La Crosse, La Crosse, WI, USA

Value of testing information after testing



MONITORING TRAINING AND PERFORMANCE IN ATHLETES

Mike McGuigan



Longitudinal Monitoring of Athletes: Statistical Issues and Best Practices

Chris Bailey¹

Received: 31 July 2019 / Accepted: 13 October 2019
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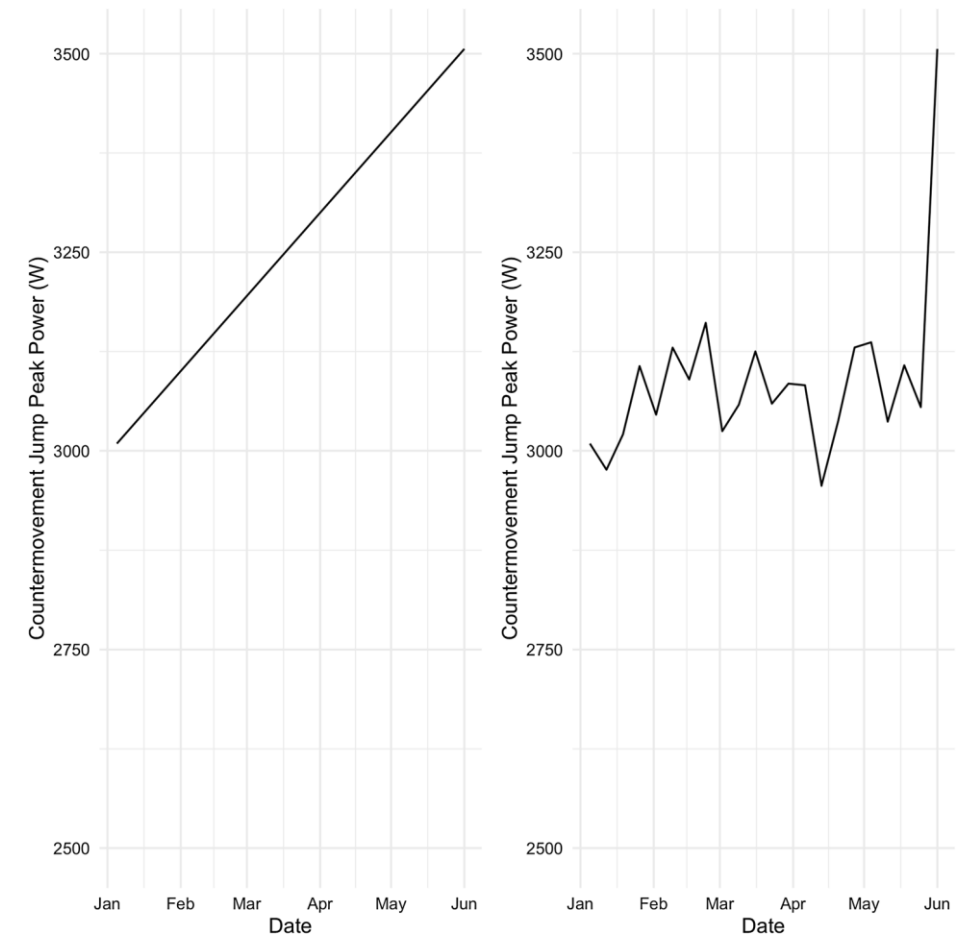
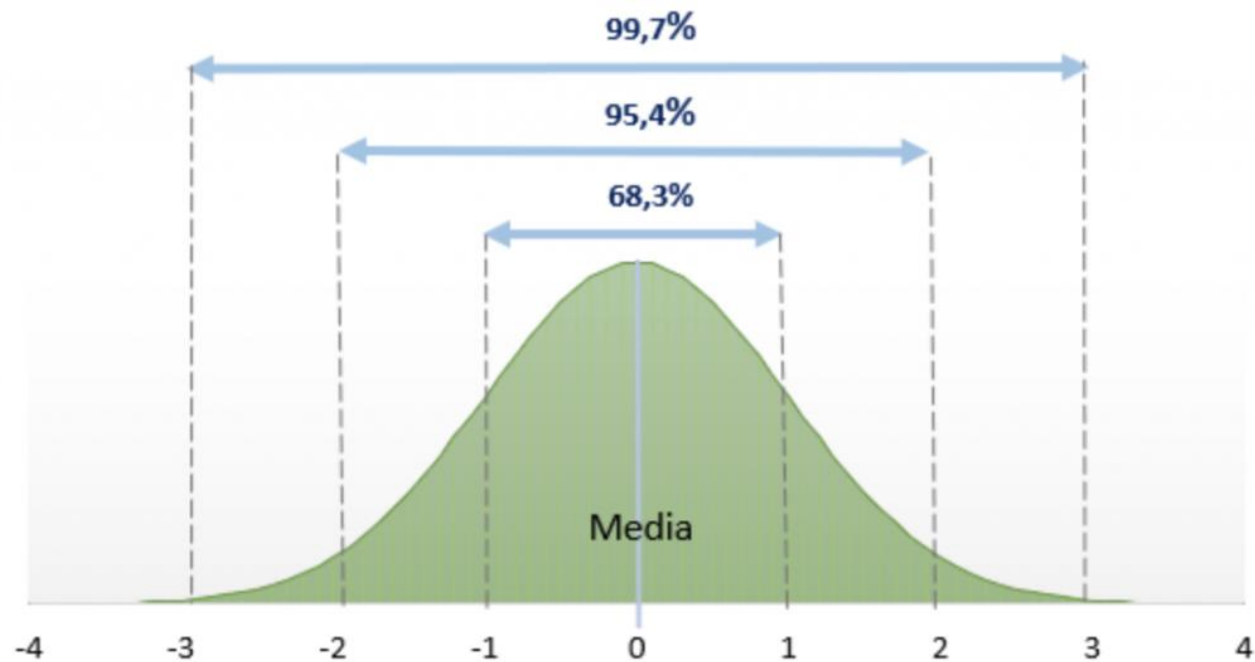


Figure 1.1 Monitoring issues and how monitoring helps athletes.

$$CV = \frac{s}{\bar{x}} \times 100$$



Intento	Altura (cm)
1	40
2	46
3	38
4	50
5	36
Promedio	42
SD	5.83

$$CV = \frac{s}{\bar{x}} \times 100$$

$$CV = \frac{5.83}{42} \times 100$$

$$CV = 13.9\%$$

$$2 \times 13.9 = 27.8\%$$

$$42 \times 0.278 = 11.676 \text{ cm}$$

$$42 + 11.68 = 53.68 \text{ cm}$$

Intento	Altura (cm)
1	45
2	46
3	45
4	47
5	46
Promedio	45.8
SD	0.84

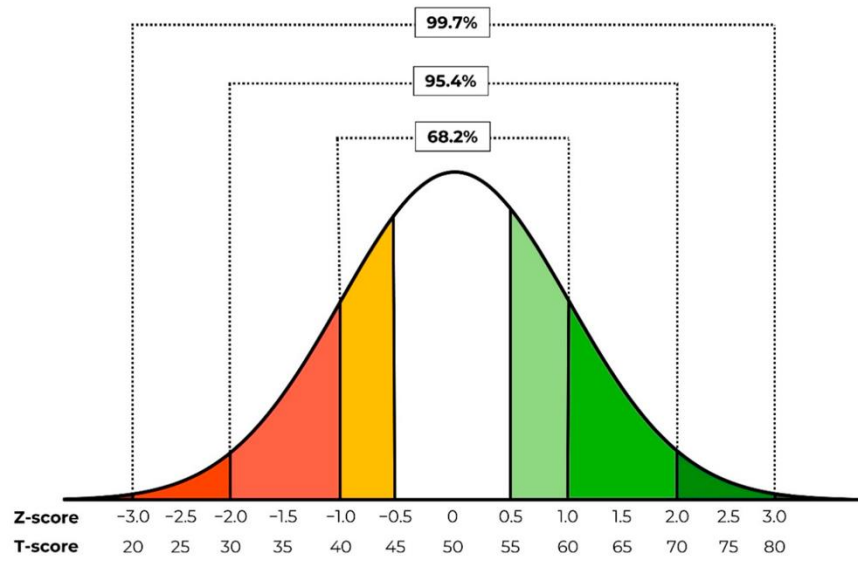
$$CV = \frac{0.84}{45.8} \times 100$$

$$CV = 1.83\%$$

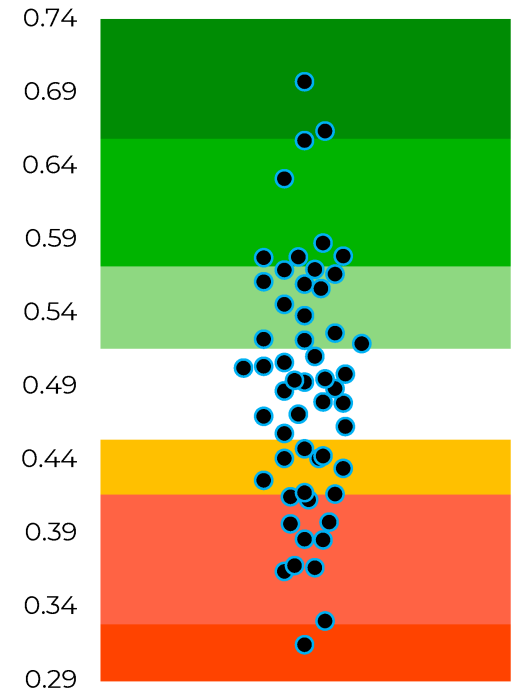
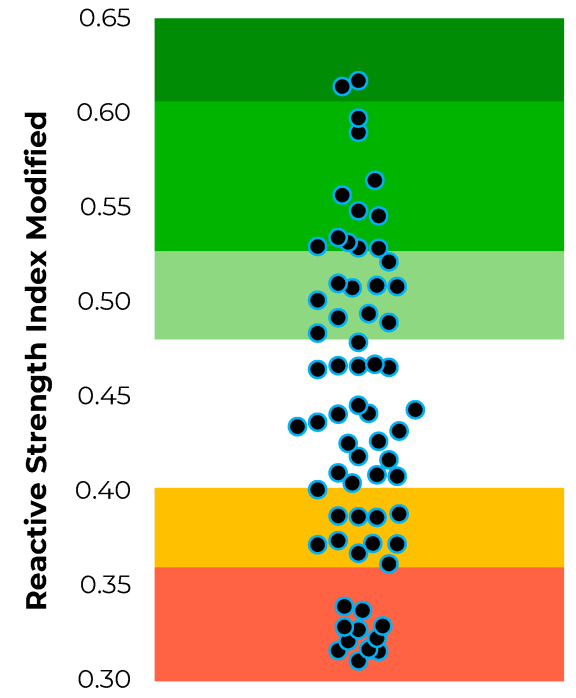
$$2 \times 1.83 = 3.66\%$$

$$45.8 \times 0.0366 = 1.676 \text{ cm}$$

$$45.8 + 1.68 \approx 47.48 \text{ cm}$$

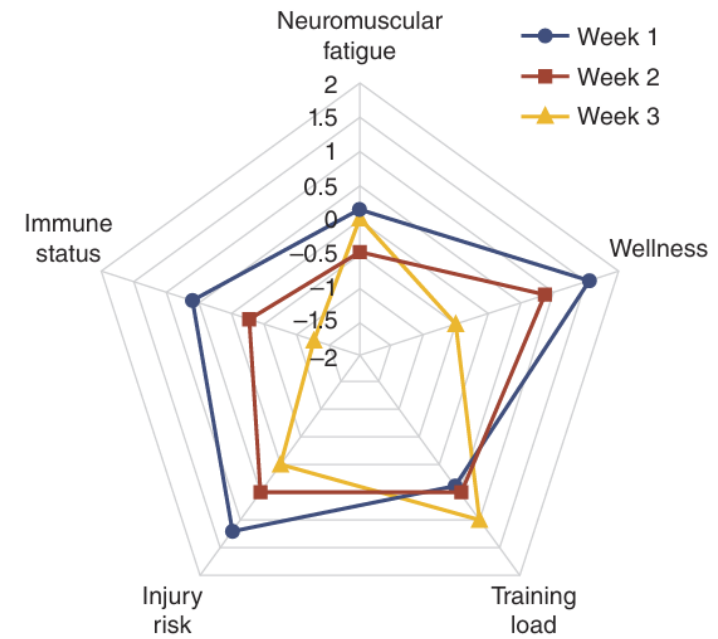
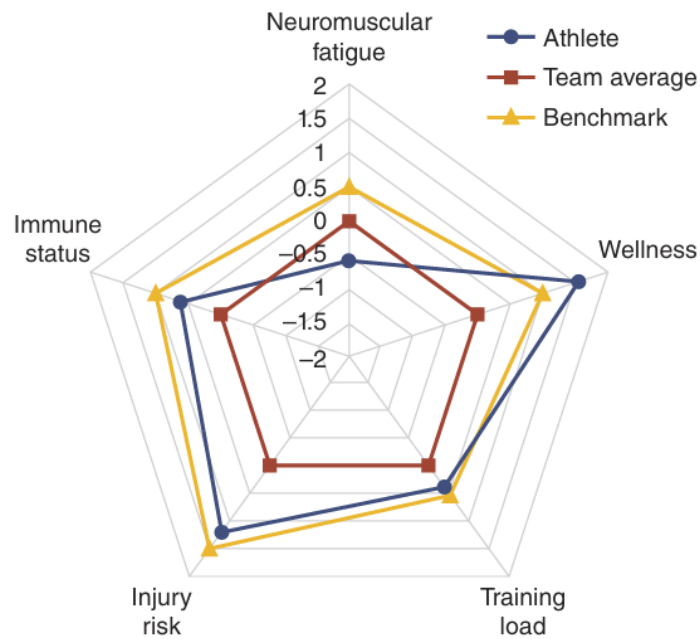
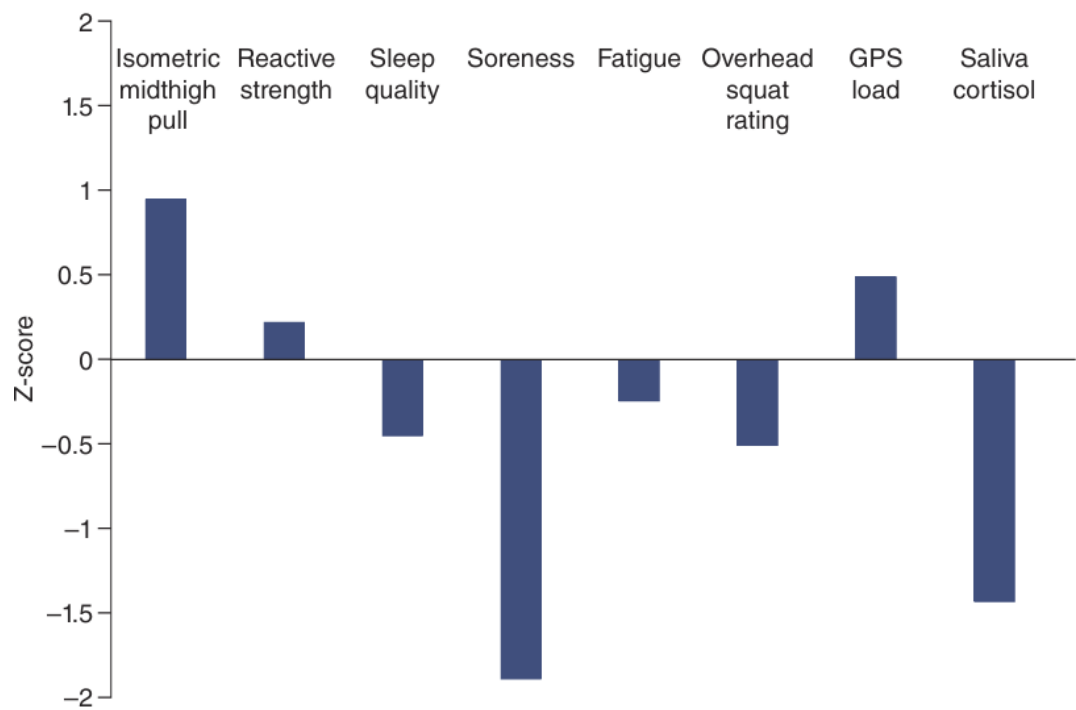


Description	T-Score
Excellent	>80
Very Good	70-80
Good	60-70
Above Average	55-60
Average	45-55
Below Average	40-45
Poor	30-40
Very Poor	20-30
Extremely Poor	<20



MONITORING TRAINING AND PERFORMANCE IN ATHLETES

Mike McGuigan



Nombre**Rank** 16**TSA** 0.55

1RM rel (kg/kg) MOD Z-SCORE	L0 MOD Z-SCORE	V0 MOD Z-SCORE	Aline MOD Z-SCORE	Jump Height (cm) MOD Z-SCORE	Rel Peak Propulsive Power (W/kg) MOD Z-SCORE	Sprint 10 (s) MOD Z-SCORE	Sprint 20 (s) MOD Z-SCORE
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MOD Z-SCORE	1RM rel (kg/kg) MOD Z-SCORE	L0 MOD Z-SCORE	V0 MOD Z-SCORE	Aline MOD Z-SCORE	Jump Height (cm) MOD Z-SCORE	Rel Peak Propulsive Power (W/kg) MOD Z-SCORE	Sprint 10 (s) MOD Z-SCORE	Sprint 20 (s) MOD Z-SCORE
	0.04	0.38	0.21	0.23	-0.11	-0.15	-0.26	0.21

Elaborado por: Juan Ángel Rodríguez Chávez
 Director Científico FMLP

Sprint 10 y 20 metros

1.6 a 2.5	Excelente	Aceleración / velocidad muy superior al grupo de referencia
0.6 a 1.5	Bueno	Rendimiento por encima del promedio, con buena capacidad de aceleración o mantenimiento de velocidad
-0.5 a 0.5	Promedio	Rendimiento acorde a los valores de referencia del grupo
-0.6 a -1.5	Mejorable	Rendimiento por debajo del promedio, sugiere limitaciones en la aceleración o velocidad
-1.6 a -2.5	Mala	Déficit marcado en aceleración y/o desarrollo de la velocidad respecto al grupo

Nota: Un resultado alto (mejor) en 10 m y bajo (peor) en 20 m indica una buena capacidad de aceleración inicial, pero dificultades para sostener o desarrollar la velocidad en fases posteriores de la carrera, en comparación con el mismo grupo de atletas

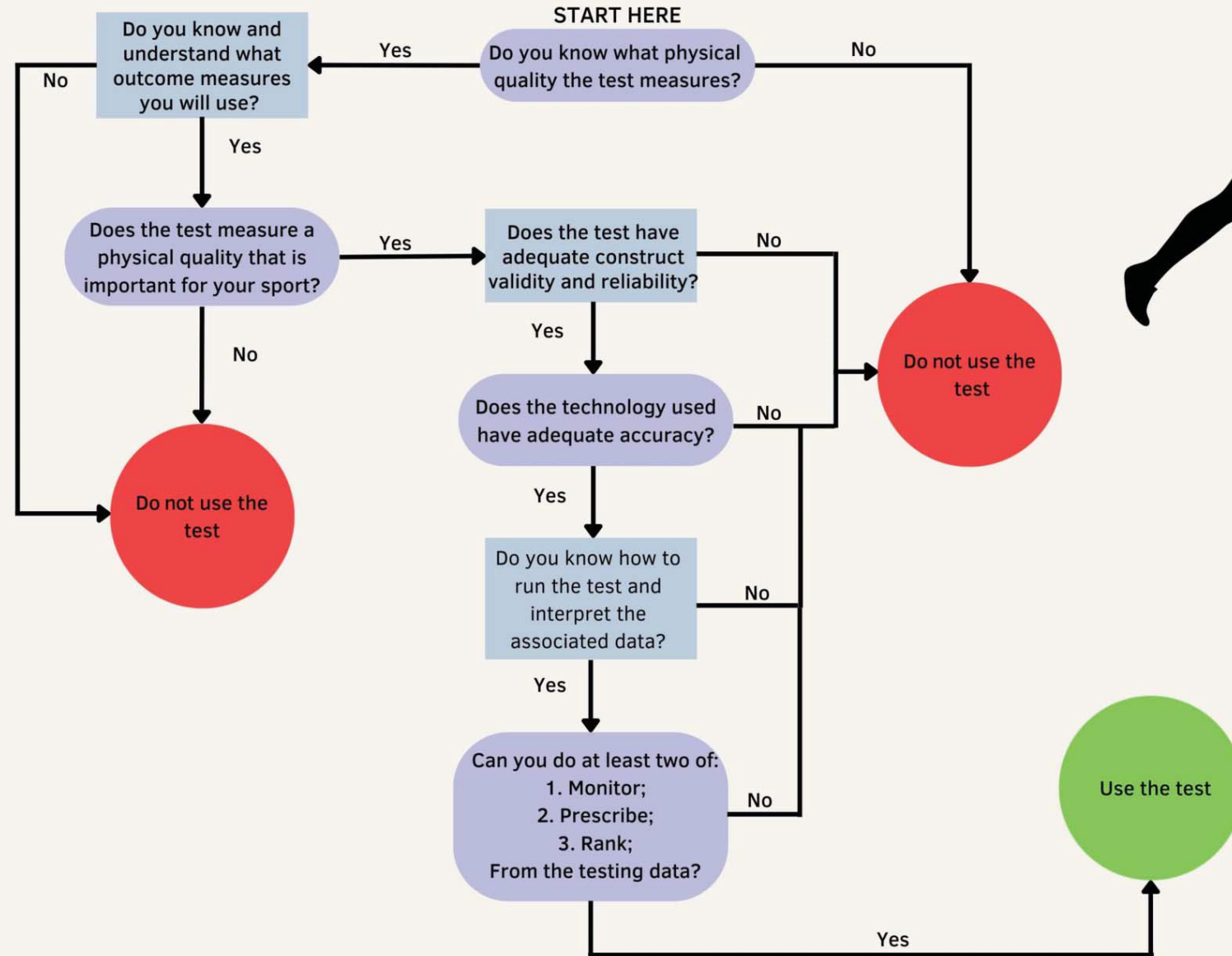
Test de salto

1.6 a 2.5	Excelente	Capacidad explosiva muy elevada, con producción rápida de fuerza y transferencia óptima a la fase concéntrica del salto
0.6 a 1.5	Bueno	Buen nivel de explosividad, con adecuada tasa de desarrollo de fuerza y eficiencia neuromuscular rápida de fuerza y transferencia óptima a la fase concéntrica del salto
-0.5 a 0.5	Promedio	Capacidad explosiva acorde a valores de referencia, sin limitaciones evidentes en la producción de potencia
-0.6 a -1.5	Mejorable	Capacidad explosiva por debajo de lo esperado, sugiriendo limitaciones en la aplicación rápida de fuerza
-1.6 a -2.5	Mala	Marcada deficiencia en la producción explosiva de fuerza, comprometiendo la generación de potencia

Test Sentadilla

1.6 a 2.5	Excelente	Rendimiento muy superior al promedio; nivel alto de fuerza máxima respecto al grupo de referencia.
0.6 a 1.5	Bueno	Rendimiento por encima del promedio; fuerza bien desarrollada.
-0.5 a 0.5	Promedio	Rendimiento dentro del rango esperado para el grupo; fuerza adecuada.
-0.6 a -1.5	Mejorable	Rendimiento por debajo del promedio; se recomienda énfasis en el desarrollo de fuerza.
-1.6 a -2.5	Mala	Rendimiento claramente inferior al grupo; posible limitante para el rendimiento deportivo.

DECISION FLOWCHART FOR SELECTING A TEST

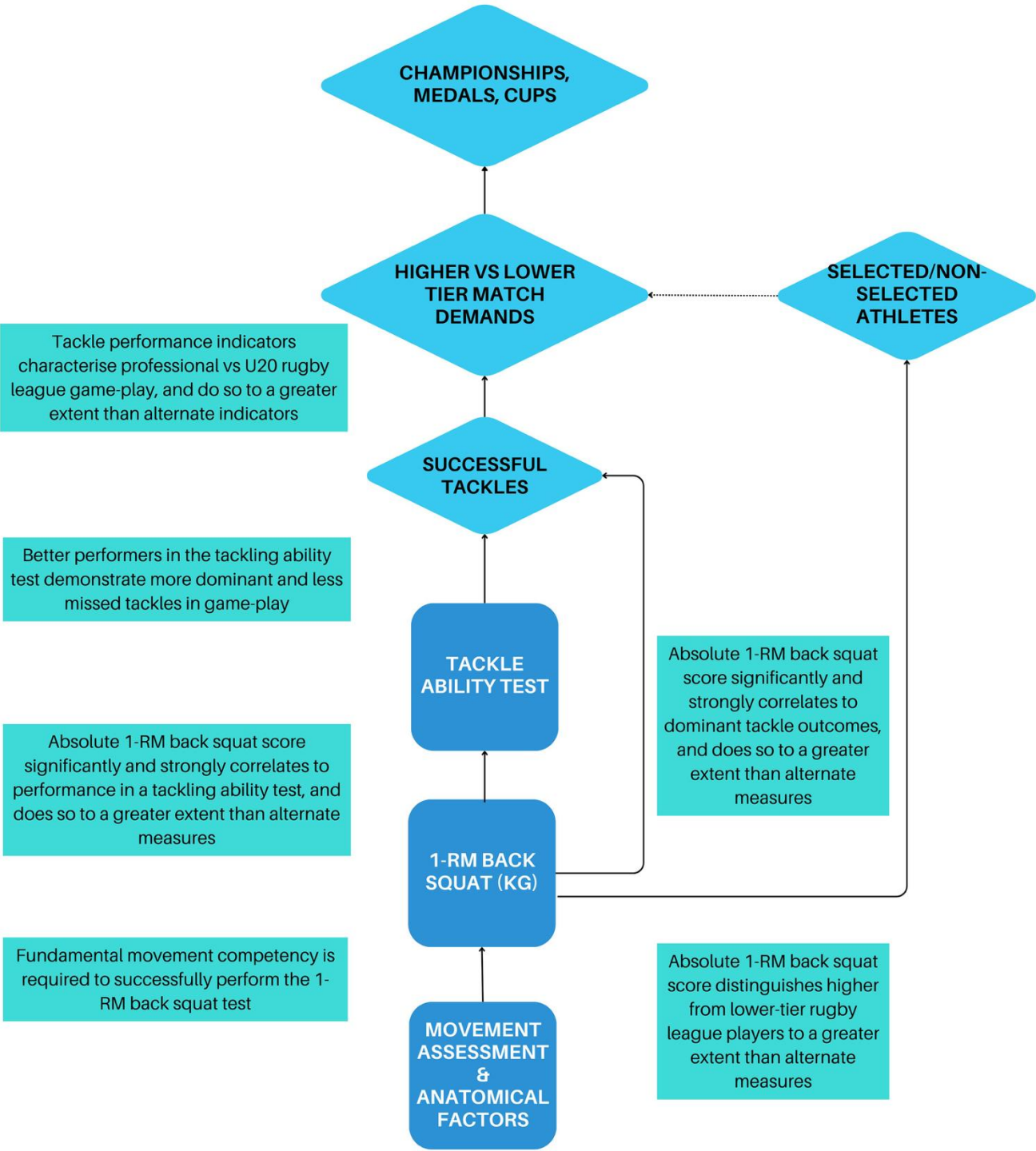


**Testing and Profiling Athletes:
Recommendations for Test Selection,
Implementation, and Maximizing Information**

A framework for test measurement selection in athlete physical preparation





Lachlan P. James^{1*}, Jade A. Z. Haycraft^{1,2}, David L. Carey¹ and Samuel J. Robertson²

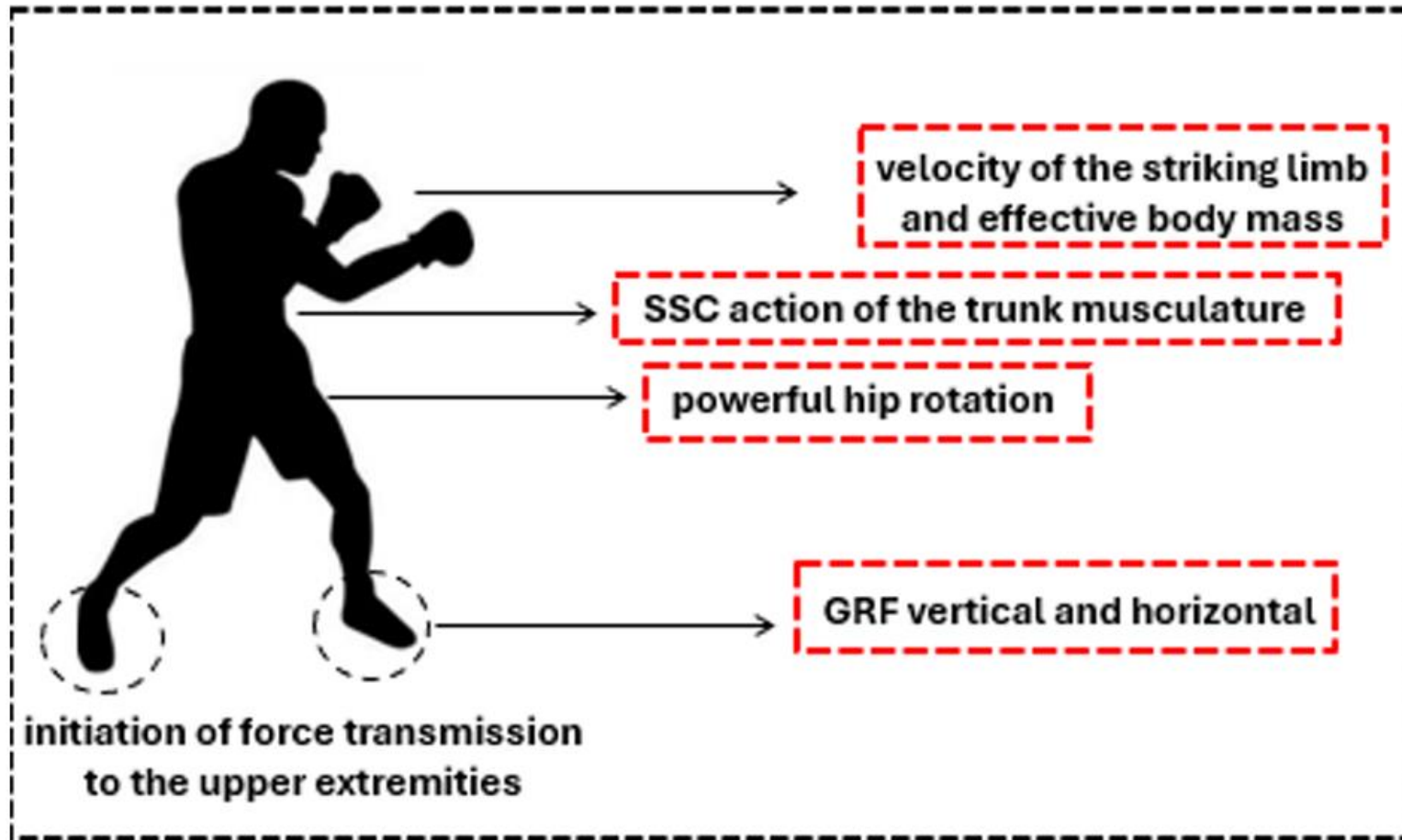
¹Sport, Performance, and Nutrition Research Group, School of Allied Health, Human Services, & Sport, La Trobe University, Melbourne, VIC, Australia, ²Institute for Health and Sport, Victoria University, Footscray, VIC, Australia



Review





Acute and Chronic Effects of Muscle Strength Training on Physical Fitness in Boxers: A Scoping Review

Jordan Hernandez-Martinez ^{1,†}, Izham Cid-Calfucura ^{2,†} , Pablo Valdés-Badilla ^{3,4} , Emerson Franchini ⁵ , José Manuel García-García ⁶ and Tomás Herrera-Valenzuela ^{2,*} 









Review

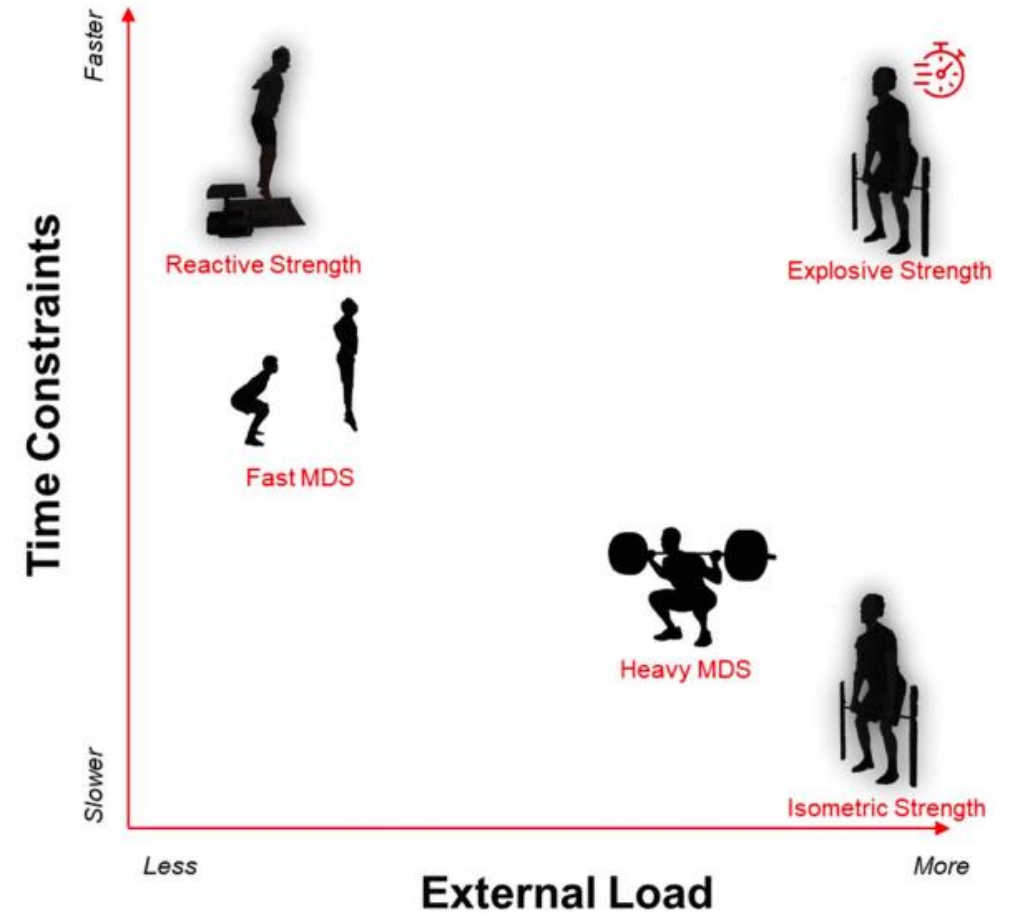
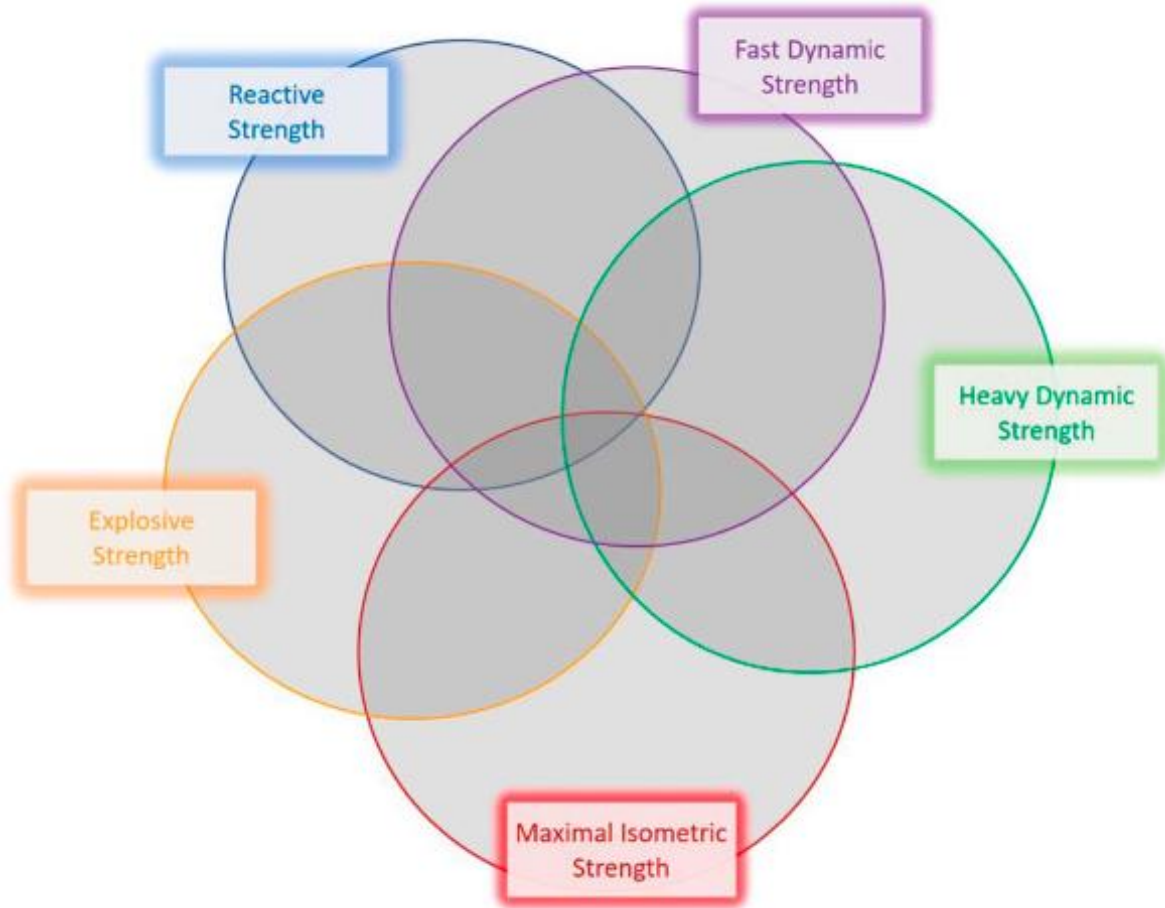
Acute and Chronic Effects of Muscle Strength Training on Physical Fitness in Boxers: A Scoping Review

Jordan Hernandez-Martinez ^{1,†}, Izham Cid-Calfucura ^{2,†} , Pablo Valdés-Badilla ^{3,4} , Emerson Franchini ⁵ , José Manuel García-García ⁶ and Tomás Herrera-Valenzuela ^{2,*} 



General preparatory period	Specific preparatory period	Competitive period
Strength-endurance <80% 1RM (8 to 12 repetitions 3 to 5 sets)	Maximum strength 80-90% 1RM (2 to 5 repetitions of 3 to 5 sets)	Strength-power RFD & power high levels of power for the lower and upper body
rest between sets 2-5 min	rest between sets 3-5 min	dynamic correspondence
improving mobility and ranges of motion	bilateral & unilateral exercises	OPL training
low-impact plyometric exercises	eccentric overload exercises	landmine rotations and medicine ball throws
core stability (static-slow)	medium-high intensity plyometric exercises	partial concentric lifts & maximum isometric strength
 	 	 

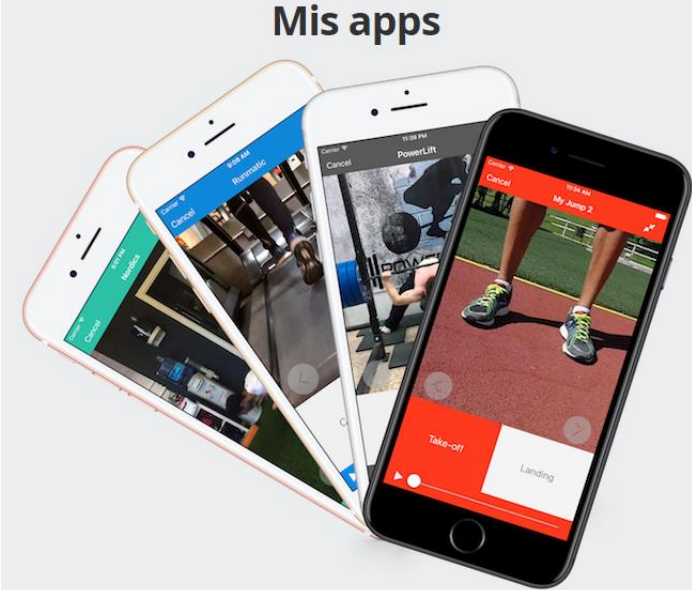
La capacidad de generar fuerza máxima se controla habitualmente en los deportistas y puede evaluarse mediante contracciones musculares dinámicas o isométricas



James LP, Talpey SW, Young WB, et al. Strength classification and diagnosis: not all strength is created equal. *Strength Cond J.* 2022; 3:744. doi:10.1519/SSC.0000000000000744

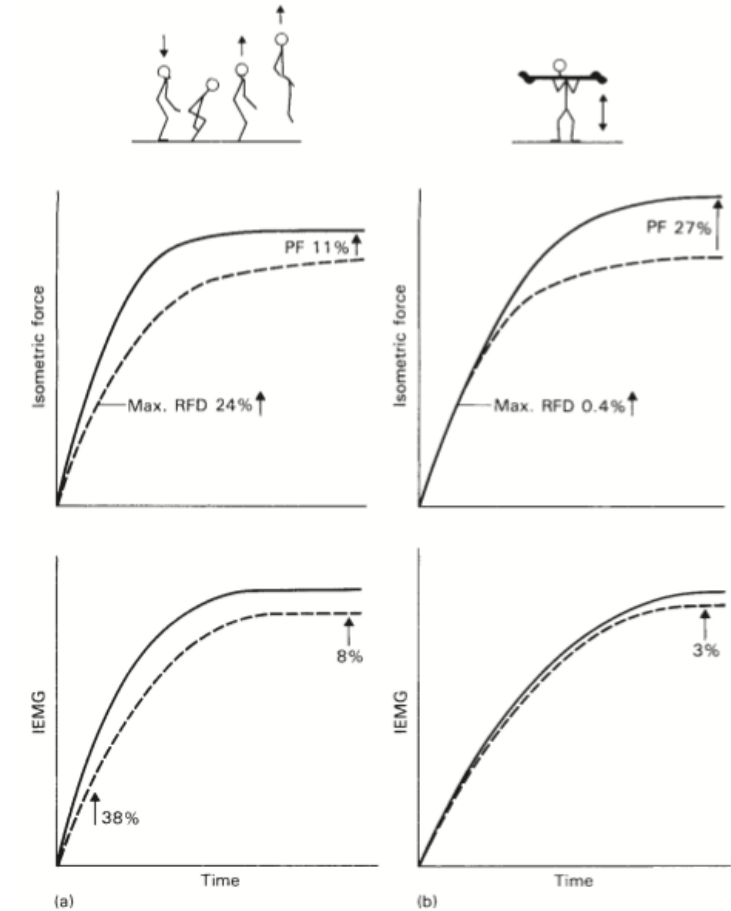
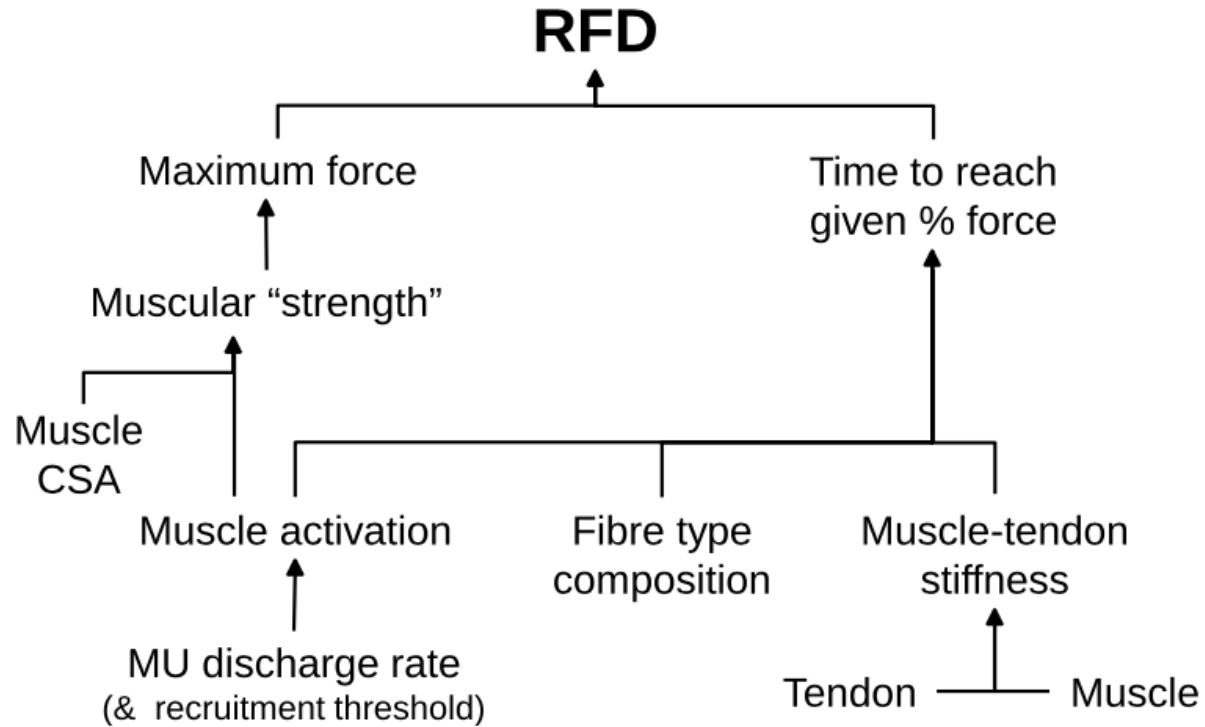
Beckham, G., Mizuguchi, S., Carter, C., Sato, K., Ramsey, M., Lamont, H., & Stone, M. (2013). Relationships of isometric mid-thigh pull variables to weightlifting performance. *Journal of Sports Medicine and Physical Fitness*, 53, 573–581.

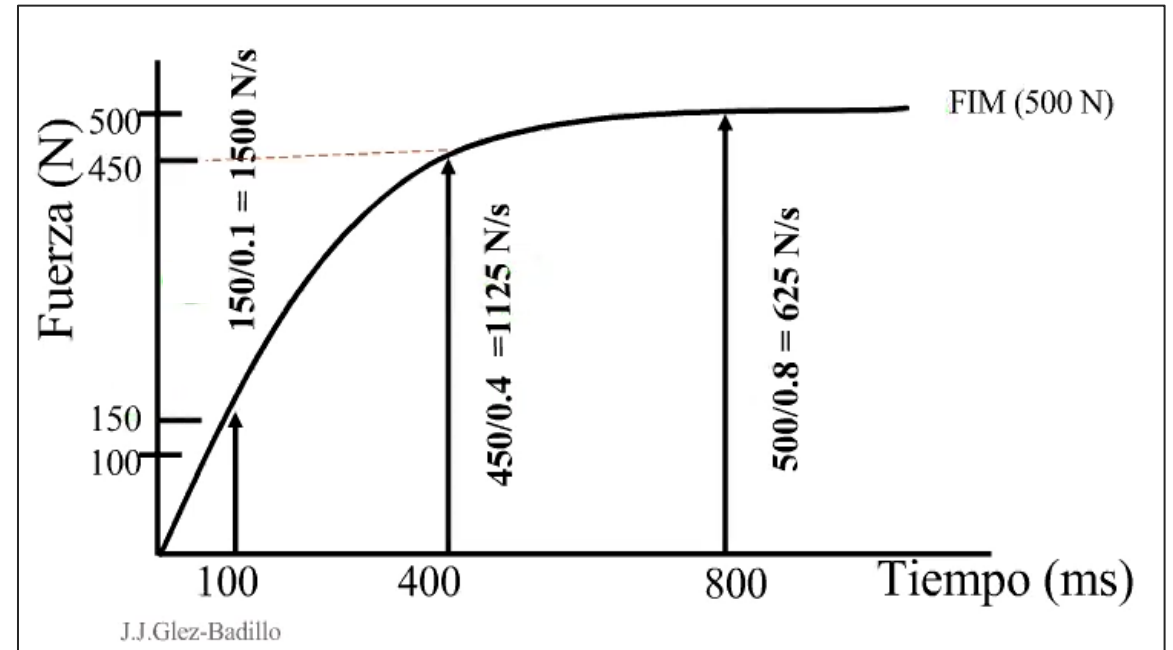
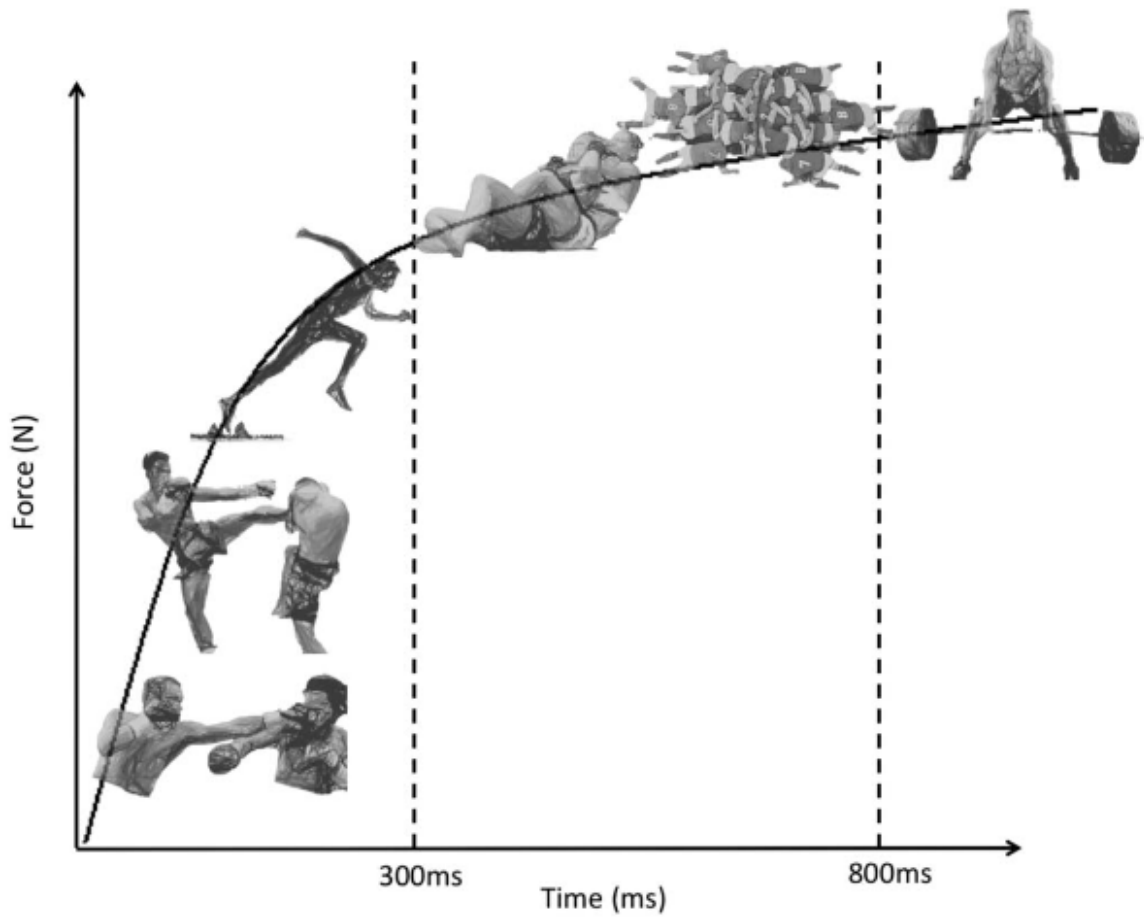
Haff, G., Carlock, J. M., Hartman, M. J., Kilgore, J. L., Kawamori, N., Jackson, J. R., & Stone, M. H. (2005). Force time curve characteristics of dynamic and isometric muscle actions of elite women olympic weightlifters. *The Journal of Strength & Conditioning Research*, 19, 741–748.



Rate of force development: physiological and methodological considerations

Nicola A. Maffiuletti¹ · Per Aagaard² · Anthony J. Blazevich³ · Jonathan Folland⁴ · Neale Tillin⁵ · Jacques Duchateau⁶





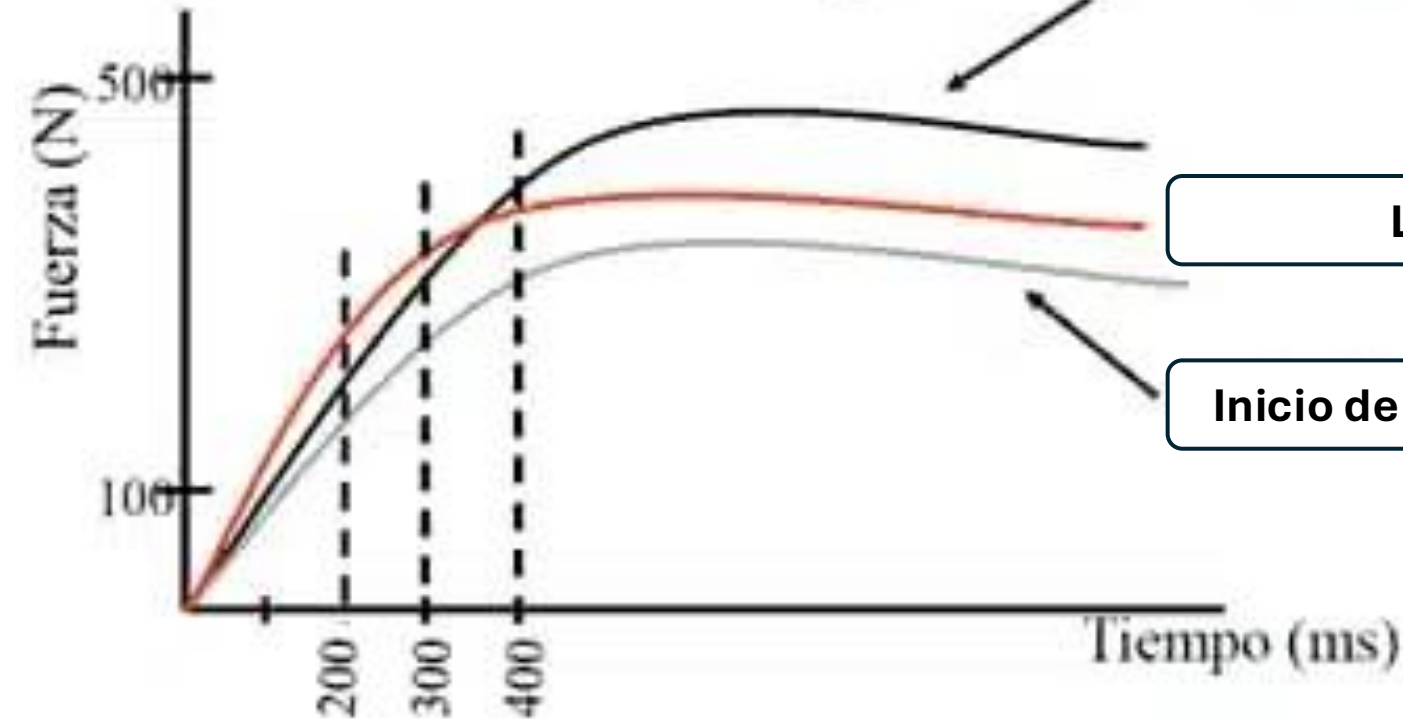


Cargas Elevadas



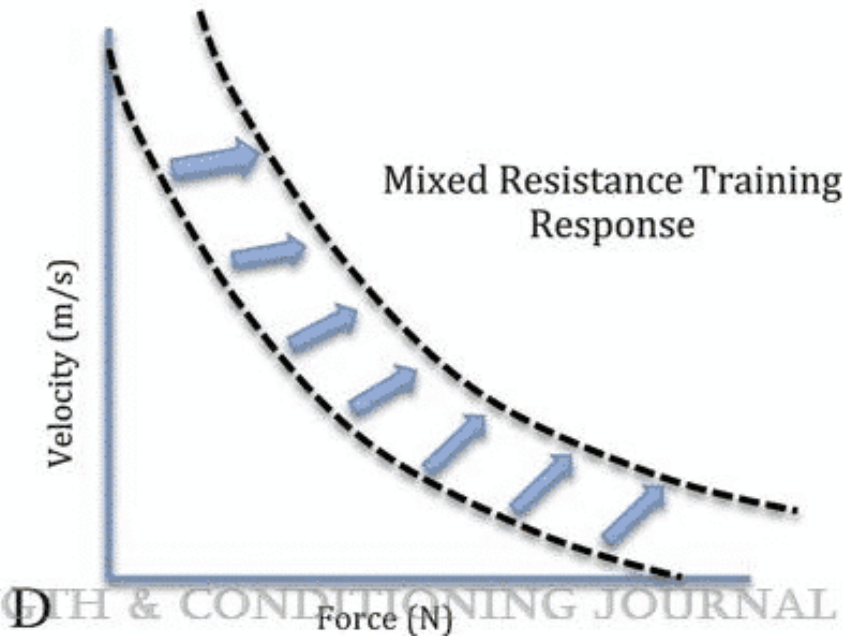
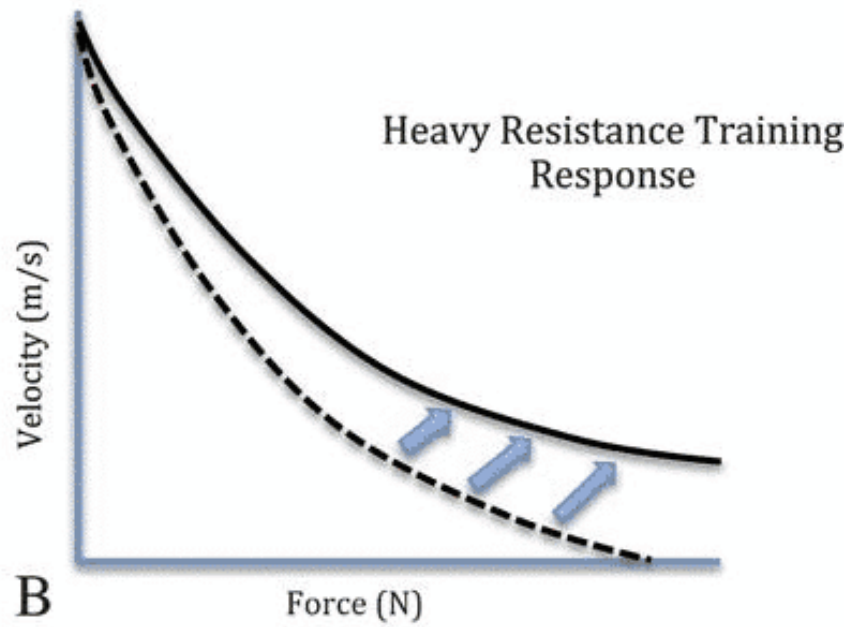
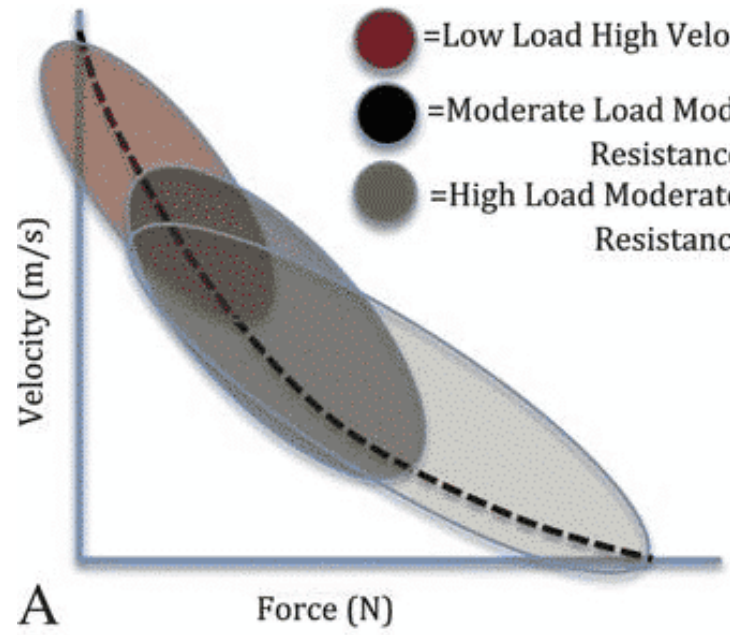
Ligeras

Inicio de la Preparación



Nota: con atletas principiantes, cargas bajas puede igual incrementar el PF. La intención en el desplazamiento afecta a la adaptación

- =Low Load High Velocity Resistance Training
- =Moderate Load Moderately High Velocity Resistance Training
- =High Load Moderate to Low Velocity Resistance Training





Squat Jump (SJ)



Countermovement Jump (CMJ)



Depth Jump



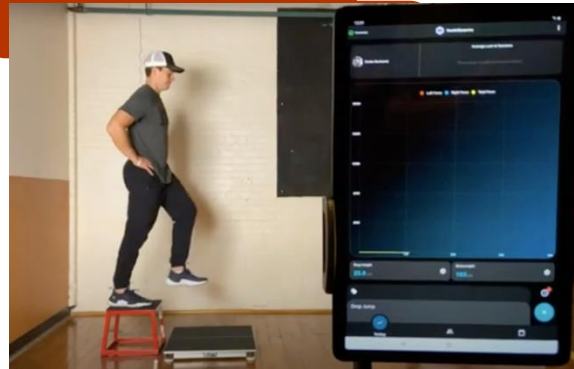
Countermovement Rebound Jump (CRBJ)



Abalakov



Drop Jump (DJ)



Salto Vertical

Las tareas de salto vertical se utilizan habitualmente para evaluar el rendimiento neuromuscular de las extremidades inferiores en atletas y en la población general.

El salto en contramovimiento (CMJ) es una de las pruebas de salto vertical más utilizadas.

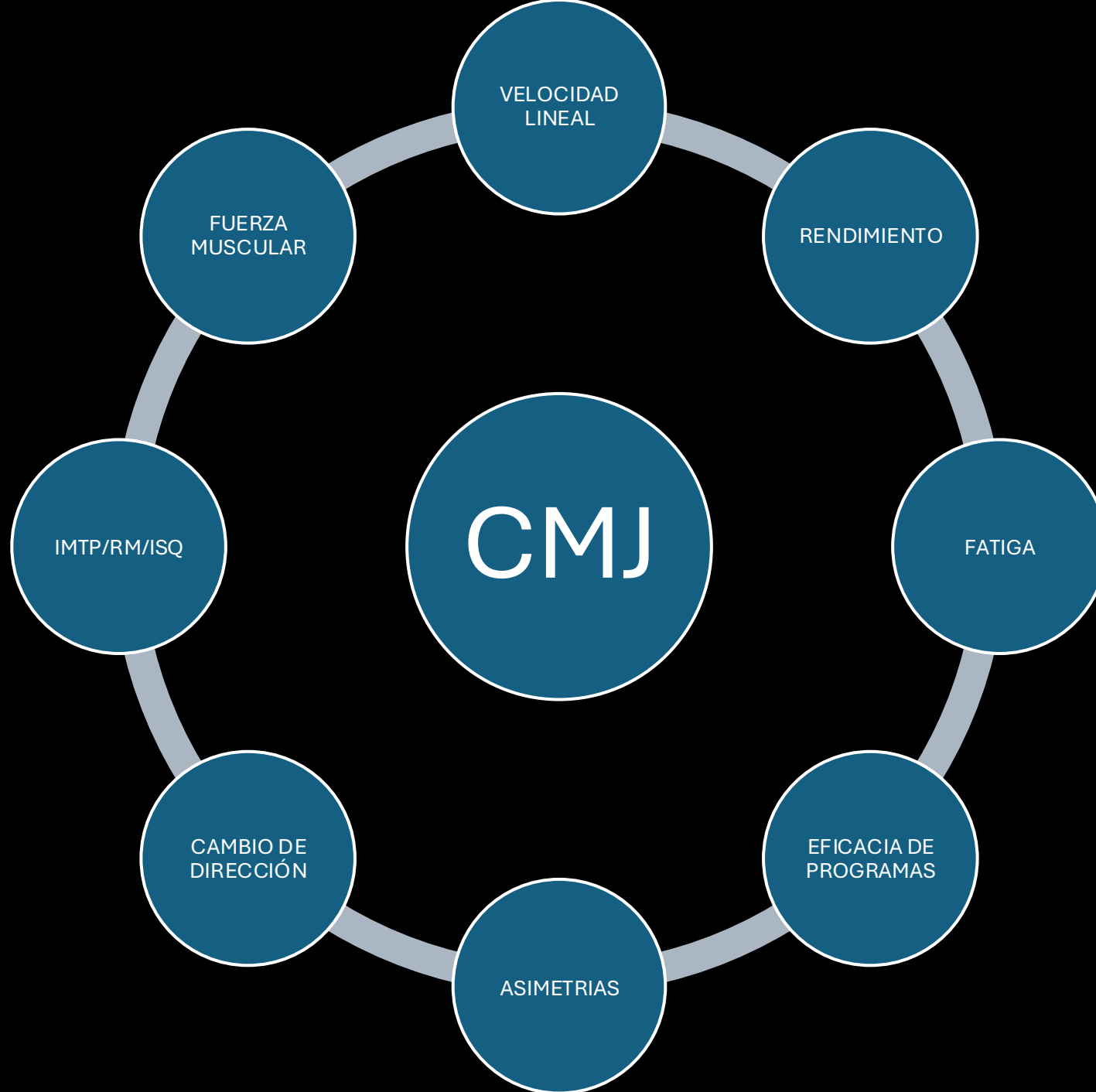
SJ

CMJ

Drop Jump

Depth Jump

Rebound Jump



Countermovement Jump (CMJ)



Descanso entre salto de 30" a 1'

Saltar lo más rápido y alto

Cuidar profundidad

No hacer pausa en la transición

Potencia, Fuerza, Velocidad, Distancia f(t)

S_CMJ (68 Kg.) Perez, Eduardo

Potencia (F5)

Fuerza (F6)

Trabajo

Velocidad (F7)

Distancia (F8)

Velocity Based Training

"El VBT es un método para evaluar la intensidad de un determinado movimiento mediante el cálculo del desplazamiento y el tiempo a través del control de las velocidades de la barra o del cuerpo" (Signore, 2022)

Fuerza	1000	Newtons
Trabajo	4000	Joules
Velocidad	2.00	m/s
Tiempo	1.00	ms.
Distancia	0.000	mts.

0

0.5

1.0

1.5

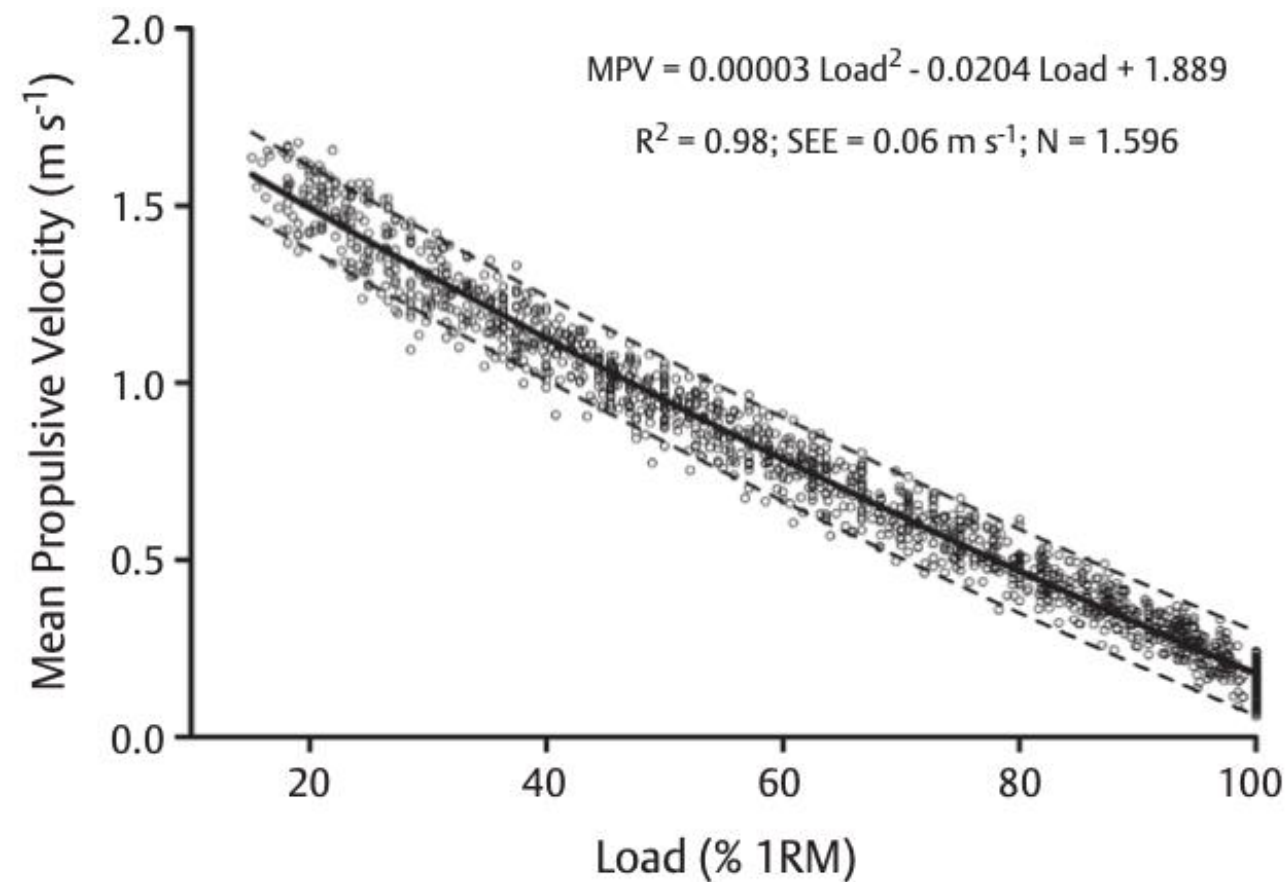
2.0

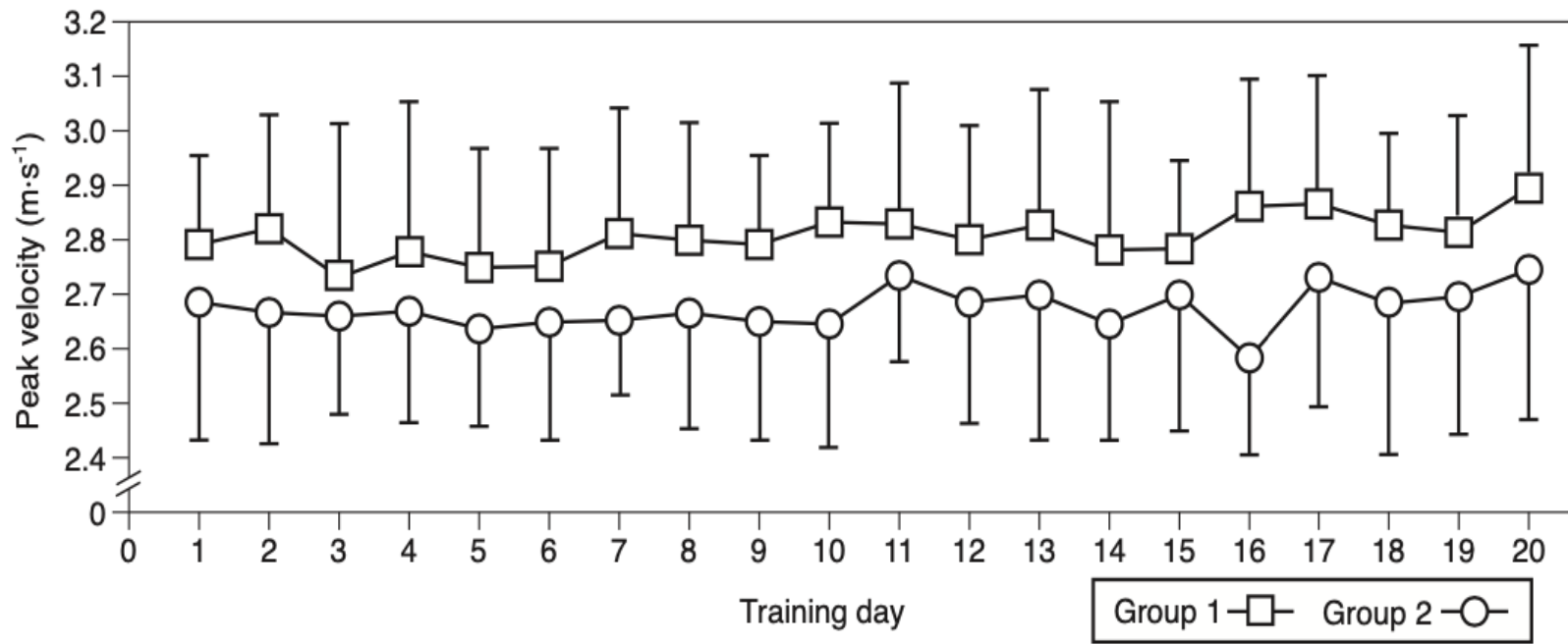
2.5

Tiempo (Seg.)

Trabajo (Joules)
Distancia (m.)

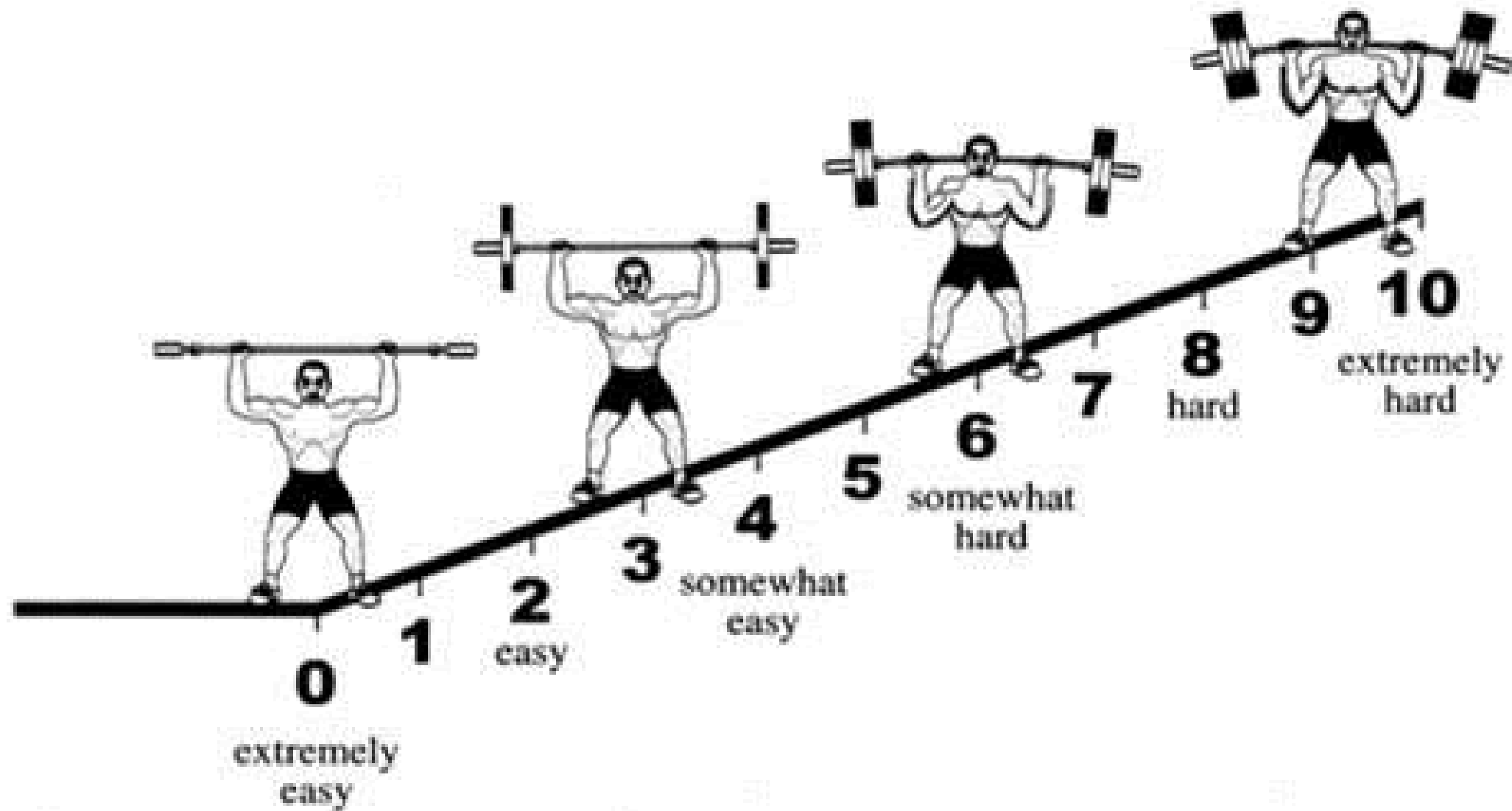
Load (%1RM)	T1	T2	Difference (T1-T2)
30%	1.33±0.08	1.33±0.08	0.00
35%	1.24±0.07	1.23±0.07	0.01
40%	1.15±0.06	1.14±0.06	0.01
45%	1.06±0.05	1.05±0.05	0.01
50%	0.97±0.05	0.96±0.05	0.01
55%	0.89±0.05	0.87±0.05	0.01*
60%	0.80±0.05	0.79±0.05	0.01
65%	0.72±0.05	0.71±0.05	0.01
70%	0.64±0.05	0.63±0.05	0.01
75%	0.56±0.04	0.55±0.04	0.01
80%	0.48±0.04	0.47±0.04	0.01
85%	0.41±0.04	0.40±0.04	0.01
90%	0.33±0.04	0.32±0.04	0.01
95%	0.26±0.03	0.25±0.03	0.01
100%	0.19±0.04	0.18±0.04	0.00*

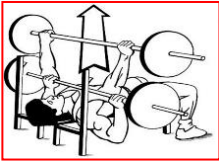




Zatsiorsky, V. M., Kraemer, W. J., & Fry, A. C. (2021). Science and Practice of Strength Training. Champaign, IL, IL: Human Kinetics.

Zourdos MC, Dolan C, Quiles JM, Klemp A, Jo E, Loenneke JP, et al. Efficacy of daily one-repetition maximum training in well-trained powerlifters and weightlifters: a case series. NutrHosp. 2016;33(2):437-43.



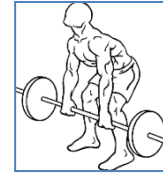


%1RM = 29.03 + 7.26(OMNI-RES)

$R^2 = 0.93$ SEE 6.41, n = 308

[242 males and 66 females trained athletes]

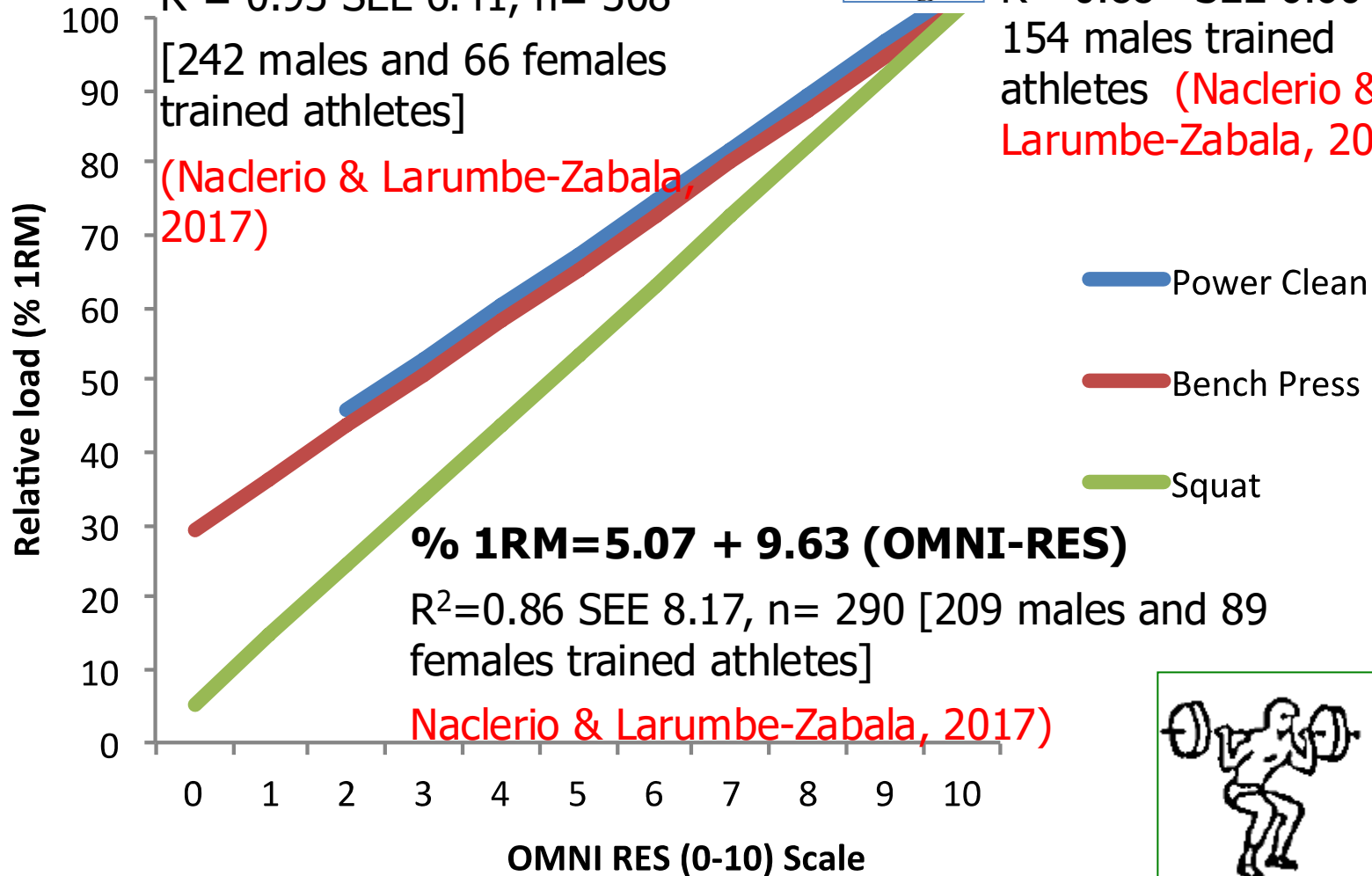
(Naclerio & Larumbe-Zabala, 2017)



% 1RM = 31.10 + 7.26 (OMNI-RES)

$R^2 = 0.88$ SEE 6.60 n =

154 males trained athletes (Naclerio & Larumbe-Zabala, 2018)



% 1RM = 5.07 + 9.63 (OMNI-RES)

$R^2 = 0.86$ SEE 8.17, n = 290 [209 males and 89 females trained athletes]

(Naclerio & Larumbe-Zabala, 2017)





Puntos importantes



Evaluación Física del Boxeador

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