

**RIVISITANDO CARMELO
BOSCO: DOVE VA LA SCIENZA
DELLO SPORT NEL 2020?**

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Executive Director Of Research And Scientific Support

ASPETAR

FIFA SCIENTIFIC & MEDICAL EXCELLENCE

University of St.Mary & St.John

AUCL

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I TRE MOSCHETTI

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LA STORIA E IL CONTESTO

*"Navigant quidam et labores peregrinationis longissimae
una mercede perpetiuntur cognoscendi aliquid abditum
remotumque."*

Alcuni si mettono in mare e sopportano i travagli di un
lunghissimo viaggio per la sola ricompensa di conoscere qualcosa
di nascosto e lontano

Seneca, De Otio

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LA PRODUZIONE SCIENTIFICA

Bosco, Carmelo
Author ID: 200000197
Affiliation(s): Cagliari University, Italy
Citation: 3761 times, 33 h-index, 14 i10-index
Other name: Bosco, Carmelo
Subject area: Medicine, Biochemistry, Biostatistics and Medical Biology, Health Professions, Engineering, Psychology, General Science

Documents by author: 54 Total citations: 3761 by 1018 documents View citation overview
Analysis period: 1980-2019
View potential author profiles
View all publications

Documents and citation details: 14 Documents, Cited by 3718 documents, 308 co-authors

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L'INTUITIONE

Georgi GA, Dumitru B, Margarit B. Positive work done by a previously stretched muscle. *J Appl Physiol* 1968;24(1):21-32. doi:10.1177/0021891X6802400105

AGABSSON G, BONG-PETERSON Storage of elastic energy in skeletal muscles of men and women. *Acta physiol scand* 1974;87: 385-392.

Carrera Basso Ph.D.I.C.
LA STORIA ORIGINALE DI MUSICOLOGIA
REVISTE SCIENTIFICHE INTERNAZIONALI
EDUCATIVE BALLO
SCIENCE CITATION INDEX
ORIGINAL PAPER PUBLISHED IN INTERNATIONAL
REVIEW JOURNAL GROUP BY SCIENCE CITATION INDEX

Utilization of stored elastic energy in leg extensor muscles by men and women.
CHARLES RUMFORD AND CHARLES DODGSON (PUPPETEERS)
University of Cambridge, Cambridge, U.K.

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Bar 1: Appl Physiol, Vol. 31(1) 1971 (1971)

Muscular Characteristics and Fiber Composition of Human Leg Extensor Muscles
Carroll Sorenson and Pearce C. Knott
University Laboratories, Department of Kinesiology and Physical Activity, University of Colorado, Boulder, CO 80309, USA

Summary: To investigate the influence of dietary muscle fiber composition on mechanical performance of human skeletal muscle under dynamic conditions.

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SSC – CICLO ALLUNGAMENTO-ACCORCIAMENTO

Acta Physiol Scand (1979) 106: 467-472
Potentiation of the mechanical behavior of the human skeletal muscle through prestretching
CARMELO BOZCO and PAAVO V. KOMI
Kinesiology Laboratory, Department of Biology of Physical Activity, University of Jyväskylä, Finland

KOMI, C. & KOMI, P. V.: Potentiation of the mechanical behavior of the human skeletal muscle through prestretching. In: *Acta Physiol Scand.*, Vol. 106, No. 3, pp. 467-472. ISSN 0001-6992. Kinesiology Laboratory, Department of Biology of Physical Activity, University of Jyväskylä, Finland.

Prestretch potentiation of human skeletal muscle during ballistic movement
CARMELO BOZCO, PAAVO V. KOMI and AKERI ITTO
Department of Biology of Physical Activity, University of Jyväskylä, SF-40100 Jyväskylä 10, Finland

BOZCO, C., KOMI, P. V. & ITTO, A.: Prestretch potentiation of human skeletal muscle during ballistic movement. In: *Acta Physiol Scand.*, Vol. 111, pp. 131-140. Received 14 April 86; revised 22 May 87. ISSN 0001-6992. Department of Biology of Physical Activity, University of Jyväskylä, Finland.

Influence of Aging on the Mechanical Behavior of Leg Extensor Muscle*
Carrie Boose and Paavo V. Komi
Department of Biology of Physical Activity, University of Jyväskylä, SF-40100 Jyväskylä 10, Finland
Summary: Age dependence of the mechanical behavior of leg extensor muscle was investigated using vertical jumps with and without a stretch prior to the jump. The mechanical behavior of the leg extensor muscle was measured by the ratio of the maximum power output (Pmax) to the average power output (Pavg) during the jump. The results indicated that the Pmax/Pavg ratio decreased with age. The decrease in the Pmax/Pavg ratio was more pronounced in older subjects than in younger subjects. The decrease in the Pmax/Pavg ratio was correlated with the decrease in the maximum velocity of the knee bending, velocity of the prestretch and the force generated during the prestretch.

Electromechanical Behaviour of Human Muscles in Vertical Jumps
J. T. Vilistalo and C. Boose
Department of Biology of Physical Activity, University of Jyväskylä, SF-40100 Jyväskylä 10, Finland

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Eur J Appl Physiol (1985) 40:351-361
A Simple Method for Measurement of Mechanical Power in Jumping
Carrie Boose, Peter Lohman, and Paavo V. Komi
Department of Biology of Physical Activity, University of Jyväskylä, SF-40100 Jyväskylä 10, Finland

Table 1. Characteristics of the four methods of power measurement calculated from the different variables of the vertical jump (n = 15). Mean ± SD

Method	Mean Power (W)	SD Power (W)	Mean Velocity (m s⁻¹)	SD Velocity (m s⁻¹)	Mean Force (N)	SD Force (N)
Jumping (n = 15)	3.47	0.38	0.40	0.04	3.40	0.38
Flight (n = 15)	3.47	0.38	0.40	0.04	3.40	0.38
Flight (n = 15)	3.47	0.38	0.40	0.04	3.40	0.38
Springing (n = 15)	3.36	0.35	0.37	0.03	3.30	0.35

SIMPLE METHODS

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European Journal of Physiology (1990) 40: 11-16
Hormonal Responses in Strenuous Jumping Effort
G. Bouret, J. Tournet, L. Monvoisin, D. Pichot, G. Tissier, P. D. Provost, C. Roffet, M. Viala, and A. Viala
*University of Paris-Sud, Orsay, France; **Institut National de la Recherche Agronomique, Jouy-en-Josas, France; ***Université de Bourgogne, Dijon, France; ****Université de Paris-Est, Creteil, France; *****Université de Paris-Dauphine, Paris, France; and 6th Faculty of Veterinary Medicine, University of Lyon, Villeurbanne, France

Fig. 2. Correlation of change in serum testosterone levels with average power output (A) and average jumping height (B) during strenuous jumping. (n = 95).
European Journal of Physiology Vol. 40, No. 1, 1990

Clinical Physiology (1990) 10: 515-522
SHORT COMMUNICATION
Relationships between field fitness test and basal serum testosterone and cortisol levels in soccer players
C. Boose, H. T. Finsen, and A. Vinde
*School of Education, University of Jyväskylä, Jyväskylä, Finland and Institute of Sports Medicine and Biophysics, University of Göttingen, Göttingen, Federal Republic of Germany; †Department of Sociology, University of Jyväskylä, Jyväskylä, Finland; ‡Department of Sociology, University of Turku, Turku, Finland
Summary: The aim of this study was to investigate the existence of a relationship between performance capacities and blood levels of testosterone (T) and cortisol (C),

Fig. 2. Relationships between the changes in testosterone and cortisol levels and the results of the field fitness test after training.
European Journal of Physiology Vol. 10, No. 1, 1990

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VIBRAZIONI

Biology of Sport, Vol. 15 N°3, 1998

ARTICLE

Carola Boen - Mario Cattaneo - Oleg Ti

Influence of vibration on muscle activity in human arm field

Figure 3. Schematic diagram illustrating the mechanism by which vibration influences the activation of the arm's muscle system. It shows a mechanical system where vibration is applied to a muscle, which then generates force. This force is measured and compared with a baseline. The diagram also includes a brain model showing the connection between vibration and muscle activity.

Figure 4. Human leg during the squat exercise. The figure shows a person performing a squat, with a camera capturing the movement. A schematic diagram below illustrates the biomechanics of the squat, showing the knee and hip joints and the path of the leg during the exercise.

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DALLA SCIENZA ALLE APPLICAZIONI

Di sinistra: P. Melcherschmid, C. Boen, A. Hys

Original Article

Ulrich Boen, Tim Lohse
Influence of vibration on muscle activity in human arm field

Differences in morphology and force/velocity relationship between Sengalese and Italian sprinters

Modeling the energetics of 100-m running by using speed curves of world champions

Figure 5. A collage of images related to scientific applications in sports. It includes a man working on a laptop, a group of people at a table, a man in a suit, a woman on a stationary bike, a man performing a squat, and a portrait of a man.

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Original Article

Ulrich Boen, Tim Lohse
Influence of vibration on muscle activity in human arm field

Original Article

Ulrich Boen, Tim Lohse
Differences in morphology and force/velocity relationship between Sengalese and Italian sprinters

Original Article

Modeling the energetics of 100-m running by using speed curves of world champions

Figure 6. A portrait of a man, likely Ulrich Boen, wearing a dark jacket and a lanyard, standing in front of a stadium.

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L'IMPATTO INTERNAZIONALE



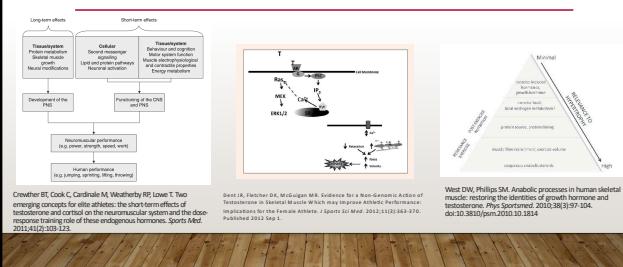
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PRECONDITIONING OF THE PERFORMANCE IN POWER EVENTS WITH ENDOGENOUS TESTOSTERONE: IN MEMORIAM OF PROFESSOR CARMELO BOSCO

Attilio Vico and Mario Vellozzi
Institute of Exercise Biology and Nutrition of Sports, Padova, Italy

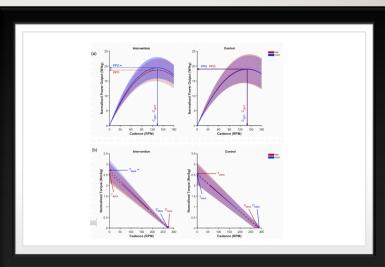
Current evidence has demonstrated that the administration of exogenous testosterone may improve performance in power events. However, the role of endogenous testosterone in preconditioning exercise performance is less clear. In this article, we review the available literature on the effect of endogenous testosterone on performance in power events. Different data obtained from field and laboratory studies indicate that the level of endocrinological and metabolic changes induced by exercise may be related to the magnitude of the performance improvement. In particular, it appears that the magnitude of the performance improvement is related to the magnitude of the increase of endogenous testosterone levels. For example, in the case of the 100-m sprint, the performance improvement is more evident in those individuals who have a greater increase in endogenous testosterone levels. Conversely, in other types of events, such as the 400-m run, the performance improvement is more evident in those individuals who have a lower increase in endogenous testosterone levels. These findings suggest that the magnitude of the performance improvement is related to the magnitude of the increase in endogenous testosterone levels.

LA SCIENZA SI EVOLVE



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LE CONVINZIONI CAMBIANO



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Rivalutare sempre il passato



"Doping begins when harm from their heavy training workload becomes more dangerous than harm from using doping." Grigory Rodchenkov

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MA ANCHE IL PRESENTE...



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PORARE LA SCIENZA SUL CAMPO

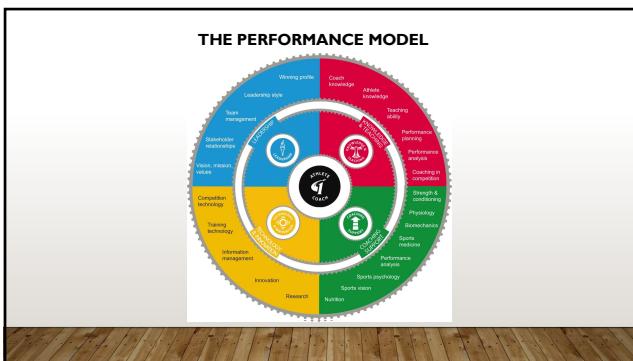
"Un allenamento senza valutazione e misurazione è come un viaggio senza meta." (Carmelo Bosco)



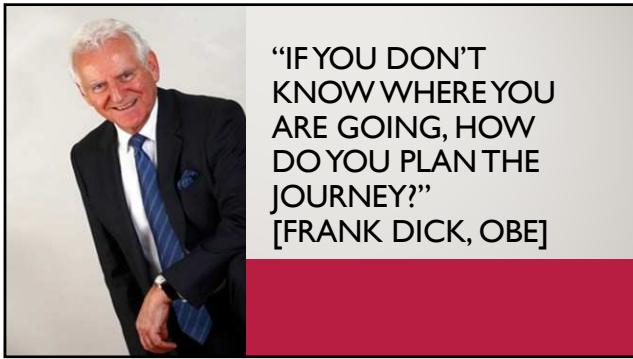
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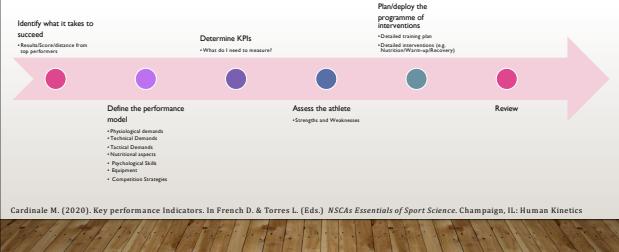


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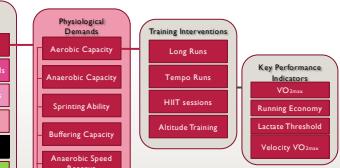


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BUILDING THE PLAN: WITTW MODEL

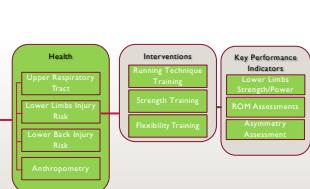


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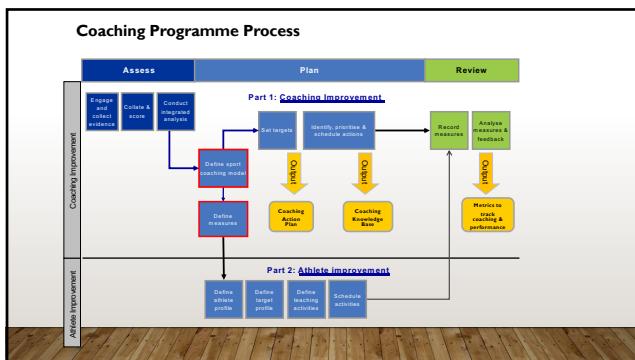
Cardinale M. (2020). Key performance Indicators. In French D. & Torres L. (Eds.) *NSCA's Essentials of Sport Science*. Champaign, IL: Human Kinetics

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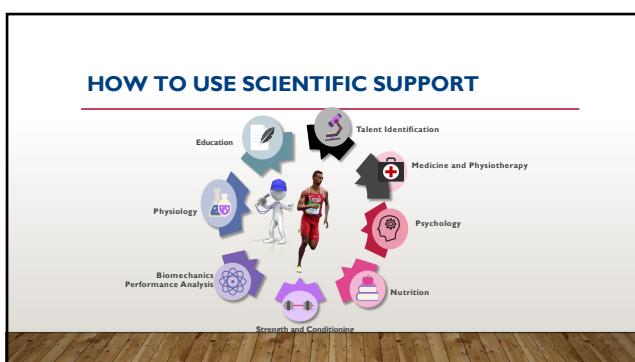


Cardinale M. (2020). Key performance Indicators. In French D. & Torres L. (Eds.) *NSCA's Essentials of Sport Science*. Champaign, IL: Human Kinetics

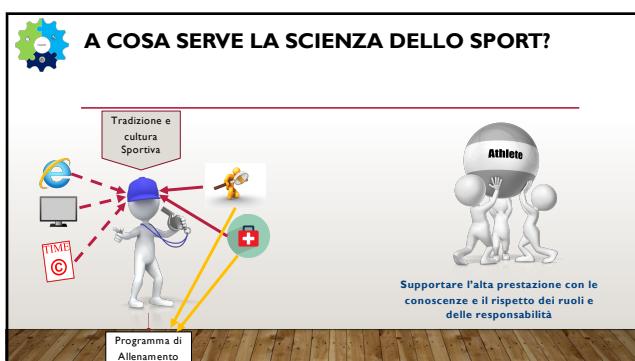
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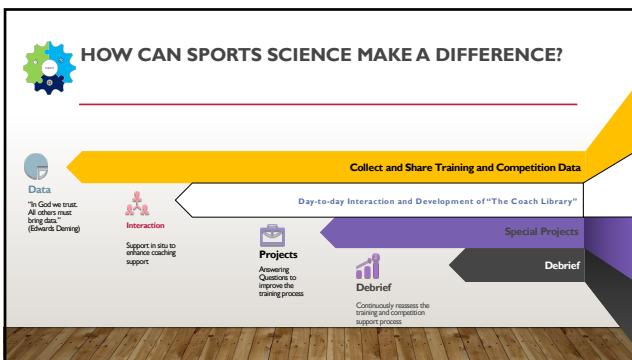
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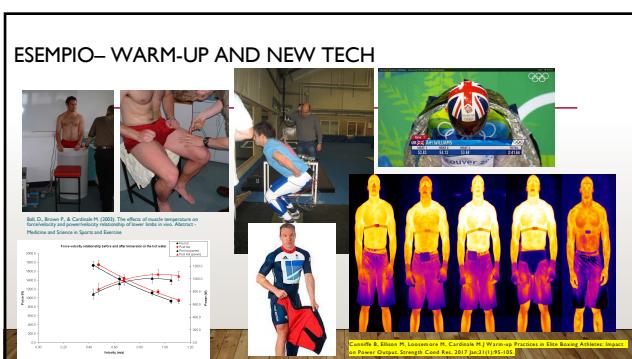
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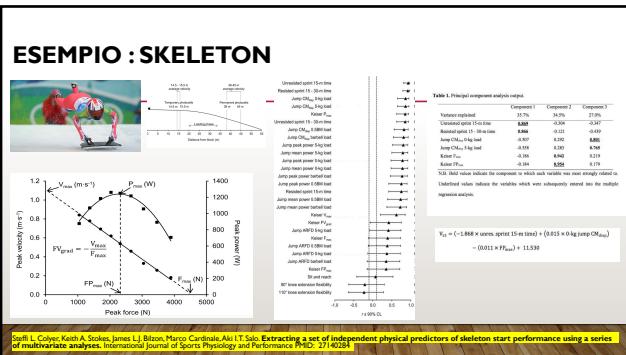
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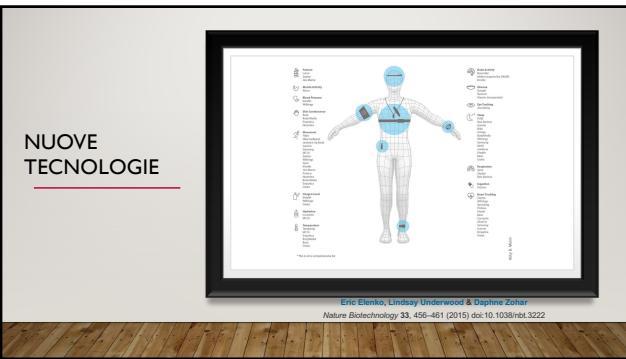
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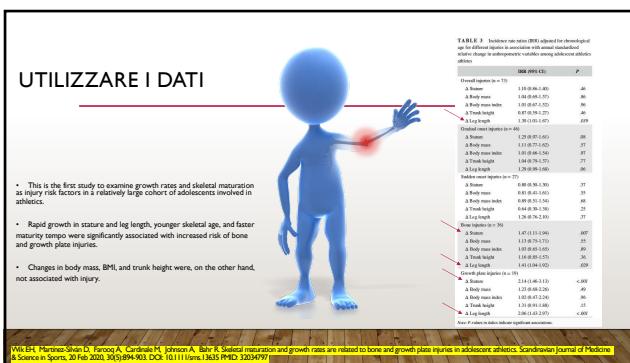
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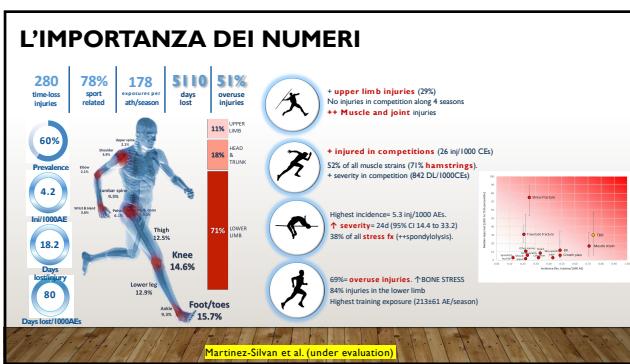
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TRADURRE SCIENZA DELLO SPORT IN AZIONE

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SOMMARIO

- Bosco ci ha lasciato una legacy di metodi e modelli che possono essere ancora utilizzati per valutare atleti e per programmarne l'allenamento.
- Ma la scienza va Avanti, bisogna aggiornarsi [leggere] e si deve avere una mente più aperta
- Il metodo scientifico, o metodo sperimentale, è la modalità tipica con cui la scienza procede per raggiungere una conoscenza della realtà oggettiva, affidabile, verificabile e condivisibile. Il metodo deve restare, le convinzioni cambiano.
- Molte delle tecnologie al momento sul mercato per valutare lo "stato" dell'atleta o per riuscire a prevedere infortuni o performance non hanno **ALCUNA evidenza scientifica di validità**
- Molti metodi di allenamento 'venduti' per validi non hanno alcuna evidenza che funzionino

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QUO VADIS?

- La scienza dello sport avanza rapidamente, il modello degli istituti di scienza dello sport inizia a vacillare (vedi AIS/UK/USOC etc).
- Il miglioramento delle conoscenze dei tecnici deve avere la stessa priorità dell'innovazione scientifica
- Le università devono modernizzare i programmi e collaborare con le organizzazioni professionali
- Siamo circondati da disinformazione, scarsa professionalità, pseudo-experti e guru. Bisogna sviluppare il pensiero critico negli operatori del settore
- Come diceva Bosco (e Scoglio), bisogna continuare ad imparare e prepararsi per evitare di parlare "ad-minchiam".

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