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O Efeitos do imagery mental no performance desportiva:
cenário real ou efeitos colaterais?



The Effects of mental imagery on athletic performance: real scenario or side effects?

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Where is Burapha University



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The way of success in sport

Success in sport

Physical conditioning , skillful

Mental toughness

Physical

mental

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What is mental toughness?

Quotes from athletes:

"Baseball is 90 percent mental, the other half is physical."
(mental Training for Athletic Success)

"The game of golf is 90% mental and 10% physical.
(Jack Nicklaus)

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What is Mental toughness?

Definition

Mental toughness is having the natural or developed psychological edge that enables you to:
Generally cope better than your opponents with the many demands (e.g., competition, training, lifestyle) that are placed on you as a performer.

Specifically, to be more consistent and better than your opponents in remaining determined, focused, confident, resilient, and in control under pressure (Jones et al., 2002).

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Key psychological characteristics associated with mentally tough (Jones et al., 2002):

- Believed
- Motivation
- Focus
- Dealing with pressure

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Mental training for mental toughness

- ❖ The optimal performance is related with mental preparation and psychological strength just as much as physical preparation and technical skill.
- ❖ Mental training is concentrates on preparing the mind of the athlete as thoroughly as the body.



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Mental training for mental toughness: Psychological STraining

Somatic technique (body to mind) such as <u>Biofeedback</u> , <u>Progressive Muscle Relaxation</u> , and <u>Meditation</u>	Cognitive technique (mind to body) such as <u>mental rehearsal</u> , <u>Visualization</u> , <u>Imagery</u>
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What is mental imagery?

Why used a mental imagery?

- *Paige (2009)* imagery is an effective technique for developing or enhancing mental toughness in athletes.

Imagery is an experience similar to a sensory experience but arising in the absence of the usual external stimuli as sight, sound, taste, smell and touch/feel(Martens, 1982)

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Traditional imagery in sport

For Example: shadow boxing
Muay Thai

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What are the benefits?

Training		Competition
<ul style="list-style-type: none"> ✓ developing <u>self confidence</u> ✓ developing pre-competition and competition strategies ✓ helping the athlete to focus his/her attention 	Combined with relaxation it is useful in the removal of stress e.g. muscular tension	Strong confident Not fear Tough Flow Enterprising Never give up



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Mental imagery perspectives

	Internal	External
Real time		
slow motion		
		Actually action
		Learning skill

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PETTLEP model for enhance performance (Holmes and Collins, 2001)

P Physical E Environment T Task T Timing L Learning E Emotion P Perspective	<pre> graph TD P[Physical] --> MI[MOTOR IMAGERY] E[Environment] --> MI T[Task] --> MI PERSPECTIVE[Perspective] --> MI MI --> A[AWARENESS] MI --> AT[ATTENTION] MI --> T2[TIMING] HAPTIC[HAPTIC AFFERENCE] --> MI KINETIC[KINETIC AFFERENCE] --> MI ENVIRONMENT[ENVIRONMENT] --> MI AWARENESS --> AT AT --> T2 </pre>
+ Physical practice (Wright & Smith, 2012)	<i>Success using the PETTLEP model</i> <ul style="list-style-type: none"> ✓ Gymnastic routines ✓ Golf bunker shots ✓ Computer game performance ✓ Nursing skills

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Effects of PETTLEP Imagery on Sports Performance

- Holmes and Collins (2001) pioneered the seven-component imagery process known as PETTLEP imagery.
- Smith, Wright, Allsopp, and Westhead (2007) compared the effects of PETTLEP-based imagery against the improvements found with the use of traditional imagery.
- Smith, Wright, and Cantwell (2008) studied the effects of PETTLEP imagery on golf bunker shot performance.

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Effects of PETTLEP Imagery on Sports Performance (con.)

- Jenny and Munroe-Chandler (2008) research focused on the timing element of the PETTLEP intervention. The researchers examined the performance effects of three imagery conditions, in regards to soccer dribbling.
- Wright and Smith (2009) compared the effects of PETTLEP imagery with the results obtained using more traditional imagery, on muscle strength.
- Ramsey, Cumming, Edwards, Williams, and Brunning (2010) examined the Emotion element of the PETTLEP model using penalty kicks in soccer.

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Mental imagery cycle

The diagram illustrates the Mental Imagery Cycle with three stages:

- Cognitive stage: brain store** (represented by a silhouette of a head with a red circle labeled "MUSCLE")
- Transferring stage: Muscle activity** (represented by a 3D anatomical model of a muscular system)
- behavioral stage: performance** (represented by a photograph of a person performing a physical activity)

A large pink arrow points from the cognitive stage through the transferring stage to the behavioral stage, forming a circular flow. Below the main stages, there are five smaller images showing various sports and physical activities.

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Cognitive stage: brain working

Brain activity has been proposed to be important in understanding affective and perceptual responses of human performing(Nybo & Nielsen, 2001; Petruzzello et al., 2006).

Brain wave is the patterns represent the electrical activity of the brain

Farag (2011) studied about effect of development of some mental imagery abilities on some skill and brain map for competitive swimmers and found that 4 basic types of brain wave are associated with electroencephalogram (EEG) record.

The diagram illustrates the four basic types of brain waves and their associated states:

- Beta** (14-30 Hz): Normal Waking States, Alert Engaged in Work Busy Thinking
- Alpha** (8-13 Hz): Relaxing When Dreaming, Relaxed Images & Visuals Self-Introspection Day Dreaming
- Theta** (4-8 Hz): Deep Sleep Between Awake/Sleep Flow of Ideas/Creativity Shamanic States Bridge to Subconscious
- Delta** (0-4 Hz): Deep Dreamless Sleep Unconsciousness Very Deep Sleep

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Cognitive stage: transfer to perception, to questionnaire

Sensing --> Memory --> Learning --> Decision making

Perception is the set of processes by which an individual becomes aware of and interprets information about the environment.

Questionnaire (Sport imagery Questionnaire; SIQ; Sport Imagery Ability Questionnaire; SIAQ; et al.)

The diagram shows the cognitive process from stimulus to cognitive processing:

1. Stimulus (A tiger)
2. Sensing (Information reaching the brain)
3. Cognitive processing (The brain interpreting the information)

Below the diagram, a question is asked: "O que é?" with options: a. Canguru, b. Foca, c. A e B.

On the right, there is a list of terms: ers, hallucination, stereotype, ecentring, here and now.

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Transferring stage:

Some studies have detected EMG activity during motor imagery (Bakker et al., 1996; Guillot et al., 2007; Guillot et al., 2007; Lebon, Rouffet, Collett, & Guillot, 2008)

Shackell and Standing (2007) found that physical strength was increased by 24% through mental practice. Strength was also increased through physical training, by 28%. Mental and physical training produced similar decreases in heart rate, and systolic blood pressure.

Wilson, Smith, Burden and Holmes(2010) found that self-reported imagery ability ratings were higher, and EMG activity in the right bicep was greater, when the participants generated their own imagery scripts than when the script was produced by the experimenter.

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Behavioral or performance stage:

Study in performing, record, point et al.

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Relationship between Mind and body

- It is important to think positively, but pressure doesn't just affect your thoughts, it affects your body and your senses also, and it's these two that make the difference between good and bad shots. (Harkness, 2009)

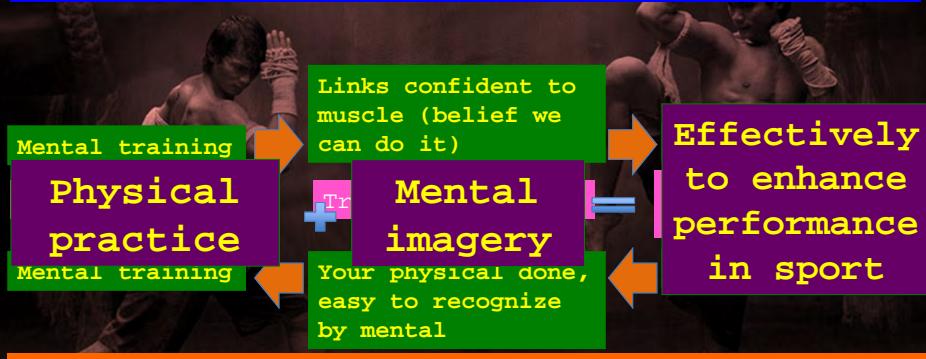


Harkness, T., (2009). Psykinetics: The new Science of the Golf Swing Psykinetics the interaction of mental States and Physical movement. in: www.biofeedbackrus.com/images/graphics/thewall/PsykineticsTrainingGolf.pdf

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Not only.....But also.....



Just more than one discipline; **Sport Psycho-Physiology in sport (SPP)** is the integration of mind and body in the effective training, preparation and performance strategies of athletes.



