

# The Mind-Muscle Connection – How Your Mindset & Thoughts Can Amplify Your Results

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# Believe and Achieve

“Whatever the mind of man can conceive and believe, it can achieve.”

- Napoleon Hill
- Our minds are like a garden, be careful what you plant in it!!!



# What Does the Research Say?

- Self-talk
- Visualization / Mental Imagery
  - Energy (psyching up)
  - Technique (instructions)
  - Appearance (bigger, stronger, winning)

# Self-Talk – What Does it Mean?

- Self-talk refers to statements individuals address to themselves for specific purposes, such as increasing motivation or enhancing skill execution

Hardy, J. Speaking clearly: a critical review of the self-talk literature. *Psychol Sport Exerc* 7: 81–97, 2006

# Self-Talk Research

- Tod et al. tested vertical jump performance with motivational/instructional vs. neutral self-talk
  - Greater center-of-mass displacement
  - Greater impulse
  - Quicker angular rotation
- **Conclusion**: “self-talk may lead to an increase in muscular power by alterations in movement kinematics. The use of self-talk may contribute to improved performance in sports requiring power-based skills.”
- Hatzigeorgiadis et al. found that motivational self-talk led to improved distance in the water polo throw

# Mental Imagery Research

- Silbernagel et al. found “Athletes who used imagery more often were more confident”
- “Positive relationship between imagery use and imagery effectiveness and confidence in the weight room”
- “Imagery is a source of confidence in the weight room, just as it is a source of confidence in sports and other domains”

## Mental Imagery Research (cont'd)

- Woolfolk et al. used positive and negative imagery with the task of putting a golf ball
  - positive imagery - ball going into the cup
  - negative imagery - ball narrowly missing the cup
  - control group - putted without instructions
- On each of 6 consecutive days a 10-putt trial was conducted for each subject
- Post hoc analyses showed significant differences among all groups, with **positive imagery** producing the most improvement, the **control** condition producing less, and **negative imagery** resulting in performance deterioration

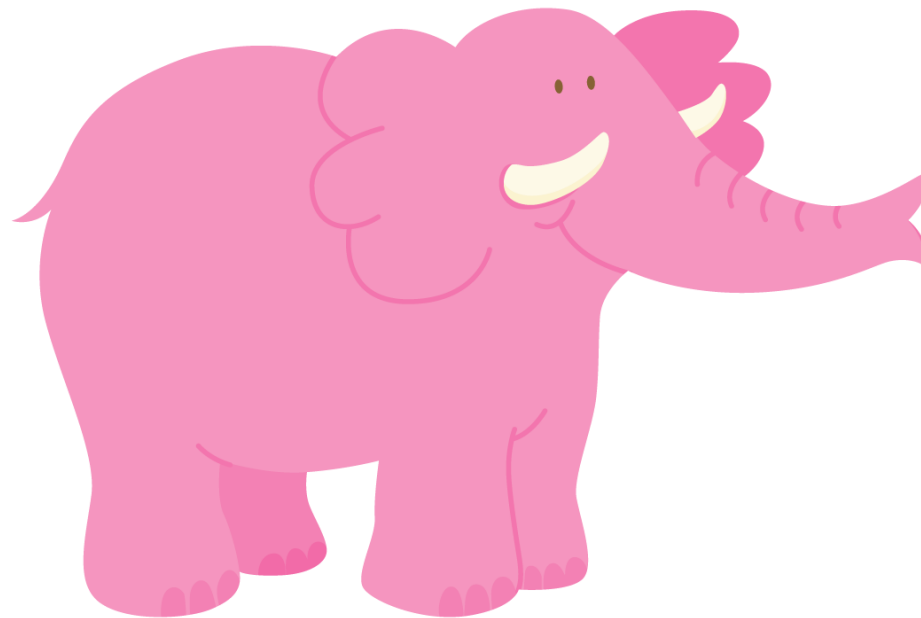
# The POWER of Mental Imagery

- Let's try a little test...
- Read the following sentence:

**“Do NOT think of a  
Pink Elephant”**



# The POWER of Mental Imagery

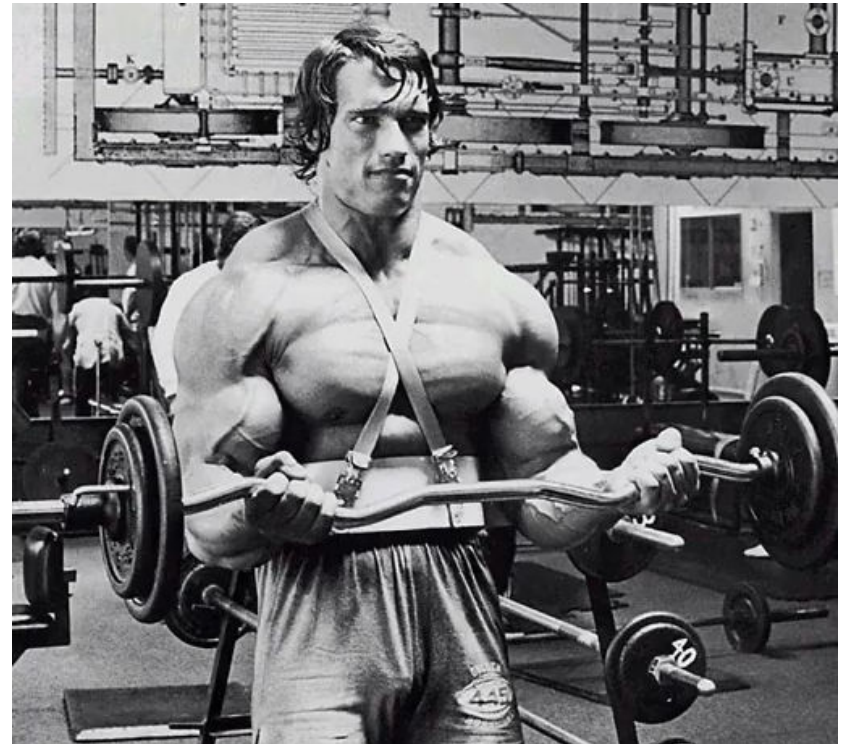


# Who Uses These Techniques?

- Arnold Schwarzenegger – 7-time Mr. Olympia
- Jack Nicklaus – 18 Major Championships
- Michael Jordan – 6-time NBA Champion

# Arnold Schwarzenegger

“Thinking of my biceps as mountains made my arms grow faster and bigger than if I’d seen them only as muscles. When you think of biceps as merely muscles, you subconsciously have a limit in your mind, which for biceps is something in the area of 20” or 21”. When you think about mountains, there is no limit to biceps growth, and therefore you have a chance of going beyond normal mental barriers.”



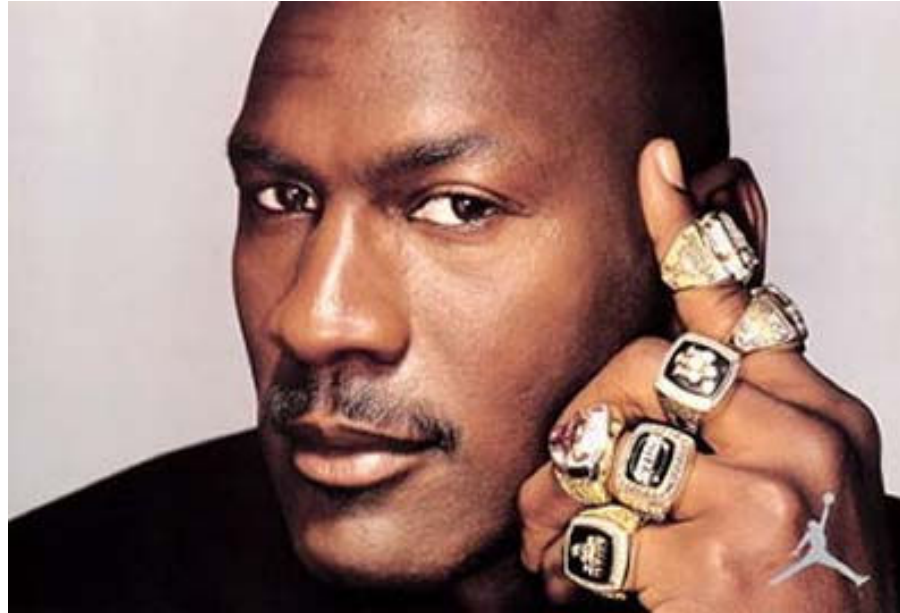
# Jack Nicklaus

“I never hit a golf shot without first having a sharp picture of it in my head. First I ‘see’ where I want the ball to finish.

Then I ‘see’ it going there; its trajectory and landing. The next scene shows me making the swing that will turn the previous images into reality”



# Michael Jordan



“The mental part is the hardest part, and I think that’s the part that separates the good players from the great players. I visualized where I wanted to be, what kind of player I wanted to become. I knew exactly where I wanted to go, and I focused on getting there.”

# Athletes vs. General Population

- BE CAREFUL!!!
- General Population requires solid technique instruction FIRST
- Psyching up an Office Worker who doesn't know how to squat properly is NOT going to help them squat



## Mental Imagery Research – Non-Athletes

- “The Effect of Cognitive and Somatic Psyching-up Techniques on Isokinetic Leg Strength Performance” – Tenenbaum et al. JSCR, 1995
- 45 non-strength-trained men (ages 24.7 +/- 3.6 yrs) tested knee extensor strength
  - positive statements (PS-cognitive),
  - relaxation-visualization and autogenic training (RVA-somatic)
  - control (no treatment)
- The control group showed a significantly greater improvement (39.1%) in peak force than both PS (24.6%,  $p < 0.05$ ) and RVA (9.0%,  $p < 0.05$ ) treatment groups
- **CONCLUSION**: mental preparation techniques in non-strength-trained individuals may hinder optimal strength performance by diverting the individuals' full concentration away from the exercise movement

# Mental Imagery - Athletes

- Silbernagel et al. examined how 295 Div I & II college athletes used imagery during weight training
- Order (most effective to least effective)
  - **Appearance** imagery (i.e. images related to the attainment of a fit-looking body)
  - **Technique** imagery (i.e. images related to performing the skill and techniques correctly with good form)
  - **Energy** imagery (i.e. images related to getting "psyched up" or feeling energized)



# Implementation

- Psyching up is the LEAST effective mental imagery technique yet it is one of the MOST frequently utilized
- Both Athletes and Non-Athletes perform best when using **Appearance** Imagery
- Critical to use **Technique** Imagery with Non-Athletes to prevent injury and build confidence

# Implementation (cont'd)

- Have athletes utilize appearance imagery by having them spend 5-10 minutes a day visualizing themselves achieving success
  - on playing field / practice field
  - in weight room
- Use technique imagery with non-athletes by having them visualize completing a lift / exercise properly
  - give cues and have them close their eyes and go through the cues in their mind

# For the Skeptics - Darts

- Psychologist R.A. Vandll proved that mental practice in throwing darts at a target, where the person sits for a period each day in front of the target, and imagines throwing darts at it, improves aim just as much as actually throwing darts



# For the Skeptics – Free Throws

- *Research Quarterly* looked at the effects of mental practice on shooting free throws in basketball
- Groups were scored on day 1 and day 20
  - Group 1 – practiced every day for 20 days
  - Group 2 – did not practice at all
  - Group 3 – only imagined making free throws (NO ACTUAL PRACTICE)

## For the Skeptics – Free Throws (cont'd)

- Group 1 (practiced) – improved 24%
- Group 2 (no practice) – no improvement
- Group 3 (mental practice) - improved 23%



# Conclusion

- Athletes
  - will benefit from daily Mental Imagery Practice
- Non-Athletes
  - will benefit from Technique Imagery most
- In both Athletes and Non-Athletes:
  - Appearance Imagery = most effective followed by
  - Technique Imagery
  - Energy Imagery (“psyching up”) = least effective

# Questions?

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- Thank You!!!

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