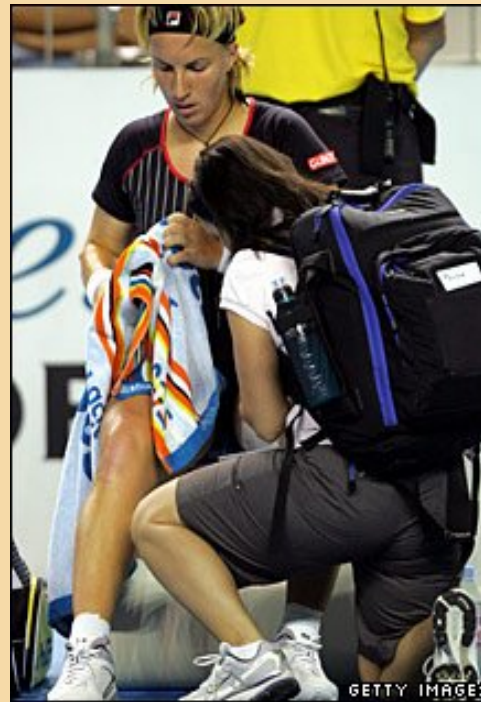




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# General & Specific Strategies for Optimising Patient- Client Motivation in Sports Rehabilitation

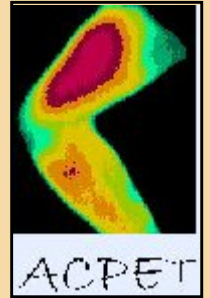


Implications for Transfer with your Patients/ Clients

Tom Fawcett - PhD  
University of Salford



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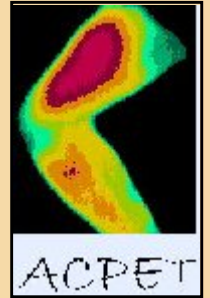
# Motivation

The Direction & Intensity of Effort  
towards the completion of a chosen  
Task ( Gould ,2000)





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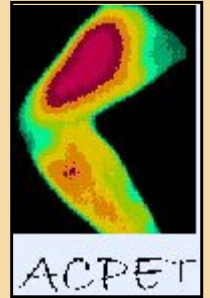
A Myth of Sports Psychology in Sports Rehabilitation  
Motivation and Behaviour Change

Motivation is stable and transfers across different  
aspects of our lifestyle

Weight Management & Diet  
Exercise Behaviour  
Compliance within Injury Rehabilitation  
Work related tasks!



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SELF MOTIVATION – Internally Driven

High SM required for consistent 'Positive'  
Behaviour Change

Low – Moderate SM requires external support  
to promote changes in behaviour !

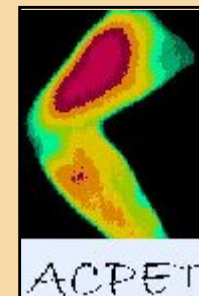
If the perceived importance of a speedy recovery is low  
& rewards for quick recovery are small

=

Little Investment Value in recovery programme ( Low Effort)  
& slow recovery



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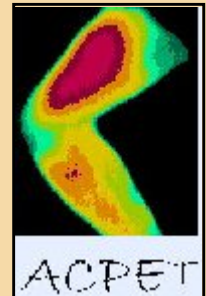


Journal of Sport Rehabilitation, 2007, 16, 111-121  
© 2007 Human Kinetics, Inc.

## **Views of Chartered Physiotherapists on the Psychological Content of Their Practice: A Follow-Up Survey in the UK**

**Monna Arvinen-Barrow, Brian Hemmings,  
Daniel Weigand, Caryl Becker, and Lynn Booth**

**Objective:** To assess, on a national level, the views of chartered physiotherapists with regard to the psychological content of physiotherapy practice. **Design:** A postal survey to a national list of sport injury and physiotherapy clinics was employed. **Participants:** A total of 361 responses were included in the descriptive statistical and qualitative analyses. **Measurements:** The Physiotherapist and Sport Psychology Questionnaire (PSPQ). **Results:** On average, physiotherapists felt that athletes were psychologically affected 83% of the time when injured. Key psychological characteristics were also identified in athletes who cope/do not cope successfully with their injuries. Physiotherapists reported using psychological techniques in their work and expressed the need for further training in the field. Only 24.1% of the physiotherapists stated having access to accredited sport psychologists. **Conclusions:** Results suggest that UK physiotherapists possess practical experiences and good awareness for psychological aspects of injuries and acknowledge the importance of treating a range of psychological conditions.



**N= 361 – 248 f (68.7%) 113 m (31.3%)**

**Table 2 Top 10 Characteristics of Athletes Who Cope Successfully With Athletic Injury**

Characteristic	Frequency (%)
Positive and proactive attitude toward injury	43.21
Compliance with the rehabilitation/treatment program	39.61
Understanding of injury	24.93
Realistic expectations	21.88
Motivation	19.67
Patience with themselves and the injury program	17.45
Determination	14.13
Confidence and trust in the therapist and rehabilitation program	12.74
Commitment	12.47
Good social, emotional and medical support	9.7

This was an open-ended question in which the physiotherapists were asked to list the top four observed characteristics.

**Arvinen- Barrow et al. (2007)- Journal of Sports Rehabilitation,16,111-121**  
**Human Kinetics**



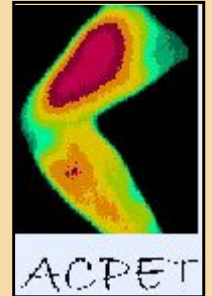
**N= 361 – 248 f (68.7%) 113 m (31.3%)**

**Table 3 Top 10 Characteristics of Athletes Who Cope Less Successfully With Athletic Injury**

<b>Characteristic</b>	<b>Frequency (%)</b>
Non/poor compliance with the rehabilitation program	34.9
Depression	27.7
Impatience	22.16
Anxiety	18.01
Negative attitude towards injury	17.17
Anger	14.4
Unrealistic goals and expectations	13.85
Exercise addiction	13.3
Stress	10.8
Lack of/poor understanding of the injury and rehabilitation process	10.25

This was an open-ended question in which the physiotherapists were asked to list the top four observed characteristics.

**Arvinen- Barrow et al. (2007)- Journal of Sports Rehabilitation,16,111-121**  
**Human Kinetics**



**N= 361 – 248 f (68.7%) 113 m (31.3%)**

**Mean of 19yrs experience**

**Table 1 Psychological Conditions Encountered by Physiotherapists When Working With Injured Athletes**

<b>Psychological responses</b>	<b>Mean</b>	<b>SD</b>
Stress/anxiety	3.75	0.87
Exercise addiction	3.39	0.92
Treatment compliance problems	2.81	0.85
Anger	2.75	0.87
Depression	2.74	0.82
Attention/concentration problems	2.38	0.82

1 = never encounter; 5 = very often encounter

**Arvinen- Barrow et al. (2007)- Journal of Sports Rehabilitation,16,111-121**  
**Human Kinetics**

## Physiotherapists' and Male Professional Athletes' Views on Psychological Skills for Rehabilitation

Susan R Francis<sup>1</sup>, Mark B Andersen<sup>1</sup> & Paul Maley<sup>2</sup>

<sup>1</sup>Victoria University, Australia.

<sup>2</sup>National Basketball League, Australia.

Francis, S.R., Andersen, M.B., & Maley, P. (2000). Physiotherapists' and male professional athletes' views on psychological skills for rehabilitation. *Journal of Science and Medicine in Sport*, 3 (1), 17-29.

In the literature on the psychological aspects of rehabilitation from athletic injury, several studies in North America have focused on athletic trainers' roles as physical and psychological caregivers for injured athletes. Wiese, Weiss, and Yukelson (1991) examined the views of athletic trainers on the psychological characteristics that distinguished athletes who coped well, versus those who coped poorly with rehabilitation, and also sought athletic trainers' opinions on the role of psychological skills in injury rehabilitation. This study replicated the Wiese et al. (1991) study with Australian physiotherapists and extended it to include the viewpoints of professional basketball players. The results indicated the importance attached to communication and motivation by both physiotherapists and athletes in the rehabilitation process. Both athletes and physiotherapists did not, however, think psychological skills such as relaxation or imagery techniques to be particularly useful tools in the recovery process.

### Introduction

Items from all Three Scales*	Physiotherapists	Athletes
Willingness to Listen to Physiotherapist (1)	X	X
Willingness to Learn About Injury/Rehab (1)	X	X
Self-Motivation (1)	X	X
Positive Attitude (1)	X	X
Aid Understanding of Injury Mechanism (2)	X	
Communication Skills of Physiotherapist (2)	X	X
Realistic Timeline to Full Recovery (2)	X	
Focus on Short-Term Goals (2)	X	
Positive Reinforcement by Physiotherapist (2)	X	
Keeping Athlete Involved with Team (2)	X	X
Coach Support of Athlete (2)	X	X
Using Positive Communication Style (3)	X	
Determination/Mental Toughness (1)		X
Encouraging Positive Thoughts (2)	X	
Setting Realistic Goals (3)	X	
Understanding Stress/Anxiety (3)	X	
Understanding Individual Motivation (3)	X	

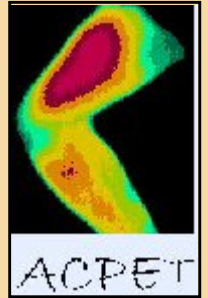
\* The number in parentheses after the item represents the scale where the item can be found. Note: An 'X' represents that the item was endorsed 90% of the time, or more, by that group.

Table 4: Items nearly universally endorsed (90% agreement) as important/effective by physiotherapists and athletes.

Items from all Three Scales*	Physiotherapists	Athletes
High Ability Level in Sport (1)	X	X
High Pain Tolerance Level (1)	X	X
High Academic Ability (1)	X	X
Emotional Maturity (1)	X	X
Relaxation Techniques (2)	X	X
Visualisation/Imagery (2)	X	X
Teaching Muscle Relaxation (3)	X	X
Teaching Mental Imagery (3)	X	X
Teaching Emotional Control (3)	X	X
Teaching Concentration Skills (3)	X	X
Social Support (peers & parents) (1)		X
Focus on Short-Term Goals (2)		X
Encouraging Positive Thoughts (2)		X
Reducing Depression (3)		X
Understanding Stress/Anxiety (3)		X
Enhancing Self-Confidence (3)		X
Enhancing Listening Skills (3)		X

\* The number in parentheses after the item represents the scale where the item can be found. Note: An 'X' represents that the item was a difficult judgement for that group.

# Do Psychological skills & strategies assist in injury rehabilitation?

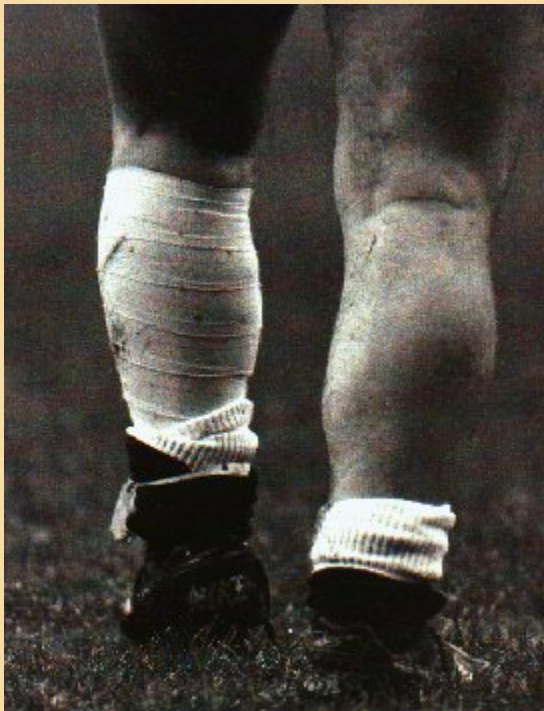


Ievleva & Orlick (1991)  
Interview methods

Fast v Slow healing athletes  
< 5 weeks = fast  
> 16 weeks = slow

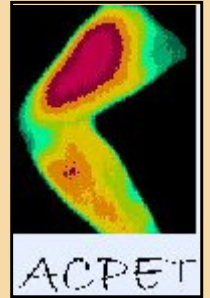
Knee & ankle injuries

Greater use of psych skills  
Goal Setting / + self talk  
Healing Imagery





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## Coping Skills & Athletic Injury (Gordon, Milios & Grove 1991)

\*482 athletic trainers to identify the primary characteristics of athletes who most or least successfully coped with their injuries

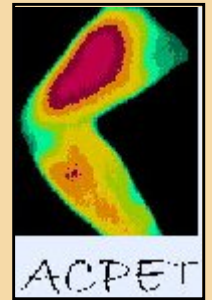
Successful Copers -

- ◆ Complied better with rehab and treatment programs
- ◆ Demonstrated a more positive attitude about injury status
- ◆ Demonstrated a more positive attitude towards life
- ◆ More motivated, dedicated & determined
- ◆ Asked more questions and were knowledgeable about their injuries





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## Major Psychological Issues in Sports Rehab OVERVIEW

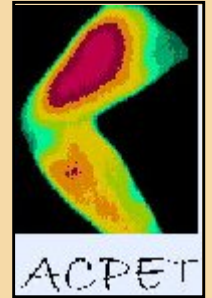


Stress / Anxiety Regulation  
Treatment – Compliance Behaviour  
Anger Management  
Impatience  
Negative Attitude towards Injury  
Unrealistic Goals & Expectations  
Awareness / Understanding of the Injury  
Exercise Addiction





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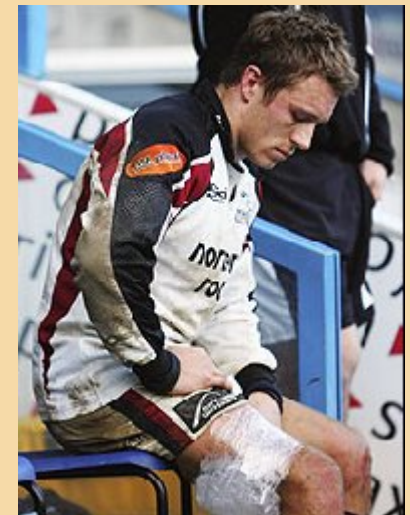


Depressed patients x3 likely to be non-compliant than  
Compared to Non-Depressed patients.

Develop an understanding of what Depression is about – how it is displayed in body language, behaviour, mood and self esteem.

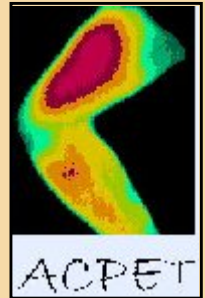
Refer to Clinical Psychologist in serious cases, offer counseling advice ( 97% ( 87) of Arvinen- Barrow study provided advice to clients.

Gain access to an Accredited Sports Psychologist ( BASES UK )





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**Being Inactive**  
**Being Bored and Lethargic**

*Got a lot on*  
*Deadlines Looming*  
**Feeling stressed**  
*Not sure you'll get it*  
*all done in time*  
**Feeling tense**  
**Not Coping**  
**Avoiding stuff**  
*Feeling panicky*  
*and anxious*  
**Feeling alone**



**Scientific Support**

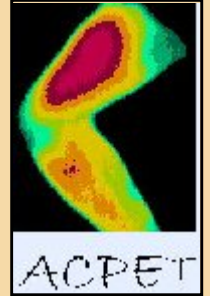
**The British Association of Sport and Exercise Sciences**  
**Leeds Metropolitan University**  
**Carnegie Faculty of Sport and Education**  
**Fairfax Hall**  
**Headingley Campus**  
**Beckett Park**  
**Leeds LS6 3QS**

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## Dealing with Clients/ Patients

Use a variety of communication styles ( Telling & Doing / Showing & Copying / Manual therapy and Instruction/ Questioning and asking for Evidence of feedback ) – telling & instructing has the lowest return rate/ Learning Effect, even though it is quicker and easier ( expert view)

Use block practice schedules initially then change to random practice Schedules in rehab to increase *learning* effect

Empower them to be fully involved within the rehab process & educate them ( if they are interested!)

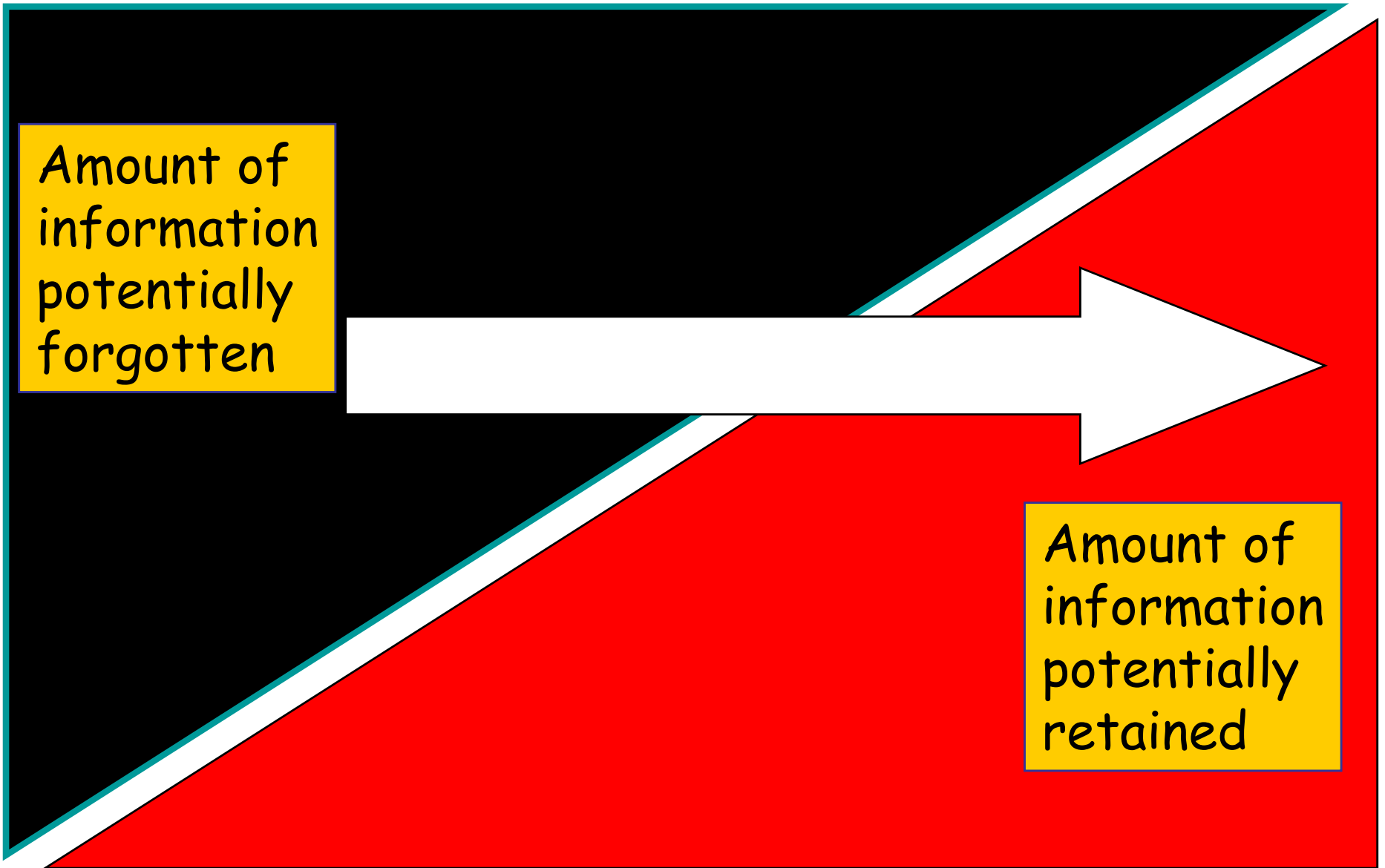
Encourage the use of mental skills within early rehab – they are essential to adherence , progress and future experience – i.e. transfer as a life skill.

SPEAKING

DEMONSTRATING

SIMULATING

CONFIRMING



Amount of information potentially forgotten

Amount of information potentially retained

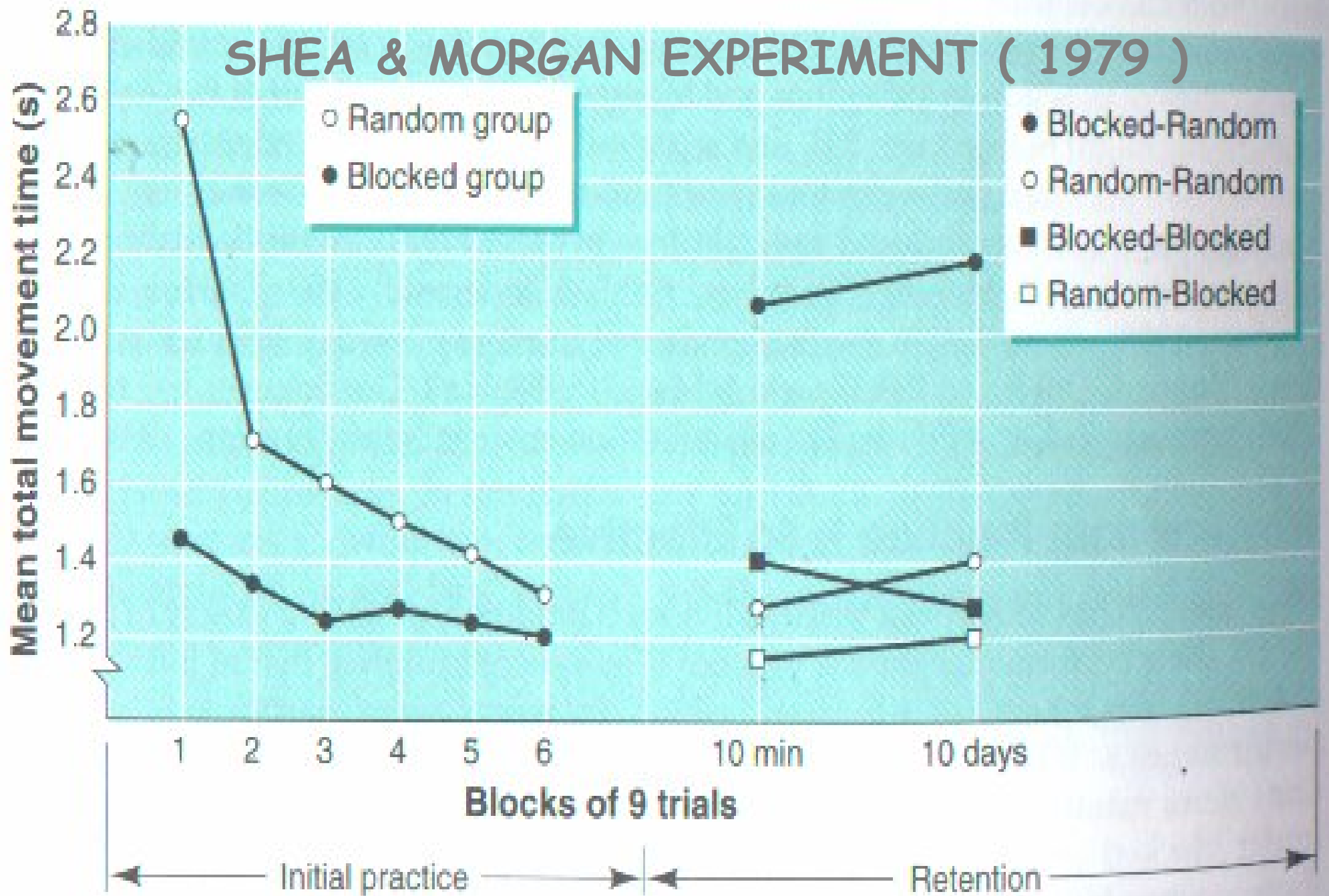
TELL

SHOW

DO

QUESTION

THE LEARNING GRADIENT



**Figure 9.1** Performance on movement-speed tasks under random and blocked conditions. The relative amount learned by each group during initial practice (left side of figure) is shown by their retention...

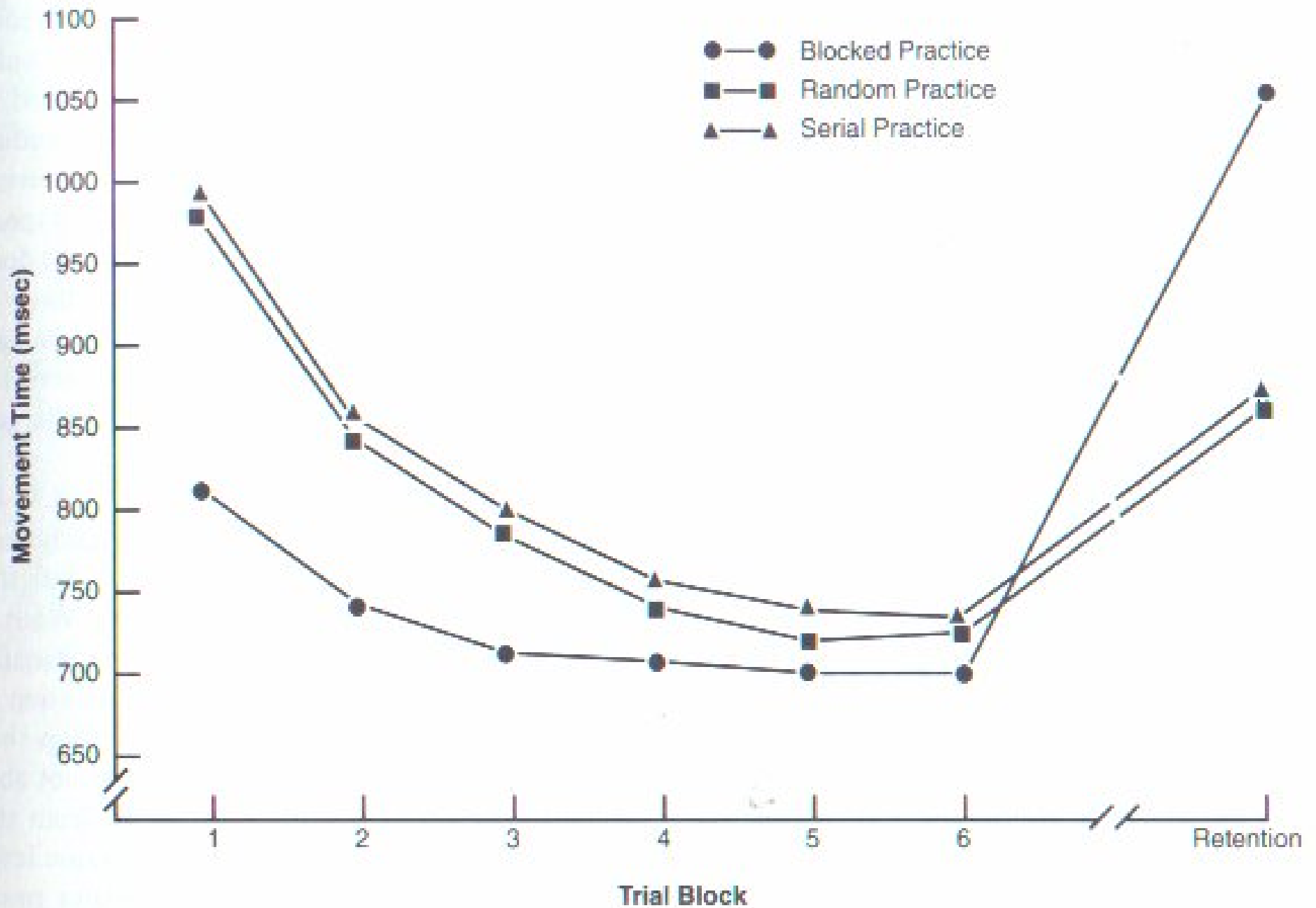
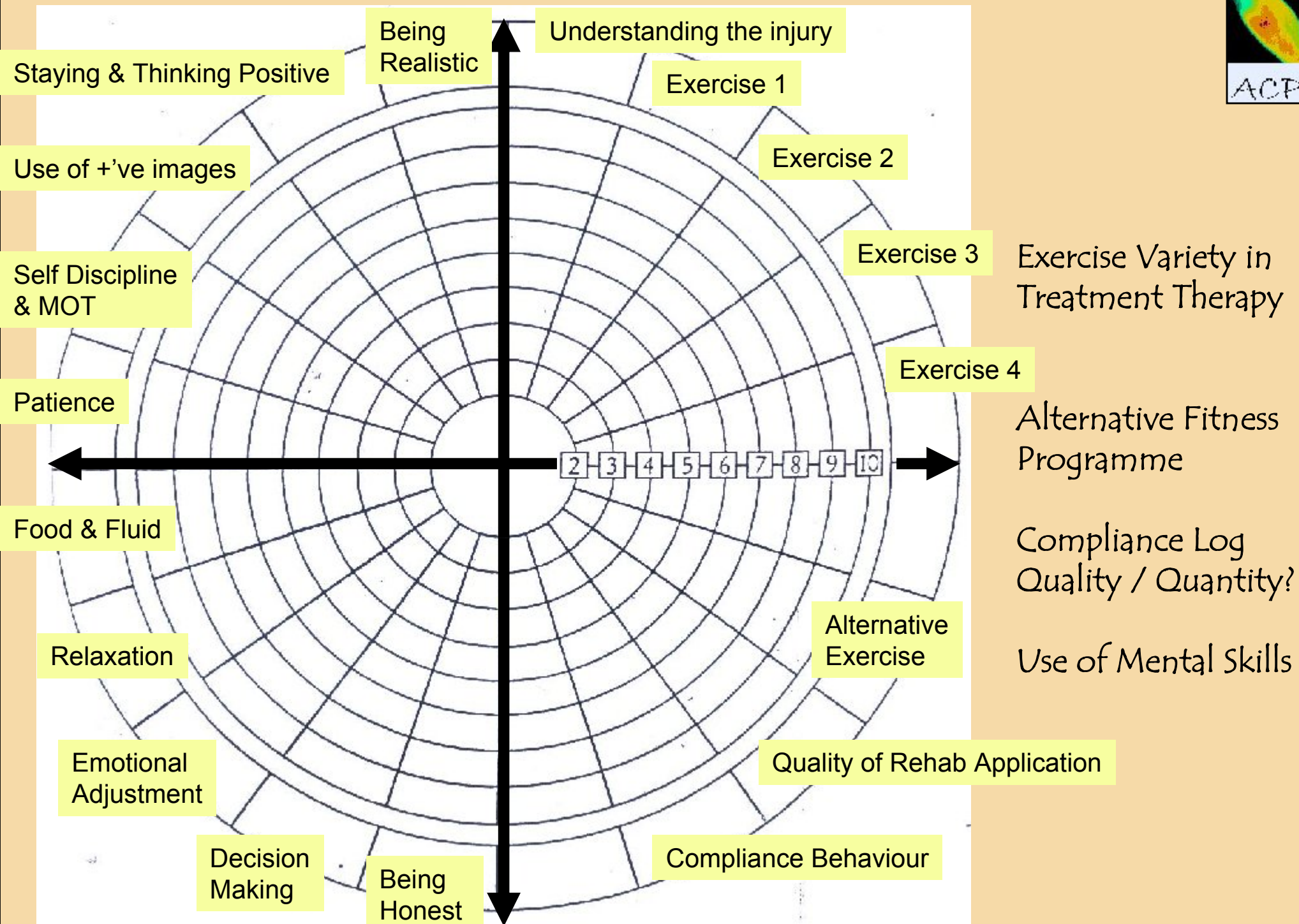
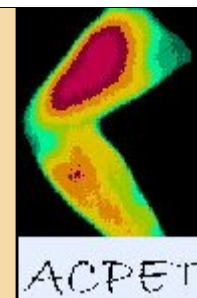


FIGURE 8.1-3 Results from the experiment by Lee and Magill showing mean movement time for completing three movement patterns using three different practice structures (blocked, random, and serial). Trial blocks (3 trials per block) 1 through 6 were with KR. The retention block was without KR.

# Employ a Visual Goal Setting Chart for Daily – weekly progress

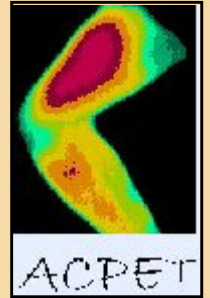


Exercise Variety in Treatment Therapy

Alternative Fitness Programme

Compliance Log  
Quality / Quantity?

Use of Mental Skills



Type of Injury :

<b>Type of Rehab Exercise &amp; Purpose</b>	<b>Frequency (Times per Day) Sets &amp; Reps</b>	<b>Intensity ( Quality of Attempt) 1 5 (1=low , 5=high)</b>	<b>Use of any Mental Skills During Sessions? / Duration in mins</b>	<b>Venue where Rehab took place &amp; comments</b>



# Adherence to Sports Rehabilitation

## Chapter 6

### Adherence to Sport Injury Rehabilitation Regimens

Britton W. Brewer

Unfortunately, physical injury is a common occurrence for association with participation in sport and exercise. Indeed, as regular exercise becomes more prevalent, the general population's participation in sport and exercise has emerged as a significant public health issue (Caine, Collett & Lindner, 1996). In the United Kingdom, for instance, sport-related injury was identified by respondents as a major problem on a survey of the leading causes of physical injury, accounting for roughly one-third of all injuries experienced (Hetherington, 1996). Similarly, it has been estimated that 3.4 million sport-and recreation-related injuries occur each year in the United States (Brewer, 1997; Kraus & Comstock, 1981).

People whose sport injuries are serious enough to merit medical attention may, as part of their treatment, receive a prescribed rehabilitation regimen from their medical practitioners. Such regimens, which are typically administered by sport physiotherapists, athletic trainers, and other sport rehabilitation professionals, often consist of procedures designed to enhance the patient's recovery process. It is widely assumed that the success of sport injury rehabilitation programs is contingent on following the prescribed protocol (Fisher, Dornan, & Whist, 1988; Linker & Taylor,

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**Britton Brewer – in Bull .S 1999 (Ed)  
Adherence issues in Sport & Exercise  
- JWiley**

It is widely assumed that the success of Sports injury rehab programmes is contingent on following the prescribed protocol

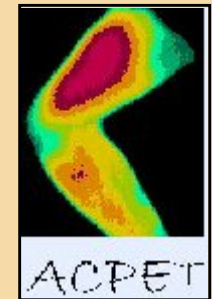
Basically – sports rehab adherence is a broad construct which involves a variety of behaviours in several settings

Clinic  
Home  
Training Ground  
Track



**Table 6.1** Indices of sport injury rehabilitation adherence

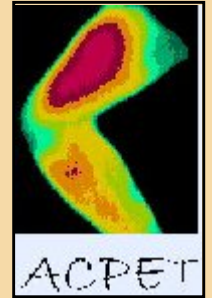
Index	Studies using the index
Patient self-reports of medication use	Arrowsmith & A. residuals, 1994
Patient self-reports of home exercise completion	Almekki & Almekki, 1994; Brewer et al., 1994; Brewer, Van Raalte et al., 1998; May & Taylor, 1994; Neves et al., 1985; Quinn, 1986; Taylor & May, 1995a, 1996, 1997
Patient self-reports of compliance with activity restrictions	May & Taylor, 1994; Taylor & May, 1995a, 1996, 1997
Patient use of an electromyographic feedback for home exercises	Levit et al., 1996
Practitioner estimates of patient home exercise completion	May & Taylor, 1997; Taylor & May, 1995a, 1996, 1997
Practitioner estimates of patient compliance with activity restrictions	May & Taylor, 1994; Taylor & May, 1995a, 1996, 1997
Practitioner adherence of physical therapy	Brewer, Cornelius et al., 1998; Brewer et al., 1997; Brewer, Van Raalte et al., 1998; Brewer, 1997; Byrdy et al., 1996; Campbell et al., 1996; Daly et al., 1995; Diersheid & Edring, 1987; Duda et al., 1989; Fields et al., 1995; Fyfe et al., 1998; Lupton et al., 1997; Ludwick et al., 1996; Odry, 1997
Practitioner ratings of patient adherence during physical therapy	Brewer, Cornelius et al., 1998; Brewer et al., 1994; Brewer, Van Raalte et al., 1998; Brewer et al., 1995; Byrdy et al., 1996; Campbell et al., 1996; Daly et al., 1995; Duda et al., 1989; Edinger et al., 1986; Fields et al., 1995; Lupton et al., 1997; Ludwick et al., 1996; Welfje & Schurr, 1994
Patient self-ratings of adherence behavior during physical therapy	Brewer et al., 1994; Shank, 1998
Patient compliance with home exercises	Arrowsmith & A. residuals, 1994



Selection of the appropriate INDEX of S.I.R. must consider the Nature of the SR protocol !

e.g. Large Clinic v Home based v Professional driven

The assumption that athletes who recover rapidly from injury DO so because they ADHERE better than those who recover more slowly is not VALID!



# SIRAS – Brewer et al. (1995) Sports Injury Rehabilitation Adherence Scale

## **Practitioner based Behavioural Observations/ Judgements**

1. Intensity with which the patient completed the rehab exercises during the appointment ( minimum to maximum effort)
2. How frequently did the patient follow your instructions / advice during the session ( Never – always )
3. How receptive was the patient to changes in the rehab program ( very unreceptive / very receptive)

**DATA HAS TO BE COLLECTED AS CLOSE TO THE TREATMENT TIME AS POSSIBLE!**

## **Home Based Exercise Completion ( Most researched )**

1. Self Report – open to bias / distortion and accuracy of recall !
2. Daily Log diaries – better but time consuming – requires user friendly format & advice

**ACCURACY OF FREQUENCY AND INTENSITY OF EXERCISE COMPLETION IS CRUCIAL – NOT BASED ON RETROSPECTIVE BUT IMMEDIATE RECALL**

# Psychological Skills and Adherence to Rehabilitation After Reconstruction of the Anterior Cruciate Ligament

Carrie B. Scherzer, Britton W. Brewer, Allen E. Cornelius, Judy L. Van Raalte, Albert J. Petitpas, Joseph H. Sklar, Mark H. Pohlman, Robert J. Krushell, and Terry D. Ditmar

**Objective:** To examine the relationship between self-reported use of psychological skills and rehabilitation adherence.

**Design:** Prospective correlational design.

**Setting:** Outpatient physical therapy clinic specializing in sports medicine.

**Patients:** Fifty-four patients (17 women and 37 men) undergoing rehabilitation after anterior-cruciate-ligament reconstruction.

**Main Outcome Measures:** An abbreviated version of the Sports Injury Survey (Ivleva & Orlick, 1991) was administered approximately 5 weeks after surgery to assess use of goal setting, imagery, and positive self-talk. Four adherence measures were obtained during the remainder of rehabilitation: attendance at rehabilitation sessions, practitioner ratings of patient adherence at rehabilitation sessions, patient self-reports of home exercise completion, and patient self-reports of home cryotherapy completion.

**Results:** Goal setting was positively associated with home exercise completion and practitioner adherence ratings. Positive self-talk was positively correlated with home exercise completion.

**Conclusions:** Use of certain psychological skills might contribute to better adherence to sport-injury rehabilitation protocols.

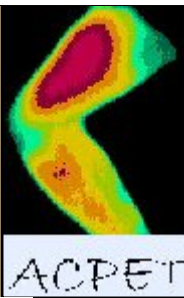
**Key Words:** compliance, knee surgery, psychology

Scherzer CB, Brewer BW, Cornelius AE, et al. Psychological skills and adherence to rehabilitation after reconstruction of the anterior cruciate ligament. *J Sport Rehabil.* 2001;10:165-172. © 2001 Human Kinetics Publishers, Inc.

More specific !  
What happened  
to Imagery ?

Why after 5 weeks?

May not !



## Important Psychological Factors which influence Adherence to Sports Rehabilitation

1. Personal Incentive ( task involvement)

2. Sense of Self Beliefs ( 5 )

( social support, trait confidence, self motivation, internal Locus of control & perceived physical ability)

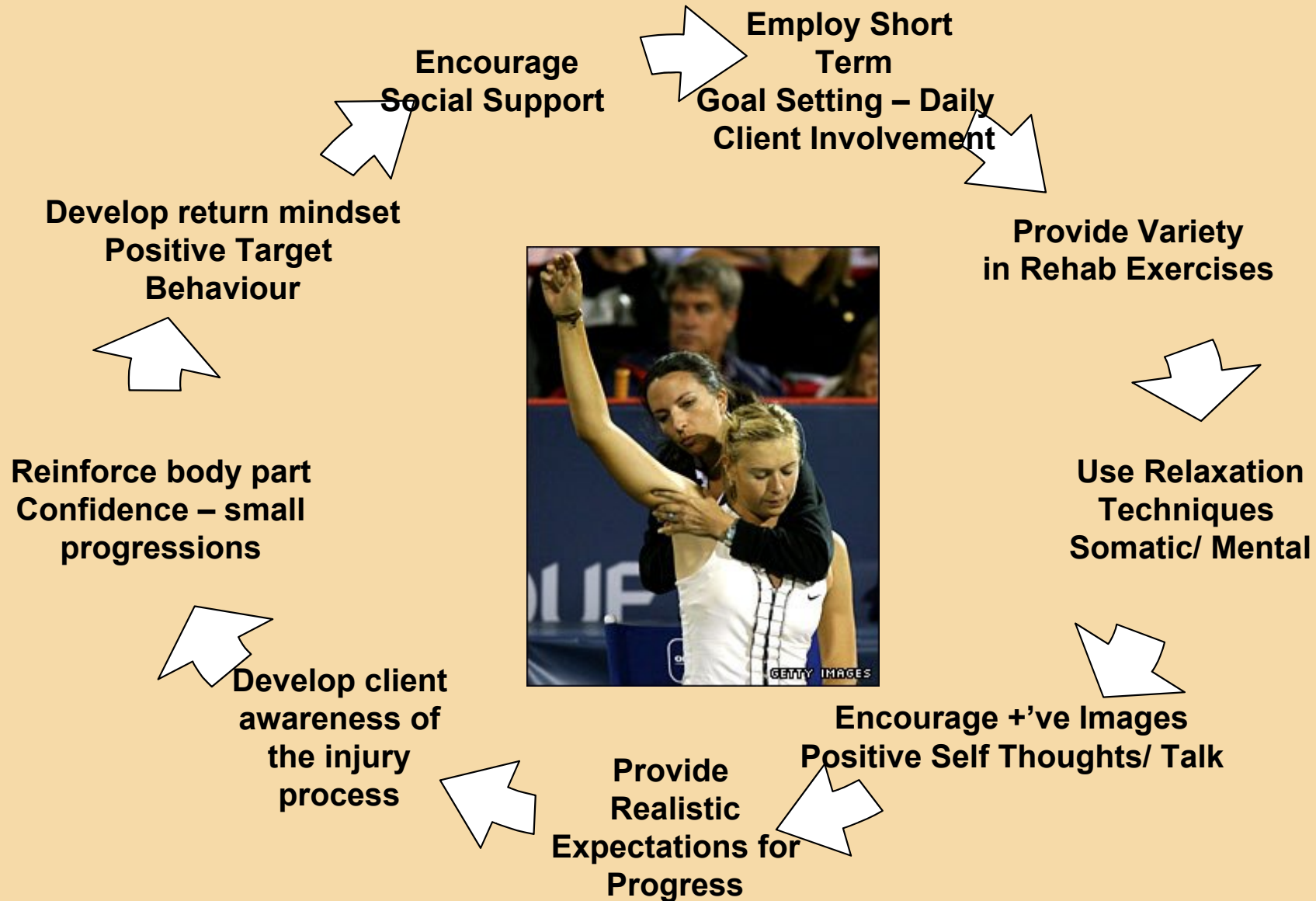
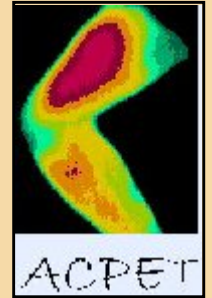
3. Perceived Options available ( 4 )

( Belief in efficacy of treatment, knowledge of treatment, plans for future sport Involvement & perceived team role during injury)

Duda, J ( 1989) -Personal Investment Theory (Maehr & Braskamp ,1986)

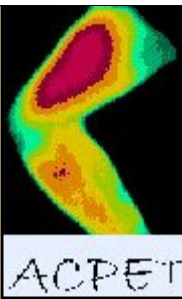


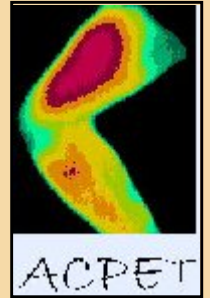
# Psych Intervention Guidelines ( Fawcett 2008).





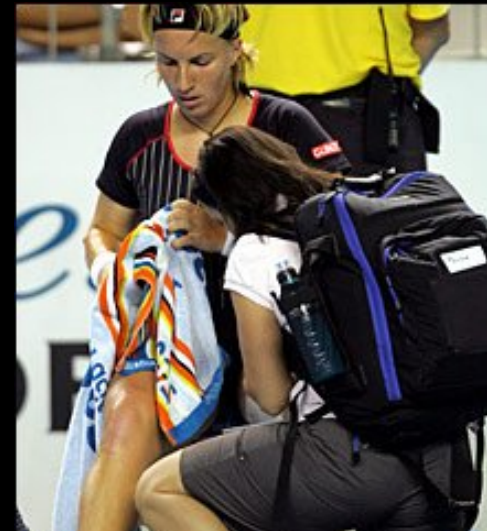
# Guidelines based on SR Adherence Research (Fawcett 2008).





## Important Points to Remember

- ◇ Intention of future Actions does NOT = actual behaviour pattern ( promises mean nothing)
- ◇ Gather supporting evidence of successful adherence behaviour
- ◇ Home based compliance is most difficult to monitor with confidence
- ◇ Find out the Perceived Importance / Personal Meaning of full recovery ( P.I.T.), the sense of self and the Options available for recovery
- ◇ Full Adherence does NOT guarantee rapid recovery ! ( what you do is more important than how much you do it )
- ◇ Effective practitioner Communication, information retention of accurate exercise replication are crucial for speedy recovery

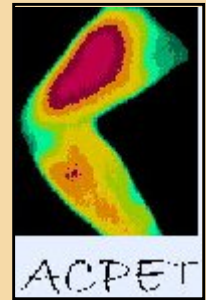


# Mental Toughness in Sports Rehabilitation?

**“unshakeable  
perseverance &  
conviction towards  
some goal despite  
pressure or adversity”**

**Pain Tolerance  
Correct Decision Making?  
Future Health?  
ST Toughness / LT Brittle  
Goal Commitment**





### "Down But Not Out": An Exploration of the Psychological Factors that Impact the Unexplained Underperformance Syndrome (UPS)

Joanna E. M. Brown, Marcia A. Wilson and  
N. G. Craig Sharp

School of Sport and Education at Brunel University, UK  
UB8 3PH. E-mail: Joanna.Brown@brunel.ac.uk

#### ABSTRACT

The Unexplained Underperformance Syndrome (UPS) is characterized by a continued economy in athletic performance, exacerbated by two weeks rest (Rubin, 2003). This study qualitatively examined psychological factors of potential relevance to UPS, with specific consideration of the consequences of a mentally tough attitude in the interpretation of fatigue. Seven elite athletes, actively diagnosed with UPS or Chronic Fatigue, participated in one-to-one interviews to examine their experience of UPS. The results of this study revealed a paradoxical relationship between mental toughness and UPS. Specifically, a mentally tough attitude dominated default in competitive sport, activated physiological markers of fatigue. Furthermore, the results indicated that non-training related stressors appeared to have a pivotal influence on the onset of UPS.

**Key words:** Fatigue, Mental Toughness, Stress

The use of harsh experiences to toughen ones morale, and the view that success is achieved through effort rely on an Internal Locus of Causality and Self Efficacy & require an unshakeable self belief, determination and the ability to maintain performance whilst experiencing physical and emotional pain.

These attributes suggest that Mental Toughness is by far the most important determinant of performance success, but it may be central to the propensity to push the self to breakdown.

Does Mental Toughness improve Rehabilitation Behaviour ?



Which MT characteristics may well be detrimental to successful Injury Rehabilitation?

High Need Achievement ( obsessive Behaviour)

Quest for Personal Excellence / Perfection driven ( mastery)

Burning ambition to be the BEST / Positive Comparisons (ego) ( over compliance in rehab/ returning too early / rushing back too soon)

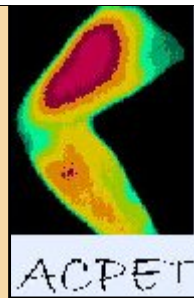
Super Confidence/Arrogance ( lack of Advice / dis respect)



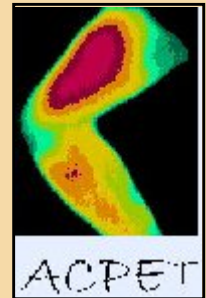
The DARK side of MT !!

# Mental Toughness & Sports Injury

## The Dark Side of being Mentally Tough!



Mental Toughness Characteristic	How HIGH MT injured athletes may – Negatively respond to SR process in a severe injury situation
<b>Self Belief / Efficacy</b>	Over confidence that they are so MT that they over comply with the Rehab and push too much too soon resulting in poor decisions/ denial & returning to competitive situation too early – playing through pain etc ( M Owen – Hernia Sept 07 ref BBC.CO.UK 27.09.07)
<b>Perseverance</b>	Stickability to task adherence despite adversity / failure – over use injury Not recognising need to reduce intensity /frequency of sessions ( Over compliance)
<b>Goal Commitment</b>	Being over committed –denial of injury severity -
<b>Stress Minimisation ( Emotional Control)</b>	Gets too emotionally involved and invests too much emotion into getting fit – finds it difficult to emotionally cope with being injured but not when fit – lack of transfer of MT
<b>Positive Comparisons</b>	Allows too many comparisons to be made and Suffers from EGO overload – making rehab competitive process – stress inducing



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### Mental Toughness as a Determinant of Beliefs, Pain, and Adherence in Sport Injury Rehabilitation

Andrew B. Levy, Ricardo C. L. Polman, Peter J. Clough, David C. Marchant, and Keith Earle

**Objective:** To investigate the relationship between mental toughness, sport injury beliefs, pain, and adherence to a sport injury rehabilitation program. **Design:** A prospective design was employed that assessed adherence over the entire rehabilitation period. **Participants:** 50 patients undertaking a sport injury rehabilitation program for a musculoskeletal injury. **Main Outcome Measures:** Adherence was assessed using self-report measures of clinic and home-based rehabilitation attendance. **Results:** A significant relationship between mental toughness and injury appraisals, whereby high mental toughness individuals displayed more positive injury appraisals and were better able to cope with pain than their less mentally tough counterparts. Greater attendance at rehabilitation sessions was displayed by more mentally tough individuals; however, more positive behavior during rehabilitation was also exhibited by less mentally tough patients. **Conclusion:** To reap the benefits of being mentally tough, sports medicine practitioners need to be able to identify and nurture mental toughness to a maximum degree. **Keywords:** mental toughness, rehabilitation, adherence.

Regular physical activity has been established as a mechanism to prevent various chronic diseases experienced in most western societies. This has led to the establishment of government initiatives that have promoted the participation of sport and physical activity. Paradoxically, a consequence of engagement in such activities is an increase in the incidence of and incidence of acute injury. Within the European Union, it is estimated that each year more than 60 million people have a sport-related injury requiring medical attention, with more than five million requiring the services of an emergency department of a hospital. The cost of return exceeds ten billion Euros.<sup>1</sup>

Despite the obvious appeal that athletes are compliant with rehabilitation treatment in order to recover and return to sport more rapidly, adherence levels with this population to be as low as 40%.<sup>2</sup> To address this issue,

The authors are with the University of Hull, Department of Sport, Health, and Exercise Science, Hull, East Yorkshire HU6 7RX, UK. Email: A.C.levy@hull.ac.uk

High MT displayed more +ve threat appraisals than Low MT patients

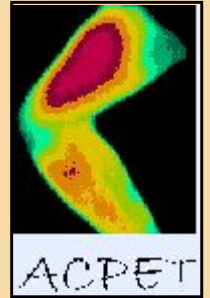
HMT patients more able to cope with pain than LMT Patients – MT was found to be negatively correlated With pain catastrophizing

HMT perceived their injury to be less threatening (severe) and less susceptible to re-injury than LMT

HMT > greater attendance at sessions than LMT  
LMT dwelt on pain more than HMT patients

More positive behaviour adopted by LMT patients than HMT

MT was significantly related to adherence (attendance) BUT in clinic & home based rehab it was negatively related



## Guidelines when dealing With Mentally Tough Athletes in Sports Rehab

1. Do not assume MT will positively transfer to the rehab process from other situations  
(tough athlete = compliant rehab!)
2. Be aware of the Dark Side of Mental Toughness in Rehab
3. MT is a double edged sword
4. Knowing oneself, honesty, patience and realistic expectations are more important in rehab
5. MT in rehab is different than MT when NOT injured - it is contextually different / driven
6. Research evidence provides support for all of the above  
(Levy et al. 2006; Brown et al, 2006; Fawcett,2008)

Thanks for Listening

Now for .....

**BREAK  
TIME**

