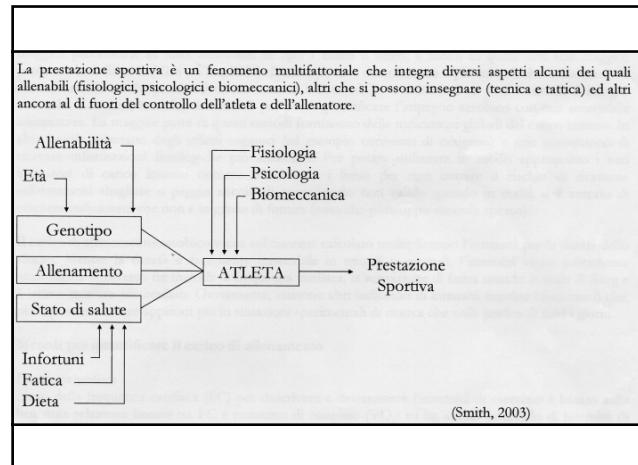


  
**CAVALESE**  
3 agosto 2018

**Ruolo e compiti del medico di squadra  
La gestione dello staff sanitario**

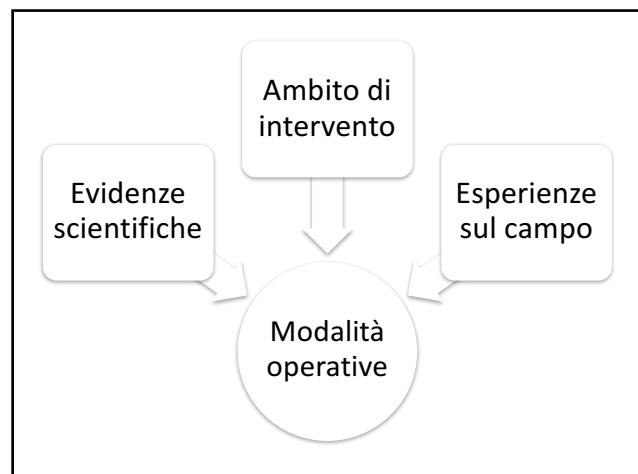
Piero Benelli – Medico squadra nazionale seniores maschile



**I punti chiave**

- Assistenza medica generale
- Alimentazione
- Integrazione
- Antidoping
- Gestione del recupero e dei carichi di lavoro
- Gestione del trauma: prevenzione, terapia e riabilitazione
- Costruzione e gestione dello staff sanitario
- La comunicazione all'interno degli staff





## I livelli di intervento

- Squadra Nazionale
- Club (alto/medio livello)
- Club “dilettantistico”
- Settore giovanile

## Assistenza medica generale

- Anamnesi ed informazioni – Cartelle cliniche
- Programma di prevenzione / gestione
- Controllo peso, % grasso corporeo, etc.
- Analisi ematochimiche periodiche
- Idoneità agonistica
- Assistenza sanitaria generale
- Gestione del recupero e dei trasferimenti



## Anamnesi - Informazioni

- Scheda informativa
- Scheda di entrata
- Scheda di uscita

## Scheda n.1

- Informazioni su:
  - Antropometria
  - Idoneità
  - Problematiche alimentari
  - Problematiche integrative
  - Problematiche traumatologiche
  - Problematiche mediche (allergie, uso di farmaci, etc.)
  - Anamnesi recente
  - Trattamenti e lavori abituali
  - Utilizzo di tutori, plantari, bendaggi, etc.
  - Procedure TUE attivate

## Scheda n.2

- Dati antropometrici
- Anamnesi recente
- Esame obiettivo
- Problematiche traumatologiche principali
- Indicazioni per la gestione

## Scheda n.3

- Dati antropometrici
- Eventuali infortuni e/o problematiche traumatologiche
- Esami diagnostici effettuati
- Trattamenti (farmacologici, fisioterapici, etc.) effettuati
- Integrazioni effettuate
- Test di valutazione effettuate
- Note

## Staff societari

- Trasmissione delle informazioni (selezionare)
- Duplicazione degli esami e dei referti
- Cfr. fra operatori dello staff (?!)
- Gestione degli esami diagnostici
- Schede iniziali e successive
- Foto e documentazione
- Gestione dei rapporti



## FIPAV 2018 - Analisi ematologiche

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Emocromo con formula</li> <li>• VES</li> <li>• Glicemia</li> <li>• Creatininemia</li> <li>• GOT</li> <li>• GPT</li> <li>• Bilirubinemia (dir. e ind.)</li> <li>• Sideremia</li> <li>• Ferritina</li> <li>• Colesterolemia</li> <li>• Col. HDL</li> <li>• Trigliceridemia</li> <li>• Elettroforesi proteica</li> <li>• CPK</li> </ul> | <ul style="list-style-type: none"> <li>• Proteina C r.</li> <li>• Uricemia</li> <li>• Transferrinemia</li> <li>• Elettroliti sierici</li> <li>• TSHreflex</li> <li>• Testosterone</li> <li>• Cortisolemia</li> <li>• Es. urine standard</li> </ul> |
|---|--|



## IL RISTORANTE



## Integrazione

### Supplements and Sports

DAVID M. JENKINSON, DO, and ALLISON J. HARRIET, MD, Department of Family Medicine, University of Tennessee College of Medicine—Chattanooga Unit, Chattanooga, Tennessee

Use of performance-enhancing supplements occurs at all levels of sports, from professional leagues to junior youth tournaments. Although many substances do enhance performance, many have no proven benefit and have serious adverse effects. Anabolic steroids, growth hormone, insulin, and erythropoietin are prohibited by the International Olympic Committee and the National Collegiate Athletic Association. Testosterone, dehydroepiandrosterone, and dehydroepiandrosterone sulfate are also prohibited in competition. Caffeine, creatine, and sodium bicarbonate have been shown to improve athletic performance and may have few adverse effects. No performance benefit has been shown with alpha-lipoic acid, beta-hydroxy-beta-methylbutyrate, chromium, human growth hormone, and iron. Carbohydrate-electrolyte beverages have no serious adverse effects and can aid performance when used for fluid replacement. When considering use of performance-enhancing supplements, physicians should be prepared to counsel athletes about potential risks and benefits and refer them to the American Academy of Family Physicians. *J Am Fam Physician.* 2008;78(9):1039-1046. Copyright © 2008 American Academy of Family Physicians.



#### SORT: KEY RECOMMENDATIONS FOR PRACTICE

|  | Evidence rating | References                  |
|--|-----------------|-----------------------------|
| Clinical recommendations   |                 |                             |
| Evidence fails to show enhanced athletic performance with amino acids, beta-hydroxy-beta-methylbutyrate, chromium, human growth hormone, and iron. | B               | 4, 6, 12, 18, 26, 27, 36-39 |
| Prohibited by IOC <sup>1</sup> and NCAA <sup>2</sup>   | B               | 19, 32, 33, 36-37           |
| Androstenedione is illegal under the Anabolic Steroid Control Act of 2004  | B               | 21-25, 28, 29, 40-42        |
| Legal  |                 |                             |

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to <http://www.aafp.org/sort.html>.

| Table 1. Effectiveness and Legal Status of Supplements Used in Sports |  |  |  |  |
|---|--|--|--|--|
| Supplement  | Postulated effect  | Evidence of effectiveness              | Adverse effects  | Legal status   |
| Amino acids <sup>1-3</sup>  | Increase growth hormone levels   | No effect                              | Minimal  | Legal  |
| Anabolic steroids <sup>1-6</sup>                                      | Increase lean muscle mass  | Effective                              | Significant and dangerous                                      | Illegal  |
| Androstenedione and dehydroepiandrosterone <sup>1-11</sup>            | Increase testosterone and lean muscle mass                                       | No effect                              | Significant  | Prohibited by IOC <sup>1</sup> and NCAA <sup>2</sup> |
| Beta-hydroxy-beta-methylbutyrate <sup>1-7,8</sup>                     | Decrease protein breakdown and increase synthesis of protein and oxygen delivery | No effect                              | None, but long-term evidence lacking                           | Under the Anabolic Steroid Control Act of 2004       |
| Blood transfusion and caffeine <sup>1-11</sup>                        | Increase energy and decrease fatigue   | Effective                              | Significant and dangerous                                      | Legal  |
| Caffeine <sup>1-11</sup>  | Increase energy and decrease fatigue   | Effective                              | Minimal  | Prohibited by IOC <sup>1</sup> and NCAA <sup>2</sup> |
| Carbohydrate-electrolyte beverages <sup>1-8,10</sup>                  | Increase energy and decrease fatigue   | Effective                              | None   | Prohibited by IOC <sup>1</sup> and NCAA <sup>2</sup> |
| Chromium <sup>1-12</sup>  | Increase lean muscle mass  | No effect                              | Potentially dangerous, but long-term evidence lacking          | Under the Anabolic Steroid Control Act of 2004       |
| Creatine <sup>1-12</sup>  | Improve muscle energy and strength   | Effective in limited contexts          | Minimal  | Legal  |
| Ephedrine and pseudoephedrine <sup>1-13</sup>                         | Increase energy and decrease fatigue   | Mixed, but mostly negative             | Significant and dangerous                                      | Prohibited by IOC <sup>1</sup> and NCAA <sup>2</sup> |
| Human growth hormone <sup>1-14</sup>                                  | Increase muscle protein synthesis and growth                                     | No effect due to lack of evidence      | Minimal  | Illegal  |
| Ingr <sup>1-15</sup>  | Increase energy and general performance  | No effect unless deficiency is present | None below recommended daily intake; toxicity above this level | Legal  |
| Sodium bicarbonate <sup>1-12</sup>                                    | Increased buffering capacity   | Effective in limited contexts          | Minimal  | Legal  |

IOC = International Olympic Committee; NCAA = National Collegiate Athletic Association.

Information from references 4 through 42.

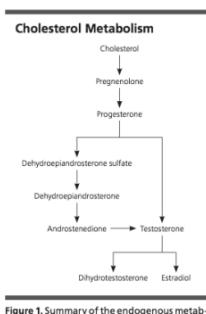


Figure 1. Summary of the endogenous metabolism of cholesterol into multiple hormones. Some of the intermediaries are used as supplements to promote physical performance.

## DEFINIZIONE di INTEGRATORE ALIMENTARE

prodotto destinato a un' alimentazione particolare

**IMPIEGO : fornire un supplemento di nutrienti con azione "protettiva" o "tropica" allo scopo di ottimizzare il metabolismo e le funzioni fisiologiche dell' organismo**

**COSA DICE LA LEGISLAZIONE**

**Decr. Leg. n° 111 del 27 gennaio 1992**

**art. 1 - comma 1 - gli integratori sono prodotti alimentari che, per la loro particolare composizione o per il particolare processo di fabbricazione hanno le seguenti caratteristiche :**

**a) si distinguono nettamente dagli alimenti di uso corrente;**

**b) sono adatti all' obiettivo nutrizionale indicato;**

**comma 2 - i prodotti devono rispondere alle esigenze nutrizionali di persone in condizioni fisiologiche particolari per cui possono trarre benefici dall' assunzione controllata di talune sostanze negli alimenti**

**INTEGRATORI ALIMENTARI**

D.L. 21-V-2004, n.169 attuaz.Direttiva 2002/46/CE

**Art. 1 – Definizione**

1. "...prodotti alimentari destinati ad integrare la comune dieta e che costituiscono una fonte concentrata di sostanze nutritive, quali vitamine o minerali, o di altre sostanze aventi un effetto nutritivo o fisiologico, in particolare ma non in via esclusiva aminoacidi, ac. grassi essenziali, fibre ed estratti di origine vegetale, sia monocomposti che pluricomposti, in forme predosate"

**PRODOTTI DESTINATI AD UNA ALIMENTAZIONE PARTICOLARE**

**D.L. n° 111 del 27 Gennaio 1992**

**Procedure per commercializzazione, autorizzazione e notifica etichetta**

**Prodotti Autorizzati:** il Ministero della Salute provvede all' analisi e verifica del prodotto (corrispondenza tra etichetta e contenuto)

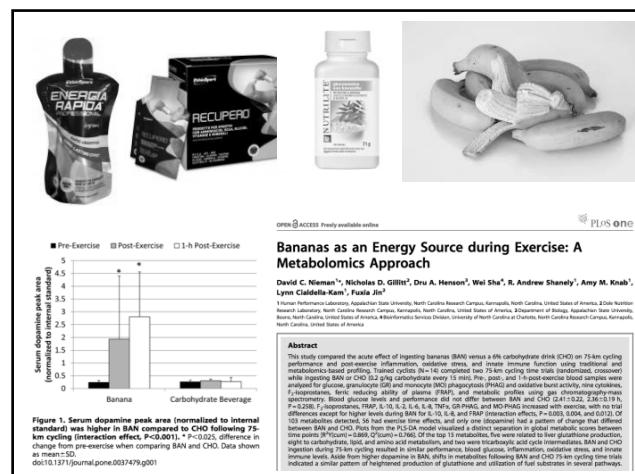
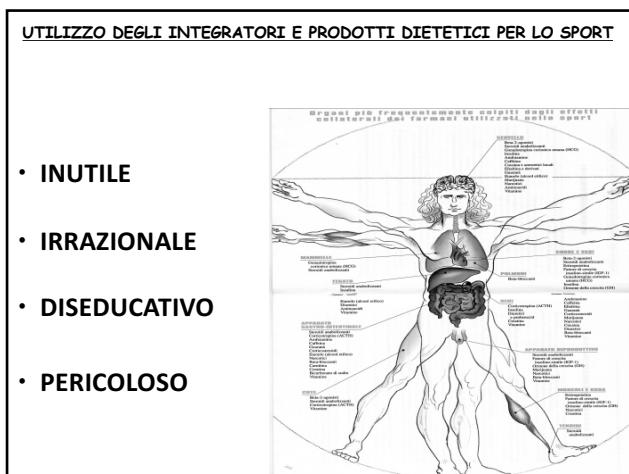
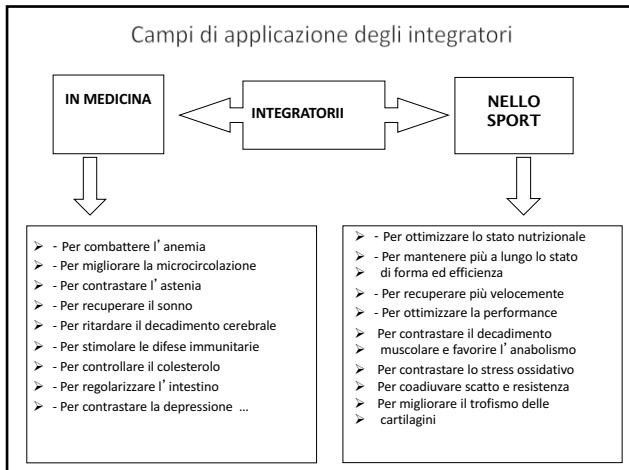
**Prodotti Notificati:** la responsabilità è dell' azienda produttrice che presenta al Ministero un' etichetta con la dichiarazione dei contenuti

**Notifica al Ministero della Salute**

La notifica è solo una comunicazione scritta.  
L' azienda comunica al Ministero della Salute che immette in commercio un nuovo prodotto, sottoponendo l' etichetta al giudizio dei funzionari.

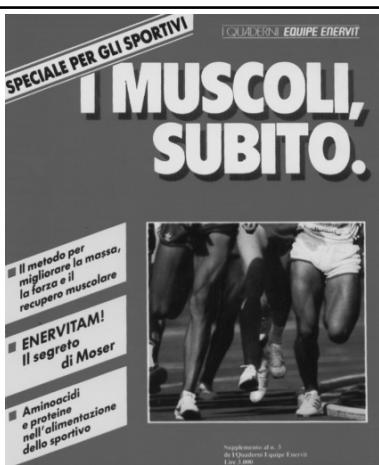
Vale la regola del "silenzio assenso"  
Se entro 90 giorni non arrivano comunicazioni è OK

Le regole cambiano spesso  
I funzionari sono spesso in grave ritardo nel dare risposte



- Spesso l'assunzione di integratori non avviene su basi scientifiche e gli effetti ricercati non sono spesso documentati
- L'assunzione delle dosi raccomandate di molti integratori, isolatamente, non ha probabilmente effetti nocivi sulla salute, ma gli effetti sull'assunzione di alte dosi degli stessi non è ben conosciuta

- Spesso gli atleti assumono contemporaneamente più di un integratore, ma si sa molto poco su eventuali effetti dannosi sull'assunzione di più integratori
- Alcuni integratori possono essere sicuri ed efficaci assunti singolarmente, ma possono avere effetti indesiderati e dannosi quando presi con altre sostanze
- Necessitano nuovi studi per determinare la dose ottimale, le modalità e i tempi di assunzione dei vari integratori



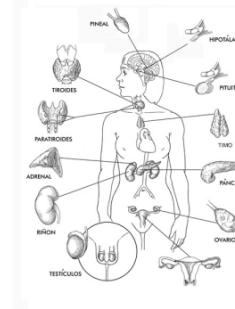
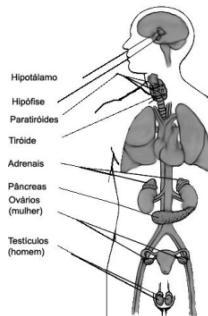
## I rischi

- Sovradosaggio
- Assunzione contemporanea di più integratori e di mix non controllati
- Messaggi fuorvianti
- Dipendenza psicologica
- No "more must be better"!
- L'integrazione non fa la differenza, è un supporto per la prestazione dell'atleta che deve essere valutato e utilizzato basandosi su criteri adeguati (necessità, utilità, efficacia, sicurezza, etc.)

## Nazionale Volleyball maschile – Integrazione 2018

- Giornata tipo di allenamento (v. allenamento tecnico / sessione di preparazione fisica)
- Arginina + BCAA
- Omega3
- Sali minerali e barrette (proteiche/energetiche)
- Partita
- Prima e durante: energetici (carboidrati) di varia tipologia
- Dopo: integratori multisostanze per recupero
- \*Altre integrazioni: da discutere con il medico in base alle esigenze individuali

## Educazione e lotta al doping



CODICE MONDIALE ANTIDOPING  
STANDARD INTERNAZIONALE

## LISTA DELLE SOSTANZE E METODI PROIBITI

IN VIGORE DAL 1° GENNAIO 2018

## Lista Wada

- Sostanze sempre proibite
- Sostanze proibite in-competition
- Sostanze proibite in particolari sport
- Metodi proibiti

In Italia 2000 test circa/anno  
2% positività di cui 44% cannabinoidi



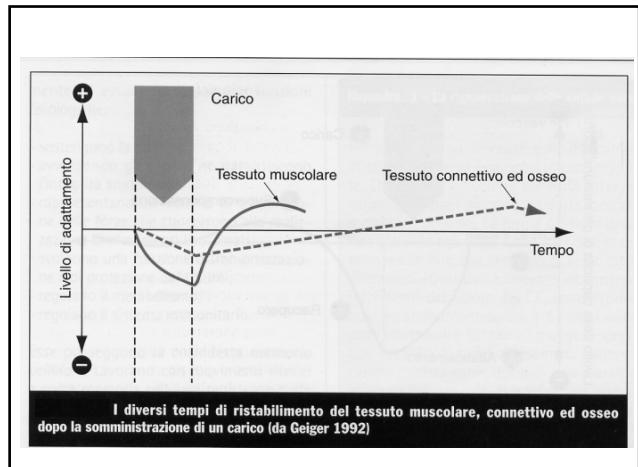
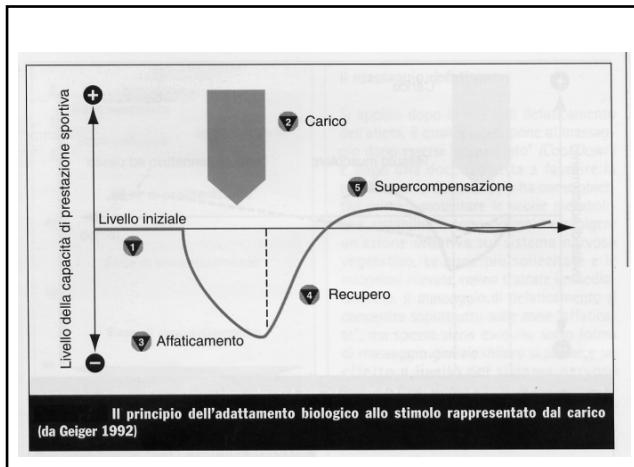
|   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
|---|--|------------|--------------|------------|------------------------|----------|--|-------|----------|-----------|--|------------|---------|--------------------------|--|--------|-----------------------|--|--|
| <p style="text-align: center;">Identification of Anti-Doping Organization<br/>(Logo or Name of the ADO)</p>   | <p style="text-align: right;">Appendix 2</p> |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <p><b>Abbreviated<br/>Therapeutic Use Exemptions<br/>ATUE</b></p>   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <p>Please complete all sections in capital letters or type</p>  |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <input checked="" type="checkbox"/> beta-2 agonists by inhalation <input type="checkbox"/> glucocorticoids by non-systemic routes *   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <p>* All routes other than orally, rectally, intravenously and intramuscularly.<br/>Dermatological glucocorticoids do not require any TUE</p>   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <p><b>1. Athlete Information</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Surname:</td> <td style="width: 50%;">Given Names:</td> </tr> <tr> <td>Initials Q</td> <td>Date of Birth (d/m/y):</td> </tr> <tr> <td colspan="2">Address:</td> </tr> <tr> <td>City:</td> <td>Country:</td> </tr> <tr> <td>Postcode:</td> <td></td> </tr> <tr> <td>Telephone:</td> <td>E-mail:</td> </tr> <tr> <td colspan="2">(not international code)</td> </tr> <tr> <td>Sport:</td> <td>Description/Location:</td> </tr> <tr> <td colspan="2">International or National Sporting Organization:</td> </tr> </table> |  | Surname:   | Given Names: | Initials Q | Date of Birth (d/m/y): | Address: |  | City: | Country: | Postcode: |  | Telephone: | E-mail: | (not international code) |  | Sport: | Description/Location: | International or National Sporting Organization: |  |
| Surname:  | Given Names:                                 |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| Initials Q  | Date of Birth (d/m/y):                       |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| Address:  |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| City:   | Country:                                     |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| Postcode:   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| Telephone:  | E-mail:                                      |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| (not international code)  |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| Sport:  | Description/Location:                        |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| International or National Sporting Organization:  |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <p><b>2. Medical information</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Diagnosis:</td> <td style="width: 50%;"></td> </tr> <tr> <td colspan="2">*</td> </tr> </table>   |  | Diagnosis: |              | *          |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| Diagnosis:  |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| *   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <p><b>N.B.</b> Any ATUE may be reviewed at any time, by the ADO and/or WADA</p>   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |
| <p><b>STRICTLY CONFIDENTIAL</b></p>   |  |            |              |            |                        |          |  |       |          |           |  |            |         |                          |  |        |                       |  |  |

Educazione ed informazione

- Riunione iniziale ad ogni raduno
  - Programma Adams/Where abouts
  - Informazione specifica e generale
  - Controllo e vigilanza
  - Conseguenze legali (Legge n.376/2000)

## Gestione del recupero e dei carichi di lavoro





".....Mi sono preoccupato soprattutto di evitare infortuni, quindi abbiamo indietreggiato ogni volta che vi era il più piccolo accenno di infortunio. Sono stato anche attento a non commettere errori sul piano della sicurezza nel valutare i sovraccarichi.  
Ciò mi permette di evidenziare quella che io considero la seconda "chiave" del successo di Jonathan : il recupero. Il rispetto del recupero ha sempre caratterizzato il suo programma di allenamento : forse questa è una delle ragioni del suo terribile miglioramento del 1995....."  
  
Carl Johnson, allenatore di J.Edwards,  
primatista mondiale di salto triplo



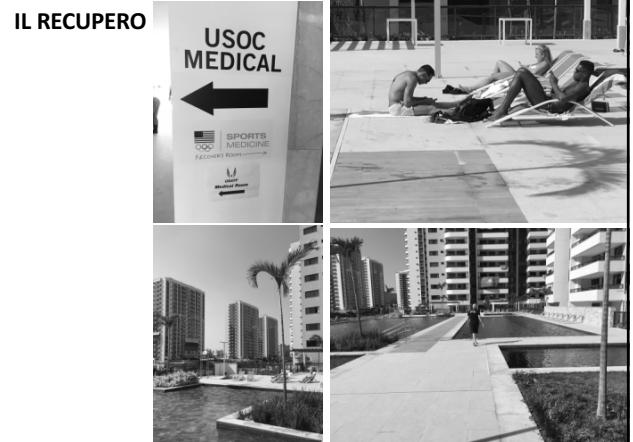
**SETTIMANE TIPO**

|           |              |
|-----------|--------------|
| Lunedì    | PESI         |
|           | PALLA        |
| Martedì   | TECNICA-DIFF |
|           | PALLA        |
| Mercoledì | PESI         |
|           | PALLA        |
| Giovedì   | TECNICA-DIFF |
|           | PALLA        |
| Venerdì   | PESI         |
|           | PALLA        |
| Sabato    | RIPOSO       |
|           | RIPOSO       |
| Domenica  | RIPOSO       |
|           | RIPOSO       |

|           |              |
|-----------|--------------|
| Lunedì    | PESI         |
|           | PALLA        |
| Martedì   | TECNICA-DIFF |
|           | PALLA        |
| Mercoledì | PESI         |
|           | PALLA        |
| Giovedì   | RIPOSO       |
|           | PALLA        |
| Venerdì   | ALL PRE GARA |
|           | PARTITA      |
| Sabato    | RIPOSO       |
|           | PESI+PALLA   |
| Domenica  | ALL PRE GARA |
|           | PARTITA      |

**NAZIONALE ITALIANA MASCHILE VOLLEYBALL  
STAGIONE 2015**

- 4 CONTINENTI
- 21 CITTÀ
- 28 ALBERGHI
- 110 ORE DI VOLO
- 60 ORE DI TRENO
- 30 ORE DI PULLMANN
- 36 PARTITE
- 78 GG. ALLENAMENTI E RADUNI

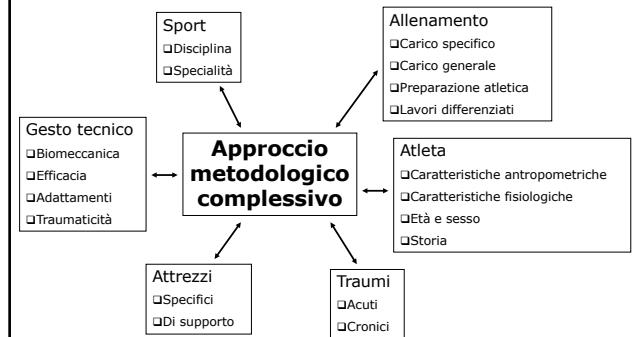
**IL RECUPERO****IL RECUPERO**

## Gestione del trauma

- Prevenzione
- Gestione
- Riabilitazione
- Conoscenza epidemiologica
- Aggiornamento scientifico costante



## Sport e Traumatologia



## Gestione integrata e prevenzione

- \* Conoscenza dell'injury profile della disciplina
- \* Conoscenza della storia del giocatore e delle problematiche traumatologiche più recenti
- \* Individuazione dei principali fattori di rischio generali ed individuali
- \* Organizzazione delle strategie di prevenzione più adeguate in relazione al periodo, alla situazione, all'atleta
- \* Valutazione e controllo dell'efficacia delle misure di prevenzione nei vari periodi

*Scand J Med Sci Sports 1996; 6: 228-232  
Printed in Denmark - All rights reserved*

*Copyright © Munksgaard 1996  
Scandinavian Journal of  
MEDICAL SCIENCE  
IN SPORTS  
ISSN 0905-7188*

## Injuries in elite volleyball

Aagaard H, Jørgensen U. Injuries in elite volleyball.  
*Scand J Med Sci Sports 1996; 6: 228-232. © Munksgaard, 1996*

During the 1993-1994 volleyball season, injuries to players in the two Danish elite divisions were registered by means of a questionnaire survey. Eighty per cent of the players returned the questionnaire. A total of 70 female players reported 79 injuries and 67 male players reported 98 injuries, representing an overall incidence of 3.8 injuries per player per 1000 volleyball hours played. The injury incidence was the same for female and male players. Most injuries occurred in spiking (32%) and in blocking (28%). The injuries were predominantly either acute injuries to fingers (21%) and ankles (18%) or overuse injuries to shoulders (15%) and knees (12%). Shoulder injuries seemed to be a more serious problem in females. During the past 10 years the rate of overuse injuries has increased from 16% to 47% in male elite volleyball, corresponding to a significant increase in the incidence of these injuries from 0.5 to 1.8 injuries per player per 1000 played hours ( $P<0.001$ ). A possible explanation for this could be a 50% increase in training activity during this period.

H. Aagaard<sup>1</sup>, U. Jørgensen<sup>2</sup>

<sup>1</sup>Laboratory of Functional Anatomy, Department of Medical Anatomy C, The Panum Institute, <sup>2</sup>Unit of Sport Traumatology, Department of Orthopaedic Surgery, Copenhagen County Hospital, Gentofte, University of Copenhagen, Denmark

**Key words:** injury; volleyball; epidemiology; elite players; injury incidence  
Henrik Aagaard, Department of Medical Anatomy C, University of Copenhagen, The Panum Institute, Blegdamsvej 3, DK-2200 Copenhagen N, Denmark  
Accepted for publication January 9, 1996

Curr Sports Med Rep. 2012 Sep-Oct;11(5):251-6. doi: 10.1249/JSR.0b013e3182699037.

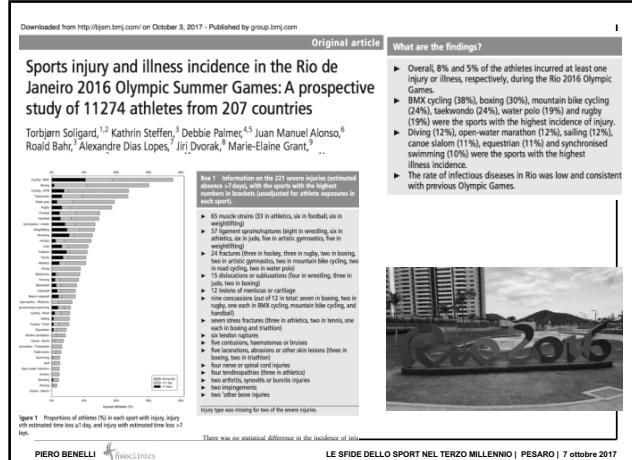
### **Volleyball injuries.**

Eerkes K. 1.

## Author information

## Abstract

There has been a significant increase in the numbers of people playing indoor and beach volleyball since the early 1980s and, consequently, an increase in injuries. Most injuries are related to repetitive jumping and hitting the ball overhead. The ankle is the most commonly injured joint, but the knee, shoulder, low back, and fingers also are vulnerable. The shoulder in particular is subject to extreme torque when hitting and jump serving the ball. Some injuries have a predilection for those playing on sand versus those playing in an indoor court. The clinician caring for volleyball players should be aware of the types of injuries these players sustain and how to help them return to play promptly and appropriately. This article reviews the specific injuries that are most common as a result of participating in the sport of volleyball.



## Injury Report Form

M-10

Event: **2010 FIVB Men's Volleyball World Championship**

Place: **Italy**

Dates: **Sep 25th - Oct 10th, 2010**

Team: **ITA**

Match: **ITA** - **FRA**

Match #: **63**

Date: **06.10.2010**

Team Doctor:

Mobile:

E-mail:

**NOTE: An injury is defined as any physical complaint sustained by a player during the match or during training prior to the match.**

Any injury?  **NO**  **YES** If "YES", please complete information below

| Player # | Function | Time of injury     |                  | Injury location |      | Type of injury |      | Cause of injury |      | Severity  |                   |
|----------|----------|--------------------|------------------|-----------------|------|----------------|------|-----------------|------|---|-------------------|
|          |          | Training<br>(date) | Match<br>(set #) | Description     | Code | Description    | Code | Description     | Code | Returned to game  | Absence<br>(Code) |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |
|          |          |                    |                  |                 |      |                |      |                 |      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |

### Definitions & Codes

Upper extremity: 1. shoulder/neck  
11. shoulder/shoulder/neck  
12. upper arm  
13. elbow  
14. forearm  
15. wrist  
16. hand  
17. finger  
18. thumb

Lower extremity: 1. knee  
22. groin  
23. thigh  
24. knee  
25. lower leg  
26. ankle/foot  
27. toe  
28. foot/heel

### Injury location - injured body part

Head and trunk: 1. face (incl. eye, ear, nose)  
2. neck  
3. neck/vertebral spine  
4. thoracic/spear/upper back  
5. mid/lower back  
6. lumbar/spear/lower back

Arms and shoulders: 7. shoulder  
8. elbow  
9. forearm  
10. hand/wrist  
11. shoulder/arm/upper limb  
12. elbow/arm  
13. forearm/hand/wrist  
14. hand  
15. shoulder/arm/hand/wrist

Legs and hips: 16. knee  
17. thigh  
18. lower leg  
19. ankle/foot  
20. toe  
21. shoulder/arm/upper limb  
22. elbow/arm  
23. forearm/hand/wrist  
24. hand  
25. shoulder/arm/hand/wrist

### Type of injury - diagnosis:

1. concussion (regardless of level of consciousness)  
2. fracture (traumatic)  
3. stress fracture (overuse)  
4. contusion (bruise)  
5. dislocation, subluxation  
6. sprain (ligamentous)  
7. ligamentous rupture with instability  
8. ligamentous injury without instability

9. muscle (injury of joint or ligaments)

10. lesion of meniscus or cartilage

11. strain/muscle rupture/ tear

12. tendonitis/tendinitis

13. tendinopathy/rupture

14. bursitis

15. synovitis/effusion/bleeding

16. dental/maxillofacial tooth

17. nerve/musculoskeletal injury

18. muscle cramps or spasms

19. others

### Cause of injury - diagnostic:

1. overuse (gradual onset)

2. acute onset (sudden)

3. non-contact

4. recurrence of previous trauma

5. contact with another player

6. contact with ball

7. contact: stationary (eg. net, wall, floor, bench)

8. violation of rules (off play)

21. field of play conditions

22. environmental conditions

23. equipment failure

24. others

**Severity - expected duration of absence from competition or training or competition (in months)**

0: days

1: 1 day

2: 1 week

3: 1 month

21: 3 weeks

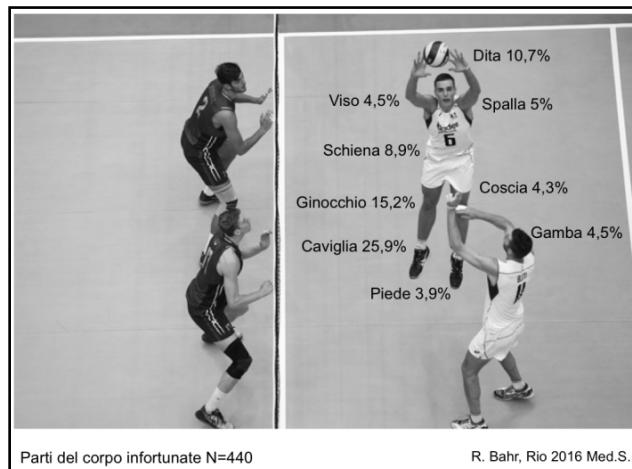
28: 1 month

>30: more than 4 months

>180: 6 months or more

CE: career ending

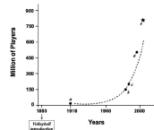
Signature Team Doctor:



## Traumatologia della pallavolo

### Infortuni più frequenti:

- \* Distorsioni caviglia (Bahr, 1994 – Schafle 1993)
- \* Traumi dita mani
- \* Tendinopatia rotulea (Bisseling, 2007)
- \* Tendiniti e traumatismi cronici spalla (Briner, 1999 – Reeser, 2010 – Vang 2001)
- \* Neuropatia sovrascapolare (Dramis, 2005 – Witvrouw, 2000)
- \* Lombalgia
- \* Traumi muscolari (Watkins, 1992)



## Volleyball player Injury profile

Traumi acuti: distorsione di caviglia, dita mani

Traumi cronici: sovraccarico funzionale spalla, schiena, ginocchio (jumper's knee [spt.sovrarotuleo], condropatia)



## Traumatologia della pallavolo

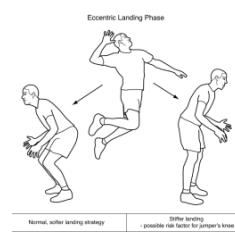
- Infortuni correlati alle azioni di muro e di schiacciata
- Maggiore incidenza di tendinopatia rotulea in giocatori con maggiore forza degli arti inferiori e maggiore capacità di salto; influenza della biomeccanica del gesto



## SPORT-SPECIFIC ILLNESS AND INJURY

### Jumper's Knee in Volleyball Athletes: Advancements in Diagnosis and Treatment

Garrett S. Hyman



Contents lists available at ScienceDirect  
**Physical Therapy in Sport**  
 journal homepage: [www.elsevier.com/ptsps](http://www.elsevier.com/ptsps)

Original research  
 Lower extremity mechanics during landing after a volleyball block as a risk factor for anterior cruciate ligament injury  
 David Zahradník<sup>a,\*</sup>, Daniel Jandacka<sup>a</sup>, Jaroslav Uchýtil<sup>a</sup>, Roman Farana<sup>a</sup>, Joseph Hamill<sup>b</sup>

<sup>a</sup> Human Motion Diagnostic Center, University of Ostrava, Vávrovské 404, 70200 Ostrava, Czech Republic  
<sup>b</sup> Biomechanics Laboratory, University of Massachusetts, Amherst, MA, USA



**STICK**      **STEP-BACK**

time      time

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**SCANDINAVIAN JOURNAL OF**

**Training volume and body composition as risk factors for developing jumper's knee among young elite volleyball players**

H. Visnes, R. Bahr

*Oslo Sports Trauma Research Center, Oslo, Norway*  
*Corresponding author: Håvard Visnes, MD, PT, Oslo Sports Trauma Research Center, PO Box 4014 – Ullevål Stadion, 0806 Oslo, Norway. Tel: +47 23 26 23 67, Fax: +47 23 26 23 07, E-mail: haavard.visnes@helse-bergen.no*

Accepted for publication 24 November 2011

**week. We did not detect any significant differences between the groups in body composition at the time of inclusion or in the change of body composition during the study period. Conclusion. Male gender, a high volume of volleyball training and match exposure were risk factors for developing jumper's knee.**

| <b>RISK FACTORS</b>  |                   | <b>SOLUTIONS</b>  |                   |
|--|-------------------|---|-------------------|
| <i>Intrinsic</i>   |                   | <i>Preventive</i>   |                   |
| <b>SHOULDER</b>  | <b>BACK/TRUNK</b> | <b>SHOULDER</b>   | <b>BACK/TRUNK</b> |
| Anatomy & biomechanics   |                   | <ul style="list-style-type: none"> <li>Optimization of the spike technique</li> <li>Eccentric resistance training</li> <li>Core strengthening/stability training</li> <li>Developing trunk muscle motor control, kinesthetic awareness, endurance and coordination</li> <li>Developing adequate strength power</li> <li>Exercises to appropriate trunk stability and neutral spine alignment</li> </ul> |                   |
| <ul style="list-style-type: none"> <li>Mobility impairment</li> <li>Muscle imbalance/stability</li> <li>Muscle weakness SICK scapula &amp; Scapular asymmetry</li> </ul>                             |                   | <ul style="list-style-type: none"> <li>Posture</li> <li>Trunk weight</li> <li>Centre of mass position</li> </ul>  |                   |
| History of shoulder pain   |                   |   |                   |
| <ul style="list-style-type: none"> <li>Gender</li> <li>Age</li> <li>Hours of game/training played</li> <li>Technique utilized</li> <li>Level, category and role of the player in the game</li> </ul> |                   | <ul style="list-style-type: none"> <li>Diagnostic screening</li> <li>Physical Examinations</li> <li>Stretching/correct warm up before the game</li> </ul>   |                   |
| <i>Extrinsic</i>   |                   | <ul style="list-style-type: none"> <li>Rest Period</li> <li>Anti-inflammatory drugs</li> <li>Surgery</li> </ul>   |                   |
| <ul style="list-style-type: none"> <li>Type of shoes</li> <li>Environment</li> <li>Competitive situation</li> <li>Hardness of the playing surface</li> </ul>   |                   | <ul style="list-style-type: none"> <li>Rehabilitation Programs:</li> <li>Following an appropriate kinetic chain (from proximal to distal)</li> <li>Muscle training (strength and control)</li> <li>Plyometric exercises</li> </ul>  |                   |

Sports Med  
 DOI 10.1007/s40279-014-0203-9

**INJURY CLINIC**

**Injury Risk Management Plan for Volleyball Athletes**

Lachlan P. James • Vincent G. Kelly •  
 Emma M. Beckman  
*Injury Risk Management Plan for Volleyball Athletes*

**Table 1** Modifiable and non-modifiable risk factors for the most common volleyball injuries

| Risk factor               | Modifiable   | Non-modifiable  |
|---------------------------|--|---|
| Ankle sprain              | Sprinting techniques with excessive horizontal displacement [8]<br>Faulty two-person blocking strategy [14]  | Previous ankle injury [10]<br>Increased tibial varus ROM [23]<br>Inherent anatomical factors [23]   |
| Patellofemoral syndrome   | Lower weight-bearing ankle dorsiflexion ROM (men) [26]   | Less accurate joint position sense in eversion [13]<br>Higher range of motion through extension at the first metatarsophalangeal joint (women) [13] |
| Shin splints              | High impact running [13]<br>Faulty running style [40]<br>Reduced dorsiflexion [15]<br>Inherent anatomical factors [13, 35]   | High impact running style [13]<br>Faulty running style [40]<br>Reduced dorsiflexion [15]<br>Inherent anatomical factors [13, 35]                    |
| Shoulder overuse injuries | Greater vertical jump performance [29]<br>Service or spiking style [40]<br>Reduced internal shoulder rotation [5]  | Previous shoulder injury [2]<br>Age [40]<br>Playing history [3]   |
| ACL injury                | Faulty landing and take-off techniques (less valgus collapse combined with excessive internal or external knee rotation, and increased knee flexion) [44]<br>Faulty landing in relation to quadriceps ratio [45, 40, 31] | Family history [40]<br>Previous ACL injury [19]   |
| Overall injury occurrence | Fatigue [47]   | Playing in either middle, left- or right-side hitting position [14]   |
|                           | Regularity season games [14]   |   |

*ACL, anterior cruciate ligament; ROM, range of motion; SICK, scapula malposition, inferior medial border prominence, concord pain and abnormal movement [40]; [41].*

**Table 2** Injury Risk Management Plan for Volleyball Athletes

|                         | Injury  | High risk   | Medium risk   | Low risk |
|-------------------------|---|---|---|----------|
| Ankle injury            | Right, middle or left hinge with previous ankle injury employing unsafe blocking or striking strategies   | Hitters with no history of ankle injury with unsafe blocking and striking tactics   | Setter or libero with no history of ankle injury  |          |
|                         | With or without poor postural control, poor IJS, poor technique   | A setter or libero with a previous ankle injury   | Hitters with safe blocking and striking strategies without previous ankle injuries          |          |
| Patella tendinopathy    | Middle, left- and right-side hitters with history of PT who display hazardous landing techniques  | All remaining hitters   | Setter, libero without history of PT  |          |
|                         | Hitters with a previous shoulder overuse injury who possess mobility impairment, weakness through external rotation and shoulder pain regardless of serving style | All remaining hitters with a history of shoulder overuse injury   | All remaining players   |          |
| Shoulder overuse injury | Hitters with extensive playing history, who demonstrate mobility impairment, weakness through external rotation and shoulder pain regardless of serving style     | Hitters without an extensive training history who experience at least one of the following: mobility impairment, weak external to internal rotation ratio, SICK, reduced core stability |   |          |
|                         | Setters with extensive playing history, who demonstrate mobility impairment, weakness through external rotation and shoulder pain regardless of serving style     | Setter or libero with a previous history of shoulder overuse injuries   |   |          |
| ACL injury              | Any hitter demonstrating valgus collapse about an internally or externally rotated and excessively extended knee  | A setter or libero with a previous history of valgus collapse about an internally or externally rotated and excessively extended knee   | Hitters who are not predisposed and execute healthy jumping and landing mechanics           |          |
|                         |   | A hitter with weak hamstring to quadriceps ratio or poor proprioception, and healthy landing mechanics  | Liberos and setters with optimal jumping, landing technique, with or without predisposition |          |

PT patella tendinopathy, IJS joint position sense, ACL anterior cruciate ligament, ROM range of motion, SICK capsula malposition, inferior medial border prominence, coracoid pain and malposition, and scapular dyskinesis

**Table 3** Injury prevention strategies for all players

| Type of strategy                       | Injury                             | Activities  |
|--|------------------------------------|---|
| Example neuromuscular tasks            | ACL injury<br>Ankle sprain         | Single-leg squat<br>Shuffles or Cariocas—progress to change of direction reaction (mirror partner or coaches cue)<br>Lateral or 45° bound and balance, landing on opposite leg<br>Single-leg hops over line, or ladder drills<br>Jump to 45° turn—progress to reaction ('jump left', 'jump right'), further progress to dual task (catch and pass, set, dig)<br>Submaximal single-leg landing drills, depth jumps and variations  |
| Motor learning and coaching strategies | ACL injury<br>Patella tendinopathy | Progression to pivoting and cutting activities after capacity is developed<br>Precise movement mechanics to ensure lower-limb joint congruency and encourage active, soft landings whilst maintaining the centre of mass over the base of support<br>Close qualitative analysis to identify these movement dysfunctions<br>Combined visual and verbal feedback<br>Use of implicit learning strategies<br>Cognitive teaching describing both the injury prevention and performance benefits of prescribed activities |
| Load management                        | Patella tendinopathy               | Cautious introduction of tendon-loading activities during the preseason or following a period of inactivity<br>Structuring high, medium and low tendon-loading days<br>Tracking of 'ground contacts' during plyometric and ballistic activities in strength and conditioning sessions<br>Application of valid periodization strategies to prevent fatigue-related injuries, particularly in preseas and regular season  |
| Rotator cuff strengthening             | Shoulder overuse injury            | External rotation and external rotation with scapular plane abduction exercises in functional, athletic positions (Fig. 1)<br>Such exercises can also be conducted with eccentric emphasis. Here, the athlete externally rotates against light elastic tubing, steps away and along the line of action to create more tension while the free hand supports, then completes, the eccentric action<br>These exercises can be performed between sets during resistance training  |

ACL anterior cruciate ligament

## SCANDINAVIAN JOURNAL OF MEDICINE & SCIENCE IN SPORTS

### Previously identified patellar tendinopathy risk factors differ between elite and sub-elite volleyball players

I. Janssen<sup>1,2</sup>, J. R. Steele<sup>1</sup>, B. J. Munro<sup>1</sup>, N. A. T. Brown<sup>1</sup>

<sup>1</sup>Biomechanics Research Laboratory, Faculty of Science, Medicine & Health, University of Wollongong, Wollongong, New South Wales, Australia; <sup>2</sup>AIS Movement Science, Australian Institute of Sport, Canberra, Australian Capital Territory, Australia

Corresponding author: Ina Janssen, Biomechanics Research Laboratory, Faculty of Science, Medicine and Health, University of Wollongong, Northfields Avenue, Wollongong, NSW 2522, Australia. Tel: +61 2 4221 3498, Fax: +61 2 4221 5945, E-mail: ij915@uowmail.edu.au

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Patellar tendinopathy is the most common knee injury incurred in volleyball, with its prevalence in elite athletes more than three times that of their sub-elite counterparts. The purpose of this study was to determine whether patellar tendinopathy risk factors differed between elite and sub-elite male volleyball players. Nine elite and nine sub-elite male volleyball players completed a lateral stop-jump block movement. Maximum vertical jump, training history, muscle extensibility and strength, three-dimensional landing kinematics (250 Hz), along with lower limb neuromuscular activation patterns (1500 Hz), and patellar tendon loading were collected during each trial. Multivariate analyses of variance ( $P < 0.05$ ) assessed for between-group differences in risk factors or

patellar tendon loading. Significant interaction effects were further evaluated using post-hoc univariate analysis of variance tests. Landing kinematics, neuromuscular activation patterns, patellar tendon loading, and most of the previously identified risk factors did not differ between the elite and sub-elite players. However, elite players reported a higher frequency of knee pain and had less quadriceps extensibility than sub-elite players. Therefore, high training volume is likely the primary contributor to the injury discrepancy between elite and sub-elite volleyball players. Interventions designed to reduce landing frequency and improve quadriceps extensibility are recommended to reduce patellar tendinopathy prevalence in volleyball players.



Journal of Strength and Conditioning Research, 2007, 21(2), 466–469  
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## EFFECT OF SIX WEEKS OF DURA DISC AND MINI-TRAMPOLINE BALANCE TRAINING ON POSTURAL SWAY IN ATHLETES WITH FUNCTIONAL ANKLE INSTABILITY

DAWSON J. KIDGELL,<sup>1</sup> DEANNA M. HORVATH,<sup>1</sup> BRENDAN M. JACKSON,<sup>1</sup> AND PHILIP J. SEYMOUR<sup>2</sup>  
<sup>1</sup>School of Exercise and Nutrition Sciences, Deakin University, Australia; <sup>2</sup>Centre for Ageing, Rehabilitation, Exercise and Sport, Victoria University, Australia.



## ORIGINAL CONTRIBUTION

Open Access

## The prevention of musculoskeletal injuries in volleyball: the systematic development of an intervention and its feasibility

Vincent Gouttebarge<sup>1,2,3,4\*</sup>, Marije van Sluis<sup>5</sup>, Evert Verhagen<sup>3,4,6</sup> and Johannes Zwerver<sup>5</sup>



Table 5 Tendon loading schedule for volleyball athletes

| Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|--------|---------|-----------|----------|--------|----------|--------|
| M      | L       | H         | L        | M      | H        | L      |

L low tendon load, M medium tendon load, H high tendon load

Table 4 Additional injury prevention strategies for volleyball athletes according to specific risk factor profiles

| Moderate-to-high risk of ankle/ankle instability                                     | Moderate-to-low risk of patella tendinopathy  | Moderate-to-low risk of shoulder/overuse injury         | Moderate-to-high risk of ACL injury |
|--|---|---|-------------------------------------|
| Taping ankle even pre-activation   | Tracking of tracking contacts during games and actions if feasible                          | Deconditioning tasks such as depth drops and drop jumps |                                     |
| Single-leg stance and balance. Progress from one to an unstable apparatus            | Games if feasible   | May require closer monitoring and more feedback         |                                     |
| Progress from one to an unstable apparatus   | Stretching and ground work RON  | Throughout warm-ups, practices and games                |                                     |
| Muscle resistance can be applied in all these conditions                             | Technique during strength and conditioning training particularly following high tendon load | Additional matting, stretching exercises                |                                     |
| Technique training to encourage a more vertical trajectory when spiking and blocking | Increased focus on strength and resistance training   | Traditional exercises                                   |                                     |
| Taping or bracing of the previously injured ankle                                    | Quicker drop squat and hanging leg exercises  | Higher volume of plyometric exercises                   |                                     |
|  |   | Caution for those at low risk of patella tendinopathy)  |                                     |

ROM range of motion, ACL anterior cruciate ligament



Fig. 1 Quick drop squat with external shoulder rotation

## Preventing Injury: Young swimmers are not "little adults"

There is an adage in sports medicine that "the child is not simply a little adult". And nowhere is this comment more relevant than in aquatic sport, in particular swimming. There are unique anatomical features of the child that make them particularly vulnerable to injury. The progression of a young swimmer is so rapid, the training load too intense or poorly monitored, the risk of injury increases.

These are the risks in the pool where injury is more likely to occur in regions where tendons attach to "soft" immature bone, and in growth plates located at the ends of each long bone. Coaches play an integral part in recognizing the early indicators of injury and may intervene early by reducing the training load, altering stroke mechanics, or modifying weight-training and dry land exercise programs. Overuse is the most common injury mechanism and the young swimmer is particularly prone to shoulder, knee and elbow problems. Sports doctors recognize conditions such as "swimmer's shoulder", "butterfly swimmer's back", and "breaststroke knee". These apply equally to water polo players.

### KEY POINTS

- Musculoskeletal overuse is a risk for the young aquatic athlete.

Overuse injuries that limit athletes' sports participation are relatively common among young basketball and floorball players. Players participating in adult elite field games, and players with previous history of overuse injuries of MSD, are at increased risk of overuse injuries. Further research is needed to decrease the risk of overuse injuries in youth team sports.

## Epidemiology of Overuse Injuries in Youth Team Sports: A 3-year Prospective Study

Authors

Mari Leppänen<sup>1</sup>, Kati Pasanen<sup>1</sup>, Pekka Kannus<sup>2</sup>, Tommi Vasankari<sup>3</sup>, Urho M. Kujala<sup>4</sup>, Ari Heinonen<sup>4</sup>, Jari Parkkari<sup>1,2</sup>



## Modificazioni del regolamento

- Rally point system, 1999
- Introduzione del “libero”, 1998
- Battuta sul net, 2000
- Palla meno gonfia, 2000
- Time-out
- Video-check



### ■ CONSEGUENZE METODOLOGICHE

- Allenamenti meno lunghi e più intensi
- Preparazione fisica modificata e diversificata



### ■ CONSEGUENZE TRAUMATOLOGICHE

- Aumento traumi acuti (caviglia – traumi muscolari: polpaccio/addominali)
- Diverso “injury profile” in relazione ai ruoli
- Aumento “shoulder pain” per l’azione di battuta



## Integrazione degli interventi

- Trattamenti manuali
- Fisioterapia strumentale
- Terapia medica / farmacologica
- Attività in palestra
- Attività in acqua
- Altro...

**NO**

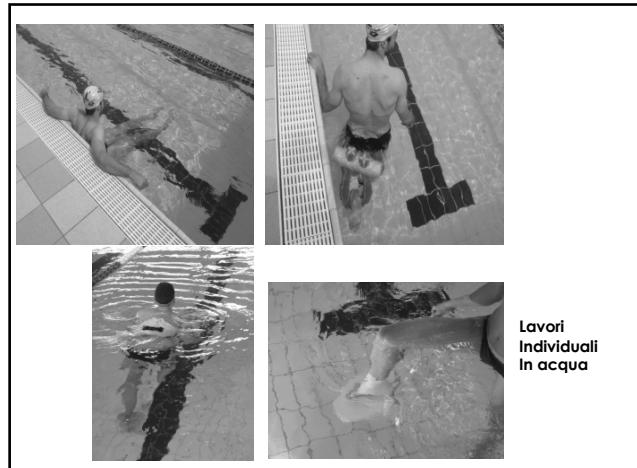
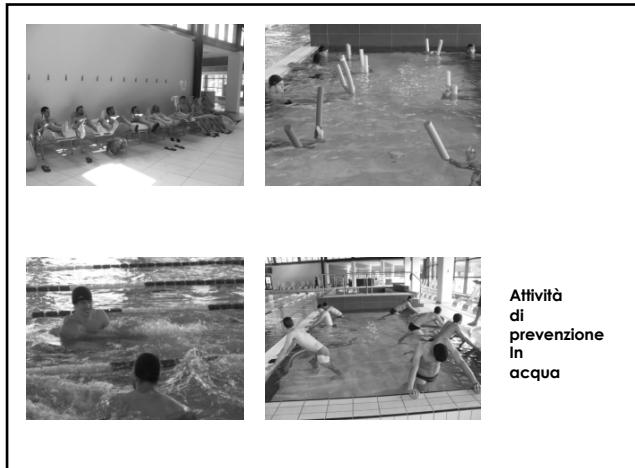
- Conflittualità
- Interferenza
- Sovraccarico

**SI**

- Coordinazione
- Sinergia
- Corretta modulazione carico
- Integrazione
- Sequenzialità

Integrazione e coordinazione degli interventi e delle attività









#### INVESTIGATION OF MANAGEMENT MODELS

#### IN ELITE ATHLETE INJURIES

*Shen-Kai Chen, Yun-Min Cheng, Yen-Chung Lin,<sup>1</sup> Yu-Jue Hong,<sup>1</sup> Peng-Ju Huang,<sup>1</sup> and Pei-Hsi Chou*

- Diverse componenti portano a scegliere un modello di gestione degli infortuni
- La scelta, spesso pilotata dagli atleti, dipende dal livello di qualificazione, dall'età, dal genere, dall'esperienza
- Ci può essere una utile integrazione tra approcci diversi

## Lo staff sanitario



Clin Sports Med 26 (2007) 179–179  
CLINICS IN SPORTS MEDICINE

### Building a Sports Medicine Team

Fredie H. Fu, MD, HDSc\*, Fotios Paul Tjoumakaris, MD, Anthony Buoncristiani, MD

Department of Orthopaedic Surgery, Center For Sports Medicine, 3200 South Water Street, Pittsburgh, PA 15263, USA



**B**uilding a winning sports medicine team is equally as important to the success of an athletic organization as fielding talented athletes. Acquisition of highly qualified, motivated, and hard-working individuals is essential in providing high quality and efficient health care to the athlete. Maintaining open paths of communication between all members of the team is the biggest key to success and an optimal way to avoid confusion and pitfalls.

Fu e al. –Building a sports medicine team (Clin Sports Med 26, 2007)

#### — Obiettivi:

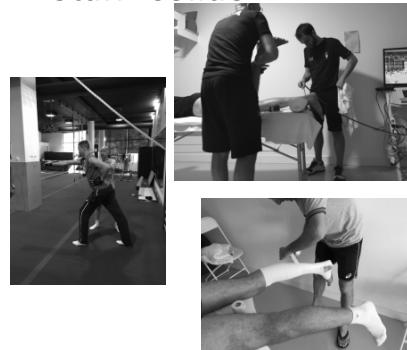
- Coordinare lo screening pre-partecipazione
- Gestire gli infortuni sul campo
- Organizzare la gestione medica di traumi e malattie
- Coordinare i programmi riabilitativi ed il ritorno allo sport
- Assicurare un ritorno all'attività in sicurezza
- Integrale le competenze coinvolte (specialistiche, mediche, tecniche)
- Organizzare un corretto approccio ad alimentazione, integrazione, stili di vita
- Controllare le documentazioni cliniche ed aggiornare

Fu e al. –Building a sports medicine team (Clin Sports Med 26, 2007)

- Individuare il riferimento principale
- Coordinare il percorso riabilitativo
- Evitare errori, confusioni, conflitti
- Costruire un “team” vincente” (coordinazione e comunicazione!)

### Staff “solido”

- Coordinato
- Sinergico
- Dialettico
- Flessibile
- Autorevole
- Responsabile
- Competente
- Aggiornato
- Innovativo



Coris E. e al. – Sports Med Arthrosc 2009

#### Imaging in sports medicine: an overview

“Dato il continuo aumento dei traumi sportivi, e l’ utilità di una tecnologia di diagnosi e trattamento in continua evoluzione, il medico sportivo deve necessariamente aggiornarsi sulle potenzialità delle nuove tecnologie.....particolari avanzamenti sono stati fatti in campo radiologico, che offre una miriadi di opzioni al medico....che deve essere informato sulla validità, sulle indicazioni, sulle controindicazioni, sulla sensibilità, sulla specificità e anche sui costi nel grande spettro delle opzioni diagnostiche”

### Borg-Stein J. – PM R 2009

New concepts in the assessment and treatment of regional musculoskeletal pain and sport injury

L’ esame delle nuove conoscenze nel trattamento dei disordini muscoloscheletrici (comprensione dei meccanismi patogenetici, nuove modalità nell’ imaging, aggiornamenti sui modelli di trattamento, etc.) presuppongono un nuovo approccio nella gestione dei traumi muscolotendinei non chirurgici

Borg-Stein, Zaremski, Hanford – New concepts in the assessment and treatment of regional musculoskeletal pain and sports injury – PM&R, 1, 8, 2009

- Rassegna sulle nuove opportunità diagnostiche e terapeutiche dei traumi tendinei e muscolari nello sport:
  - Necessità di un nuovo approccio basato sulle nuove conoscenze, adeguato anche alle diverse patologie, discipline, età

Organizzazione delle attività di terapia e di prevenzione in differenti condizioni (*flessibilità!*)



*Journal of Athletic Training* 2008;43(5):523-529  
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[www.nata.org/jat](http://www.nata.org/jat)

systematic review

## Ankle Ligament Healing After an Acute Ankle Sprain: An Evidence-Based Approach

Tricia J. Hubbard, PhD, ATC; Charlie A. Hicks-Little, MS, ATC

The University of North Carolina at Charlotte, Charlotte, NC

### Key Points

- The amount of time needed for ligament healing after ankle sprain is unknown.
- Significant improvements in mechanical stability did not occur until at least 6 weeks to 3 months after injury, but a moderate percentage of participants still had objective mechanical laxity and subjective ankle instability.
- Objective assessment of mechanical laxity immediately after an ankle sprain and for at least 1 year after injury is needed so clinicians can know how long to protect and immobilize an ankle after sprain, develop rehabilitation protocols to help stabilize the ankle, and make return-to-play decisions based on stability of the ankle ligaments, preventing further injury and damage.



Return to play

## Approccio integrato

- Metodologie di lavoro
- Figure professionali
- Trattamenti terapeutici
- Attività ed interventi
- Esperienze ed evidenze

## Lo staff – Come costruirlo

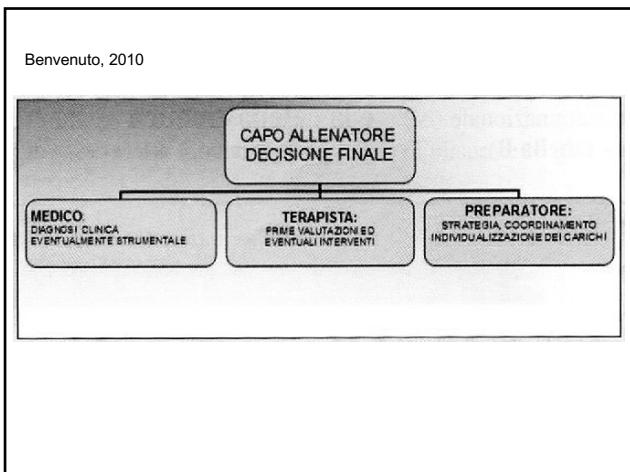
- Da chi è composto
- Come interagisce
- Come si consolida
- Come si modifica
- Come lavora
- Il budget e il contesto
- I riferimenti



## Gestione integrata

- Tecnico/i
- Team-manager
- Preparatore fisico
- Medico
- Fisioterapista/i
- Specialisti di riferimento
- Osteopata
- Statistici / Tattici
- Psicologi
- Fisiologi / Biomeccanici
- .....





## La comunicazione

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**Review**

**Teams, tribes and patient safety: overcoming barriers to effective teamwork in healthcare**

Jennifer Weller, Matt Boyd, David Cumlin

**ABSTRACT**  
 Modern healthcare is delivered by multidisciplinary, distributed healthcare teams who rely on effective teamwork and communication to ensure effective and safe patient care. However, we know that there is an

members of the team and categorise the challenges to interprofessional teamwork and communication in healthcare into three domains: educational, psychological and organisational. Finally, we will suggest a range of solutions to these challenges,

Lavorare come un team multidisciplinare: le opportunità di crescita

- Aspetto educazionale/Formativo (diversi linguaggi, diversi programmi di intervento, diversa preparazione, difficile interazione tra le professionalità: "allenamento"!!)
- Psicologico (comunicazione e interazione fra diversi livelli e diverse figure)
- Organizzativo/Gestionale (situazioni geografiche, logistiche – diversi teams coinvolti – utilizzo delle comunicazioni sulla rete, etc.)

**Self-assessment questions**

- A shared mental model is a critical requirement for effective teamwork. Which of the following is not a component of a shared mental model?
  - All team members understand the overall plan
  - All team members understand their role
  - All team members can perform all of the required tasks
  - All team members have the same level of experience
  - All team members know each other's capabilities
- Reducing surgical complications in orthopaedic teams has been shown to:
  - contribute to 81% of sentinel events
  - result in visible adverse events over one-third of the time
  - reduce the risk of surgical complications
  - All of the above
- Which of the following is an example of a successful initiative to support teamwork with protocols and processes?
  - Teaching effective communication strategies
  - Establishing a common language
  - Using simulation-based training
  - All of the above
  - None of the above
- What is the "ABC" project?
  - A risk-reducing strategy has been shown to reduce risk-adjusted mortality rates by 50% across over 100 hospitals.
  - A teaching effective communication strategies
  - Establishing a common language
  - Using simulation-based training
  - All of the above
- What is the "New South Wales Health between the flags" project?
  - Teaching effective communication strategies
  - Establishing a common language
  - Using simulation-based training
  - Reducing surgical complications
  - New South Wales Health between the flags project

- Apprendere strategie di comunicazione efficace
- Allenare insieme i teams che lavorano insieme
- Allenare il team utilizzando la simulazione
- Favorire la coesione di team multidisciplinari incentivando il senso di appartenenza e il raggiungimento degli obiettivi
- Creare teams democratici con una comunicazione aperta e la valorizzazione delle diverse competenze e figure
- Sostenere il team work con adeguati protocolli e procedure chiare e condivise
- Sviluppare una cultura organizzativa che favorisce la comunicazione e la crescita dei teams sanitari

**Table 2** Strategies to improve communication

| Tool   | Brief description   |
|--|---|
| Step-back (call-out) <sup>32-40</sup>                                | Stepping back from and taking an overview of the situation, the health professional who is leading the team calls the attention of the team and provides an update of the situation, the plan and invites suggestions.  |
| Closed-loop communication <sup>40 53 54</sup>                        | This three-step strategy involves; the sender directs the instruction to the intended receiver, using their name where possible; the receiver confirms what was communicated as a check on hearing and understanding the instruction, seeking clarification if required; the sender verifying that the message has been received and correctly interpreted. |
| Structured information transmission (SBAR/ISBAR) <sup>32 53 56</sup> | This is a widely used acronym to help structure verbal at handover or patient referral. The original version (SBAR) has been expanded in some reports to ISBAR, starting with identify yourself: Identify →Situation→Background→Assessment→Recommendation.  |
| Structured handover <sup>33 57</sup>                                 | Simple templates for summarising important patient information at handover  |
| Graded assertion (PACE) <sup>48</sup>                                | Escalating concern (Probe, Alert, Challenge, Emergency)   |

psychological and organisational strategies. Recent evidence suggests that improvement in teamwork in healthcare can lead to significant gains in patient safety, measured against efficiency of care, complication rate and mortality. Interventions to improve teamwork in healthcare may be the next major advance in patient outcomes.

**Clin Sports Med 26 (2007) 137-118**

**CLINICS IN SPORTS MEDICINE**

**Communication: The Key to the Game**

Jeff G. Konin, PhD, ATC, PT  
Department of Orthopaedic Surgery, College of Medicine, University of South Florida,  
12901 Bruce B. Downs Boulevard, MDC 77, Tampa, FL 33612-4766, USA

**C**ommunication. Communication. Communication. The author could probably stop writing this article at this point. If I did, however, you might just think my words are archaic and merely come across as yet just another cliché in a world that is overpopulated and infiltrated with acronyms and quotes to describe each and every daily encounter. So perhaps an explanation is owed to clearly justify why the word "communication" takes on a whole new level of meaning when it describes one's role as a team physician.

Konin J. – Communication: the key of the game – (Clin sports med, 26, 2007)

- Catena di comando
- Metodi vincenti
- Forme di comunicazione pratiche
- Errori comuni di comunicazione: assenza di comunicazione, non comunicare abbastanza, comunicazioni poco comprensibili o "interpretabili" (v. dirette / mail), non comprensione e adeguamento situazioni specifiche, non riconoscere l'importanza della comunicazione, non definire né curare il rapporto con gli atleti, non conoscere aspetti medici importanti, non frenare il "gossip"

**IMPORTANCE**  
Perhaps the biggest mistake one can make as a team physician as it relates to communication is to underestimate the importance of any single piece of information. This is especially true if one or she is a member of a team of health care providers. Their manner that new information regarding the injury or illness of a player must be shared with the athletic trainers and other key individuals in a timely manner. Likewise, the team physician should expect the same level of communication in return from athletic trainers. One of the most uncomfortable feelings that a medical provider associated with a team can have is to be asked a question by a coach or key person and not know the answer. It is not uncommon for coaches and others to ask the same question to

Email address: jeffkonin@hotmail.com

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multiple health care providers associated with a team, just to see if they can obtain the same response. In fact, if the question at hand pertains to a diagnosis, prognosis, or return-to-play decision, this is a common tactic that will be used by coaches in an attempt to seek out the one person on the medical team who may provide the most favorable response from the coach's perception. Be careful not to underestimate the value of each little piece of information related to a player's health, and be sure to communicate this to other appropriate medical team members. Team physician should at all times carry telephone numbers, e-mail addresses, faxes, and any other form of communication used by

team members. Team physicians should at all times carry telephone numbers, e-mail addresses, pagers, and any other form of communication used by medical staff members to assure timely communication.

It is absolutely critical that the team physician, and any other medical staff member for that matter, does not "grandstand" and feel compelled to be the one to deliver news that other pertinent medical staff members do not have. Feeling the need to set one's own a priori information dissemination agenda will only lead to a distrustful and uncomfortable environment. Furthermore, this has the dangerous potential of providing coaches and others with credible information that some involved medical staff members do not have. There is no place for such behavior when a team of medical providers are expected to work as one.

To avoid confusion, misinformation, and communicating through inappropriate channels, it is imperative to first identify a single person who will be the voice of the medical staff. All information regarding the health status of a player should be conveyed through this one individual. Doing this clearly

## Conclusioni

La gestione dell'atleta infortunato e la programmazione di adeguate strategie di prevenzione e riabilitazione necessitano di operatori non solo competenti e capaci ma anche di staff coordinati, solidi e sinergici, a tutti i livelli e in qualsiasi contesto. Questo può costituire quel "valore aggiunto" per il raggiungimento dei massimi obiettivi



## Conclusioni

### • Integrazione

- degli interventi (coordinati, sinergici, sequenziali, flessibili)
- dei trattamenti delle professionalità e delle capacità
- delle conoscenze e delle competenze

**Continuo confronto ed interazione degli operatori**

## Conclusioni

- \* Conoscenza completa ed aggiornata dell'epidemiologia specifica
- \* Studio adeguato del gesto tecnico e del modello prestativo (ruolo, caratteristiche antropometriche e fisiche) e delle caratteristiche degli atleti
- \* Capacità di adattamento alle modificazioni del gioco, dei regolamenti, dei materiali
- \* Programmazione attenta della stagione e delle strategie di recupero e modulazione continua dei carichi di lavoro
- \* Continuo confronto tra staff tecnico e staff sanitario
- \* Costruzione di percorsi adattabili e flessibili
- \* Valutazioni basate su criteri condivisi e consolidati
- \* Attenzione alle nuove metodologie e tecnologie
- \* Creazione di un sistema di prevenzione e gestione dei traumi che sia solido (basato sulle evidenze e sulle esperienze), adattabile, flessibile, condiviso

GRAZIE!

