A preliminary assessment of professional footballers’ awareness of injury prevention strategies

Richard D Hawkins, Colin W Fuller

Abstract
Players from five English professional football clubs completed a questionnaire containing 52 items relating to injury prevention practices and advice received on these issues. Responses were received from 55 players, which represents a mean response of 11 (4) and a response rate of 38 (14)% from each club (means (SD)). The main deficiencies in awareness of injury prevention strategies for players were identified as: use of shin pads during training, carbohydrate intake before and after training and after matches, cool downs after training and matches, and flexibility work. These deficiencies indicate a need for wider education of players in current injury prevention strategies.

Results
Questionnaires were distributed to 146 professional players at five English League clubs, a mean club value of 29 (8). Fifty five players responded, which represents a mean club response of 11 (4) and a response rate to the questionnaire of 38 (14)%. The player age and number of years as a professional footballer were 25 (4) years (range 18–38 years) and 6 (4) years (range 1–16 years) respectively. The players were from one Premier (9), two Division One (6 and 16), and two Division Two (9 and 15) teams, and their playing positions were as forwards (11), midfielders (24), defenders (14), and goalkeepers (6). The key findings from the survey can be summarised under the following headings.

PROTECTIVE EQUIPMENT
In competitive matches, 28 players always wore shin pads with additional ankle protection; however, 23 players never wore shin pads with ankle protection. In training, 51 players never wore shin pads of any type, even though 30 of these players agreed that wearing shin pads reduced the risk of lower leg injury. Fifty three players said that they were not encouraged by coaching staff to wear shin pads during training.

NUTRITION
While 43 players always consumed carbohydrates before a match, fewer than 20 players always consumed carbohydrates after a match or before and after training. This was despite the fact that players said that they were given some advice on the consumption of carbohydrates before (48) and after (40) matches, and before (40) and after (42) training.

TRAINING
Warm ups and cool downs
Forty nine players always warmed up before a match and before training; however, none of the players always cooled down after. While 51 players agreed/strongly agreed with the benefits of warming up with respect to the risk of injury, only 17 agreed with the benefits of cooling down. Thirty nine players gave reasons for not always cooling down after training or matches (table 1).

Flexibility
Fifty one players always stretched the major leg muscles before a match and before training but only two always stretched these muscles after. Forty players said they did not take part in any
team flexibility sessions, 36 did not perform individual flexibility work, and 29 players did not take part in flexibility sessions of any kind. Forty six players, who did not perform at least one flexibility session per week, gave responses to explain why. The reasons given were: “not told to do it” (26), “nobody else did it” (18), “did not believe it was necessary” (11), and “too tired” (4); no player responded that there was “not enough time”. Only 24 players said they were “not given any advice on flexibility techniques” and 26 players agreed that “players with poor flexibility are more likely to get injured than those with good flexibility”.

### FOOTBALL AND INJURIES

An assessment of professional footballers’ awareness of injury prevention strategies.

All questions are strictly confidential. Please be as truthful as possible and tick one box per question unless otherwise indicated.

#### PART A.

1. Age (yrs): ____________

2. Number of years as a professional: ____________

3. League: 
   - premier □  
   - 1st □  
   - 2nd □  
   - 3rd □  

4. Playing position: 
   - goalkeeper □  
   - defender □  
   - midfielder □  
   - forward □  

5. How many injuries have you received over the last 12 months during training or a competitive match that have resulted in you being unavailable for selection?

   i. competitive match injuries: ____________
   - no □  
   - 1 □  
   - 2 □  
   - 3 □  
   - 4 □  
   - 5 □  
   - >5 □  

   ii. training session injuries: ____________
   - no □  
   - 1 □  
   - 2 □  
   - 3 □  
   - 4 □  
   - 5 □  
   - >5 □  

6. Do you wear shin-pads in training?
   - always (100%) □  
   - very often (~75%) □  
   - often (~50%) □  
   - sometimes (~25%) □  
   - never (0%) □  

7. In competitive matches do you wear shin-pads with ankle protection?
   - yes □  
   - no □  

8. Do you consciously consume carbohydrates (e.g. bread, pasta, rice, potatoes, chocolate, sugar) in the following situations?

   i. pre-training: □  
   ii. post-training: □  
   iii. pre-match: □  
   iv. post-match: □  

9. Do you have a warm-up period prior to:
   i. training: □  
   ii. matches: □  

10. Do you have a cool-down period at the completion of:
   i. training: □  
    ii. matches: □  

11. Do you stretch the major leg muscles in the following situations?
   i. warming-up prior to training: □  
   ii. warming-up prior to matches: □  
   iii. cooling-down after training: □  
   iv. cooling-down after matches: □  

12. Do you undertake flexibility training (not included as part of a warm-up or cool-down)?
   i. times per week as part of a team session: □  
   ii. times per week as extra individual work: □  

13. Do you undertake strength training in the gym?
   i. times per week as part of a team session: □  
    ii. times per week as extra individual work: □  

#### PART B.

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<th>Responses</th>
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<td>2</td>
</tr>
<tr>
<td>Too tired</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Not told to</td>
<td>36</td>
<td>30</td>
</tr>
<tr>
<td>No advice</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Not necessary</td>
<td>18</td>
<td>16</td>
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<tr>
<td>Nobody else does it</td>
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#### Table 1 Responses given by players for why cool downs are not always performed after training and matches

<table>
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<th>Reasons</th>
<th>Training</th>
<th>Match</th>
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<tbody>
<tr>
<td>Not time</td>
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<td>16</td>
</tr>
<tr>
<td>Nobody else does it</td>
<td>25</td>
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Thirteen players said they did not take part in any team strength sessions, and eight did not perform individual strength work. Thirty-six players took part in one or two strength sessions per week as a team, and 39 performed extra individual work; only three players reported that they did no strength work. Forty-six players agreed with the statement that "strong muscles are important in the protection against injury".

Discussion

While the present study only assesses the responses from a limited number of players in...
five football clubs, the results do indicate deficiencies in players’ knowledge and implementation of injury reduction measures. The main deficiencies identified relate to an appreciation of the benefits of the use of shin pads during training, carbohydrate intake before and after training and matches, cool downs after training and matches, and flexibility work. These preliminary results indicate that football clubs are not meeting the legal requirement under Regulations 8 and 11 of the MHSW Regulations of providing adequate information and training on injury prevention strategies. The results of this study indicate the need for a comprehensive assessment to determine whether these results are representative of the majority of professional footballers.


Football’s ankle

There is no doubt that articular cartilage requires a certain amount of movement for it to remain healthy. On the other hand, excessive and abnormal movement is unhealthy for it and will inevitably lead to degenerative change.

The term “footballer’s ankle” was coined by T P McMurray of Liverpool. In an article published posthumously in 1950 he described case histories of three professional footballers who had ankle problems. He also mentioned that he had treated three other footballers in this short anecdotal paper. He described how in football the foot is usually in a position of full equinus when kicking the ball. This leads to strain on the anterior capsule of the ankle joint. He suggested that this eventually gave rise to a bony outgrowth into the capsule of the joint from the anterior margin of the tibia, or from the neck of the talus. He pointed out that, although the appearance of osteophyte formation suggested arthritic change in the ankle, the articular surfaces were normal. All his patients were cured by an open operation to remove bone from the capsule of the ankle joint.

Scranton and McDermott subsequently described the same condition as “anterior tibiotalar spurs”. They classified these lesions into four categories, in which type IV included arthritic change. Their paper from Seattle described this condition in 37 patients. Their series included American footballers and baseball players, as well as ballet dancers. They compared the results of open excision of the spur with the results of arthroscopic excision. It is clear that the spur is not in the capsule of the ankle joint, but arises within the joint at the articular surface of the tibia. In their series, the follow up of the arthroscopy group was quite short. Success was judged by subjective criteria—that is, when the patient felt that the ankle was better than before the operation and was able to return to unlimited athletic activity. By this criterion all patients in both groups had good results. The patients in groups I and II appeared to recover more quickly than those in groups III and IV.

A recent prospective study by van Dijk and colleagues from Amsterdam has given further results of arthroscopic surgery. Out of 62 patients, his series included 24 soccer players. This paper gives useful technical hints on the removal of osteophytes arthroscopically. This was achieved using either a small osteotome or an arthroscopic shaver. They confirm that the osteophytes are actually within the joint and not within the capsule of the joint. It is not surprising that the ankle is injured by kicking a football, as the average kicking velocity is given as 96 km/h. During a match there would be 60–120 such contacts for each player, and the ensuing microtrauma in a position of dorsiflexion must be the reason why such lesions are common in professional footballers.

The results of arthroscopic excision of osteophytes for ankle impingement are certainly encouraging. Patients with smaller osteophytes seem to do better. My own experience of professional footballers with Scratchon-McDermott type I and II lesions has been excellent. After arthroscopic excision of osteophytes, even those larger than 3 mm in size (grade II), a good recovery may be expected within weeks of the operation. With intensive physiotherapy, most professional footballers are able to play again four to six weeks after this type of arthroscopic procedure.

The long term outcome is not known. Undoubtedly, former professional footballers may develop severe osteoarthritis of the ankle. Although excision of osteophytes gives good short term results, there is no evidence that it will prevent long term degenerative change in the ankle joint.

T W D SMITH

Consultant Orthopaedic Surgeon
Northern General Hospital
Sheffield

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