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### A Call for Papers

The next edition of the JBMS will be published in September at the start of the USQ and QUK seasons. Many university teams will be starting from scratch in recruitment, training, and management, with numerous individuals new to their leadership positions managing largely rookie rosters. The JBMS is interested in publishing papers that will aid these teams in the following subjects:

- Recruitment techniques
- Strategies for coaching new players
- Essential drills
- Guidelines in planning for practice
- Guidance on maximizing teamwork
- Essential skills in managing a team

Articles for the front pages are short, easy to read, and contain vital condensed information, while still being reviewed by qualified content experts. Articles for the back pages are built on research principles but do not necessarily need to be long, though they must reach a publishable standard of scientific integrity and will be reviewed as such.

If you have a particular way of doing something that has worked for you that a new team would benefit from, please share it! The quidditch world is sorely lacking in accessible tools to help spread good practices, so you are invited to share your knowledge. You may also share your knowledge by becoming a content expert and reviewing articles for publication. Thank you and see you on the pitch!

Alejandro Enriquez

Editor-in-Chief, Journal of Broom-Mounted Sports

*Many thanks to the anonymous reviewers who certified the published articles in this issue.*

## NINJA DUEL

A drill to develop play skills and field awareness for beaters

By Alejandro Enriquez

**INTRODUCTION:** This is a good drill to enhance situational awareness, reaction times, and “head on a swivel” mentality for beaters. Since new quidditch players and especially players new to the beater position tend to lock in on a single target even as the game evolves rapidly around them, this drill helps them adjust to the mental pressure of playing the beater position. This drill has the advantage of being fun and entertaining, but it also teaches beaters to constantly be on the lookout for and attack other beaters, so it should be considered one part of a varied toolkit for coaching new beaters. It is of greatest benefit to a player who is new to the beater position, especially if they are playing against more experienced beaters while they are surrounded by teammates invested in their success.



Figure 1a: Manager positions players and instructs them to close their eyes. Figure 1b: Manager places bludgers while disguising their position from auditory cues by either circling the entire space or through the use of background noise or music.

**SETUP:** Two players start out back-to-back, possibly directly back-to-back, but preferably having each taken several paces forwards. The manager(s) of the drill (other beaters not currently active and/or any coaches) instruct the players to close their eyes, and then the manager(s) collectively place up to three bludgers around the players. The beaters should not be clued in by the sound of movement, so either the assistants should all walk around simultaneously or music or other background noise can be employed to mask the sounds of movement and placement of bludgers. The manager(s) may also hold one or more bludgers, but there should never be more than three bludgers on the field, to ensure the simulation of gameplay is valid.

**ACTION:** The players are instructed with no warning or countdown to begin (e.g. “...GO!” or a whistle blast) to further enhance reaction times. The players then play as beaters, attempting to win by knockout. The full range of beater rules apply, such as tackling, catching, blocking, and boundary rules. The players may potentially also receive a win credit for having thrown two bludgers back towards their own side of the field (having gained bludger control) but this should be specified ahead of time if it is to be used. After each play, coaches should deliver any feedback, but it should be done quickly to get to the next match, especially if multiple other players are waiting their turn.



Figure 2: on a signal, the players are permitted to open their eyes and move around. This trains their reaction times and field awareness very effectively.

**ANALYSIS:** A vitally important part of this training is that the bludger positions need not be symmetrical. Fairness is not the point, as the goal is to teach the players how to react to in-game situations as a beater. A manager should even take an opportunity to occasionally deprive a more experienced beater of any bludgers on their “side” of the field entirely so that the veteran may demonstrate to new beaters what one’s options are when facing an inexperienced beater holding a bludger. Discussions about the outcomes of this drill are an ideal environment for acculturating players who aspire to become beaters to better understand the nuances of this position and gain the mentality of constantly being prepared for anything.



Figure 3: Players attempting to knock each other out, while defending themselves using the bludgers and obeying all quidditch rules.

**NINJA DUEL REFEREEING**  
 A method for training assistant referees  
 By Alejandro Enriquez

**INTRODUCTION:** While practicing the Ninja Duel drill as previously outlined, one or two players may be assigned to practice their assistant refereeing skills for each set. To develop a full set of refereeing skills, an individual must practice repeatedly, and this gives a concentrated opportunity to adjudicate beater-vs-beater clashes with a high likelihood of beats, catches, blocks, boundary crosses and simulated third bludger interference calls.

**MECHANICS:** If only three people are present, the beater who is not in play is both the drill manager/coach and also the referee. In a more ideal situation, the most experienced assistant referee should demonstrate refereeing technique first and then use subsequent drills as teaching opportunities, observing and giving feedback to the assistant referees. Referees should receive feedback on correct rules, calls, positioning, and how and when to alert and not alert the head referee.

**VARIATIONS:** The following variations may be applied depending on the team/individual goals:

- If training the referees is a higher priority than helping the beaters improve, the beaters may be instructed to attempt to cheat, to force the assistant referees to become more assertive in their calls and aware of common beater cheats.
- If adjudicating third bludger interference calls is a high priority, each beater may be assigned a teammate (either an actual player not active in play, or a simulation such as a cone or dummy) that can either have or not have a bludger. This helps the assistant referees and the players be sure to apply third bludger interference rules and immunity claims effectively and correctly.
- If beater teamwork and referee teamwork are both high priorities for development, two teams of two beaters each can play Ninja Duel against each other. In the “seeing-eye” partner variant, the back beater may open their eyes first and communicate with their still-blind partner, to help them practice rapid effective communication with their partner. In the “double blind” partner variant all beaters have their eyes closed, simulating a truly chaotic situation such as snitch on pitch.
  - Without seekers or a quaffle, extensive use of this drill will result in all four beaters converging to duel with no regard for the rest of the field, so extensive use of this variant is discouraged. Adding another player such as a seeker or quaffle carrier will help the beater partners learn to multitask better.
  - It is recommended to have at least two assistant referees for this activity to give the referees an opportunity to practice the quadrant system of having eyes on the play from multiple angles.



Figure 1: referee calls beats and non-beats as well as catches, blocks, boundary rules, tackling rules and any other duties of an assistant referee.

Thanks to Dillen Cooper and Alex Andres for modeling for both of these articles.

# IS REAL-LIFE QUIDDITCH SAFE; A REVIEW INTO INJURIES IN THE SPORT OF QUIDDITCH

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*Note: For this review, 'sex' (male/female) is used to reference the genetic make-up of an individual, whereas 'gender' is used to reference their social identity and personality characteristics. As gender has no clear direct impact on physical characteristics or injury rates, this review will focus primarily on sex rather than gender. Trans, Non-Binary, and Inter-Sex players have not been directly discussed in this review due to the limited data focusing on injuries in this population and the heterogeneity of the methods by which the various studies approached the recording, categorising, and analysis of data from trans players.*

## Introduction

Quidditch is unique as the only mixed-sex full-contact sport. It prides itself on promoting inclusion of players of all genders and sexes, including those who do not identify with the traditional binary categories. This consequently makes quidditch a highly progressive and inclusive team sport, with a range of associated benefits to its participants<sup>1-3</sup>.

Yet, on first encountering quidditch, there are always the same three inevitable questions: “Can you fly?”, “Do you not get hurt by the brooms?”, and “Do the women not get hurt?”. Regarding the first question, the answer is a simple “no”. Although, it is noted that often it is far more enjoyable to create an outlandish explanation of how flying would be possible, to see how far one can get before the joke is discovered. The other two questions, however, have much greater face validity. Alongside these two concerns, there is also a further issue facing all full-contact sports at present: concussions.

As a young novel sport, it is essential that extensive research and surveillance is put in place to identify, explore, and resolve any recurrent injury issues; to help guide the growth of the sport in a safer way and protect its small player base. Yet, to date, only a handful of papers have been published focusing on injuries in quidditch. These papers mostly focus on competitive gameplay, although some also include training play through retrospective data collection. This review will briefly review all these papers in the context of the main quidditch injury concerns mentioned above; seeking to provide some possible explanations for their results and discussion of their implications.

## Injuries in General

Reassuringly for this novel sport, when assessed together, the current published literature does not show any significantly increased risk of injuries from playing quidditch compared to other full-contact sports. Most injuries which are sustained are musculoskeletal injuries to the limbs (such as fractures, dislocations, ligament tears, and cuts and bruises)<sup>4,5</sup>, which is in keeping with most contact sports. These are not of a significantly higher rate than other contact sports<sup>4,6</sup>.

Initial anecdotal concerns regarding possible neck and spinal injuries also do not hold up to scrutiny; although there appears to be a greater rate of assessment for these injuries, the vast majority of assessments show no concerning clinical injury and do not identify any increased risk compared to other sports<sup>4-6</sup>. This increased assessment is likely due to the inexperience of both the players and clinicians.

The players, on the whole, are often new to participating in contact sports and unfamiliar with the related normal musculoskeletal bruising and aches, and so are more likely to seek help for clinically minor concerns. Meanwhile, clinicians are undoubtedly less experienced in assessing what level of risk this novel sport poses to players, and so will normally err on the side of caution and over-investigate concerns.

The one alarming exception to these reassuring findings is the significantly increased risk of players sustaining a concussion, which we will go on to discuss in more detail later in this review.

## **Injuries by Brooms**

It is not inconceivable that full contact sport with a stick between the legs would result in various injuries, specifically ‘impaling’ injuries. However, it is interesting to note that none of the handful of research studies exploring injuries have recorded any significant injuries from quidditch’s brooms<sup>4,6,7,5,8,9</sup>. Even the studies recording the exact cause of the injury found no regular recording of broom-related injuries<sup>4,6</sup>. The cause for this is likely multi-factorial and would require footage analysis to determine more detail.

Anecdotally, it is noted that the move from wooden brooms to plastic-capped PVC has resulted in fewer injuries, likely due to the thicker end distributing force more evenly and the smoother surface minimizing abrasions. With the standard strength PVC, there is also less chance of the broom snapping to leave sharp ends, although again no injuries were recorded as being caused by this.

A second important factor is likely the result of tackling technique. During these studies, two handed tackling was illegal. However, most players (consciously or not) use the broom as a ‘second arm’ to help pin the opposition in place. This necessitates holding the broom wide out to side to envelop the opposition player, with the beneficial consequence of helping to keep the broom out of the way of the tackle and thus minimize injuries. It is noted that this does not account for the position of the opposition’s broom in the tackle, but as the tackling player is normally able to choose their moment to initiate and angle of approach, it would be expected that they would choose an approach, time, and method so as to try to prevent any injuries to themselves.

Finally, there is likely an important role for subconscious self-preservation helping to ensure the broom is kept out of the tackle to minimise related injuries. The more ‘high-force’ tackles normally involve bending or crouching low to impact the opposition in the abdomen with the shoulder. This requires having the player’s face near to both their own broom and the opposition’s broom. It would be expected that self-preservation instincts are involved in ensuring the players own broom is kept away from their face, and that they do their best to avoid the opposition’s broom. It is also noted that the broom is held between the legs next to the genitals. As such, a strong or sudden impact to the broom the player is carrying is likely to have a secondary impact on that players genitals, which is clearly undesirable. There again, self-preservation is expected to play a role for both tackler and opposition in ensuring their brooms, and by extension their genitals, are not involved in the tackle, where they could be subject to sudden, forceful, and painful impacts.

## Sex-Related Injury Differences

Most other sports, especially those focused primarily on physical performance, are separated by sex into male and female. Given the significant differences in physical characteristics<sup>10,11</sup>, and arguably related psychological characteristics<sup>12-15</sup>, this is a natural separation that suits most situations. Indeed, the differences in the physical abilities of elite athletes provide real world evidence for this significant disparity and have acted to reinforce the ongoing perceived need to maintain this separation in order to ensure fair competition for female athletes. However, due to its 'gender-rule' and the fact that most players' genders match their birth-assigned sexes, quidditch encourages mixed-sex gameplay. With the significant differences in physical characteristics, it would be expected that male players would be able to generate more force, and so more often over-power female players. This in turn leads to the expectation that female players would be more likely to come off worse from tackles/impacts and be more likely to be injured as they are subject to greater forces.

Yet, the data from both retrospective<sup>4</sup> and prospective studies<sup>6</sup> do not support this. In fact, they show no statistically significant difference in the rates of injuries between male and female players other than concussions (which will be addressed later in this article). Again, there are a range of hypotheses for this finding, some of which we will briefly cover below.

The first hypothesis is that the low average level of athleticism amongst quidditch players is a protective factor. Although the levels of athleticism are improving, the average player would not be classed as a high-level sportsperson. As such, the average gameplay does not include very many high-force impacts that could potentially cause serious injuries to players. This theory is supported by data showing that more elite players, and presumably more athletic, are more likely to be injured per 1,000 hours of gameplay<sup>4,6</sup>. Also, it is noted that sex differences in physical and sporting characteristics are more pronounced at more elite levels of other sports, and so the lower athleticism of quidditch players indicates that there likely may not be much difference in the sporting physical characteristics of male and female players at the level of average quidditch gameplay.

Alongside this is the hypothesis that female players self-select at a higher level of athleticism than their male counterparts. In order for female players to feel safe and comfortable playing quidditch, it is likely that they require at least a moderate level of athleticism. Female players with low levels of athleticism may find the full-contact mixed-sex environment too risky and so stop playing, or shy away from tackles/impacts within the game. In contrast, due to the current mostly low level of the sport, male players with only low levels of athleticism are more likely to feel safer to play, due the protection of their different physical and psychological characteristics. As such, the higher average level of athleticism amongst female players may act to balance out any sex differences, and so counteract the potential increased injury likelihood.

A further possible explanation relates to the gameplay roles performed by the different sexes. It has already been identified that different positions in quidditch afford different injury rates<sup>4,6</sup>, but no paper has yet looked at the sub-categorised roles and playing styles of players. For example, male players are anecdotally more likely to play the more aggressive roles such as tackling and driving through opposition players. They would therefore be expected to attract a higher injury rate, balancing out the difference in expected injury rates between the sexes. The reason for this is outside the scope of this review, but likely has many psychological and sociological underpinnings<sup>12,15,16</sup>.

Another possible mechanism of avoiding difference in injury rates between sexes is the mechanics of the game itself. Given the wide range of positions and roles, quidditch can be seen as multiple games being played in conjunction: chasing, beating, and seeking. Each of these games relies on different skills and

techniques. In the chaser game, due to the limitations of the tackling rules, the momentum and force is mostly generated by the attacker. The role of the tackling defender is mostly to harness that force and redirect it towards the ground. Meanwhile, in beater tackling, the force is usually generated by the tackler, with the opposition player attempting to avoid the tackle rather than compete back with force. This is similar for seeking, with the snitch often attempting to avoid, re-direct, and distance the seeker rather than allow close body impacts. As such, technique is usually more important than raw power throughout the various roles, and quidditch avoids the direct head-to-head impact seen in other contact sports that relies more on directly overpowering the opposition. With the reliance on forcefully overwhelming the opposition reduced, the importance of the biological sex differences is also diminished.

Finally, one should not underestimate the effect of social conditioning, reinforced by the ‘excessive force rule’, on limiting male-female interactions [note; this references the stereotyped social conditioning of cis-gendered players]. As a unique sport, most players have not previously participated in full-contact mixed-sex gameplay. As such, given the stereotypes, preconceptions, and social conditioning of the public, it is likely that male players would be wary of injuring female players due to the perceived strength difference. As such, one would expect male players to limit their forceful contact with female players, thus reducing the female injury rate. This effect is further compounded by the ‘excessive force rule’; forcing players to try to attempt to ensure that although they do overpower their opposition, they do not too greatly overpower them. This is especially likely given the often poor refereeing, focusing on the results of an action rather than the legality of action itself. This all culminates in male players considerably reducing the force involved in tackles with female players, thus reducing female injury rates when compared to male injury rates.

## **Concussion Concerns**

Of current concern for many contact sports is the high rate of concussions and their long-term implications. This is equally true for quidditch. A handful of papers have investigated this concern, with varying results<sup>4,6,8,9</sup>. We will explore these here.

The first papers focusing on quidditch concussions were retrospective questionnaires sent out to players across the UK and USA<sup>4,8</sup>. These studies highlighted a high incidence of concussions, with one paper recording approximately 25% of players reporting experiencing a concussion at some point during gameplay<sup>8</sup>. The very first quidditch injury study<sup>4</sup> also noted a statistically significant increase in concussion rates amongst female players vs male players. However, it should be noted that these initial studies were heavily influenced by the subjective and retrospective nature of the data collection. Not only does this raise concerns of recall bias, but also leaves a potential bias of the difference in self-reporting by the different sexes<sup>17</sup>.

Due to these potential biases, an improved study was conducted more recently using a prospective data recording method<sup>6</sup>. This study captured an entire competitive QUK season, with recording of professionally-diagnosed injuries and demographics in real time. Although this paper is pending publication, it will show no statistically significant difference in the concussion rates between male and female players. This is reassuring for dispelling concerns regarding the mixed-sex nature of the sport. However, the rates of concussions again are shown to be concerningly high, with concussion rates higher than rugby.

	Football		Rugby		Ice Hockey		Quidditch	
	/1000 hours	/1000 AE	/1000 hours	/1000 AE	/1000 hours	/1000 AE	/1000 hours	/1000 AE
Male	0.44	1.07	3.89	3.00	2.01	1.63	<b>8.1</b>	3.2
Female	1.76	1.48	1.58	2.11	2.33	2.27	<b>6.2</b>	2.4

*Table 1 – Concussion rates of different competitive sports compared to quidditch, [per 1000 hours of gameplay and per athletic exposure(AE)]<sup>6</sup>*

The cause for this extraordinarily high concussion rate is still uncertain. A likely hypothesis is that the mechanism of tackles in quidditch leads to a higher rate of uncontrolled head impacts. This main hypothesis is supported by papers showing that the most common mechanism of concussions (and indeed all injuries) is from tackles/impacts with other players<sup>4,6</sup>. In other sports, impacts are more controlled by the ability to use two hands to tackle (rugby) or two hands to break the fall (ice hockey/football). In quidditch, the tackle is limited to one hand, resulting in the tackler often having to use momentum to throw the opposition player to the floor. Additionally, the tackled player is holding both a broom and a ball, which prevents the use of their hands to protect themselves. This results in players more often landing heavily and uncontrolled on the ground and therefore more likely to land on vulnerable areas, such as the head. The broom itself may also indirectly increase concussion rates, as players try to avoid landing badly on their broom and instead fall in positions that indirectly leave their head more at risk.

Another likely factor is the average reduced level of training and fitness of quidditch players compared to other sports played at high competitive levels. Although this is changing, many quidditch players have not played contact sports prior to starting quidditch and have had little training in safely engaging in contact sports. Effective and experienced coaching skills are also often lacking in quidditch. As such, players are often poorly prepared to manage the physicality of the game and protect themselves from injuries such as concussions.

A third factor relates to concerns around the effect of bludgers. Again, there is little published evidence for this, but there is a small (yet important) number of anecdotal reports of serious concussions from being hit very hard in the head by a thrown bludger. It is not inconceivable that if thrown hard enough to the head this impact could induce a concussion. Interestingly, this practice appears to differ across nations, with some nations endorsing forceful bludgers to the head (UK and USA) and others aiming to avoid this. As most published papers have been conducted in either the UK or USA, it would be illuminating to compare their concussion rates to nations in which this practice is much less common, to see if that has an impact. Yet, studies recording the exact cause of injuries/concussions have not identified this as a common cause<sup>4,6</sup>.



## Discussion

To return to our initial two obligatory questions (putting “Can you fly?!” aside), the current literature regarding quidditch injuries is initially reassuring. There appears to be no direct injury risk from the brooms in quidditch, with even studies looking specifically for this finding no increased risk. Additionally, there seems to be no significantly different injury rates between male and female players. This is reassuring not only for quidditch but also as a proof of concept for the development of more mixed-sex full-contact sports, especially in the current socially progressive climate.

Yet, underlying this is a tangled mass of further questions and required clarifications. For example, do brooms lead to indirect injury due a change in tackle technique or self-protective behaviour from players? Is the lack of difference in injury rates between sexes driven more by psycho-social differences rather than the sport itself? It is clear that more focused research needs to be conducted in order to determine the answers to these questions, using more focused and objective techniques such as video analysis and professionally-directed prospective data recording. These studies will also need to focus on comparisons between smaller subgroups within the quidditch player population, such as elite vs novice players, or offensive vs defensive style players, etc. Without this further detailed work, we will struggle to understand anything further than the broad highlights the initial ‘trailblazer papers’ have already identified.

Amidst this mass of data and associated questions, one area clearly stands out as a large concern: concussions. Repeated studies of different methodologies have consistently highlighted a high risk of concussion in quidditch, even compared to other full-contact sports. With the rapidly growing evidence of the long-term health implications of concussions<sup>17-19</sup>, this is clearly an area that needs to be thoroughly explored and tested. This would be to not only identify the cause of the high rate, such as possible contact techniques, but also possible remedies, such as equipment changes, rules changes, coaching education, or other preventative measures. If the sport does not act on this, it is inevitable that the sport will see increasing numbers of serious incidents, with players potentially subjected to life-altering, if not life-threatening, consequences.

It is also important to note that the quidditch community should not be complacent regarding the lack of significantly increased risk in other areas of injury. Efforts should still be made to minimise current common injuries, even if they aren’t at much higher rates than other contact sports. For example, coaching should include a focus on correct tackling and falling techniques in order to minimise injuries to the limbs and neck; e.g. teaching players to flexibly roll with momentum rather than stiffly hold out arms and legs in an attempt to break the fall. Consideration should also be made to look at preventing possible significant injuries which currently aren’t common but have the potential to cause serious harm. For example, it may be prudent to require cups be worn to protect genitalia from possible injuries in tackles; as this is a minor change for little cost but with the potential of preventing major consequences. The key to this is developing a collective understanding that the community as a whole are all responsible for continuously and proactively seeking new ways to protect their follow players from common and/or serious injuries.

## Summary

Despite the initial face validity of many injury concerns in quidditch, this review summarises that the available evidence mostly shows no increased injury rates above that of any other full-contact sports. This is despite the unusual equipment and mixed-sex gameplay of quidditch. This is reassuring for the

promotion of further mixed-sex sports as part of our more progressive society. However, the one exception to this is the concerning high rate of concussions, which requires urgent action in order to prevent the inevitable serious incidents.

Underlying these findings is a maze of complex issues and detailed questions. Therefore, now that the broader surveys and data collection studies are completed, it is time for the quidditch community to begin focusing down into the more interventional and targeted research required to fully understand the sport of quidditch.

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