

## A LETTER FROM

PARIS, FRANCE

# Hamstring injury prevention in elite football – a contemplative walk through the City of Lights

– Written by *Cristiano Eirale, France and Qatar*



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Working in an elite football team, here in the “Ville de Lumière (City of Lights)\*”, we are well aware of the high risks of hamstring injuries in our elite footballers. These injuries sometimes disturb the ‘La Belle Epoque’ of our club. Just like the French period starting in the 1870s and lasting until World War I. Since the arrival of the Qatar ownership in 2011, our club has been characterised by economic prosperity, science, technology, culture of modernisation and an overall optimism. For that reason, we were quite surprised to learn that, despite our daily efforts since 2001, hamstring injuries have increased by 4% annually among the elite European teams we are part of<sup>1</sup>.

We don’t think the reason could be that evidence based preventive measures are only partially implemented at the elite level<sup>2</sup>, as hypothesised by some scientists. We

are confident that our colleagues working in our rival teams at all latitudes, just like ourselves, are up to date with the latest literature on prevention of this common injury. In fact, the rate of hamstring injuries increased only during training sessions, while there was no significant increase of these injuries during matches<sup>3</sup>. In reality, considering that high-intensity running demands in football over the same periods have moderately-to-largely increased, it appears that match injury risk has in fact slightly decreased ( $\approx 20\%$ ) during this time<sup>3</sup>. We can therefore be proud of the effectiveness of our prevention protocols for reducing match hamstrings injuries.

“Hamstrings injuries increase during trainings but not during matches; I would have bet the opposite... but what could be the reason for this strange discrepancy?” This question taunted me while I was walking along the beautiful streets of Paris filled with its inspiring monuments, many of them due to the Baron Georges-Eugène Haussmann, the man responsible for the major renovation of Paris that began halfway through the 19th century. Thanks to this enlightened Prefect and his mentor, Napoleon III, Paris was transformed to what it looks like today, with buildings that have the same uniformed architectural style. This unique style has become synonymous with city of Paris itself, captured on postcards and

photographed by tourists from all over the world.

“May the increasing hamstring injuries’ rate during training sessions be due to an increased intensity during training, aimed to better prepare the players for the match?” Maybe. However, our performance and technical staff are so meticulous when preparing the training programme that this seems unlikely. The conditioning and preparation of our players always take individual load profiles into account, and the sessions are tailored according to the medical and performance indicators of each athlete. In addition, technological advances are constantly improving our ability to track and monitor our players. In summary: how come injuries are increasing when we can control the composition, load and intensity of the football activities?

As these thoughts were taking shape, I was in view of Notre Dame, the most admirable example of French Gothic architecture consecrated in the literature by Victor Hugo. It was built on the famous “Île de la Cité”, one of the remaining natural islands along the Seine, where in the years between 250-225 BC the tribe of Parisii established, giving the name to the city. Inspired by this architectural wonder, I considered another explanation for the hamstring injury increase. Could it be possible that the reason

of this negative trend is paradoxically the result of a prevention strategy too<sup>4</sup>?

Paris Saint Germain Football Club participates in the UEFA Elite Clubs Injury Study (ECIS), where a time loss definition of injury is utilised<sup>5</sup>. This definition implies the recording of all injuries that force the players to stop for at least a part of a training session or a match<sup>5</sup>. Therefore, if a player is continuing training or playing with a hamstring injury, there will be no record of this activity.

However, an important prevention strategy is to educate players not to hide or disregard the symptoms of potential overuse, which, if overlooked, can become a more serious injury, like a strain. Our players should be educated to notify the medical staff immediately as soon as any symptoms appear. In addition, we align the performance and technical staff to allow players to discontinue their activity should they present them with symptoms of overuse. Often in elite sport, pain is linked with participation and players often learn to accept that it is rare to perform completely pain free. But there is pain and then there is "pain"<sup>6</sup>; and hamstring pain cannot be overlooked.

Thanks to the prevention strategies based on the education of players and staff, club clinicians are nowadays able to identify footballers with hamstrings overuse symptoms early. This often leads to the prudent removal of a player from the team training sessions for treatment

and recovery. This preventative measure that can only really be implemented during trainings (because this kind of precaution is not realistic during matches) and is recorded as a hamstring injury in epidemiological studies. From a statistical point of view, it doesn't matter if it is an effective method for avoiding the progression of more serious hamstring injuries, perhaps allowing the resolution of the symptoms without affecting the player's availability during competition. The player has stopped his activity, and it is recorded as a time loss injury. This mathematical approach suggests that hamstring injuries are increasing during training, but it does not account for the reason behind the absence from training. Therefore, despite what numbers say, are we actually on the right path? Are we applying preventive management strategies that clash with the actual epidemiological collection methods but in reality, protect our players?

Here in Paris, during the Great Depression in 1931, artists and writers like Pablo Picasso, Ernest Hemingway, and Salvador Dali found inspiration in the cafes of Saint Germain, their work gave life to the intellectual and cultural evolution, which contributed to the prosperity of the city. We know that during dark periods, societies try to find multiple (and alternative) ways to face problems. Sometimes, this allows them to flourish. Perhaps the same can be true for our view of hamstring injuries. Perhaps our prevention efforts are actually protecting our players, which is not captured by the epidemiological data.

Of course, this is an optimistic hypothesis. And I cannot hold back my optimism walking around the most beautiful city in the world (which I admit reluctantly, considering my Italian origins), but as Oscar Wilde quipped "When good Americans die, they go to Paris." As a scientist, this optimism might be a limitation. But, inspired to think differently by this beautiful city, I have accepted that.

*\*There is a debate on the origin of this surname. Hypotheses were gained thanks to perfect illuminations during the period of 1820-30 granted by Philippe Lebon, the inventor of gas lightening. However, other*

*researchers state that this name origins from the XVIII century when, due to the rising criminality in the streets of the city, the Prefect asked the population to put lamps on their windows.*

## References

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Cristiano Eirale M.D., Ph.D.  
Sports Medicine Physician  
PSG Football Club  
Paris, France

Aspetar – Qatar Orthopaedic and Sports  
Medicine Hospital  
Doha, Qatar

Contact: ceirale@psg.fr

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