



WORLD TAEKWONDO FEDERATION

2012 MEDICAL REPORT



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1. INTRODUCTION

1.1. Objectives

The primary objectives of the World Taekwondo Federation's [WTF] 2012 Medical Report are twofold:

- Assess the frequency and severity of injuries suffered by taekwondo athletes, from elite international level through to local/regional standard.
- Ascertain whether the new rules introduced by the WTF in 2010 have impacted the injury rate among taekwondo athletes.

1.2. Context of Study

1.2.1. Adjustment to rules governing the award of points

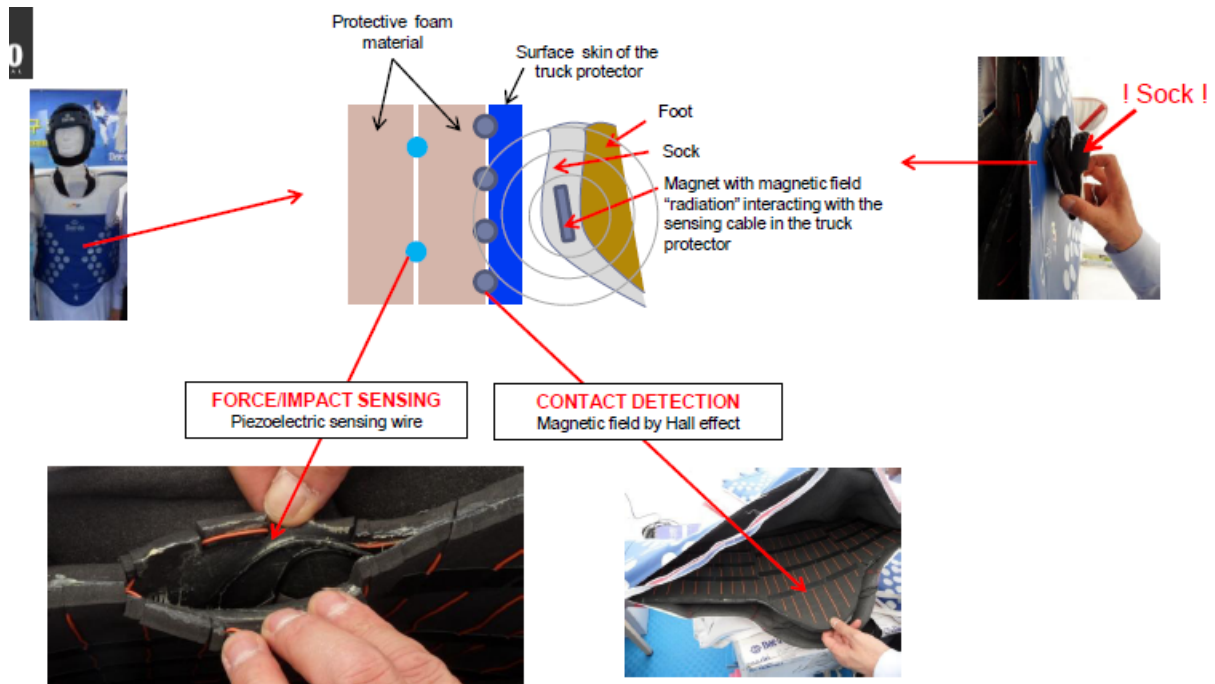
In 2010, the WTF adjusted the rules governing the award of points during competition. A summary of the adjustments is below:

2008 Points System	Points System from 2010
<p><i>Points awarded by judges if moves deemed to have sufficient force and accuracy</i></p> <ul style="list-style-type: none"> • 1 point for fist to the body • 1 point for kick to the body • 2 points for kick to the head 	<p><i>Points awarded by judges if moves deemed to have sufficient force and accuracy</i></p> <ul style="list-style-type: none"> • 1 point for fist to the body <p><i>Points awarded automatically by PSS (see below)</i></p> <ul style="list-style-type: none"> • 1 point for kick to the body <p><i>Points awarded automatically by PSS (see below); additional technique point awarded by judges</i></p> <ul style="list-style-type: none"> • 2 points for turning kick to the body <p><i>Points awarded by judges for any accurate touch of the foot to the headguard – no minimum force requirement</i></p> <ul style="list-style-type: none"> • 3 points for kick to the head • 4 points for turning kick to the head

These rules were intended to reward the use of more of technically advanced manoeuvres (i.e. turning kicks), thereby improving the sport experience for athletes and spectators.

1.2.2. The Protector Scoring System [PSS]

Also in 2010, the WTF introduced a sophisticated new Protector Scoring System [PSS]. The objective was to develop a transparent scoring system whilst keeping the sport safe and inclusive. Previously, the power of techniques was judged by the naked eye, and of course it could be subjective. The PSS all but eliminates human error with sensors that automatically calculate the power and accuracy of kicks.



All competitors now wear full-body protective clothing:

- Head guard
- PSS
- Groin protection
- Mouth guard
- Forearm protection
- Leg protection
- Gloves
- Socks with impact sensors

1.2.3. The Instant Video Replay [IVR]

The Instant Video Replay [IVR] was introduced in 2010 to support the use of the PSS. The IVR allows coaches three chances to appeal a judge's decision per bout. Six cameras monitor the bout from different angles.

2. CASE STUDY: FRENCH TAEKWONDO FEDERATION

2.1. Sources

The data was compiled from two sources:

***Mutuelle des Sportifs* health insurance providers**

2-4 Rue Louis David
75782 Paris Cedex 16
France
Tel: +33 1 53 04 86 20

French Taekwondo Federation

25 Rue Saint Antoine
69003 Lyon
France
Tel: +33 4 37 56 14 14

The statistics cover a period of four taekwondo seasons, from the 2008-2009 season to the 2011-2012 season. The first two seasons were completed using the old rules; the rules had been adjusted for the 2010-2011 and 2011-2012 seasons.

2.2. Methodology

In France, all members of National Federations recognised by the Ministry of Sport and the National Olympic Committee are required to have health insurance. The insurance provider for the French Taekwondo Federation is *Mutuelle des Sportifs*.

The WTF Medical Committee requested a full breakdown of injury statistics from the *Mutuelle des Sportifs*, based on claims made for care and treatment by members of the French Taekwondo Federation. The policy holders were aged between five and 65 years old.

Injuries were grouped into the following eight categories:

- Genitourinary region
- Lower limb and pelvis
- Upper limb and scapular belt
- Spinal column and spinal cord
- Thorax/abdomen
- Head and face
- Miscellaneous abrasions
- Unidentified abrasions

2.3. Results: 2008-2009 season

Total number of policy holders: 48,024

	Number of injuries	Injury rate (injuries per 100 athletes, to 3dp)
Genitourinary region	1	0.002
Lower limb and pelvis	67	0.140
Upper limb and scapular belt	53	0.110
Spinal column and spinal cord	5	0.010
Thorax/abdomen	2	0.004
Head and face	24	0.050
Loss of consciousness	3	0.006
Miscellaneous abrasions	1	0.002
Unidentified abrasions	25	0.048
Total	181	0.377

2.4. Results: 2009-2010 season

Total number of policy holders: 48,458

	Number of injuries	Injury rate
Genitourinary region	1	0.002
Lower limb and pelvis	72	0.149
Upper limb and scapular belt	45	0.093
Spinal column and spinal cord	2	0.004
Thorax/abdomen	2	0.004
Head and face	32	0.066
Loss of consciousness	1	0.002
Miscellaneous abrasions	1	0.002
Unidentified abrasions	23	0.045
Total	179	0.369

2.5. Results: 2010-2011 season

Total number of policy holders: 51,464

	Number of injuries	Injury rate
Genitourinary region	1	0.002
Lower limb and pelvis	77	0.150
Upper limb and scapular belt	56	0.109
Spinal column and spinal cord	5	0.010
Thorax/abdomen	2	0.004
Head and face	23	0.045
Loss of consciousness	2	0.004
Miscellaneous abrasions	2	0.004
Unidentified abrasions	10	0.019
Total	178	0.346

2.6. Results: 2011-2012 season

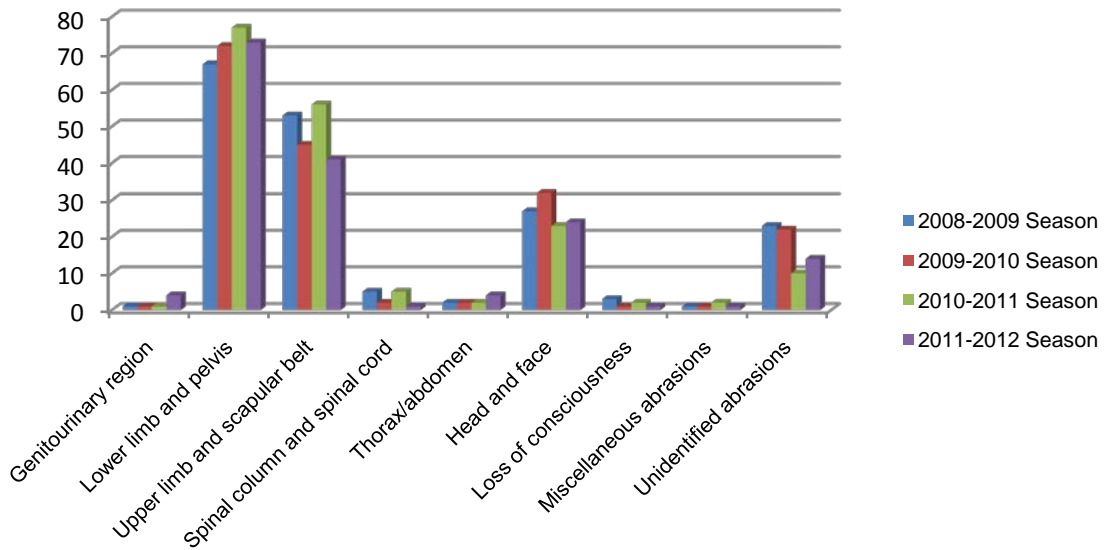
Total number of policy holders: 52,397

	Number of injuries	Injury rate
Genitourinary region	4	0.008
Lower limb and pelvis	73	0.139
Upper limb and scapular belt	41	0.078
Spinal column and spinal cord	1	0.002
Thorax/abdomen	4	0.008
Head and face	24	0.046
Loss of consciousness	1	0.002
Miscellaneous abrasions	1	0.002
Unidentified abrasions	14	0.027
Total	163	0.311

2.7. Results: Summary

	2008-2009 Season	2009-2010 Season	2010-2011 Season	2011-2012 Season
Genitourinary region	1	1	1	4
Lower limb and pelvis	67	72	77	73
Upper limb and scapular belt	53	45	56	41
Spinal column and spinal cord	5	2	5	1
Thorax/abdomen	2	2	2	4
Head and face	24	32	23	24
Loss of consciousness	3	1	2	1
Miscellaneous abrasions	1	1	2	1
Unidentified abrasions	23	22	10	14
Total	181	179	178	163
Injury rate (Injuries per 100 athletes)	0.377	0.369	0.346	0.311

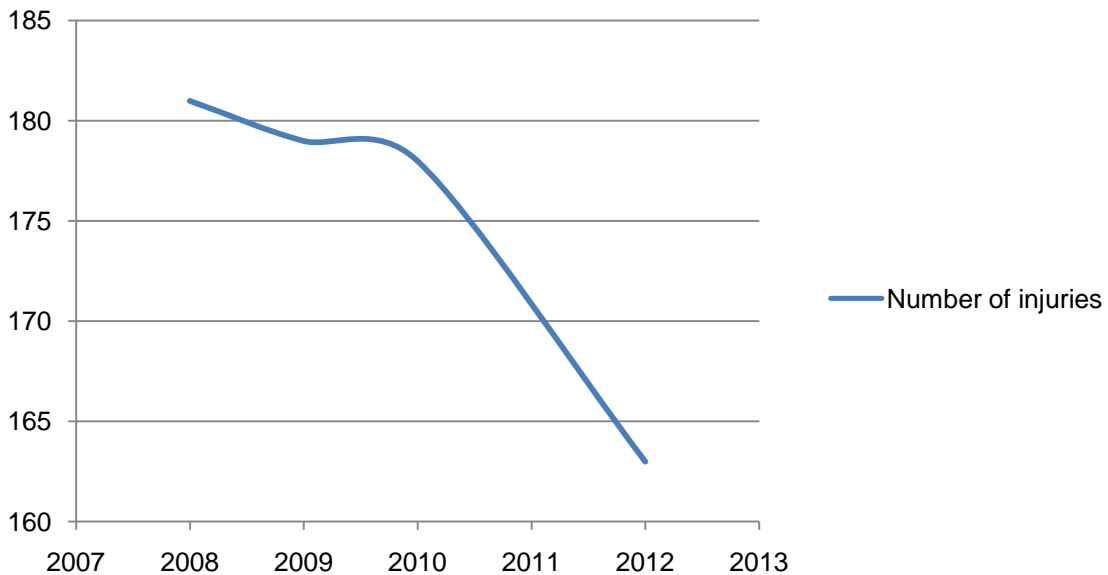
2.7.1. Injury Breakdown by Category

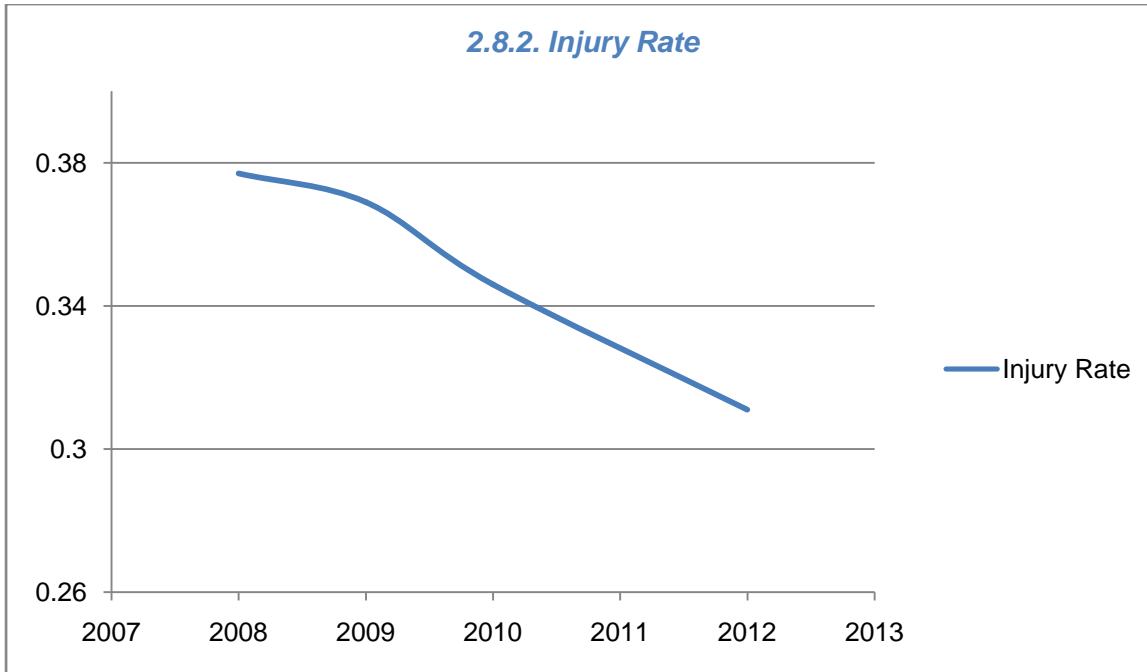


2.8. Analysis

- Total 18.4% reduction in injury rate for the period 2008-2009
- 16.2% reduction in injury rate since the amendments to the scoring system and the introduction of the PSS and IVR
- Just one reported knock-out among 52,397 registered taekwondo practitioners in the 2011-2012 season

2.8.1. Number of injuries





3. CONCLUSIONS

3.1. Assess the frequency and severity of injuries suffered by practitioners of taekwondo, from elite international level through to local/regional standard.

Taekwondo has been classified a ‘mild risk’ sport by health insurers in France and elsewhere, and the results of this study fully corroborate that classification.

An injury rate of 0.31% places taekwondo among the safest Olympic contact sports.

The number of serious injuries was consistently low throughout the period of the study, with loss of consciousness among the rarest categories of injury in each of the four seasons.

3.2. Ascertain whether the new rules introduced by the WTF in 2010 have impacted the injury rate among taekwondo athletes.

The injury rate among taekwondo practitioners dropped consistently year-on-year throughout the period of the study.

While the rate and severity of injuries was decreasing before 2010, the introduction of the new rules regarding scoring, along with the PSS and IVR, appears to have coincided with an acceleration of that trend. The injury rate dropped by 18.4% in four years, but the last two seasons alone have seen a decrease of 16.2%.

These statistics corroborate anecdotal evidence which points to a marked shift in fighting styles since the 2010 rule changes. Now that points can be scored with just a light touch to the head, athletes’ focus is primarily upon agility, accuracy and speed of movement, rather than generating maximum force. This in turn has resulted fewer impact-related injuries.

Therefore, it is possible to conclude that the WTF’s rule changes have helped to improve the welfare of taekwondo athletes.