



FICS Report, TWG2022 in Birmingham, Alabama, USA

World Squash Federation (WSF) Utilisation Report TWG 2022

The following report presents the FICS Sports Chiropractic impact data relating to the utilisation of healthcare services by WSF athletes, volunteers, and support personnel during The World Games 2022 in Birmingham, Alabama, USA.

This report is based on the observations, clinical experiences, and data collected by the FICS delegation throughout the Games. Its purpose is to provide the federation with an analysis of the healthcare services delivered during the event and to offer insights that may assist in future planning, athlete support strategies, and event healthcare operations.

The report aims to inform the federation on the types of care provided to its athletes and support personnel during the Games, while also identifying opportunities to further enhance athlete wellbeing, recovery, performance support, and integrated healthcare delivery within the sport. FICS highly values its partnership with the International Federations and hopes this report contributes to ongoing discussions regarding the future development of healthcare services and collaborative support at future international competitions and Games environments.

Recap: The World Games 2022 overall statistics:

There were **5844** accredited athletes and officials at TWG 2022.

- **3457** athletes, **2387** officials and numerous volunteers.
- The FICS delegation provided **3440** total treatments during the Games (**1690** to athletes, **1750** to non-athletes).
- Analyzing the athletes that sought our care, **889** individual athletes were treated or **25.72% of all athletes accredited** for the Games. This is the largest percentage of athletes we have ever treated at TWG. This is most likely due to multiple factors but influenced by the increased number of FICS sports chiropractors (**54**) accredited and working at the games, our location at the venue, and familiarity with sports chiropractors by the Federations and athletes.
- The treatments included those that saw us for the first time (new treatment) and those that came back for additional treatment (follow up). Of the 1690 athletes that were treated, **889** were new treatments and **801** were follow up treatments.
- The gender distribution **889** athletes treated was **492 (55.34%) males and 397 (44.66%) females**.

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The purpose of this report is to further inform the WSF through an analysis of the data collected during the event by the FICS delegation. We hope the findings will help initiate ongoing discussions and assist both the WSF and future local organisers in planning and delivering healthcare services at future Games. This information is intended to provide the WSF with insight into the healthcare services utilised by its athletes during the Games, while also identifying opportunities to further support athlete wellbeing, recovery, performance, and the continued development of the sport.

Overall Statistics of Utilisation of FICS Sports Chiropractic by WSF during TWG 2022

There were **58** accredited **WSF** athletes at TWG 2022.

- The FICS delegation provided **99** total treatments to WSF accredited individuals during the Games (**79** to athletes, **20** to non-athletes).
- Analysing the athletes that sought our care, **26** individual athletes were treated or **44.83% of the accredited WSF athletes** for the Games. This is most likely due to multiple factors but influenced by the increased number of FICS sports chiropractors (**54**) accredited at the games, our location at the venue, our availability to the athletes, and familiarity with sports chiropractors by the Federations and athletes.

Athlete Statistics:

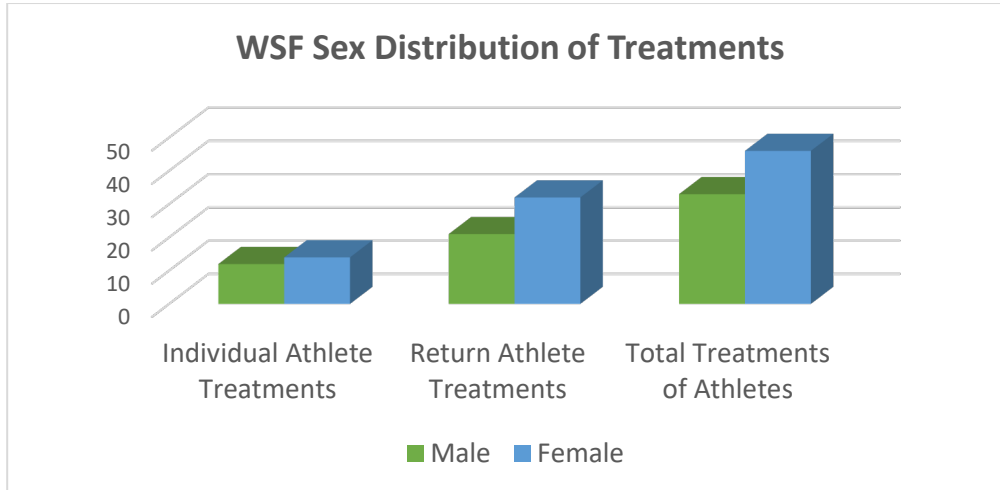
The WSF athletes accessed our treatment areas in the warmup areas near the field of play. This location seemed to allow easy access for the athletes during these games. The treatments included those that saw us for the first time (new treatment) and those that came back for additional treatment (follow up). Of the **79** WSF athletes that were treated, **26** were new treatments or different individuals and **53** were follow up treatments.

Sport	Total Accredited Athletes	Total Treatments / Sport (Athlete & Non-athlete)	Total Treatments of Athletes	Individual Athlete Treatments	Return Treatments Athletes	% Total Treatments/ # Accredited Athletes	% of Accredited Athletes /Individual Athlete Treatments
WSF	58	99	79	26	53	136.21%	44.83%

The sex distribution of **26** individual athlete was **12 (46.3153%) males and 14 (53.85%) females** for the percentage of individual

	Individual Athlete Treatment	Return Athlete	Total Treatment of Athlete	% Each Sex/ Individual Treatments	% Individual Treatments/Total WSF Athletes
Male	12	21	33	46.15%	20.69%
Female	14	32	46	53.85%	24.14%

treatments. The sex distribution of individual athletes treated by total WSF athletes was **20.69% males and 24.14% females**.

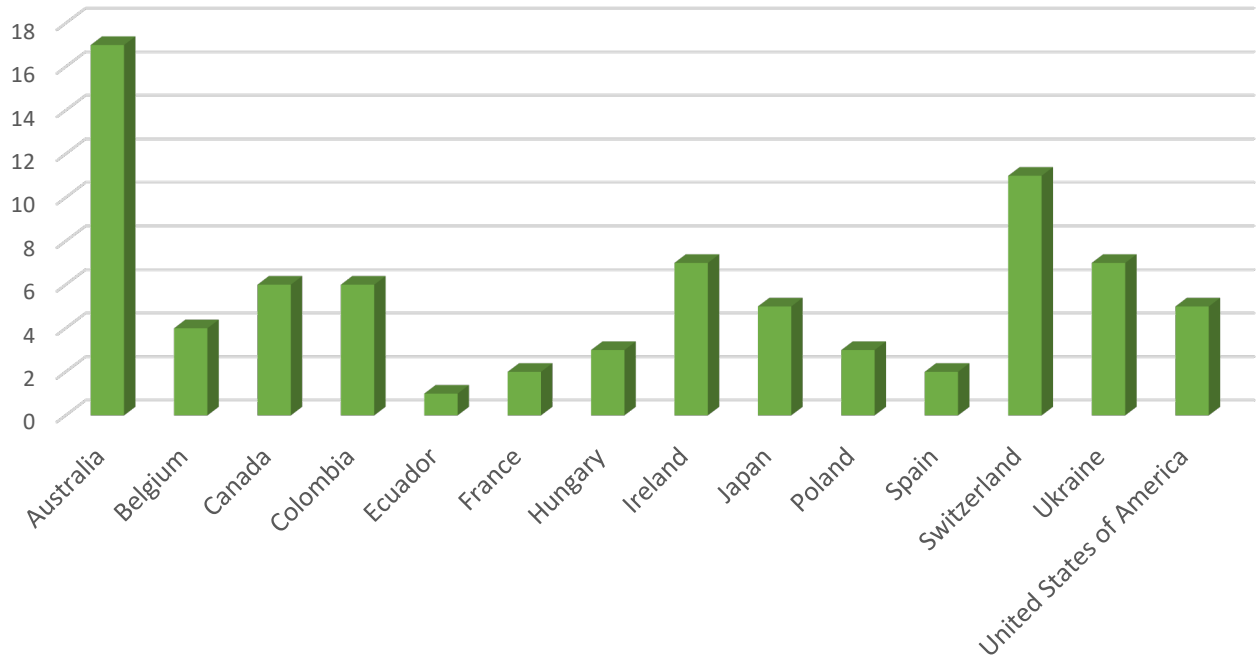


Countries Distribution:

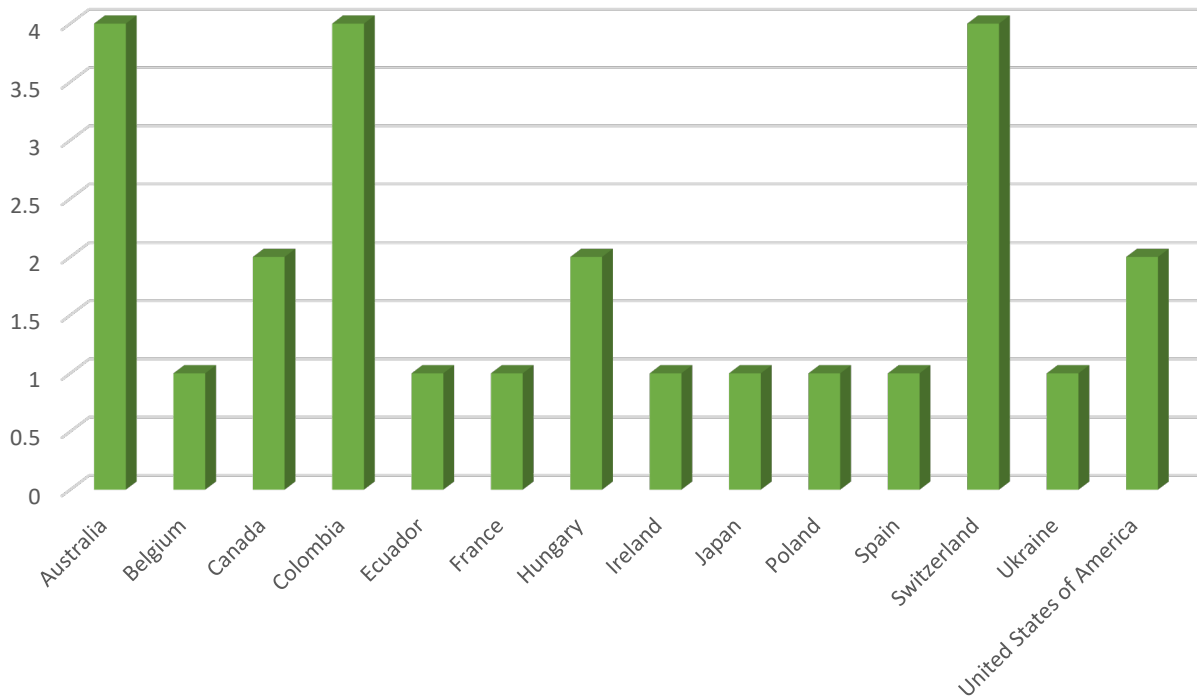
Country distribution of **WSF** athletes that requested our care demonstrated some countries that were very familiar to sports chiropractic. However, it is interesting to see other countries where sports chiropractic is underserved (Colombia, Hungary) have high utilisation rates. One of the goals for FICS is to level the playing field for all athletes by assuring that every athlete has access to sports chiropractic.

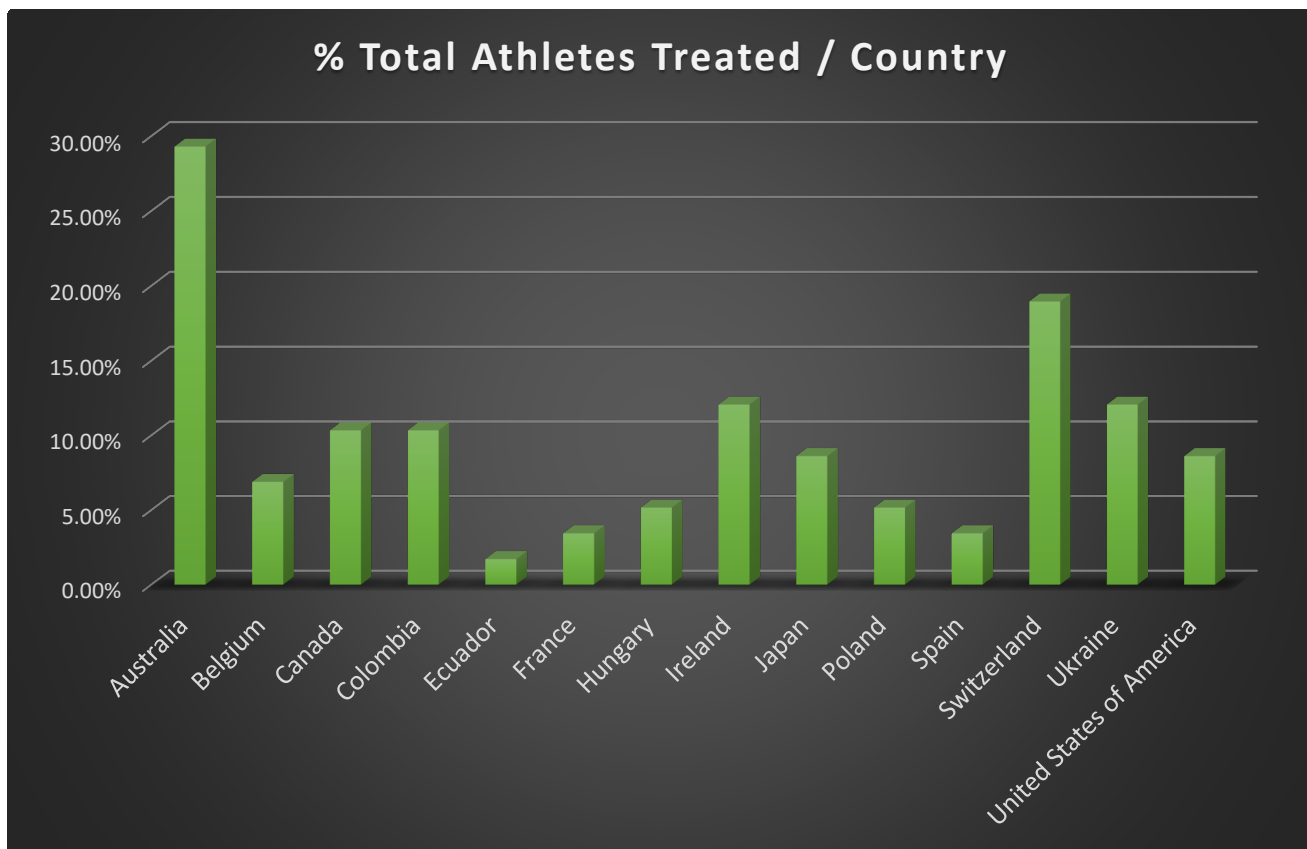
Countries	Total Treatments / Sport (Athlete & Non-athlete)	Total Treatments of Athletes	Individual Athlete Treatments	Return Treatments for Athletes	% Total Athletes Treated of WSF Athletes	Male	Female
Australia	17	17	4	13	29.31%	2	2
Belgium	4	4	1	3	6.90%	0	1
Canada	7	6	2	4	10.34%	1	1
Colombia	10	6	4	2	10.34%	2	2
Ecuador	1	1	1	0	1.72%	0	1
France	7	2	1	1	3.45%	0	1
Hungary	6	3	2	1	5.17%	1	1
Ireland	7	7	1	6	12.07%	1	0
Japan	5	5	1	4	8.62%	0	1
Poland	3	3	1	2	5.17%	1	0
Spain	2	2	1	1	3.45%	1	0
Switzerland	11	11	4	7	18.97%	2	2
Ukraine	7	7	1	6	12.07%	0	1
United States of America	5	5	2	3	8.62%	1	1

Total Squash Athlete Treatments / Country



Total WSF Individual Athlete Treatments / Country



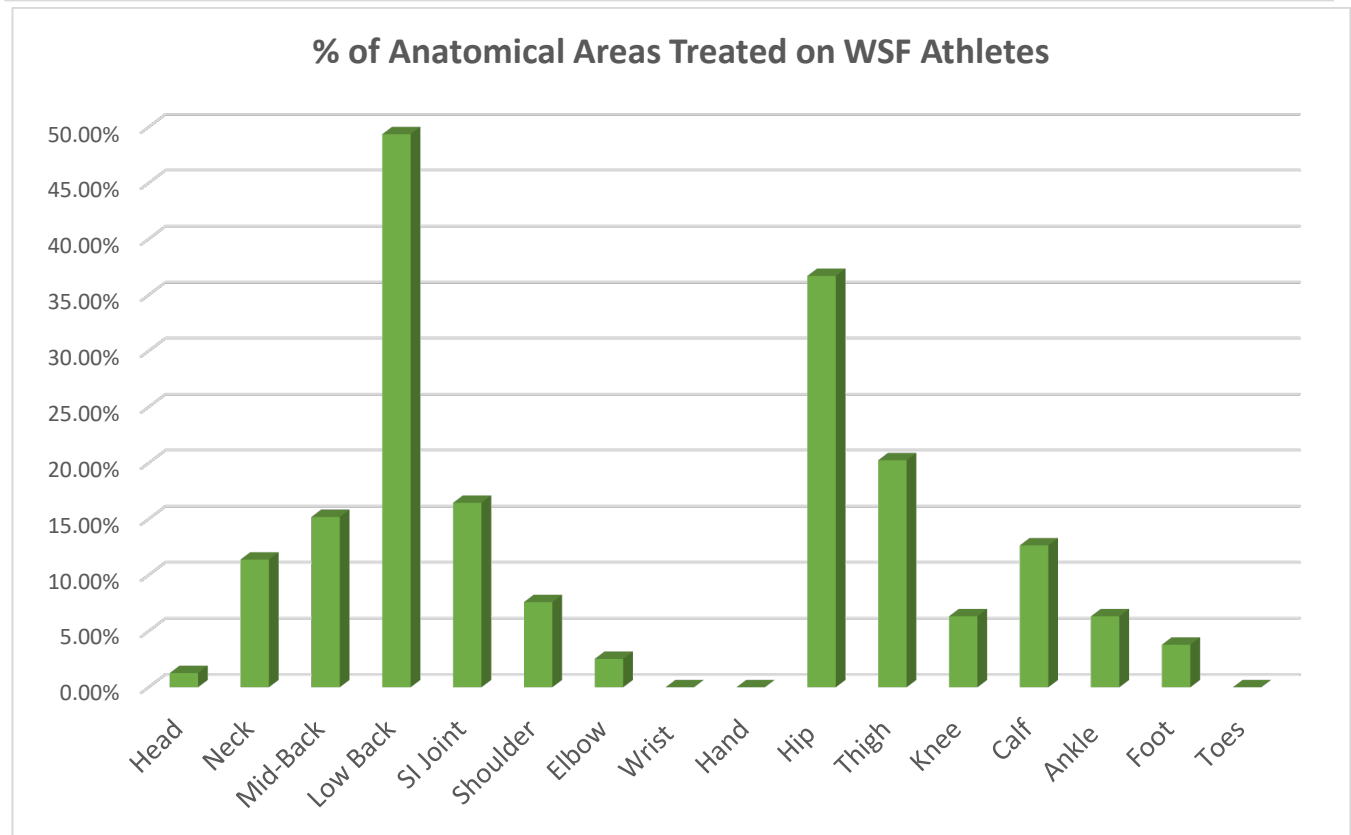
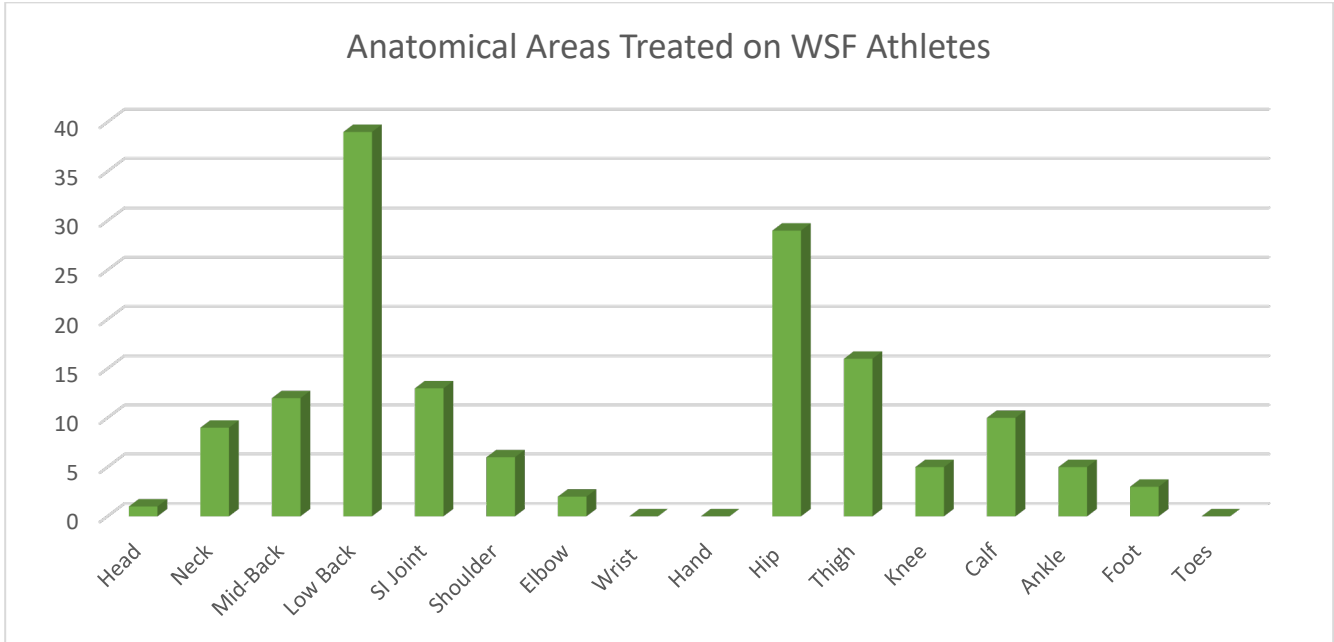


Anatomical Areas Treated of WSF Athletes:

The various anatomical areas treated on the **WSF** athletes demonstrated the spine was the most common area followed by the hip, thigh, and calf. The spine and lower extremities are in high demand for this sport and our data indicates treatments for these key areas.

Anatomical Area	Athlete area treated	% Tot Athlete treatments
Head	1	1.27%
Neck	9	11.39%
Mid-Back	12	15.19%
Low Back	39	49.37%
SI Joint	13	16.46%
Shoulder	6	7.59%
Elbow	2	2.53%
Wrist	0	0.00%
Hand	0	0.00%
Hip	29	36.71%
Thigh	16	20.25%
Knee	5	6.33%
Calf	10	12.66%

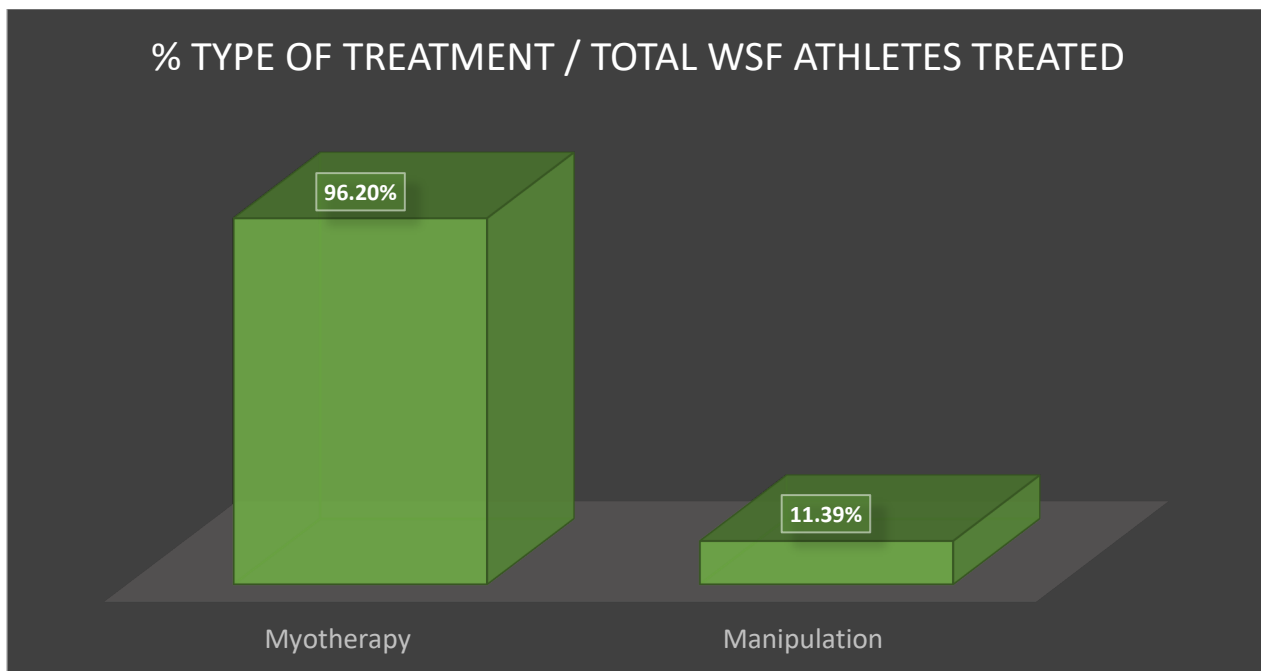
Ankle	5	6.33%
Foot	3	3.80%
Toes	0	0.00%



Types of Treatment:

The various types of treatment provided to the athletes consisted of myotherapy (muscle work, stretching), manipulation, mobilization, and taping. The WSF athletes required considerable myotherapy as the primary treatment to assist with their preparation and recovery for competition.

Type of Treatment	Number of Treatments	% of Type of Treatments / Total Athletes Treated
Myotherapy	76	96.20%
Manipulation	9	11.39%



Changes Following Treatment:

Everyone was asked to rate their pain or discomfort (Numerical Pain Score, NPS) prior to their treatments. This method is commonly used to evaluate change following treatment or care. The WSF athletes were asked to rate their pain or discomfort from 0 (no pain/discomfort) to 10 (worse pain they have ever experienced). The WSF athletes were asked to then complete the same rating following their treatment. This provides information on their perceived improvement in pain or discomfort. Of the 79 treatments provided to the WSF athletes, 60 (75.95%) completed the form which is a very high completion rate.

NPS WSF Athletes Completed	NPS Completion %	Pre Treatment Average NPS	Post Treatment Average NPS	Change	% Change
60	75.95%	3.75	1.53	2.22	59.20%

The initial rating averaged **3.75** score for the athletes. The post-treatment average rating was **1.53**. This demonstrates a **2.22** average change or a **59.20%** improvement in their rating across the 60 athletes that completed this rating.

Research has shown has demonstrated that a 2 point or 30% improvement is associated with a **positive clinical change** and correlation to a positive global perception of change from a treatment. The data demonstrates the average outcome of the 60 treatments of WSF athletes at TWG had an exceptionally positive improvement in their reported pain following sports chiropractic care.

Athlete’s Global Perception of Change: The athletes were also asked to rate their perceived global perception of change. This is a commonly used indicator of how an individual perceives change has occurred due to the treatment or their perceived effectiveness of their treatment by the sports chiropractor. This is scored from -5 to +5 rating. A total of **46 (58.23%)** of the **79** treatments provided to the athletes completed this report which is a high rate of completion.

Rate the change in how you feel now compared to before this treatment?											
Much Worse			No Change						Much Better		
-5	-4	-3	-2	-1	0	1	2	3	4	5	

Global Perception of Change	WSF Athletes Treated	# of WSF Athletes Completed Form	% of Form Completion to Total # of WSF Athletes Treated	Average Score out of Maximum of 5
	79	46	58.23%	4.24

The results demonstrated an average score of **4.24** with the highest score possible of a 5. The athletes perceived a significant change from the treatment of the FICS sports chiropractors.

Satisfaction Survey:

We asked the athletes to complete a satisfaction survey immediately following their treatment. The survey was composed of five questions that the athletes answered on a 5-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree, NA).

	Responses	Response Rate	Average Score
My chiropractor thoroughly explained the treatment(s) I received.	47	59.49%	4.79
My chiropractor treated me respectfully.	45	56.96%	4.82
My chiropractor answered all my questions.	41	51.90%	4.76
Overall, I am completely satisfied with the services I received from my chiropractor.	44	55.70%	4.75
I would return to FICS chiropractors for future services or care.	43	54.43%	4.74

The response of the athletes averaged a **4.77** or they strongly agreed with each statement with a good response rate. This evidence would indicate the athletes were very satisfied with the care of their FICS sports chiropractors.

Conclusion:

The WSF athletes at TWG 2022 sought the care of the FICS sports chiropractors at a high rate of utilization. They represented various countries and a distribution between sexes. There is evidence of high utilization by WSF athletes by several countries that may not have full medical services thus providing equable sports chiropractic to all athletes. The spine was the primary area followed by the lower extremities treated with myotherapy the primary form of treatment. There was a statistically significant change in the WSF athletes numerical pain scores following their sports chiropractic treatments signifying clinical improvement. The athletes perceived a strong global change and were very satisfied with their care from the FICS sports chiropractors.

WSF Accredited Non-Athletes:

Data was captured on the treatments provided to the accredited non-athletes that requested care by the FICS sports chiropractors. The accredited non-athletes are composed of coaches and officials.

There were **12,768** accredited non-athletes at TWG 2022. Unfortunately, we do not have the exact number of accreditations for WSF of their non-athletes. We provided **20** total treatments provided to WSF accredited non-athletes. Of the 20 total treatments, **8 (40.00%)** were to new individuals and **12 (60.00%)** follow-up treatments. The gender distribution of the **8** individual non-athletes was **7 (87.50%) males and 1 (12.50%) females**. Understanding the distribution of the non-athlete group will assist us in our planning and is evidence of the further support by the delegation to TWG 2022. We hope this is an added benefit to the support staff and volunteers.

The accredited WSF non-athletes represented various groups that supported TWG 2022. The following is the distribution of treatments for each group.

	Total Treatments Nonathletes	Individual NonAthlete Treatments	Return NonAthlete Treatments
Coach	8	3	5
Official	9	2	7
Referee	3	3	0
Totals	20	8	12

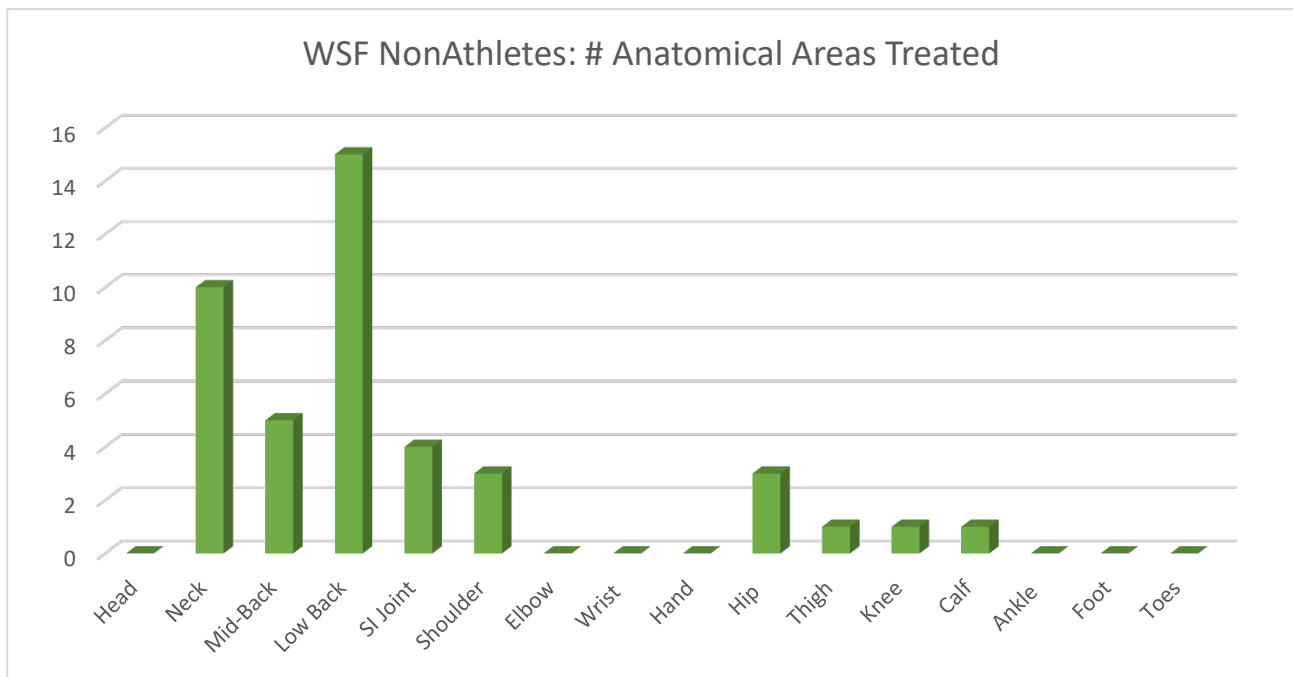
The results demonstrate good utilization from coaches, officials, and referees. FICS strives to integrate with the other medical services during an event. Additionally, the number of coaches, officials, and referees that requested care is helpful to support them during the games and experience and understand the care we are providing their athletes. We are hopeful that this utilization by non-athletes of the FICS services further supports WSF and the success of the event.

This is evidence that an added benefit of the FICS delegation is supporting all aspects of the games including those individuals that are responsible for organizing and promoting this event.

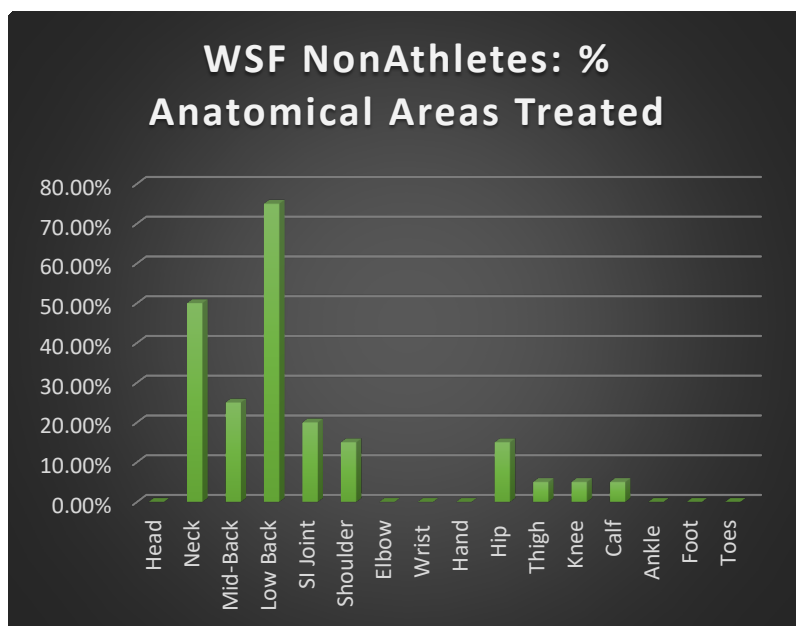
	Total Treatment Nonathlete	Individual Non-Athlete Treatments	Return Non-Athlete Treatments	Male	Female
Canada	1	1	0	1	0
Colombia	4	1	3	1	0
France	5	2	3	2	0
Great Britain	1	1	0	1	0
Hungary	3	1	2	1	0
New Zealand	1	1	0	0	1
Peru	5	1	4	1	0
Totals	20	8	12	7	1

Anatomical Areas Treated of WSF Non-Athletes:

Analysis of the areas treated to the WSF non-athletes demonstrates a similar pattern to that of the athletes. The spine and lower extremities were the primary area treated.



Anatomical Area	NonAthlete area treated	% Total NonAthlete treatments
Head	0	0.00%
Neck	4	13.33%
Mid-Back	6	20.00%
Low Back	2	6.67%
SI Joint	0	0.00%
Shoulder	0	0.00%
Elbow	3	10.00%
Wrist	0	0.00%
Hand	1	3.33%
Fingers	0	0.00%
Hip	2	6.67%
Thigh	0	0.00%
Knee	0	0.00%
Calf	0	0.00%
Ankle	0	0.00%
Foot	0	0.00%
Toes	0	0.00%



Types of Treatment Provided to WSF Non-Athletes:

The treatment or therapies provided to the WSF non-athlete was like that provided to the athletes. Myotherapy was the most common of therapies provided. The physical, emotional, long hours and stress of organizing and supporting the athletes and games was evident in the number of muscle and joint problems we treated in this population. We are hopeful that this care to so many of the support personnel of the games is an added benefit and assist with the success of each event and the games.

WSF Non-Athlete Type of Treatment	# of Treatments	% of Type of Treatments / Total WSF Non-Athletes Treated
Manipulation	2	10.00%
Myotherapy	20	100.00%

Changes Following Treatment to WSF Non-Athletes:

Everyone was asked to rate their pain or discomfort (Numerical Pain Score, **NPS**) prior to their treatments. This method is commonly used to evaluate change following treatment or care. The WSF non-athlete was asked to rate their pain or discomfort from 0 (no pain/discomfort) to 10 (worse pain they have ever experienced). The WSF non-athletes were asked to then complete the same rating immediately following their treatment. This provides information on their perceived improvement in pain or discomfort. From the **20** treatments provided to the non-athletes, **15 (75.00%)** completed the form which is a high completion rate.

Satisfaction Survey:

We asked the non-athletes to complete a satisfaction survey immediately following their treatment. The survey was composed of five questions that the athletes answered on a 5-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree, NA).

	Responses	Response Rate	Average Score
My chiropractor thoroughly explained the treatment(s) I received.	10	50.00%	5.00
My chiropractor treated me respectfully.	7	35.00%	5.00
My chiropractor answered all my questions.	8	40.00%	5.00
Overall, I am completely satisfied with the services I received from my chiropractor.	8	40.00%	5.00
I would return to FICS chiropractors for future services or care.	8	40.00%	5.00

The response of the non-athletes averaged **5.00** or they strongly agreed with each statement. This evidence would indicate the WSF non-athletes were satisfied with the care of their FICS sports chiropractors.

Conclusion:

The WSF non-athletes at TWG 2022 sought the care of the FICS sports chiropractors at a high rate of utilization. They represented various categories of the WSF non-athlete accreditation with a high rate of coaches, officials, and referees utilizing sports chiropractic care. The spine was the primary area treated with myotherapy was the primary form of treatment. The WSF non-athletes perceived a strong global change and were very satisfied with their care from the FICS sports chiropractors.

It is our hope that these reports will be viewed as positive feedback on a developing relationship with the World Squash Federation. We look forward to furthering our association with WSF and we may be an asset to the WSF and their events. We make ourselves available for further discussion and resolution.

Yours truly,

Dr Brian C Nook
FICS Secretary General
FICS ExCo and EMT Member
FICS IWGA Chef de Mission WG 2022
FICS IWGA Liaison