

Various Forms of Injury Caused by Judo

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Forword

At the 9th Meeting of the Orthopedic Society, Prof. K. Saito reported on the statistical observations made on approximately 4000 cases of trauma sustained during the performance of various sports. The present paper is a study of the various forms of injury sustained by high grade holders during their long course of training in judo.

Method of Investigation

The present study is based on answers to questionnaires given to 458 high grade holders of over sixth grade.

Results

A classification according to age, grade and their speciality (whether right or left or both) is shown in Table 1. Of the 458 subjects studied, according to their grade, there were 51 sixth grade, 324 seventh grade, 79 eighth grade, 3 ninth grade, and one whose grade could not be ascertained. According to their speciality there were 82 right, 66 left, 4 uncertain, and 306 who could do both sides equally well.

Table 1. Classification according to speciality

Age	Sixth Grade			Seventh Grade			Eighth Grade			Ninth Grade			Total
	right	left	both	right	left	both	right	left	both	right	left	both	
Below 29 yrs.	1					2							3
30~34 yrs.			2			2							4
35~39 yrs.	2	2	5	3	1	16							29
40 yrs.	1	6	17	15	16	89	2	3	4				153
50 yrs.	7	1	6	24	20	74	8	4	23				167
60 yrs.		1	1	12	6	33	5	4	20	not clear (1)		2	85
70 yrs.	not clear (1)			1	1	6	1	1	4				15
80 yrs.				not clear (2)									2
Total	11	10	31	55	44	222	16	12	51	not clear (1)		2	458
		not clear (1)		not clear (2)									

Table 2.

Sprain injuries	Number of cases	%	% according to Saito	Period required for treatment
Shoulder joint	82	5.72	4.0	1wk.~6mos.
Elbow joint	43	2.67	6.7	10das.~1yr.
Hand joint	37	2.30	9.7	2wks.~2mos.~incurable
Knee joint	300	18.65	12.0	1wk.~1yr. 6mos.~incurable
Ankle joint	314	19.52	19.5	1wk.~1yr.
Hip joint	20	1.24		2wks.~2yrs.
Others	105	6.52		1wk.~2yrs.

Table 3.

Dislocations	Number of cases	%	% according to Saito	Period required for treatment
Phalangeal joint	26	1.62	0.9	1wk.~6mos.
Hand joint	5	0.31		2wks.~2mos.
Elbow joint	50	3.10	2.4	2wks.~6mos.
Shoulder joint	84	5.22	1.0	2wks.~1yr.
Toe joint	26	1.61	0.6	2wks.~3mos.~incurable
Knee joint	34	2.11		2wks.~2yrs.~incurable
Others	7	0.34		1mo.~1yr.

Table 4.

Contusions	Number of cases	%	% according to Saito	Period required for treatment
Thoracic region	11	0.28	2.9	1mo.~?
Shoulder region	17	1.05	0.8	2wks.~?
Elbow	1	0.06	0.4	?
Rib	7	0.43		0~3mos.
Thigh	8	0.49	0.4	10das.
Knee joint	17	1.05	0.2	3das.~2wks.
Tibia	46	2.86		3das.~1mo.
Ankle	6	0.37	1.1	1mo.~?
Hip	12	0.74	2.6	1wk.~?
Lower leg	39	2.42	0.4	10das.~2mos.
Face	9	0.55	0.6	10das.
Others	52	3.23		?

Tables 2, 3, 4, and 5 show the various forms of injuries sustained, with the length of time required for treatment. From the tables it clear that of the various forms of injury sustained, sprain injuries top the list, followed in order by dislocations, contusions, and fractures. Of the sprain injuries, the ankle joint sprains were the most frequent, followed in order by the knee joint, and the wrist joint sprains. The joint most frequently dislocated was the shoulder joint. The locality most frequently sustaining contusion was uncertain, but of the localities which were made clear, the ankle top the list. Of the fractures, the rib injuries were the most frequent, followed by the clavicle.

According to the frequency of their occurrence the injuries were as follows: ankle joint sprains (19.52%), knee joint sprains (18.65%), sprains of uncertain localities (6.52%), shoulder

Table 5.

Fractures	Number of cases	%	% according to Saito	Period required for treatment
Finger	3	0.18		2wks.~3wks.
Rib	76	4.72	0.8	3wks.~1yr. 6mos.
Clavicle	44	2.73	12.6	2wks.~3mos.
Humerus	4	0.24	0.6	1mo.~2yrs.
Radius	2	0.12	0.4	25das.~1mo.
Humerus, Radius	4	0.24	0.4	3wks.~1mo.
Tibia	1	0.06	0.4	3mos.
Fibula	12	0.74	0.4	1mo.~3mos.
Toe	7	0.43		1mo.~5mos.
Scapula	6	0.37		3wks.~3yrs.
Others	4	0.24		3mos.~2

Teeth injuries	Number of cases	%	Time required for treatment
	77	4.78	1mo.~2mos.

Table 6. Frequency of injuries.

Sasa	%	Saito	%
Ankle joint sprain	19.52	Ankle joint sprain	19.5
Knee joint sprain	18.65	Clavicle fracture	12.6
Shoulder joint sprain	5.72	Knee joint sprain	12.0
Shoulder joint dislocation	5.22	Hand joint sprain	9.7
Teeth injury	4.78	Elbow joint sprain	6.7
	4.72	Shoulder joint sprain	4.0
Elbow joint dislocation	3.10		
Clavicle fracture	2.73		

joint sprains (5.72%), shoulder joint dislocations (5.22%), teeth injuries (4.78%), rib fractures (4.72%), contusions of uncertain localities (3.23%), and elbow joint dislocations (3.10%).

Table 6 is a comparison of the frequency percentage of the present study and that reported by Prof. K. Saito. Although the two reports are nearly identical on the frequency of occurrence of the ankle joint sprains, there is a great discrepancy in the frequency of occurrence of the fractures of the clavicle. This difference lies in the fact that in the present study the subjects investigated were only high grade holders, and consequently experts in judo.

As regards the time required for treatment, some cases of knee joint injuries never attained complete recovery, while the maximum time required for a scapular fracture took as long as three years, probably due to the therapeutically difficult anatomical position of the scapula.

Of the diseases of the internal organs, there were many whose etiology could not be exactly traced to the practice of judo, however when there were any cases of diseases of the internal organs in the past history of the subjects studied, they were listed (Table 7.) From this table it will be known that gastroenterological disorders top the list, followed in order by pulmonary tuberculosis, hypertrophy of the heart, valvular diseases of the heart, pneumonia, appendicitis, diseases of the liver and the bile duct, diseases of the kidneys, and

Table 7.

Diseases of viscera	Number of cases	Period required for treatment	Diseases of viscera	Number of cases	Period required for treatment
Chron. bronchitis	1	?	Pleurisy	4	1mo.~1yr.
Pneumonia	7	1mo.~6mos.	Cardiac hypertr., valv. dis.	8	?
Pulmonary tuberculosis	9	6mos.~4yrs. ~under care	Arterio-sclerosis	1	under care
Inflamation of Hilus	1	3yrs.	Neuralgia	2	6mos.~?
Arhythmia	2	?	Beri-beri	1	?
Hepatic distomiasis	1	?	Nephritis, nephrolith.	5	1mo.~over 1yr.
Cholecystitis, jaundice	5	1mo.~7yrs.	Haemorrhoid	2	1yr.~?
Stomach ulcer	1	2yrs.	Typhoid fever, cholera	5	2mos.~?
Other gastro-ental dis.	11	1wk.~2yrs.~?	Hypertrophy of prostata & others	2	2mos.~?
Appendicitis	7	2wks.~2mos.			
Peritonitis	1	6mos.		76	

typhoid fever, etc.. As regards gastroenterological disorders a proper relation of exercise, diet and sleep is necessary, and as regards pulmonary and cardiac disorders care must be taken not to overstrain oneself physically and mentally.

Among the subjects studied there were a few who were still undergoing treatment for pulmonary tuberculosis, and some for arteriosclerosis. There was a case of hepatic disorder for which treatment required as long as seven years.

Table 8. Classification according to age and grade

() indicate no injury

Grade	Uner 26yrs.	30~34yrs.	35~39yrs.	40yrs.	50yrs.	60yrs.	70yrs.	
Sixth	1		9	24 (2)	14 (1)	2	1	51 (3)
Seventh	2		22	120 (8)	119 (4)	53 (7)	8 (1)	324 (30)
Eighth				9	35 (3)	29 (2)	6 (1)	79 (6)
Ninth						3		3
				1		1		1

Total 458 (39)

There were 39 subjects who suffered no particular disease in their past, of which three were sixth grade, thirty seventh grade and six ninth grade holders (Table 8).

The decrease or increase in body weight here described are the differences in weight when the subjects were fifth grade holders, and the present weight. Other factors, such as age, aside from the effect of judo must be taken into consideration as influencing the increase or decrease in body weight, however the replies to the questionnaires were as follows: those whose weight had increased, 134 subjects; those whose weight had decreased, 274 subjects; and those whose weight showed no changes, 50 subjects. Age is most probably the major causative factor for the overwhelming number of subjects whose weight had decreased (Table 9).

Prof. K. Saito summarizes the causative and the occasioning factors of judo injuries as follows:

1) Lack of experience.

(a) Playing foul.

Table 9. Differences in body weight, present and when subjects were fifth grade holders.

	Sixth grade			Seventh grade			Eighth grade			Ninth grade			Total
	+	-	±	+	-	±	+	-	±	+	-	±	
Under 29yrs.		1		1	1								3
30~34 yrs.	5	3		2									10
35~39 yrs.	2	1		7	10	3							23
40 yrs.	9	14	1	40	62	18	3	5	1				153
50 yrs.	1	10	3	35	75	10	13	17	5				169
60 yrs.	1	1		5	40	6	6	20	3		3		85
70 yrs.	1			1	7		2	4					15
Total	19	30	4	91	195	37	24	46	9		3		458

(b) Overstraining or lack of preliminary exercise.

(c) Unfit condition of the body.

(d) Lack of seriousness during performances, or the discordant movement of the muscles.

(e) Overconfidence in oneself.

(f) Overconfidence in one's responsibility.

2) Inevitable circumstances.

(a) Lack of proper facilities.

(b) Deliberate injury.

3) Personal differences.

He also states that fractures of the clavicle and wrist joint contusions are occasioned most often when the subject is thrown. Ankle joint sprains are mostly occasioned during the performance of the foot technique. According to him of all the judo injuries, the ankle joint sprains are overwhelmingly frequent, followed by knee joint sprains, and fractures of the clavicle.

In the present study fractures of the clavicle are in the minority, differing greatly with Prof. K. Saito's report. This discrepancy, as stated above, is due to the fact that the subjects under investigation in the present study are well trained judo experts.

Conclusion

A study was made on judo injuries, based on answers to questionnaires given to 458 high grade holders. The results obtained are as follows:

- 1) Subjects who were adept at both the right and the left side techniques were the most numerous.
- 2) According to the frequency of the nature of the injuries, sprains top the list, followed in order by dislocations, teeth injuries, contusions, and fractures.
- 3) According to the frequency of occurrence of the localities of the injuries, the order is as follows: ankle joint sprains, knee joint sprains, of uncertain localities, shoulder

joint sprains, shoulder joint dislocations, and teeth injuries.

- 4) Of the disorders of the internal organs, gastroenterological disorders top the list, followed by pulmonary tuberculosis, hypertrophy of the heart, and valvular disorders of the heart.
- 5) There were more subjects whose body weight had decreased since the time they were fifth grade holders than those whose weight had increased since. This is most probably because the subjects under investigation were aged men.

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