

Roles of Physicians and Legacy of Sports for the Impaired Before and After the Tokyo Paralympic Games, 2021

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ABSTRACT

Many Paralympic athletes have complications of and disorders of motor-organs and viscera with symptoms accompanying impairments. For this reason, medical care for the said athlete during the 2020 Tokyo Paralympic Games will especially be important. Japanese Para-Sports Association has been holding lecture classes on medical management for the Paralympic athletes since 2005. Physicians authorized by The Association are to be dispatched to the 2020 Tokyo Paralympic Games as members of the medical team for the Games.

In this report, we would like to mention that the legacy of the 2020 Tokyo Paralympic Games is the promotion of symbiotic society which socially influences not only the persons with impairments but also those without impairments considering the improvement of competitiveness of athletes and the influence on the whole society.

Keywords: Roles of physicians; Legacy; Paralympic games; Para-sports

INTRODUCTION

Since 1943, sports have been introduced for the spinal-cord injured in Stoke Mandeville Hospital, and usefulness of sports was discovered in the physical functions and reentry into society. After that, the sports has been popularized among home and facility residents with impairments, which led to the opening of the 1960 Rome Paralympic Games, 1964 Tokyo Paralympic Games, to the present 2021 with the increasing popularization [1].

When the introduction of the sports for persons with impairments started, sports activities were sometimes prohibited due to the high risk for persons with impairments. However, the safety of sports for the persons with impairments has been internationally proved under the appropriate medical control. Sports for persons with impairments are useful not only for the improvement of mental and physical functions but also the promotion of social understanding of persons with impairments through observing their strenuous struggle in competitions. These merits will lead the improvement of the policy of their social life and promotion of symbiotic society with them. Thus, the Paralympic Games like the Olympic Games will aim at the

positive legacy which will influence the society after the greatest sports festivals.

Importance of medical management in the paralympic games

In Japan, Japanese Para-Sports Association was established in 1965 sponsored by the Health and Welfare Ministry following the 1964 Tokyo Paralympic Games. Since then sports for persons with impairments in Japan has been developing under the management of the Association.

In 1984 the Medical Committee was established within Japanese Para-Sports Association; the major tasks of the Committee have been the physical management of impaired athletes and scientific studies on the sports for them.

Impairments which Paralympic athletes have cover in wide range; they are physical impairments including four limbs, trunks, bone and joint disorders, central nervous paralysis, peripheral nervous disorders, visual impairments, intellectual disability, and as complications, internal impairments such as disorders of cardiac and circulatory organs, respiratory organs, kidneys, and intestinal tracts [2]. The mean age of Japanese Paralympic

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athletes is 35 to 36 years old, which is ten years older than the Olympic athletes. This means that many Paralympic athletes have complications of life-style diseases and they requires medical management [3,4].

Conventionally, many physicians who accompany the Japanese Delegation for the Paralympic Games have been orthopedists. However, considering the wide range of impairments which the Paralympic athletes have, since 2005, "Training Sessions for Sports Doctors for the Impaired authorized by Japanese Para-Sports Association" has been held up to now for internists, physiatrists, urologists, ophthalmologists, psychiatrists to support impaired athletes medically including systemic management.

In medical-management structure for the Paralympic athletes in Japan, clinical doctors in charge of daily guidance for athletes and team doctors assigned to each sport perform the primary check; then as the upper section, the medical check section of the Medical Committee of Japanese Para-Sports Association performs the final check of athletes' health management. In some cases, athletes are advised to cancel the entry into sports events in the Paralympic Games, which is called "doctor stop" (Table 1) [5,6].

Table 1: Results of the medical checks and athletes' cancellation of the participation in paralympic games.

	2008 summer Beijing games	2012 summer London games	2014 winter Sochi games	2014 Inchon asian Paralympic games	2016 summer Rio de Janeiro Games
Number of candidate Athletes with medical checks	215	167	23	346	137
A Number of candidate Athletes with medical problems	30 (-14%)	9 (-5%)	8 (-34%)	98 (-30%)	14 (-10%)
Number of candidate Athletes who cannot participate in the games	5 (-2%)	0 (0%)	0 (0%)	44 (-12.7%)	0

As a result of medical checks since the early stage, the number of participants who cancelled the participation in the Games has been decreasing; however, among participants in the Asian

Paralympic Games, many impaired athletes were diagnosed for the first time and 12.7% of the total athletes were forced to cancel the participation in the Games. This result shows the necessity of the daily medical checks for the athletes.

Medical support to be given to Paralympic athletes is extremely important; not only general doctors but also sports doctors for impaired athletes are to be assigned in clinics in the Athletes' Village and a medical room in each sport will be placed in each sports venue for the perfect medical structure. Also, sports doctors especially for the impaired athletes are to be dispatched to the Japanese Delegation.

LEGACY OF THE PARALYMPIC GAMES

Historical signifiacne of legacy

The term 'legacy' was used for the first time in the invitation of 1956 Melbourne Olympic Games. In the Olympic Charter 2 of International Olympic Committee (hereafter this is referred to IOC), it is clearly mentioned that the promotion of leaving good legacy in the host countries and cities of the Olympic Games is the mission and roles of IOC. After that, the intensive effort of IOC at grips with the legacy was added to the Olympic Charter in IOC General Assembly in 2002.

According to the IOC Legacy Booklet (2002 version), the following are mentioned clearly [7].

1. **Sporting legacies:** Transition of the population engaging in sports activities, and the change in sports environments
2. **Social legacies:** Sports systems organized by public and private sectors together and educational promotion of the Olympic and Paralympic Games
3. **Environmental legacies:** Renewal of metropolitan areas and recycle of energies
4. **Urban legacies:** Arrangement of infrastructure of barrier-free public transportation
5. **Economic legacies:** Creation of employment and development of technologies

DISCUSSION

Legacy of 2020 Tokyo paralympic games

According to the Education and Science Ministry in 2015, the creation of legacy motivated by the 2020 Tokyo Olympic and Paralympic Games aims at the succession of the following items as gifts (legacy) to the next generations [8].

1. **Sports:** The realization of a state in which all the people can spend happy and rich lives through sports; and the promotion or people's conscious reformation and symbiotic society motivated by the Paralympic Games.
2. **Culture:** Promotion of sufficient understanding of diverse culture in Japan and active utilization of cultural resources.
3. **Innovation:** Dispatch of accumulation of researches and their results in Japan and the proof of the utilization of latest scientific technology in society.

4. **Society with humaneness:** Promotion and support of young people's activities to think and act themselves in solving regional, social, and global problems
5. **Society with universality:** Realization of community in which all the people can participate actively in many fields regardless of age, gender, or impairments.

Up to now, we are reporting the realization of people's conscious renovation and symbiotic society as legacies of the 2020 Tokyo Olympic and Paralympic Games (Table 2) [9,10]. In this report, the visionary ideas of the action plans (2013 to 2020 to 2030) made by Japanese Para-Sports Association are mentioned; the ideas can be regarded as the legacy specific for the 2020 Tokyo Paralympic Games and the details are as follows.

6. **Popularization and expansion of sports (to increase the population enjoying sports activities):** Arrangement of environments for the popularization and expansion of sports for Paralympic sports, training of sports instructors, and the promotion, survey, and study on sports for the impaired (this arrangement will be performed by the cooperation with universities).
7. **Improvement of competitive performance:** Improvement of the following items; athletes' competitive performance, understanding of value and attractiveness of Paralympic sports, sports integrity, and the promotion of international cooperation through Paralympic sports.
8. **Realization of active symbiotic society:** We ultimately aim at "realization of active symbiotic society" with mutual understanding of diversity by the promotion of Paralympic sports through the good cycle of the above '6' and '7'.

Table 2: Example of legacies in the past olympic and paralympic games.

Sections and themes		Example of realized legacies
Sports legacies	Sports facilities	<ul style="list-style-type: none"> • Long-term utilization of sports Facilities (Stockholm Olympic Games) • Diversified utilization of sports facilities (Vancouver Olympic Games and London Olympic Games)
	Promotion of Sports activities	<ul style="list-style-type: none"> • Improvement of the habit of doing sports (Barcelona Olympic Games) • Presentation of opportunities of doing sports to the poorer regions (Los Angeles Olympic Games) • New curriculum for the elementary

		school children's participation in sports activities (London Olympic Games)
Social legacies	Culture	<ul style="list-style-type: none"> • Cultural Events on aborigines (Sydney Olympic Games)
	Education	<ul style="list-style-type: none"> • Joint educational program with the Education Ministry and the Olympic Committee (Beijing Olympic Games)
	Others	<ul style="list-style-type: none"> • Creation of the new culture of voluntary activities (London Olympic Games) • Procurement of materials by private companies to the poorer regions (Vancouver Olympic Games) • Social inclusions by an employment program (London Olympic Games)
Environmental legacies (1)	Reactivation of metropolitan areas	<ul style="list-style-type: none"> • Afforestation of depleted lands (Sydney Olympic Games) • Tree planting (Atlanta Olympic Games) • Sustainability management with the consideration of environment (London Olympic Games)
Sections and themes		Example of Realized Legacies
Environmental legacies (2)	Environmental energy	<ul style="list-style-type: none"> • Betterment of air pollution (Beijing Olympic Games) • Installation of solar panels in the Athletes' Village (Sydney Olympic Games) • Heat utilization of sewerage system

		(Vancouver Olympic Games)			Tourism advancement	<ul style="list-style-type: none"> • Increase of the number of tourists (Torino Olympic Games) • Improvement of regional and national brands (Vancouver Olympic Games)
Metropolitan legacies	Metropolitan development	<ul style="list-style-type: none"> • Air conditioning system of low-carbon type (London Olympic Games) • Improvement of the view of obsolete areas (maintenance of façade and pedestrians' roads) (Athens Olympic Games) • Redevelopment of the poorer areas (London Olympic Games) 				
	Infrastructure transportation	of	<ul style="list-style-type: none"> • Maintenance of light rails (Vancouver Olympic Games) • Maintenance of airports, roads, and subways (Beijing Olympic Games) 			
Economic legacies	Economic advancement		<ul style="list-style-type: none"> • GDP growth (Sydney Olympic Games) • Development of small and medium-sized companies (London Olympic Games) • Creation of employment in remote areas (Lillehammer Olympic Games) 			

CONCLUSION

We mentioned the importance of medical management by doctors for Paralympic athletes. Legacy of IOC is classified into five sections and there was no description on symbiotic societies in the section of social legacies in the past Games. On the other hand, in the legacy of 2020 Tokyo Paralympic Games “realization of symbiotic society” was described and its details are mentioned in the vision of Japanese Para-Sports Association.

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