

Team Japan's strategy for the Tokyo Olympics and its evaluation

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ABSTRACT. At the Tokyo 2020 Games of the XXXII Olympiad, the Japanese national team achieved the highest performance in the history of participation in the Olympics and took third place in the overall medal standings. The total number of medals won was 58, including 27 gold medals, 14 silver medals, and 17 bronze medals.

The article analyzes the preparation strategy and outcomes of the Japanese national team performances at the 2020 Games of the XXXII Olympiad. The relevant directions of the Japan's NOC activities during preparation for the Games in Tokyo. The factors that determined the team's success at the Games of the XXXII Olympiad were examined, including the national sports policy and sports legislation, as well as staffing, logistical, sports-methodological, and scientific aspects. The conditions of entry to the Olympic village, the base where athletes from different countries were provided with services for training, recovery and nutrition, were analysed. The issue of demonstration of sports performance in hot and humid environments was discussed along with the measures to help athletes tolerate heat exposure in endurance events (e.g. marathon running, athletic walking, and triathlon). Potential tasks of further development of the international competitiveness of the Japanese national team at the Olympic Games were disclosed.

Keywords: training strategy, national sports policy, results of sports performances, Olympic games.

Стратегія збірної команди Японії на Олімпійських іграх в Токіо та її оцінка

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АНОТАЦІЯ. На Іграх XXXII Олімпіади у Токіо 2020 р. національна команда Японії досягла рекордних результатів за всю історію виступів на олімпійських аренах і посіла третє місце у загальному медальному заліку. Загальна кількість отриманих медалей – 58, з них: 27 золотих, 14 срібних і 17 бронзових.

У статті проаналізовано стратегію підготовки та результати виступів національної команди Японії на Іграх XXXII Олімпіади 2020 р. Обговорено актуальні напрями діяльності НОК Японії під час підготовки до Ігор у Токіо. Розглянуто фактори, що визначили загальнокомандний успіх на Іграх XXXII Олімпіади, у тому числі національну спортивну політику, спортивне законодавство, питання кадрового, матеріально-технічного, спортивно-методичного та наукового характеру. Розглянуто умови в'їзду до олімпійського селища, бази, де спортсменам різних країн було надано послуги для тренувального процесу, відновлення та харчування. Поручено питання демонстрації спортивних результатів у спекотному та вологому середовищі, розглянуто заходи щодо боротьби зі спекою у день змагань у видах на витривалість (марафонський біг, спортивна ходьба та триатлон). Розкрито перспективні завдання подальшого розвитку міжнародної конкурентоспроможності національної команди Японії на Олімпійських іграх.

Ключові слова: стратегія підготовки, національна спортивна політика, результати виступів, Ігри Олімпіади.

During the pandemic, the 2020 Summer Olympics completed 17 days of games with the participation of 205 National Olympic committees (NOCs). Most of the events were held without spectators, and with the cooperation of the International Olympic Committee (IOC), NOCs, and International Federations (IFs), all the competitions were safely completed without any COVID-19 clusters.

In the 2020 Games, Team Japan was able to achieve record-setting competition results. This paper analyzes the strategy applied by Team Japan and the evaluation of the same.

1. Themes published by the Japanese Olympic Committee for the Tokyo 2020 Olympics

Table 1 shows the priority themes for the 2020 Games presented by Yasuhiro Yamashita [5], the current president of the Japanese Olympic Committee (JOC), when he was the head of the JOC High Performance Division in 2018. He particularly emphasized integrity education in Item 5. Under the slogan “There is no improvement in athletic performance without willpower,” which has been the slogan of Team Japan since the 2014 Winter Olympics in Sochi [4], the Committee provided thorough integrity education both in person and online. As Japan headed toward Tokyo 2020, interest in sports began to increase, leading to the idea that the public admiration for athletes would enhance the value of sports. In contrast, athletic scandals would reduce people’s desire to support sports. In Japan, as the percentage of people who advocated the cancellation of the Olympics on the grounds that it would contribute to the spread of COVID-19 was particularly high, the Committee sought to set an example in infection prevention among athletes, as it would also be under scrutiny.

As indicated in Item 2, our team’s goal was to “win 30 gold medals” (Table 1). This goal was set prior to the postponement of the Olympic Games, based on the condition of each athlete as well as the situation of other countries, as a number achievable in the ordinary course of events. The Games were postponed by one year, and the environment surrounding the training of the athletes and the situation of athletes from other countries changed significantly. Under these circumstances, the validity of the goal to win 30 gold medals was questioned, but the goal itself remained unchanged. However, the Committee reiterated that medals

are not the ultimate goal, but rather, athletes should be recognized for their diligent efforts to achieve the goal, despite the numerous restrictions. In addition, the athletes were urged to be grateful for the opportunity to demonstrate the results of their efforts and to give their best performance.

2. National sports policy

In 2011, the Basic Act on Sport was promulgated [3] and enforced, which was the first complete revision in 50 years of the Sports Promotion Act enacted in 1961. The Act advocates “the comprehensive and systematic promotion of sports-related measures as a national strategy to create a sports-oriented nation.” One of the basic principles set forth is to “seek mutual and organic coordination as well as effective promotion of sports-related measures that contribute to the improvement of the level of athletes’ performance, in order for Japanese athletes to achieve excellent results in both national and international sports competitions.”

In 2012, the Sport Basic Plan was formulated to embody the principles of the Basic Act on Sports [2] and to indicate the specific direction of Japan’s sports policies in the future. One of the policy objectives of the Second Sport Basic Plan (2016–2021) is to “establish a systematic human resource development system from the junior level to the top level in top sports and to improve the sports environment in order to enhance international competitiveness. Based on these measures, the country aims to win more medals than ever before at the Summer and Winter Olympic Games and receive more Olympic diplomas than ever before at the Olympic Games. The goal is to achieve the fifth place or higher in the ranking of gold medal winners at the Summer Olympic Games.” Specific measures include “support for the assignment of specialized staff such as national coaches to National Federations (NF)” “implementation of advanced support from multiple perspectives, including support in the fields of sports medicine and science, information, and the development of athletic equipment”, “reinforcement of the National Training Center (NTC) and Japan Institute of Sports Sciences (JISS)” and “co-ordination and cooperation between the core of the NTC and the sports-specific reinforcement centers”. In 2015, the Government established the Sports Agency to comprehensively promote sports-related policies and consolidated the sports administrations of several ministries, including the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Health, Labor and Welfare, into a single agency.

Against this background, the budget allocated by the Government to the improvement of athletic performance has gradually increased. Figure 1 shows the total budget allocated by the Government to the JOC and Japanese Paralympic Committee from 2014 to 2021, which more than doubled from 4.9 billion yen in 2014 to 10.3 billion yen in 2021. The JOC added its own financial resources to this budget, bringing the total amount of the budget for athletic enhancement to about 11 billion yen in 2020. Japan’s

TABLE 1 – The priority themes for the 2020 Games presented by Yasuhiro Yamashita, the current president of the Japanese Olympic Committee

Priority themes
1. Athlete first
2. Concentration of the power of the Japanese sportsdom for 30 gold medals
3. Establishment of the support system which summer and winter seasons events are united
4. Cooperation of the Olympics and the Paralympics for the success of the Games
5. Enforcement of the integrity education

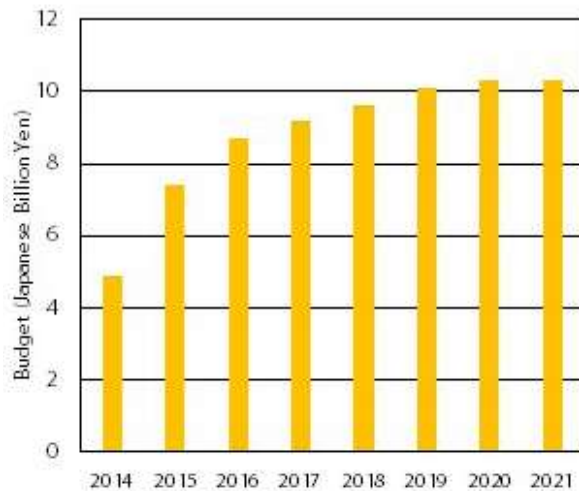


FIGURE 1 – The total budget allocated by the Government to the JOC and JPC from 2014 to 2021

budget for athletic enhancement increased for Tokyo 2020, but it is expected to decrease after the Games.

It is necessary to add an explanation of the NTC and JISS mentioned above. The NTC was established by the Japanese government at a cost of 37 billion yen in time for the 2008 Olympics held in Beijing. The facility is managed by the Japan Sports Council (JSC) and used by athletes belonging to JOC member organizations. The JISS is located adjacent to the facility, providing medical support. The NTC and JISS constitute the High Performance Sports Center (HPSC). The HPSC is also positioned as a core center for the coordination of athletic training centers throughout Japan. The facilities of the HPSC are listed in Table 2 for reference. This table also lists the event-specific training centers located throughout Japan for the Summer Olympic Games events.

In addition, the NTC has a JOC Elite Academy (JEA) program [6] to foster top athletes from their junior years. In 2021, a total of 26 students from the first year of junior high school to the third year of high school have been living and training at the NTC, where a variety of programs are being offered with the aim of enhancing athletic skills, intellectual abilities, and viability with balance to develop participants into athletes capable of playing an active role in international competitions, including the Olympics, in the future. In addition, National Coach Academy (NCA) [7] is operated to further improve the qualifications of coaches and staff members to be dispatched to the Olympics and other international sports competitions.

3. Results of the Tokyo Olympics

No one in the Japanese team, including both the athletes and officials, contracted COVID-19 during the Olympics. In addition, no athletes were disqualified for doping. They competed in a sincere, clean, and fair manner, which led to the success of the Games and the enhancement of the value of sports. This can be attributed to effective infection control measures and sports integrity education.

Table 3 describes the overall performance of the Japanese team. A total of 58 medals (27 gold, 14 silver, and 17

bronze) was won, and the goal of the Sport Basic Plan was achieved; the total number of diplomas received was the highest ever, with 78 athletes finishing in fourth to eighth places. Those 58 medals were won in 20 events, double the number of medals won in 10 events at the previous Olympics in Rio de Janeiro. At the same time, 25 medals were won by male athletes and 30 medals by female athletes (3 medals by mixed), indicating that the Sports Agency's measures to increase the number of medal-winning events and to support female athletes have borne fruit in these respects. As a result, 112 (19.2 %) of the 583 athletes won medals, and 275 athletes (47.2 %), or about half of the total, were among the top 8 finishers. In addition, 28 sports organizations were among the top 8 finishers, which means that 80 % of the 35 sports organizations that participated in the Games received Olympic diplomas. Japan achieved all the three goals set forth in the Second Sport Basic Plan.

The breakdown of the performance indicates that Japan won medals in all of the seven core events designated by the JOC (Athletics, Swimming, Judo, Wrestling, Gymnastics, Table tennis and Badminton) Athlete Reinforcement Division, suggesting that the expansion and improvement of the NTC proved effective. In addition, 14 medals, including 6 gold medals, were won in the 5 newly added events

TABLE 2 – Facilities of the High Performance Sports Center

Ajinomoto National Training Center
【Indoor Training Center East】
• Training site: Archery, Table tennis, Fencing, Swimming, Shooting
• Others: Training gym, Coat, Restaurant, Bath
【Training Center West】
• Indoor training site: Gymnastic, Volleyball, Badminton, Handball, Basketball, Tennis, Judo, Swimming, Boxing, Wrestling, Weight-lifting
• Others: Common use coat, Training room, Athlete lounge, meeting room
• Outdoor training facility: Athletic, Soccer, Tennis
• Athlete Village
Japan Institute of Sports Sciences
• Sports Science Facility: Physiology, Biochemistry, Psychology laboratories, picture, editing room, physical strength science laboratory, Track-and-field experiment site, Biomechanical experiment site, Boat canoe experiment site, wind tunnel, experiment building, High performance gym
• Sports medicine Facility: Conditioning space, Rehabilitation facility, Diagnosis room, Clinical laboratory, Nourishment counselor's office, Drug room, Counseling room, Examination of radiation room
• Service Facility: Restaurant, Staying room, Meeting room, Sports information service room, Tea room
• Training Facility: Rhythmic gymnastics/Trampoline, Swimming, Artistic swimming, Training gymnasium
Event-Specific Affiliated NTC (for Summer Olympics)
• Outdoor: Soccer (Osaka), Hockey (Gifu), Triathlon (Miyazaki), Shooting (Kanagawa), Cycling (Shizuoka)
• Ocean Waterside: Boat (Saitama), Sailing (Wakayama)
() : prefecture to be located

TABLE 3 – Performance of the Japanese team in the Olympics of the past

Year	Place	Number of event	Number of medalists and prizewinners						Number of athletes and officials		
			Gold	Silver	Bronze	Number of medal	4-8th	Total	Athletes	Officials	Total
2021	Tokyo	339	27	14	17	58	78	136	583	475	1058
2016	Rio de Janeiro	306	12	8	21	41	47	88	338	263	601
2012	London	302	7	14	17	38	42	80	293	225	518
2008	Beijing	302	9	6	10	25	52	77	339	237	576
2004	Athens	301	16	9	12	37	40	77	312	201	513
2000	Sydney	300	5	8	5	18	42	60	268	171	439
1964	Tokyo	163	16	5	8	29	36	65	355	82	437

(Baseball/Softball, Sport Climbing, Karate, Surfing and Skate boarding), and the success of young athletes and the gold medals won in the team games were the main reasons for the breakthrough of the Japanese team.

4. Discussion on the factors for success
Continuous reinforcement activities

Thirteen years have passed since the establishment of the NTC. As represented by judo, table tennis, fencing and wrestling in the current Games, Japanese athletes performed well in sports with the NTC as their base for reinforcement, as they did in the Rio de Janeiro 2016 Games, demonstrating once again the importance of continuous and systematic reinforcement. In HPSC-related events, Japanese athletes won 42 medals and 57 diplomas, while they won 2 medals and 12 diplomas in NTC-related events, indicating that the use of the competition-specific NTC and the HPSC contributed greatly to the improvement of athletic performance.

What is particularly worth noting is that this was the first time that the JEA produced Olympic athletes. The JEA was established in 2008 with the aim of nurturing top athletes capable of playing an active role in the Olympics and contributing to the development of society through sports. Ten athletes participated in the Games and won five medals (3 gold, 1 silver and 1 bronze). This achievement demonstrates that the NTC plays a very important role in the continuous development of athletes. At the same time, the fact that the NTC finally produced an Olympic athlete 13 years after the establishment of the Elite Academy indicates that the development of top athletes takes time and that it is important to persevere with mid- to long-term reinforcement measures.

Approaches to support the promotion of medium- and long-term reinforcement measures also began in 2017. The HPSC has established a Collaborative Team, and in cooperation with the JSC, JOC and JPC, multifaceted consultation and monitoring are conducted at each stage of the PDCA cycle in the four-year and eight-year reinforcement strategic plans set by each sports organization. This is to understand the issues and needs of each NF and to support them in terms of sports medicine, science, and information.

Conditioning before the competition

According to the rules, the athletes were allowed to enter the Village five days before the competition. Many foreign

teams seemed to enter the Village after conditioning in the host town in Japan or upon arrival in Japan. The U.S.A, U.K., and Italy set up large bases in Tokyo and Kanagawa Prefecture. Brazil set up a base in close proximity to the Olympic Village, where training, recovery, and meal services were provided.

Many of the athletes of the Japanese team continued their training at the HPSC and entered the Village a few days before the competition. After arrival, the athletes were able to proceed with their conditioning by utilizing the two training bases near the Village set up by the JSC. The use of the training bases within the established rules seems to have contributed to the conditioning of the body and mind.

Australia, France, and other countries provided support to their athletes using the space allocated to them inside the Village. Australia, for example, provided support in the form of training, recovery promotion, performance analysis, meals, and relaxation. Other countries seemed to be interested in these countries' bases in the Village and are expected to imitate this advanced approach in the future.

Measures against heat and humidity

The summer in Tokyo is hot and humid, and it was necessary to thoroughly promote measures to deal with the heat environment. Two issues were raised in particular: the development of athletes capable of demonstrating their tasks in a hot and humid environment and measures to deal with the heat on the day of the competition. In long-duration events, such as marathons, racewalking, and triathlons, heat control was particularly important. In order to solve these problems, the medical departments of the JISS, JOC, and NFs collaborated and took measures.

This paper introduces some of the measures against heat and humidity taken by the scientific committee of JAAF in marathon and racewalking. The JAAF recorded changes in deep-body temperature during a 40-kilometer run in the heat using small temperature sensors in the form of capsules swallowed by top Japanese runners four hours before the start of the race. The results indicated that the water supply during the race lowered the body temperature, which helped the runners take concrete measures against the heat. At the same time, analysis of the composition of sweat after the 40 km run revealed the loss of minerals in each runner, providing data for considering the composition

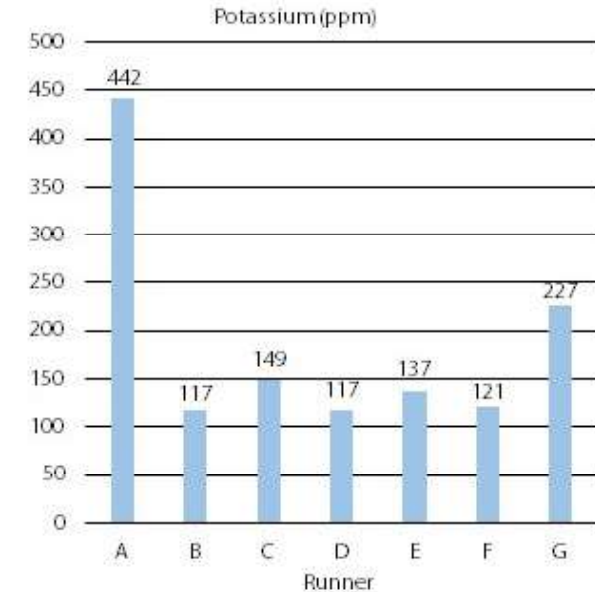
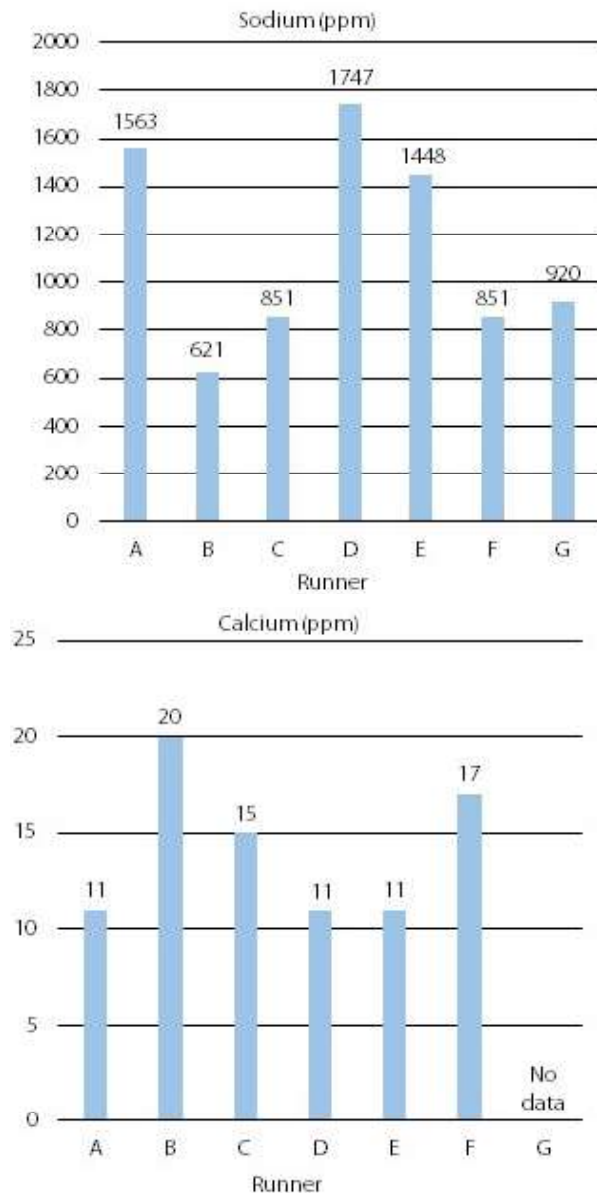


FIGURE 2 – Ingredient analysis included in the sweat during a 40 km running:
A, B, C, D, E, F, G – runners

5. Future tasks

Figure 3 shows the performance of the host countries before and after the Games held in their countries. According to this figure, Australia, the U.K., and Brazil have improved or maintained their current performance after the Games were held in their countries. If Japan is able to maintain its competitiveness after Paris 2024, this will demonstrate that the country has truly improved its international competitiveness. To achieve this, it is important to continue and develop effective athletic performance improvement projects.

In order to determine the issues to be addressed in the future, the JOC conducted an online survey of the national coaches of each NF immediately after the Olympic Games 2020 on their impressions and feelings about the Games (n = 84). The responses to some of the questions (multiple answers allowed) are listed in Table 4. The top three items are as listed below.

The results of this survey and the evaluations of the team members revealed the following three issues as future challenges:

- 1) establishment of a sustainable and strong reinforcement system (establishment of a national team):
 - assignment of coaches and support staff that meet the current situation and needs of NFs;
 - provision of opportunities to send athletes to international competitions;
 - continuous training and reinforcement of the top athletes who will lead the next generation;
- 2) continued support for reinforcement at the HPSC and expansion of sport-specific NTC:
 - enhancement of the training environment, including expansion of the HPSC and sport-specific NTC.

In view of the increasing number of athletes based overseas, the reinforcement methods using online and

of water supply before and during the race. Figure 2 shows the amount of sodium, potassium, and calcium contained in the sweat of each runner. This indicates that the types of minerals lost by sweating differ from person to person.

In racewalking, careful measures were also taken on the day of the race. In order to suppress the rise in body temperature as much as possible, the athletes received bags of ice to hold in their hands, coolers to wear around their necks, and frequent changed hats with ice inside at the Japanese team's water supply area after each lap.

As many NFs regarded heat management as an important task, they shared information on the know-how they had accumulated in athletics and triathlons at coaches' meetings, national coaches' academies, supervisors' meetings, and other opportunities set by the JOC. As a result, the JOC's heat management support was utilized in 15 events at the Tokyo Olympics.

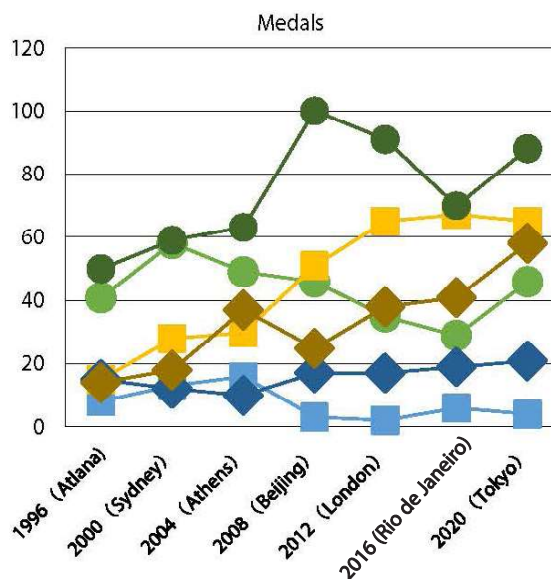
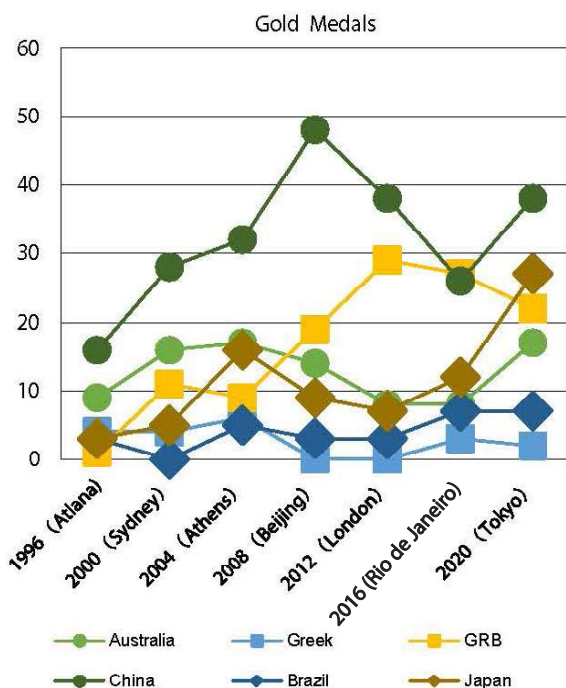


FIGURE 3 – Changes of the number of medals of the host countries of the Olympics after 1996

other methods that are not restricted by location or time will also be enhanced;

- enhancement of cross-event sports medicine support, especially mental support;

3) establishment of a special support system for the next Olympics (start early):

- environmental improvement immediately before and during the Olympics (improvement of training environment including bases inside and outside the Village, as well as other types of support);
- special measures for the unique environment of the host city (heat measures, etc.).

The JOC will focus further on the education of athletes to enhance the value of sports and foster admiration for them. In addition, to achieve a sports-participatory society, the Committee will also develop athletes who will be admired by many people and encourage their further activities while enhancing the wellbeing of both athletes and their coaches.

TABLE 4 – Main results of the survey of the national coaches of each NF conducted by JOC immediately after the Olympic Games 2020 (n = 84)

Q1 Which factor had a positive influence on your competition result?	
① Existence of the entourage	61%
② The system, staffing of the representative team	54%
③ Experience of the international game	54%
Q2 In the thing which it influenced positively, what was it that did well in particular?	
① Training environment before and during the meeting	22%
② Experience of the international game	13%
③ Training camp before the meeting	13%
Q3 Which factor had a negative influence on your competition result?	
① Experience of the international game	45%
② Strain and anxiety	37%
③ One year postponement	37%
Q4 In the thing which it influenced negatively, what was it that did not do well in particular?	
① Influence of the corona	55%
② Experience of the international game	30%
③ Strain and anxiety	14%

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