

## Report on the 1st conference on adapted judo. Beyond the limits: exploring adapted judo

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Received: 15/05/2023; Accepted: 18/06/2024; Published: 22/06/2024



REVIEW

### Abstract

This report explains the main contributions of the 1st conference on adapted judo, entitled "Beyond the limits: exploring adapted judo", organized by the Italian Federation of Judo, Wrestling, Karate and Martial Arts (FIJLKAM) on April 8-9, 2024 at the FIJLKAM Olympic Center in Rome in collaboration with the European Judo Union (EJU) and the University of Rome "Foro Italico". The various presentations highlighted the mechanisms of brain physiology that affect Autism Spectrum Disorder (ASD) and the benefits that the practice of martial arts brings to the quality of life of people with ASD and intellectual disabilities. Another block of presentations focused on the rise of adapted judo competitions and its regulation at the level of regulation and the establishment of categories of competition following a criterion of functionality to include the maximum number of people. Finally, it ended with the practical applications of adapted judo on the *tatami*.

**Keywords:** Martial arts; combat sports; judo; karate; adapted judo; parasport; intellectual disability; ASD.

### Informe sobre la 1ª conferencia sobre judo adaptado. Más allá de los límites: explorando el judo adaptado

#### Resumen

Este informe explica las principales aportaciones de la 1ª conferencia sobre judo adaptado, titulada "Más allá de los límites: explorando el judo adaptado", organizada por la Federación Italiana de Judo, Lucha, Karate y Artes Marciales (FIJLKAM) los días 8 y 9 de abril de 2024 en el Centro Olímpico FIJLKAM en Roma en colaboración con la Unión Europea de Judo (EJU) y la Universidad "Foro Itálico" de Roma. En las distintas ponencias se pusieron de relieve los mecanismos de la fisiología cerebral que afectan al Trastorno del Espectro Autista (TEA) y los beneficios que aporta la práctica de las artes marciales a la calidad de vida de las personas con TEA y discapacidad intelectual. Otro bloque de ponencias se centró en el auge de las competiciones de judo adaptado y su regulación a nivel de reglamento y el establecimiento de categorías de competición siguiendo un criterio de funcionalidad para incluir el máximo número de personas. Finalmente, se finalizó con las aplicaciones prácticas del judo adaptado sobre *tatami*.

**Palabras clave:** Artes marciales; deportes de combate; judo; karate; judo adaptado; deporte paralímpico; discapacidad intelectual; TEA.

### Relatório da 1ª conferência sobre judô adaptado. Além dos limites: explorando o judô adaptado

#### Resumo

Este relatório explica as principais contribuições da 1ª conferência sobre judô adaptado, intitulada "Além dos limites: explorando o judô adaptado", organizada pela Federação Italiana de Judô, Luta Livre, Karatê e Artes Marciais (FIJLKAM) nos dias 8 e 9 de abril de 2024 em o Centro Olímpico FIJLKAM em Roma em colaboração com a União Europeia de Judô (EJU) e a Universidade de Roma "Foro Italico". Nas diferentes apresentações foram destacados os mecanismos da fisiologia cerebral que afetam o Transtorno do Espectro Autista (TEA) e os benefícios que a prática das artes marciais traz para a qualidade de vida das pessoas com TEA e deficiência intelectual. Outro bloco de apresentações centrou-se no surgimento das competições de judô adaptado e na sua regulamentação a nível regulatório e no estabelecimento de categorias de competição seguindo um critério de funcionalidade para incluir o número máximo de pessoas. Por fim, finalizou-se com as aplicações práticas do judô adaptado no *tatame*.

**Palavras-chave:** Artes marciais; desportos de combate; judô; karatê; judô adaptado; paradesporto; deficiência intelectual; TEA.

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**Funding:** The authors received no funding for this work.

**Conflicts of interest:** The authors declare no conflicts of interest.

## 1. Introduction

Participating in combat sports can help improve the physical and mental health of children with intellectual disabilities (ID) and Autistic Spectrum Disorder (ASD), particularly when it comes to improving participants' motor skills (Kim et al., 2016; Sarabzadeh et al., 2019). There are also studies evaluating the benefits in social terms; for example, researchers have shown that karate training can lead to significant reductions in stereotyped behaviors and improvements in social interaction (Bahrami et al., 2012; Movahedi et al., 2013). It is worth highlighting that training in martial arts and combat sports requires both moderate to vigorous physical activity and the added mental component of the need for concentration and self-control (Garcia et al., 2019). These sports may also be appealing to young people with ASD because of the routines and rituals that characterize these practices and the repetitive nature of the exercises involved in the training (Bell & Allen, 2016). Among martial arts, the specific characteristics of judo, with its alternating phases of vigorous physical activity and low-intensity exercises focused on mindfulness, may provide an ideal method to reduce the stress response (e.g. cortisol levels) of young people with ASD (Renziehausen et al., 2022). Indeed, a recent systematic review (Pečnikar et al., 2020) highlights the health and psychosocial benefits that people with mental disabilities can gain from participating in adapted judo programs. Studies have shown that eight-week adapted judo programs can lead to reductions in repetitive behaviors and enhancements in social communication, interaction, and emotional responsiveness (Morales et al., 2021). Another study with a similar eight-week intervention (Rivera et al., 2020) reported a decrease in aggressive behaviors among children with ASD, indicating the short-term effectiveness of adapted judo programs. Other researchers have demonstrated the viability and effectiveness of adapted programs, reporting that the participants tend to embrace and enjoy adapted judo and express a desire to continue participating (Tomey, 2017). Adapted judo programs have registered good adherence rates leading to overall increases from moderate to vigorous physical activity (Garcia et al., 2019). Finally, two recent studies demonstrated that a long-term adapted judo program produced improvements in the physical condition (Pierantozzi et al., 2022) and in the motor and psycho-social field of its participants (Morales et al., 2022).

The main objective of this report is to share the main contents of the conference entitled "Beyond limits: exploring adapted judo" organized by the Italian Federation of Judo, Wrestling, Karate and Martial Arts (FIJLKAM) on April 8-9, 2024 at the FIJLKAM Olympic Center in Rome in collaboration with the European Judo Union (EJU) and the University of Rome "Foro Italico". The conference was also streamed on the FIJLKAM website and the EJU website, and is available at [https://www.youtube.com/live/EOhgY\\_0OLQ?si=r5yCLf9KmCJUGzBe](https://www.youtube.com/live/EOhgY_0OLQ?si=r5yCLf9KmCJUGzBe)

## 2. Proceedings

The first day of the conference featured presentations from six invited speakers, most of whom emphasized the benefits of judo in people with intellectual disabilities. Other topics such as neuroscience, challenges faced by families with disabled children, and injury prevention were also discussed. This last aspect laid as the foundation for EJU's research into modifying the adapted judo competition rules and divisioning. The presented studies also highlighted the inclusive potential of judo. The conference was designed and structured to provide a scientific and practical response to coaches working with or wanting to work with individuals with intellectual disabilities. The conference event spanned two days and was open to all FIJLKAM instructors.

The first day began with a presentation by Prof. Menotti Calvani entitled "Brain on hold." The speaker highlighted the importance of receiving correct stimuli during the first five years after birth, known as the development period, characterized by a variety of changes accompanying the acquisition of motor, sensory, language, and behavioural skills. The presentation described the progressive increase in connections between various nerve cells and the organization of circuits that allow the infant to acquire essential skills such as holding their head up making sounds to express their needs and refine voluntary movements. In response to internal and environmental stimulations neural circuits in the child integrate with each other and create functional connectivity between different brain regions. However not all new neuronal connections survive. A mechanism known as pruning (trimming connections) allows to maintain active only the functional 70 synapses and shapes the circuits during learning. This critical phenomenon during the early years is essential for



developing and acquiring new brain capabilities. The first years after birth are also critical for the emergence of Autism Spectrum Disorders (ASD), a set of different syndromes sharing common traits such as communication deficits, reduced social interaction, limited interests, and repetitive activities. Recent evidence supports the notion that a physiological opportunity to engage with brains that do not communicate and appear to be on hold. Physical activity is currently recognized as capable of entering the “empty fortress” of autistic individuals, improving their cognitive aspects and social interactions.

The second presentation, titled “Judo, Karate and special populations: from theory to practice with a look towards Europe,” was delivered by Prof. Paola Sbriccoli. The speaker explained that measures and systems have been implemented to provide people with disabilities the opportunity to enjoy a sports life and combat all forms of discrimination encountered in the sports world. There are still various challenges to be addressed. In EU it is estimated that around 80 million of individuals are disabled people, accounting for 15% of the total population. People with mobility limitations represent about 40% of the population in Europe (European Disability Forum 2014-15).

The third presentation, titled “From the Family as a barrier to the barriers of the Family”, was given by Prof. Angela Magnanini and Dr. Lorenzo Cioni. The speakers confirmed that parents of children with disabilities perceive more significantly the environmental barriers. The need to provide financial support to parents of children with disabilities and adapt sports activities to ensure accessibility for all children, including those with disabilities, was also suggested. To achieve this goal, it is imperative to implement training programs for sports educators, including theoretical and technical aspects related to special education and adapted physical activities.

The fourth presentation, titled “Successful experiences of adapted judo,” was given by Prof. Emanuela Pierantozzi and Prof. José Morales. The speakers reported on the impact of a long-term adapted judo program on motor skills, psychosocial well-being, and physical health of 21 autistic children aged 8 to 12 years. Indicators from these three areas were used to evaluate the program. A control group of 19 ASD children with ASD who did not participate in any sports program was monitored. Evaluations were conducted twice, at the beginning of the intervention and six months later. The evaluations included the Test of Gross Motor Development (TGMD-3), the Gilliam Autism Rating Scale-Third Edition (GARS-3), the ALPHA-fitness test battery, and the estimation of VO<sub>2</sub>max through a non-exercise equation (NEXE). The study demonstrated significant improvements ( $p < 0.05$ ) in the experimental group from pre-test to post-test in several subtests of the TGMD-3 and GARS-3, as well as in most indicators of good physical condition. The results suggest that participation in an adapted judo program can effectively improve motor skills, psychosocial behaviors, and the physical fitness of autistic children.

The fifth presentation, titled “Judo and karate in primary school as a means for the improvement of social inclusion and quality of life for autistic children,” was given by Dr. Nicole Maussier. The research was conducted within the KATAUTISM project, which aim to include autistic children in the practice of judo and karate in school settings during curriculum hours. The research was conducted in seven Italian regions, with a total of 573 children, including 31 autistic children. One group followed the judo path, and another followed the karate path. The participants' ages ranged from 6 to 10 years, and each class had one autistic child with ASD. All staff, supervised by a coordinator, consisted of specialized trainers and psychologists with autism expertise, who underwent a specific 40-hour training course. Each program included two weekly sessions of one hour each, for 24 weeks. This research analyzed three different areas (psycho-social, motor skills and physical fitness) in autistic children at the beginning (T0) and end of the program (T1): the level of autism through the Gilliam Autism Rating Scale (GARS), social impairment through the Social Responsiveness Scale (SRS), and gross motor skills through the Test of Gross Motor Development-Third Edition (TGMD-3). All levels of autism were involved, and all completed the program with their classmates, achieving statistically significant results in all three areas analyzed. The results suggested that inclusive activity is possible and produces significant improvements in behavior, social inclusion, and gross motor skills.

In the afternoon of the first day, experts discussed various topics. Dr. Rosa Maria Muroli explained the most common mistakes to avoid, made with disabled individuals. Marina Draskovic discussed the evolution of adapted judo in the EJU. Prof. José Morales explained the scientific bases



that led to the validation of classification criteria. This topic was further explored by Tansey Karry, who explained the practical application of the regulations and divisioning adopted by the EJU. Dr. Nicole Maussier also presented FIJLKAM's plans regarding disability. The FIJLKAM website's "Ability Revolution" section was then presented, describing specialized training courses for coaches on intellectual disabilities that FIJLKAM organized in collaboration with the Italian Federation of Paralympic Sports for the Intellectual and Relational Disabilities (FISDIR), FIJLKAM's adapted activity projects, and a spin-off that allows families with children with intellectual disabilities to find clubs with specialized technicians. The afternoon concluded with a roundtable discussion featuring coaches and instructors from the FIJLKAM/FISDIR course Fabio La Malfa, Paola Baroncelli, Chiara Meucci and expert of EJU.

On the second day, practical demonstrations of FIJLKAM projects were held: Katautism, which involved 80 children from a school that joined the project, and then "The Adventure of Simone", aimed at raising children's awareness of the topic of disability in the school setting. The project involves reading a comic book about the true story of Simone, the first boy with Down syndrome to become a black belt and the first FIJLKAM aspiring coach. The morning concluded with a competition demonstration using the new EJU regulations. A total of 62 athletes with intellectual disabilities participated in this demonstration. Coaches present had the opportunity to work actively on the *tatami*.

### 3. Final considerations and future directions

This conference highlighted the benefits of judo for individuals with intellectual disabilities and that inclusive activity is possible, starting with specific coach training. The new EJU-promoted rules for adapted judo competitions, which prioritize athlete health, had a positive impact due to their ease of implementation. The conference was highly successful, showcasing that inclusive activities can be effectively implemented. This was demonstrated by the notable public engagement and the lively interactions between the audience and the speakers.

A very important aspect of this conference was the possibility of informal meetings where everyone could ask additional questions and make contacts with fellow researchers and judo practitioners. Following this idea, a permanent roundtable between coaches and researchers could be created, where coaches and researchers could share best practices and give examples of cooperation with sports science professionals to get the best possible solutions or advices for overcoming the challenges of adapted judo. Let us hope that future congresses on this topic can increasingly attract more participants, providing contributions to this highly specialized field of research to foster new ideas, disseminate research outcomes and reach as many stakeholders as possible.

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