

## WAYS OF IMPROVING PHYSICAL QUALITIES IN JUDO BY UCHI KOMI

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**ABSTRACT.** The Uchi-Komi study is an increasing concern among the researchers. Numerous studies called Uchi-Komi Fitness Test (UFT) have shown a positive role both improve of some motric qualities necessary in judo, as one as related to weight loss, or maintaining it at a constant value (Almansba et al., 2007). Studies are made on the groups of judoka male and female with ages between 20 and 29 years old, differences between the sexes is  $\pm 3$  years with various levels of training, from intermediate to advanced.

**Keywords:** *Uchi-Komi, Respiratory Volume (RV), Butsukari-geiko, Nage-komi, Te-waza, Koshi-waza.*

**REZUMAT. Metode de îmbunătățire a calităților fizice în judo prin Uchi-Komi.** Studiul Uchi-Komi cunoaște o creștere în rândul cercetătorilor. Numeroase studii care folosesc Uchi-Komi Fitness Test (UFT) pe judoka de sex masculin și feminin, cu vârste cuprinse între 20 și 29 de ani și nivele variate de pregătire, pornind de la nivel intermediar până la un nivel avansat, arată rolul pozitiv în îmbunătățirea unor calități motrice necesare în judo, cât și în reglarea masei corporale (Almansba et al., 2007).

**Cuvinte-cheie:** *Uchi-Komi, volum respirator (VR), Butsukari-geiko, Nage-komi, Te-waza, Koshi-waza.*

### Introduction

Uchi-Komi is a method used in judo in order to repeat a number of techniques over a period of longer or shorter time. Uchi-Komi translates to "repetition". The term was taken from Kendo, japan martial arts, and professor Jigoro Kano (1860-1938) introduced it to the Kodokan-Judo since the early

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years of school. Over time, the method has improved, and it is used today, to improve speed, strength and endurance, with all their variants and to improve the skill in executing a technique. Studies related to this method have been made in many countries of the world, and there are some in Romania. At international level, the best known studies are those of Almansba et al. (2011) and Azevedo et al. (2007).

Uchi-Komi as a form of training, should not become a simple routine designed to fill a gap in judo sport training, but it must follow throughout the execution, a perfect coordination between head - hands - trunk - legs, keeping a distance (ma-ai) enough to allow a good development of action. On the other hand, we cannot go to Uchi-Komi execution as long as the practitioner did not have the basic elements (judo principle) of a technique (gripping - kumi kata, unbalancing–Kuzishi, loading, projection–Nage waza-insurance and self-insurance).

## **Materials and Methods**

### ***Advantages and disadvantages of Uchi-Komi***

Besides improving the technique, as a basic factor in Uchi-Komi, it also aims to improve some basic motor skills, decisive for finishing a technique. However, Uchi-Komi cannot fully solve the application of techniques in competition or fight situation, because their execution is static, on the spot and not on the move as is Butsukari geiko, which is much closer to real combat situations.

Another Uchi-Komi disadvantage is the fact that the projection Nage-Komi, which is in fact the end of a technique, is not executed. Long-time practice of only Uchi-Komi could cause imbalances between the components of a technique.

Studies conducted by De Cree and collaborators have shown that initial values of Respiratory Volume (RV) increased during the first six weeks of practice (De Cree et al., 1995), and then remain constant, as a consequence of overcompensation and adaptation (Callister et al., 1991). This gives us an orientation for combining the Uchi-Komi with other methods of improvement existing in judo.

Uchi-Komi requires, besides the knowledge of the technique, a series of qualities such as mobility, ability to stretch the muscle, a quality that in the last years has been lost by many judoka because they were concentrated on many strength exercises that have shortened muscle fibre.

The advantages of the Uchi-Komi are those related to the orientation in space, especially in turns back to Uke (as in arm techniques, as Te-waza, or hip technique, as Koshi-waza).

Other advantage is the increasing of the speed of execution of technique through use of several muscle groups, not only one, or two groups isolated.

The development of general force is an important factor for execution of a technique. Uchi-Komi achieves that objective, because the studies undertaken demonstrate an increase in strength (Léger et al., 1984).

The chemical changes caused by Uchi-Komi practice have been demonstrated by studies conducted by Callister et al., who which recorded elevated lactic acid, 1.1 - 9.1 mmol/ L (Callister et al., 1991).

## **Uchi-Komi methods**

### ***Speed Uchi-Komi***

Speed is a very important motor skill for judo practitioner. As speed is an acquired motor skill (Nenciu, 2002), the number of repetitions on period of time can vary from one judoka to another. According to Hantau I. (2005), it is recommended to execute Uchi-Komi for 7 seconds in order to improve the speed of execution of a technique.

### ***Our proposals for speed Uchi-Komi***

Number of repetitions: 5-7 seconds

Technique: (Three techniques) - Tai-otoshi, Seoi-Nage, Koshi-guruma,

Number of series: 5-6/ technique

Break time: 3-5 minutes

### ***Endurance Uchi-Komi***

Studies have shown that throughout the execution of endurance Uchi-Komi aerobic capacity increases significantly, at both male and female judoka. These values are different from one category to another, and the most significant are those from the higher category.

So, to women, were reported values between 43 and 53 mL / kg, at 1-minute execution, while male judoka obtained higher values, between 44-64 mL/kg, for a period of 1 minute (Aziz, Tan & Teh, 2002).

Applying in combination with Nage Komi (projection art) allows a judoka to improve his speed of execution in the endurance and strength condition. A study conducted by Franchini, Artioli & Brito (2013) showed that the project every three second, for one and a half minutes, on several series, provides an increase in heart rate up to 183b /min. This provides an opportunity to increase the resistance in judo by specific path judo.

The maximum and minimum heart rate (HR max and HR min) showed a high reliability during Uchi-Komi resistance (ICC > 0.90) with a measurement error of < 2%.

***Proposals for endurance Uchi-Komi by the circuit, proposed by Lidor et al.*** (Lidor et al., 2005)

Materials: kimono, rope, gymnastics bank.

Number of stations: 10

Station 1: 4x8m – The two judoka are facing the front at 8 meters.

Station 2: ippon-seoi-nage (the authors' proposal Nage-waza)

Station 3: climbing rope

Station 4: Output of Kesa Gatame

Station 5: jump over a gym bank.

Station 6: o-uchi-gari

Station 7: 25 crunches on back on tatami

Station 8: Output from yoko-shiho-gatame

Station 9: 20 push-ups with arms support on the ground, feet on a bench  
gym

Station 10: 8 Projections with your favourite technique.

***Our proposals – strength Uchi-Komi***

Being in the strength regimen, Tori could choose a heavier partner or two partners to increase the difficulty of their load.

***Proposal of force Uchi-Komi***

Uke will be a partner with at least 10 kg heavier. Tori will realize Uchi-Komi with detachment of Uke from the tatami (with load).

Number of repetition: 10 / left-right= 20

*Technique:* Tai-otoshi, Seoi-Nage, Koshi-guruma,

*Number of series:* 4-5

*Pause:* 2-3 minutes

**Discussions**

Besides improving the technique, as a basic factor, Uchi-Komi also aims to improve the basic motor skills, decisive for finishing the technique. However, Uchi-Komi cannot fully solve the application of techniques in competitive or combat

conditions, because their execution is static, on the place and on the move. Butsukari geiko is closer to the real judo competition (shiai).

Another disadvantage of Uchi-Komi is that it does not execute the projection (Nage Komi), which is actually the end of a technique. Practicing only Uchi-Komi for a long time could cause imbalances between components of technique.

Studies conducted by De Cree and collaborator have demonstrated that the initial values of Respiratory Volume (VR) increased during the first six weeks of practice (De Cree, Lewin & Barros, 1995), then remain constant, as a consequence of overcompensation and effort adaptation (Callister et al., 1991). This gives us an orientation for combining Uchi-Komi with other existing methods of training in judo.

Uchi-Komi supposes besides the knowledge of the technique, and a number of qualities such as: mobility, muscle-stretching ability, a quality that in recent years many judoka have lost because of focus training on a large number of strength exercises that made it shorter muscle.

The advantages of Uchi-Komi are those related to spatial orientation, especially in turns back at Uke (as in arms technique, Te-waza or hip technique, Koshi-waza). Increasing the speed of execution of a technique, by using several muscle groups and not just an isolated one.

Practice of Uchi-Komi it can be achieved on a small space, 2 m<sup>2</sup>, which gives the coach the possibility to observe better the technique. The development of general force is an important factor in the execution of technique. Uchi-Komi achieves that objective studies undertaken demonstrate increased strength (Léger et al., 1984).

Chemical changes caused by the practice of Uchi-Komi have been demonstrated by studies conducted by Callister et al., who had elevated lactic acid levels, 1.1 -9.1 mmol/L (Callister et al., 1991). These studies were conducted on subjects aged between 20 and 29 years old; but we do not have data for veteran judoka, who participate in veteran competitions, aged over 30 years. Judoka over 30 years old have different physiologically and psychologically particularities. It is important to know what are the ideal parameters a judoka over the 30 years old can reach without affecting their health status.

Considering all these aspects, we came with a one-year study proposal at the Faculty of Physical Education and Sport for 2017-2018 with veteran judoka from "Universitatea-Cluj". We study the speed at Uchi-Komi, for judoka veterans between 30 to 35 years old. We chose this motric quality, because over 30 years of age the speed decreases (Holyloszy & Coyle, 1984), but we are assuming that continuous training, over 30 years old, can bring major improvements in speed execution of judo techniques.

The 10 judoka who are part of the study, participate at the veteran and Kata competition, and have four judo training per week. The results will be public in two stages.

## Conclusion

The Uchi-Komi training for judoka between 20 and 29 years old, offer the opportunity to improve basic motor skill (power, speed, endurance), qualities that can improve at a level close to that of Shiai (competition). The lack of scientific research for veteran judoka, over 30 years old, did not provided us with information about how we should developed training for veterans.

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