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# Changes rules and evolution of results in judo, an analysis: of the 2012 and 2016 Olympic Games and 2015 and 2017 World Championships.

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## Abstract:

In the 2009-2017 period, many changes were added in judo rules, especially after London 2012 Olympics to promote “positive” actions (constant search for maximum score) instead of “negative” actions (avoiding opponents' attacks). International Judo Federation publishes data and general statistics ([www.judobase.org](http://www.judobase.org)). Two published papers (\*) used these data to analyze the total match duration, frequency of scores (ippon, waza-ari, yuko) and penalties (shido) between two Olympics Games (London 2012 and Rio 2016) and between two World Championships (Astana 2015 and Budapest 2017) before the rule changes and after the rule changes, considering the different weight categories and competition phases. Professional magazines are interested by these results, and our objective, within the framework of the popularization of the scientific works, is to present an abstract of these two papers, providing a visual point of view of these two papers. A timeline was built to resume the different changes of the rules within the period 2009-2017, and results are presented with two tables and arrows to show evolutions. The effects between the two Olympics were negative, they became better between the two world championships. At that time, rule changes did not achieve the goal to increase scores and decrease penalties, but that this seems to be changing in the last modifications made for the 2017 World Championship. Beyond rule changes, these effects, (while the periods of these 4 championships overlap) could be explained by the frequency of the events and their own modes of selection.

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Balafoutas, L. Lindner, F. Sutter, M. (2013), Sabotage in tournaments: evidence from a natural experiment, *Kylos*, 65, 425-441

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(\*) Calmet, M. Pierantozzi, E. Sterkowicz, S. Takito, MY. Franchini, E. (2017), Judo rules: searching for a wind of changes, *International Journal of Performance Analysis in Sport*, <https://doi.org/10.1080/24748668.2017.1405612>

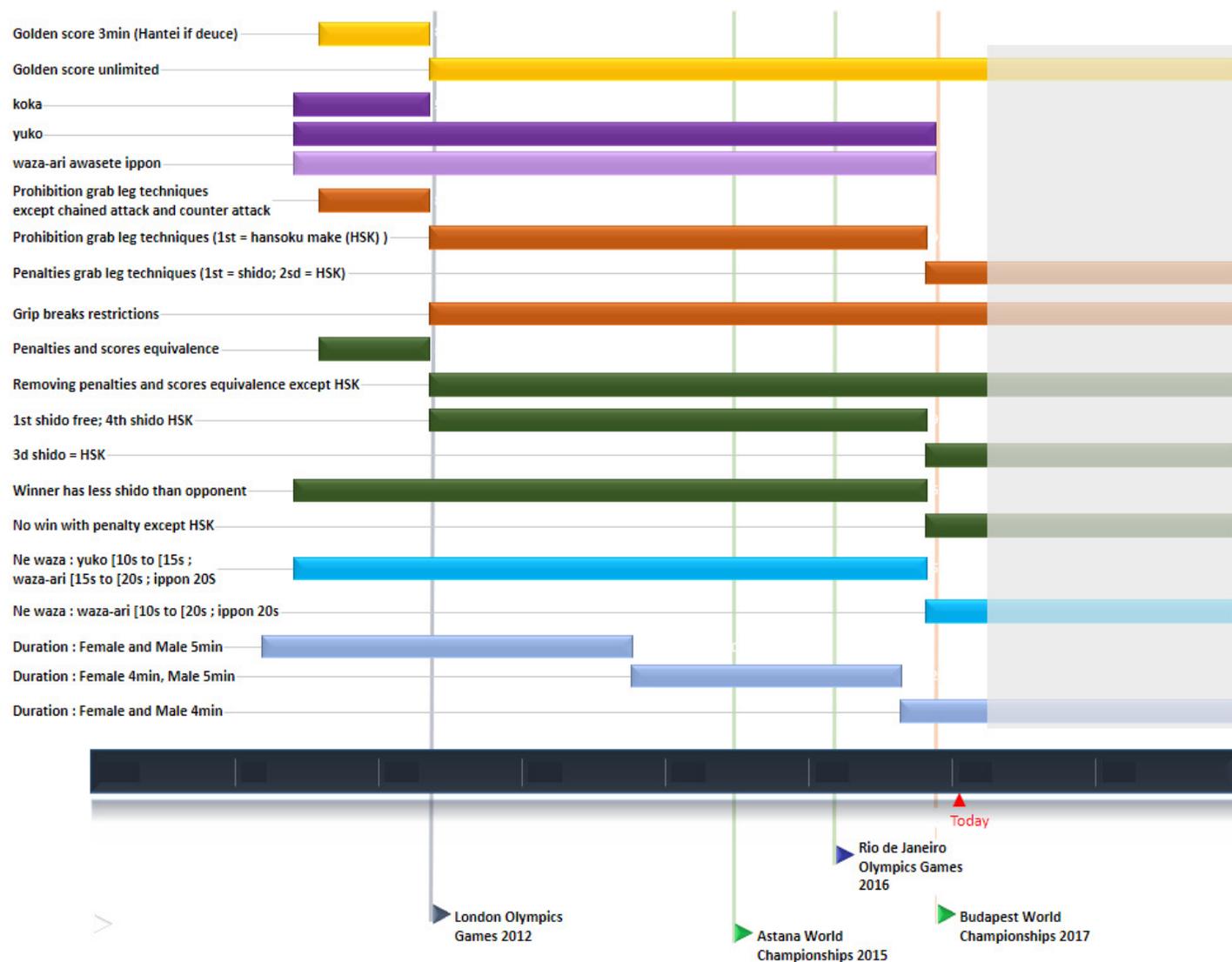
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## Changes rules and evolution of results in judo, an analysis of the 2012 and 2016 Olympic Games and 2015 and 2017 World Championships.

In judo, rules have changed in recent years to improve positive judo. Results in competition have been analyzed to see if this goal is achieved. A chronological frieze facilitates how to situate the changes compared to the most important competitions.

### Rules timeline



Rules are available immediately and can "overlap" several events (World Championships or Olympic Games) which makes the comparison difficult. Changed scores or penalties (Yuko counted in Astana in 2015 and Rio in 2016 but did not exist in Budapest in 2017), frequency of events (Olympic Games every 4 years, World Championships every year or two years) and the judokas selection mode (in or out the ranking list), brought to compare Olympic Games between them and World Championships between them.

The analyzes carried out show that rules change can:

1. Improve the situation (green inclined arrows):
  - The number of games without penalties increases (green arrow rising)
  - The number of penalties decreases (green arrow down)
2. Do not make any changes (orange horizontal arrows)
3. Deteriorate the situation (red arrows):
  - The number of yuko decreases (red arrow down)
  - The number of hansoku make increases (HSK) (rising red arrow)

## Rule change and results in competition

### Olympic Games analyses:

| London (2012) and Rio de Janeiro (2016) |                 |                    |                |   |                          |                                  |  |                                       |                   |                             |  |
|---|-----------------|--------------------|----------------|---|--------------------------|----------------------------------|--|---------------------------------------|-------------------|-----------------------------|--|
| Items                                   | Number of ippon | Number of waza-ari | Number of yuko | Number of penalties Female                | Number of penalties Male | Number of hansoku make (F and M) | Number of match <i>without</i> penalty | Number of golden score (F and M)      | Duration of match |                             | Number of penalties Extralight - Heavy |
|   |                 |                    |                |   |                          |                                  |  |                                       | F (5min -> 4min)  | M (5min -> 5min)            |  |
| Evolution                               |                 |                    |                |   |                          | Not studied.                     |  | Not studied.                          |                   |                             |  |
| Comments                                |                 |                    |                |   |                          |                                  |  |                                       |                   |                             |  |
|   |                 |                    |                | Female receives fewer penalties than Male |                          |                                  |  | If more ippon<br>If more Hansoku Make |                   | No difference in categories |  |

Learn more: Rule change and Olympic judo scores, penalties and match duration, Calmet M, Pierantozzi E, Sterkowicz S, Challis B, Franchini E, International Journal of Performance Analysis in Sport, 2017, 17 – 4, 458-465.

### World Championships analyses:

| Astana (2015) and Budapest (2017) |                 |                    |   |                            |   |                                  |   |                                  |                    |                  |   |
|-----------------------------------|-----------------|--------------------|---|----------------------------|---|----------------------------------|---|----------------------------------|--------------------|------------------|---|
| Items                             | Number of ippon | Number of waza-ari | X | Number of penalties Female | Number of penalties Male                  | Number of hansoku make (F and M) | Number of match <i>without</i> penalty        | Number of golden score (F and M) | Duration of match  |                  | Number of penalties Extralight - Heavy                        |
|                                   |                 |                    |   |                            |   |                                  |   |                                  | F (4min)           | M (5min -> 4min) |   |
| Evolution                         |                 |                    | X |                            |   |                                  |   |                                  |                    |                  |   |
| Comments                          |                 |                    |   | X                          |   |                                  |   |                                  |                    |                  |   |
|                                   |                 |                    |   |                            | Female receives fewer penalties than Male |                                  | Possible explanation: 3 shidos = Hansoku Make |                                  | Reduced time for M |                  | The heavier the category, more the judokas received penalties |

Learn more: Judo rules: searching for a wind of changes; Calmet M, Pierantozzi E, Sterkowicz S, Takito MY, Franchini E; International Journal of Performance Analysis in Sport 2017, <https://doi.org/10.1080/24748668.2017.1405612>

## **Conclusions**

The effects between the two Olympics were negative, they became better between the two world championships: at that time, rule changes did not achieve the goal to increase scores and decrease penalties, but that this seems to be changing in the last modifications made for the 2017 World Championship. Beyond rule changes, these effects, (while the periods of these 4 championships overlap) could be explained by the frequency of the events and their own modes of selection.