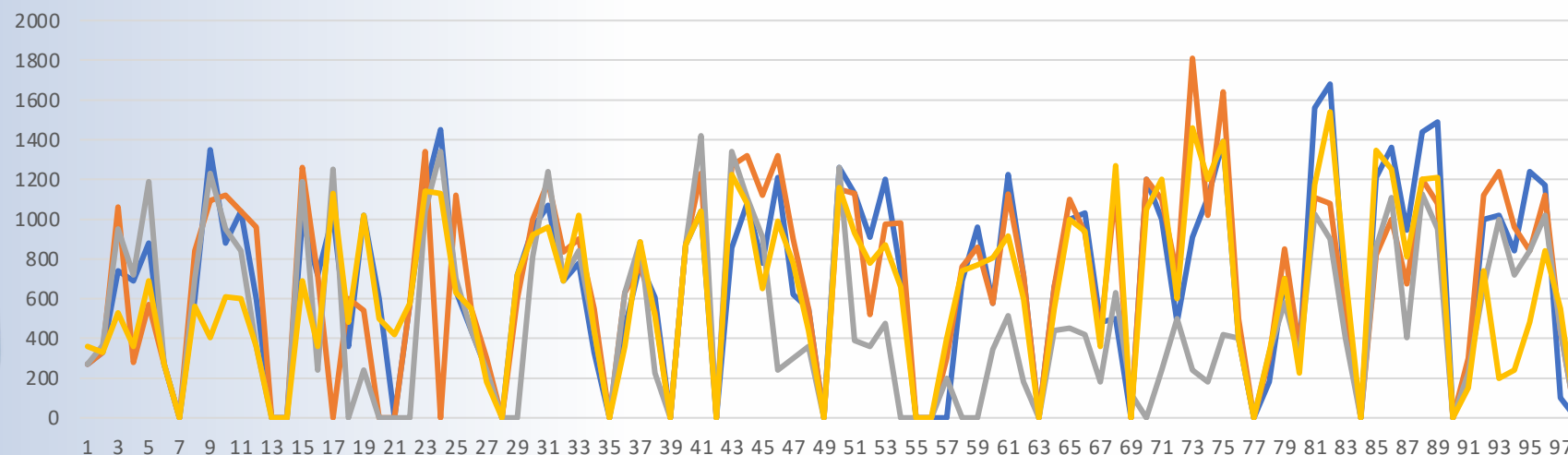


# CONTROL DE LAS CARGAS DE ENTRENAMIENTO EN JUDO



Felipe Sánchez Llanes  
Equipo Nacional China



# ENTRENA DURO, ENTRENA INTELIGENTE

*Pero, ¿cómo  
de duro?*







## ENTRENAMIENTO



## RECUPERACIÓN



# MONITORIZACIÓN CARGA ENTRENAMIENTO



**CARGA = Volumen x Intensidad**

CARGA ENTRENAMIENTO

VOLUMEN (minutos)

INTENSIDAD

|         |   |
|---------|---|
| 1<br>一  | Really easy<br>十分轻松                                 |
| 2<br>二  | Easy<br>轻松  |
| 3<br>三  | Moderate<br>一般, 中等水平                                |
| 4<br>四  | Somewhat hard<br>有点难                                |
| 5<br>五  | Hard<br>困难  |
| 6<br>六  |   |
| 7<br>七  | Very hard<br>非常困难                                   |
| 8<br>八  |   |
| 9<br>九  | Extremely hard<br>非常, 非常困难                          |
| 10<br>十 | Maximal: just like my hardest race<br>极限值, 是我做过的最难的 |

**Athletic performance in relation to training load**

Abstract  
Athletic performance generally improves through regular training. However, excessive training can lead to overtraining syndrome, which is characterized by a decline in performance, mood disturbances, and other symptoms. This review examines the relationship between training load and performance, and discusses the role of overtraining syndrome in athletic performance. It also explores the potential for using training load monitoring to optimize performance and prevent overtraining.

Introduction  
Athletic performance is a complex phenomenon that is influenced by a variety of factors, including genetics, nutrition, and training. Training load is a key component of athletic performance, and it is important to understand the relationship between training load and performance in order to optimize performance and prevent overtraining.

Training load and performance  
Training load is defined as the amount of physical activity that an athlete performs over a given period of time. It is typically measured in terms of distance, time, or energy expenditure. Training load is a key component of athletic performance, and it is important to understand the relationship between training load and performance in order to optimize performance and prevent overtraining.

Overtraining syndrome  
Overtraining syndrome is a condition that is characterized by a decline in performance, mood disturbances, and other symptoms. It is caused by excessive training, and it can lead to a variety of health problems, including fatigue, insomnia, and depression. Overtraining syndrome is a serious condition that can have a significant impact on athletic performance, and it is important to understand the signs and symptoms of overtraining syndrome in order to prevent it.

Conclusion  
Training load is a key component of athletic performance, and it is important to understand the relationship between training load and performance in order to optimize performance and prevent overtraining. Overtraining syndrome is a serious condition that can have a significant impact on athletic performance, and it is important to understand the signs and symptoms of overtraining syndrome in order to prevent it.

**Monitoring training in athletes with reference to overtraining syndrome**

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# MONITORIZACIÓN CARGA ENTRENAMIENTO



***CARGA = Volumen x Intensidad***

CARGA  
ENTRENAMIENTO

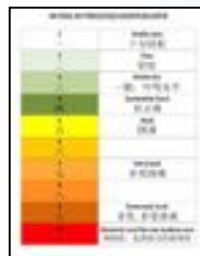


VOLUMEN (minutos)



120 min. x 4 = 480 UAL

INTENSIDAD



Carga entrenamiento = 480 UAL





# MONITORIZACIÓN CARGA ENTRENAMIENTO



***CARGA = Volumen x Intensidad***

CARGA  
ENTRENAMIENTO



VOLUMEN (minutos)



INTENSIDAD



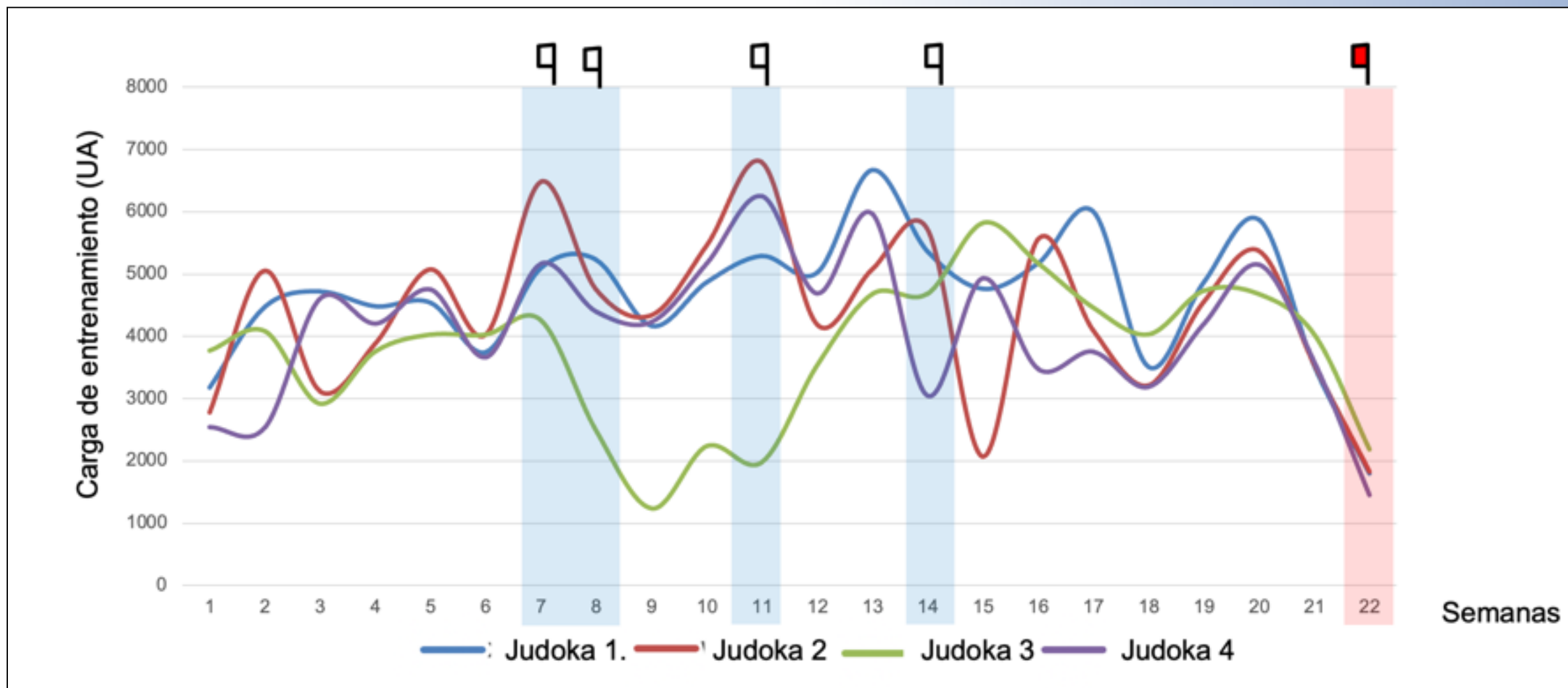
120 min. x 4 = 480 UAL

80 min. x 3 = 240 UAL

Carga entrenamiento = 720 UAL

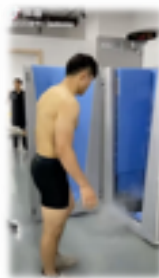
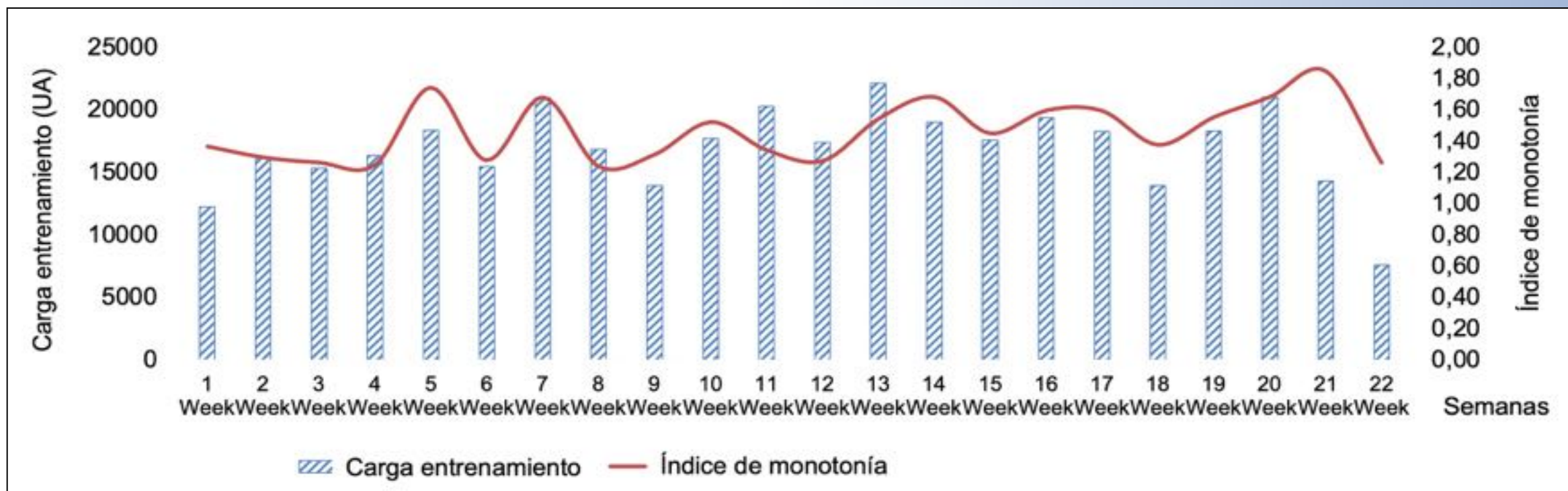


# RESULTADOS



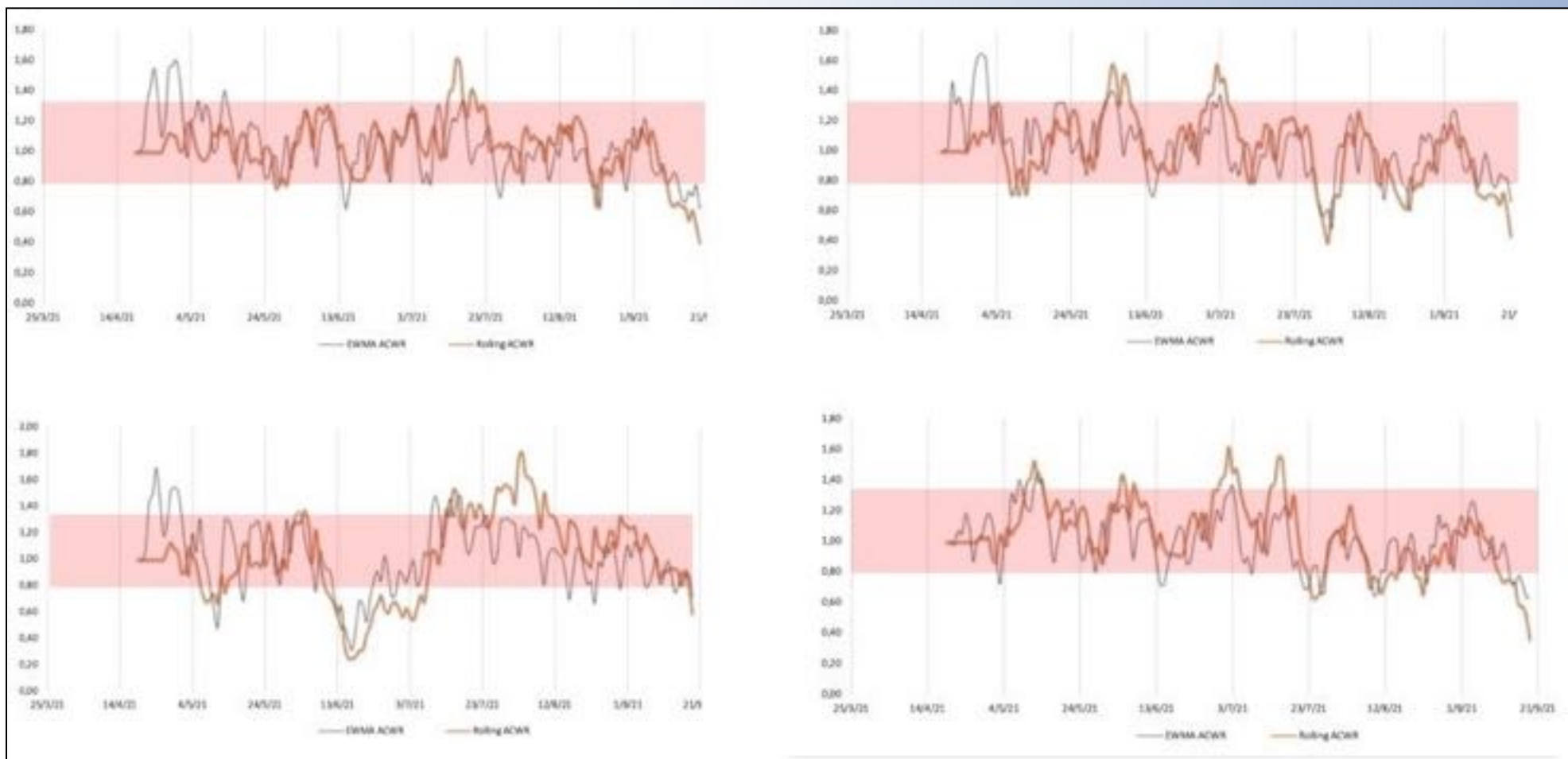


# RESULTADOS





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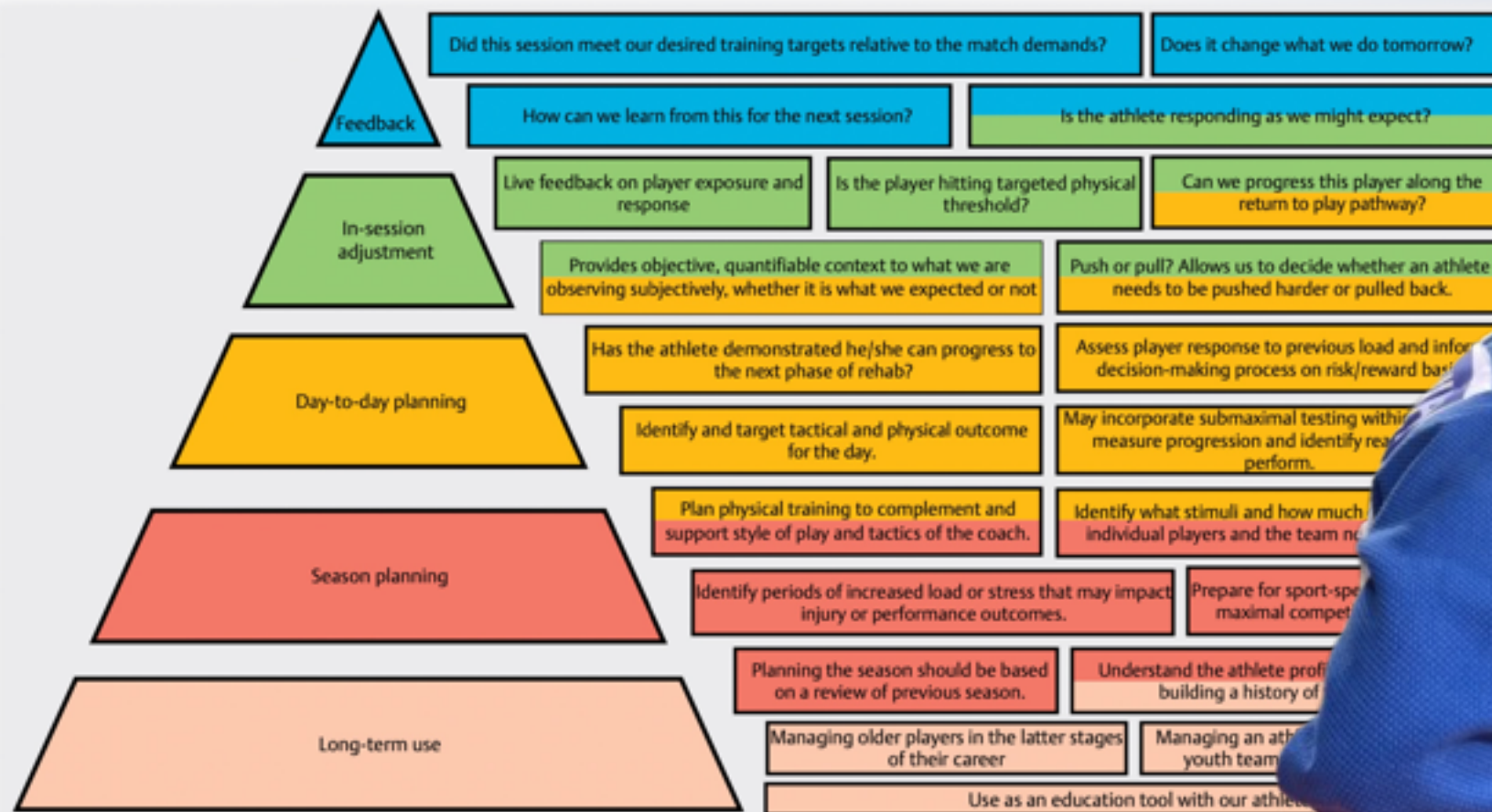


# APLICACIONES

## More than a Metric: How Training Load is Used in Elite Sport for Athlete Management

Authors


Stephen W. West<sup>1,2</sup>, Jo Clubb<sup>3</sup>, Lorena Torres-Ronda<sup>4</sup>, Daniel Howells<sup>5</sup>, Edward Leng<sup>6</sup>, Jason D. Vescovi<sup>7</sup>,  
 Sean Carmody<sup>8</sup>, Michael Posthumus<sup>9,10</sup>, Torstein Dalen-Lorentsen<sup>11</sup>, Johann Windt<sup>12,13</sup>



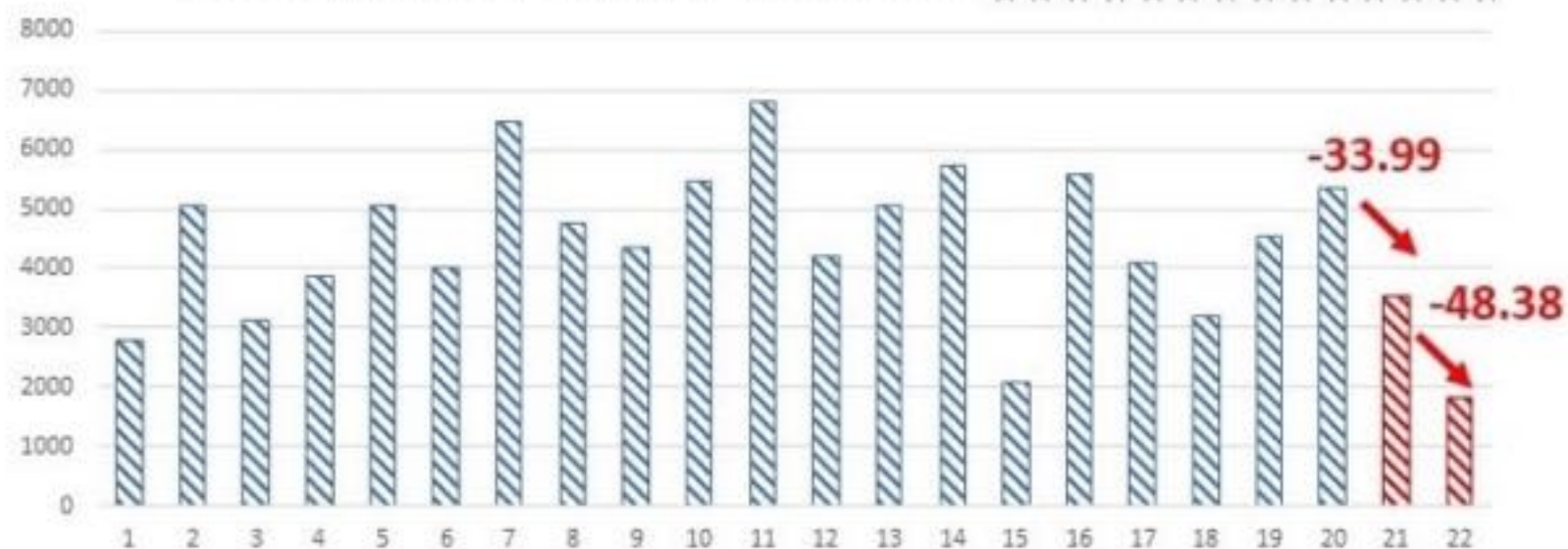


# APLICACIONES

| Wu Zedong   |            | 73             | MALE              | 0 | 0 |
|---|------------|----------------|-------------------|---|---|
|  | 2021-08-30 | 1040           | 910               |   |   |
|   | 2021-08-31 | 1120           | 1015              |   |   |
|   | 2021-09-01 | 480            | 360               |   |   |
|   | 2021-09-02 | 1290           | 975               |   |   |
|   | 2021-09-03 | 990            | 975               |   |   |
|   | 2021-09-04 | 450            | 510               |   |   |
|   | 2021-09-05 | 0              | -                 |   |   |
| <b>WEEK LOAD</b>  |            | <b>% DF WK</b> | <b>AVG WL CAT</b> |   |   |
| 5370  |            | 18,02%         | 4408              |   |   |

| Wu Zedong   |            | 73             | MALE              | 0 | 0 |
|---|------------|----------------|-------------------|---|---|
|  | 2021-09-06 | 360            | 360               |   |   |
|   | 2021-09-07 | 665            | 750               |   |   |
|   | 2021-09-08 | 650            | 843               |   |   |
|   | 2021-09-09 | 0              | -                 |   |   |
|   | 2021-09-10 | 650            | 595               |   |   |
|   | 2021-09-11 | 380            | 807               |   |   |
|   | 2021-09-12 | 340            | 340               |   |   |
| <b>WEEK LOAD</b>  |            | <b>% DF WK</b> | <b>AVG WL CAT</b> |   |   |
| 3545  |            | -33,99%        | 3383              |   |   |

| Wu Zedong  |            | 73             | MALE              | 0 | 0 |
|--|------------|----------------|-------------------|---|---|
|  | 2021-09-13 | 120            | 225               |   |   |
|  | 2021-09-14 | 350            | 425               |   |   |
|  | 2021-09-15 | 600            | 503               |   |   |
|  | 2021-09-16 | 360            | 360               |   |   |
|  | 2021-09-17 | 400            | 380               |   |   |
|  | 2021-09-18 | 0              | -                 |   |   |
|  | 2021-09-19 | 0              | -                 |   |   |
| <b>WEEK LOAD</b>   |            | <b>% DF WK</b> | <b>AVG WL CAT</b> |   |   |
| 1830   |            | -48,38%        | 1140              |   |   |

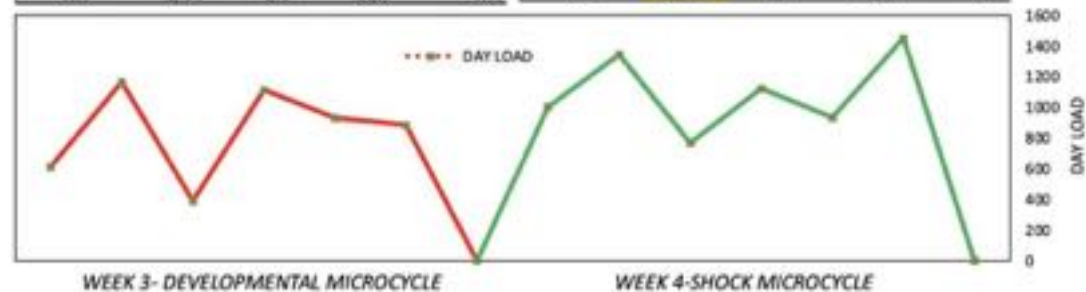




# APLICACIONES



| Ma Zhonghan |           |                |                |            | Ma Zhonghan |           |                |                |            |
|-------------|-----------|----------------|----------------|------------|-------------|-----------|----------------|----------------|------------|
| WEEK LOAD   | % DIFF WK | Monotony Index | Fatigue Strain | AVG WL CAT | WEEK LOAD   | % DIFF WK | Monotony Index | Fatigue Strain | AVG WL CAT |
| 5099        | 41.42%    | 1.79           | 421.05         | 5996       | 6622        | 29.87%    | 1.84           | 479.49         | 7922       |



| Cal Qi    |           |                |                |            | Cal Qi    |           |                |                |            |
|-----------|-----------|----------------|----------------|------------|-----------|-----------|----------------|----------------|------------|
| WEEK LOAD | % DIFF WK | Monotony Index | Fatigue Strain | AVG WL CAT | WEEK LOAD | % DIFF WK | Monotony Index | Fatigue Strain | AVG WL CAT |
| 4895      | -21.95%   | 1.35           | 518.71         | 6241       | 4649      | -5.03%    | 1.45           | 457.58         | 6013       |

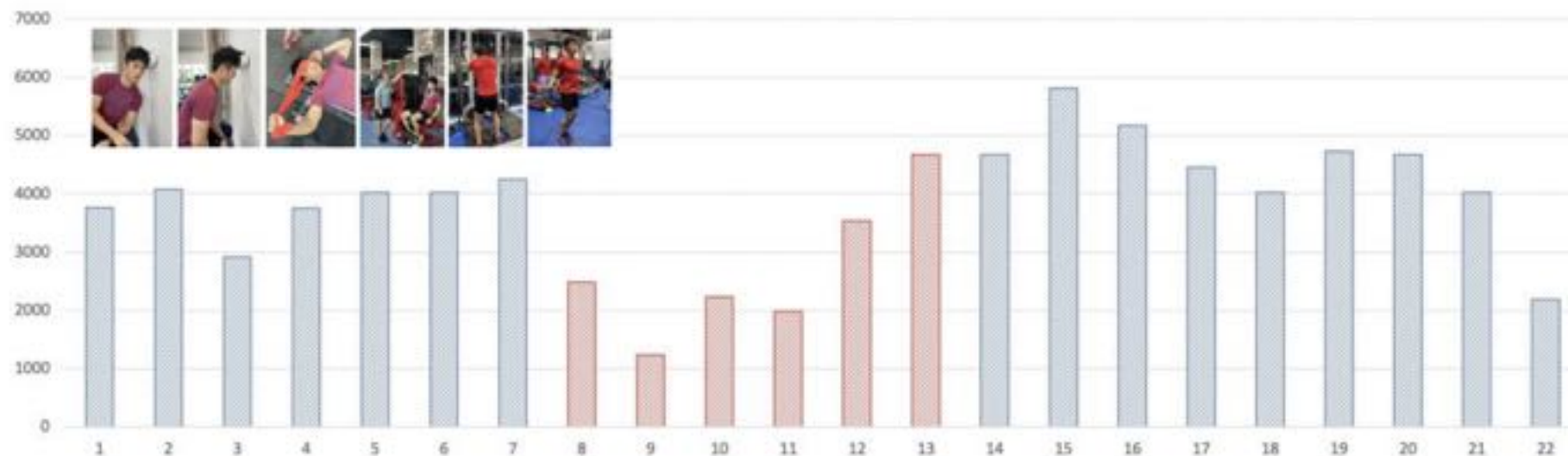
| Cal Qi    |           |                |                |            | Cal Qi    |           |                |                |            |
|-----------|-----------|----------------|----------------|------------|-----------|-----------|----------------|----------------|------------|
| WEEK LOAD | % DIFF WK | Monotony Index | Fatigue Strain | AVG WL CAT | WEEK LOAD | % DIFF WK | Monotony Index | Fatigue Strain | AVG WL CAT |
| 4895      | -21.95%   | 1.35           | 518.71         | 6241       | 4649      | -5.03%    | 1.45           | 457.58         | 6013       |

**WEEK 25: 4895 U.A.    WEEK 26: 4649 U.A.    DIFER %: -5.03%**





# APLICACIONES



| ZhangZhiyuan     |                 | BI | MALE              | 0 | 0    |
|------------------|-----------------|----|-------------------|---|------|
|                  | 2021-06-07      |    | 1260              |   | 1030 |
|                  | 2021-06-08      |    | 390               |   | 390  |
|                  | 2021-06-09      |    | 360               |   | 315  |
|                  | 2021-06-10      |    | 475               |   | 455  |
|                  | 2021-06-11      |    | 0                 |   | 570  |
|                  | 2021-06-12      |    | 0                 |   | -    |
|                  | 2021-06-13      |    | 0                 |   | -    |
| <b>WEEK LOAD</b> | <b>% DIF WK</b> |    | <b>AVG WL CAT</b> |   |      |
| 2485             | -41.67%         |    | 2475              |   |      |

| ZhangZhiyuan     |                 | BI | MALE              | 0 | 0   |
|------------------|-----------------|----|-------------------|---|-----|
|                  | 2021-06-14      |    | 200               |   | 250 |
|                  | 2021-06-15      |    | 0                 |   | 240 |
|                  | 2021-06-16      |    | 0                 |   | 180 |
|                  | 2021-06-17      |    | 345               |   | 263 |
|                  | 2021-06-18      |    | 515               |   | 515 |
|                  | 2021-06-19      |    | 180               |   | 180 |
|                  | 2021-06-20      |    | 0                 |   | -   |
| <b>WEEK LOAD</b> | <b>% DIF WK</b> |    | <b>AVG WL CAT</b> |   |     |
| 1240             | -50.10%         |    | 1070              |   |     |

| ZhangZhiyuan     |                 | BI | MALE              | 0 | 0   |
|------------------|-----------------|----|-------------------|---|-----|
|                  | 2021-06-21      |    | 440               |   | 330 |
|                  | 2021-06-22      |    | 450               |   | 615 |
|                  | 2021-06-23      |    | 420               |   | 505 |
|                  | 2021-06-24      |    | 180               |   | 180 |
|                  | 2021-06-25      |    | 630               |   | 630 |
|                  | 2021-06-26      |    | 120               |   | 120 |
|                  | 2021-06-27      |    | 0                 |   | 450 |
| <b>WEEK LOAD</b> | <b>% DIF WK</b> |    | <b>AVG WL CAT</b> |   |     |
| 2240             | 80.65%          |    | 2545              |   |     |

| ZhangZhiyuan     |                 | BI | MALE              | 0 | 0   |
|------------------|-----------------|----|-------------------|---|-----|
|                  | 2021-06-28      |    | 240               |   | 510 |
|                  | 2021-06-29      |    | 500               |   | 430 |
|                  | 2021-06-30      |    | 240               |   | 600 |
|                  | 2021-07-01      |    | 180               |   | 465 |
|                  | 2021-07-02      |    | 420               |   | 665 |
|                  | 2021-07-03      |    | 400               |   | 350 |
|                  | 2021-07-04      |    | 0                 |   | -   |
| <b>WEEK LOAD</b> | <b>% DIF WK</b> |    | <b>AVG WL CAT</b> |   |     |
| 1980             | -11.61%         |    | 3020              |   |     |

| ZhangZhiyuan     |                 | BI | MALE              | 0 | 0    |
|------------------|-----------------|----|-------------------|---|------|
|                  | 2021-07-05      |    | 330               |   | 330  |
|                  | 2021-07-06      |    | 580               |   | 335  |
|                  | 2021-07-07      |    | 300               |   | 300  |
|                  | 2021-07-08      |    | 1025              |   | 953  |
|                  | 2021-07-09      |    | 900               |   | 1030 |
|                  | 2021-07-10      |    | 400               |   | 500  |
|                  | 2021-07-11      |    | 0                 |   | -    |
| <b>WEEK LOAD</b> | <b>% DIF WK</b> |    | <b>AVG WL CAT</b> |   |      |
| 3535             | 78.54%          |    | 3298              |   |      |

| ZhangZhiyuan     |                 | BI | MALE              | 0 | 0    |
|------------------|-----------------|----|-------------------|---|------|
|                  | 2021-07-12      |    | 860               |   | 858  |
|                  | 2021-07-13      |    | 1110              |   | 1055 |
|                  | 2021-07-14      |    | 405               |   | 540  |
|                  | 2021-07-15      |    | 1125              |   | 953  |
|                  | 2021-07-16      |    | 950               |   | 1015 |
|                  | 2021-07-17      |    | 0                 |   | -    |
|                  | 2021-07-18      |    | 225               |   | 188  |
| <b>WEEK LOAD</b> | <b>% DIF WK</b> |    | <b>AVG WL CAT</b> |   |      |
| 4675             | 32.25%          |    | 4608              |   |      |

# CONCLUSIONES

- **Método RPE-sesión** ha sido demostrado como un método fiable, replicable y útil para la monitorización.
- Este método permitirá alcanzar una apropiada carga de entrenamiento y consecuentemente reducirá las posibilidades de sobreentrenamiento y lesión.
- El control de la relación entre la carga planificada vs percibida entre entrenadores y atletas puede mejorar el rendimiento optimizando la carga de entrenamiento planificada y previniendo las lesiones.
- Por lo tanto, este método no solo ayudará a manejar la vuelta al entrenamiento, sino que también proporcionará una útil herramienta para estudiar la relación entre carga entrenamiento-fatiga/lesiones

