

Nutrition for Recovery



Nutritionist
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overview

- Recovery from weight loss and weigh-in in Judo
- Recovery for the period of races in Swimming



The number of medals in men's judo team : 2 in Beijing ⇒ 4 in London!



Judo National Team(Men)

Background and Contents of Nutritional Support Service

«Problems Found»

Repetitive failure of weight loss in OG.

⇒ *Advise for weight control methods*

Importance of nutritional support

«Contents of Nutrition Service»

- Weight control and advice for weight loss on the daily basis
- Provide recovery meal and refeeding after the weight-in (world championships, OG)

The range of weight-loss and determination of individual appropriate weight

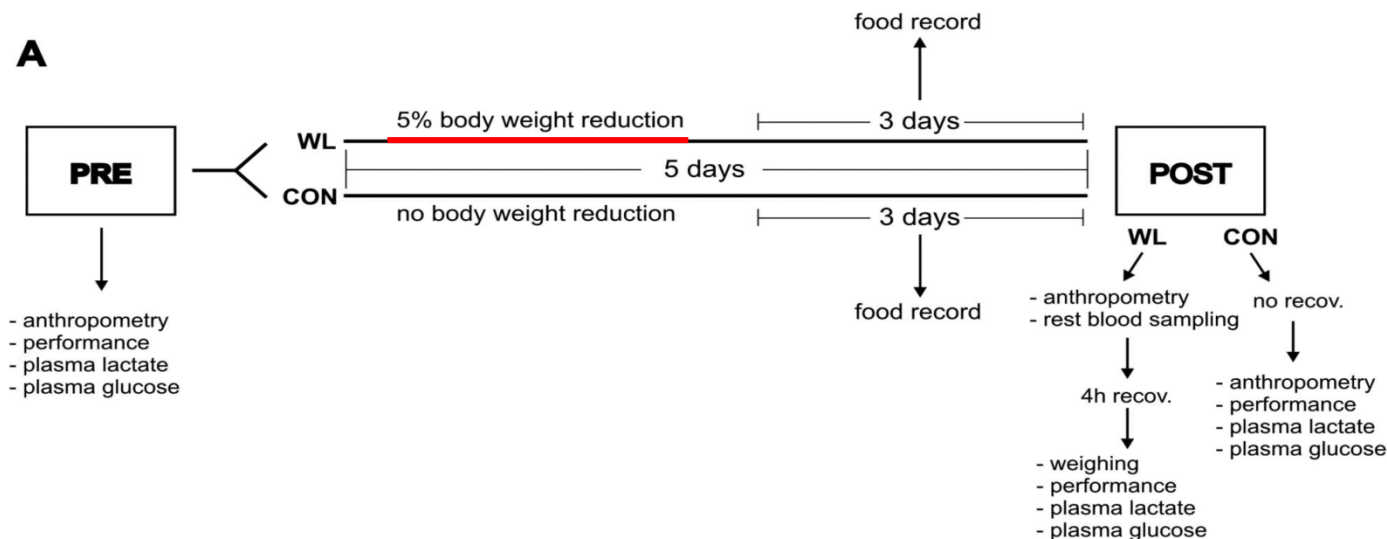


Table II. Body weight and body composition of the weight loss and control groups before (PRE) and after (POST) the intervention (mean \pm s).

| | Weight loss | | Control | |
|---------------------|-----------------------------|-----------------|----------------|----------------|
| | PRE | POST | PRE | POST |
| Body weight (kg) | 77.9 \pm 12.2* | 74.1 \pm 11.4 | 67.3 \pm 5.8 | 67.4 \pm 5.8 |
| Body fat (kg) | 8.8 \pm 2.6* [#] | 8.0 \pm 2.3** | 4.0 \pm 1.6 | 4.2 \pm 1.7 |
| Lean body mass (kg) | 66.2 \pm 4.6* | 63.5 \pm 4.9 | 63.3 \pm 5.1 | 63.2 \pm 5.1 |

*Significantly different from POST ($P < 0.01$). [#]Significantly different from control before the intervention ($P < 0.01$). **Significantly different from control after the intervention ($P < 0.01$).

Table III. Average energy and macronutrients intake reported by the participants in 3-day food records (mean \pm s, with range in parentheses).

| | Weight loss | Control |
|---|-------------------------------|-------------------------------|
| Energy (kcal \cdot kg ⁻¹ \cdot day ⁻¹)* | 19.6 \pm 4.4 (14.4–25.8) | 38.7 \pm 5.5 (32.6–45.3) |
| Carbohydrate (g \cdot kg ⁻¹ \cdot day ⁻¹)* | 2.7 \pm 0.8 (2.1–4.1) | 5.6 \pm 0.9 (4.8–7.1) |
| Fat (g \cdot kg ⁻¹ \cdot day ⁻¹)* | 0.5 \pm 0.1 (0.3–0.7) | 1.2 \pm 0.4 (0.6–1.6) |
| Protein (g \cdot kg ⁻¹ \cdot day ⁻¹)* | 1.0 \pm 0.3 (0.7–1.5) | 1.7 \pm 0.4 (1.2–2.3) |

*Significant differences between groups ($P < 0.001$).

Recommended weights per category

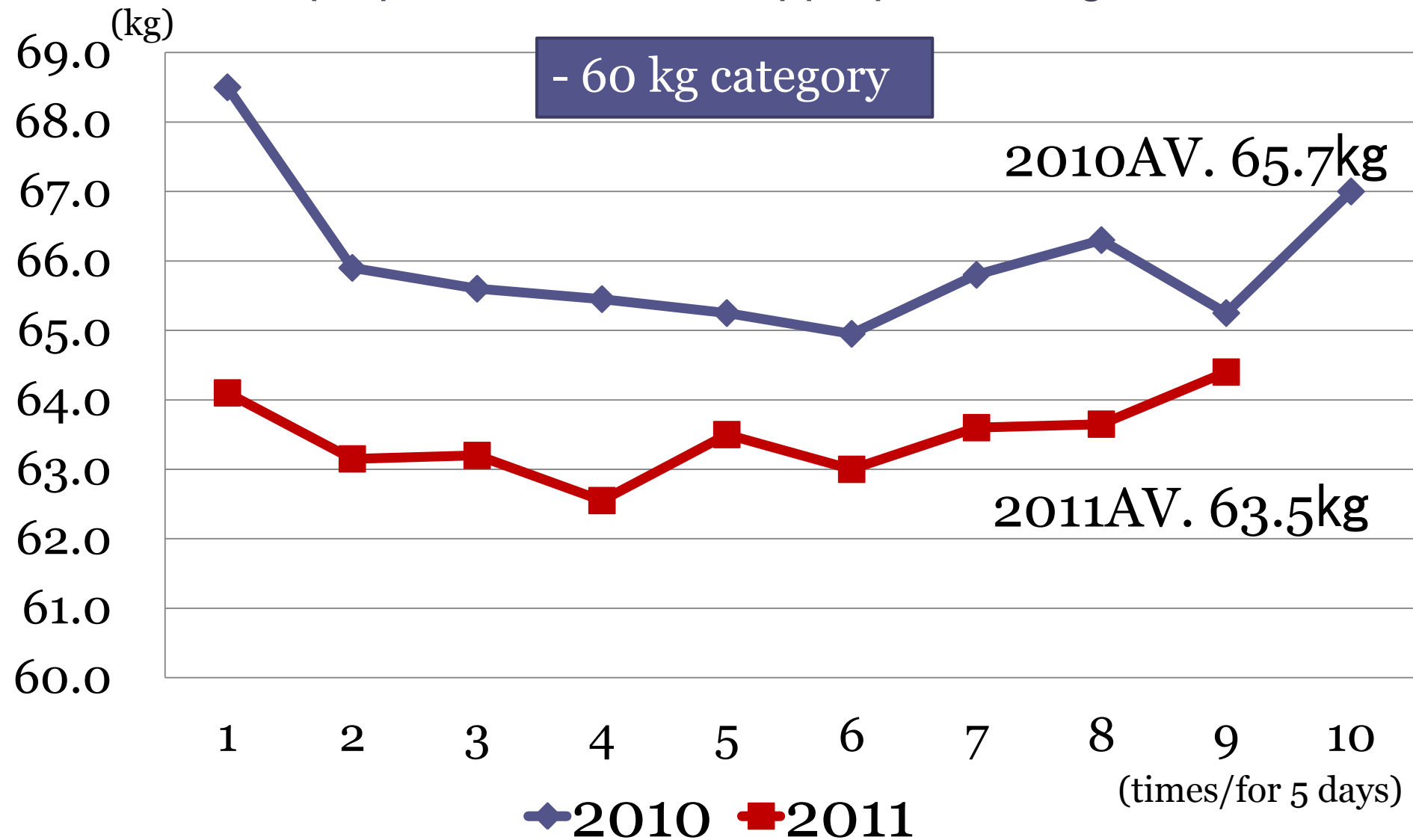
Control their weight on daily basis within **+ 5 ~ 8 %** of their weight category

⇒ Less than + 5 % 10 days prior to the match

| | + 3 % | + 4 % | + 5 % | + 6 % | + 7 % | + 8 % |
|--------------|---------|---------|---------|---------|---------|---------|
| 6 0 k g | 61.8kg | 62.4kg | 63.0kg | 63.6kg | 64.2kg | 64.8kg |
| 6 6 k g | 67.9kg | 68.6kg | 69.3kg | 69.9kg | 70.6kg | 71.2kg |
| 7 3 k g | 75.1kg | 75.9kg | 76.6kg | 77.3kg | 78.1kg | 78.8kg |
| 8 1 k g | 83.4kg | 84.2kg | 85.0kg | 85.6kg | 86.6kg | 87.4kg |
| 9 0 k g | 92.7kg | 93.6kg | 94.5kg | 95.4kg | 96.3kg | 97.2kg |
| 1 0 0 k g | 103.0kg | 104.0kg | 105.0kg | 106.0kg | 107.0kg | 108.0kg |

Support for weight-loss on daily basis

~ Case in proper control of the appropriate weight ~



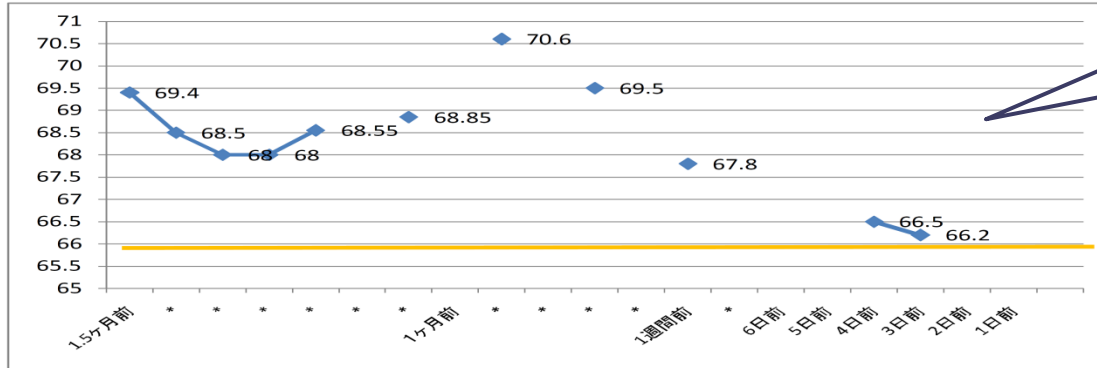
Methods for weight loss toward competition

- Do not reduce the amount of meals rapidly before a week prior to the competition
- Eat the main dish even if small amount, and reduce the side dishes
- Do not reduce water intake until the last minute
- Preferable to take water and food as much as they can up to a day before the competition



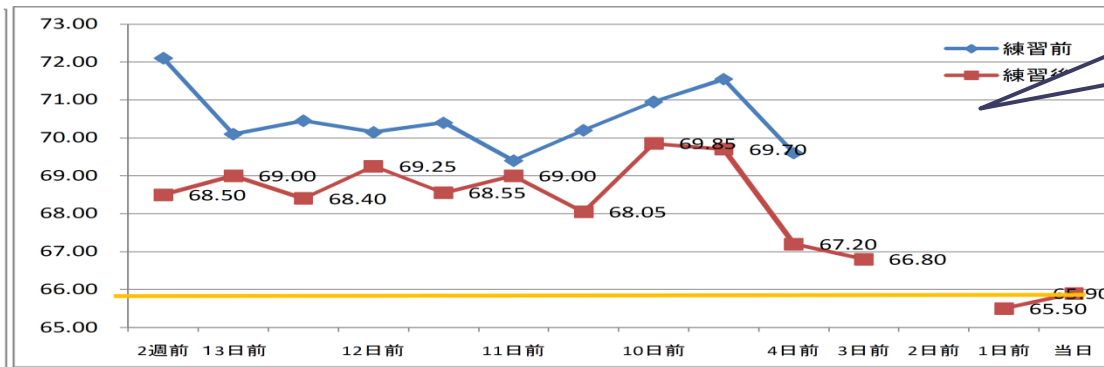
Changes in weights toward competition

海老沼匡選手
2011世界選手権(試合1.5か月前～試合)



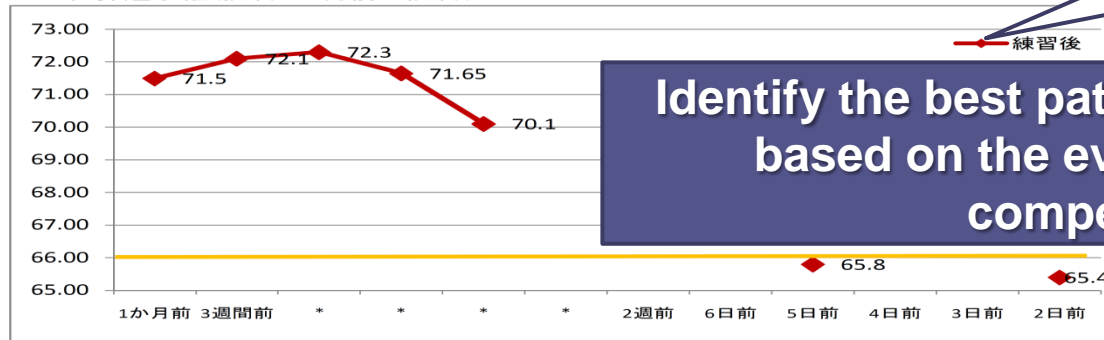
2011 world
champion ships

2011天理合宿～GSリオ(試合2週間前～試合までのシミュレーション)



2011 grand slam

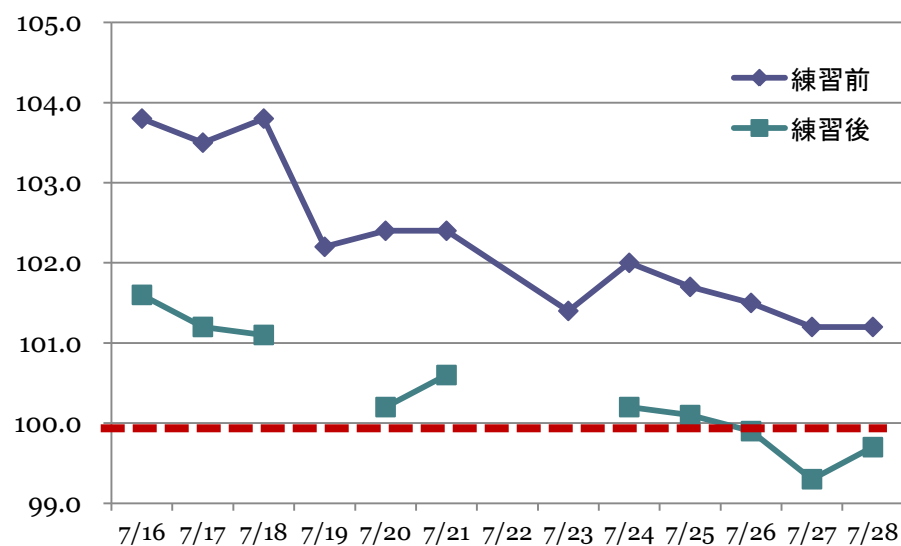
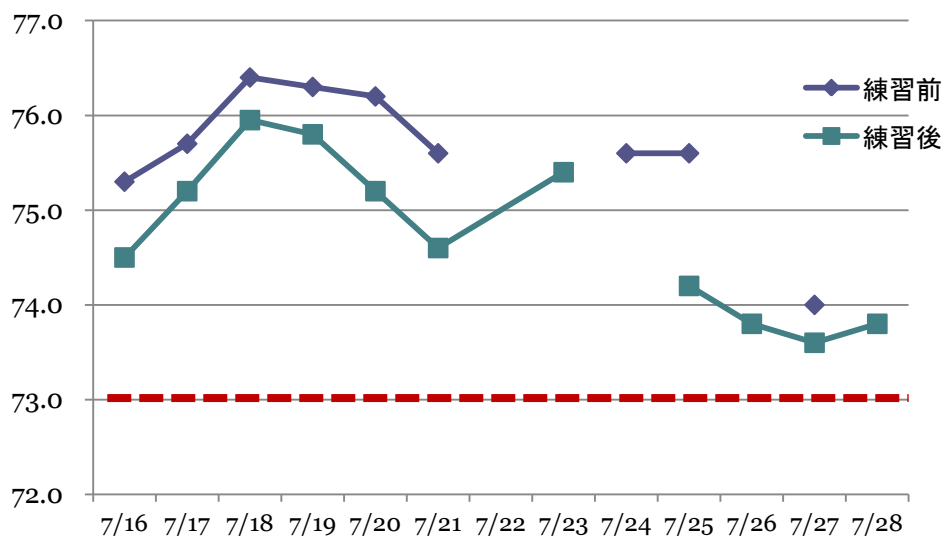
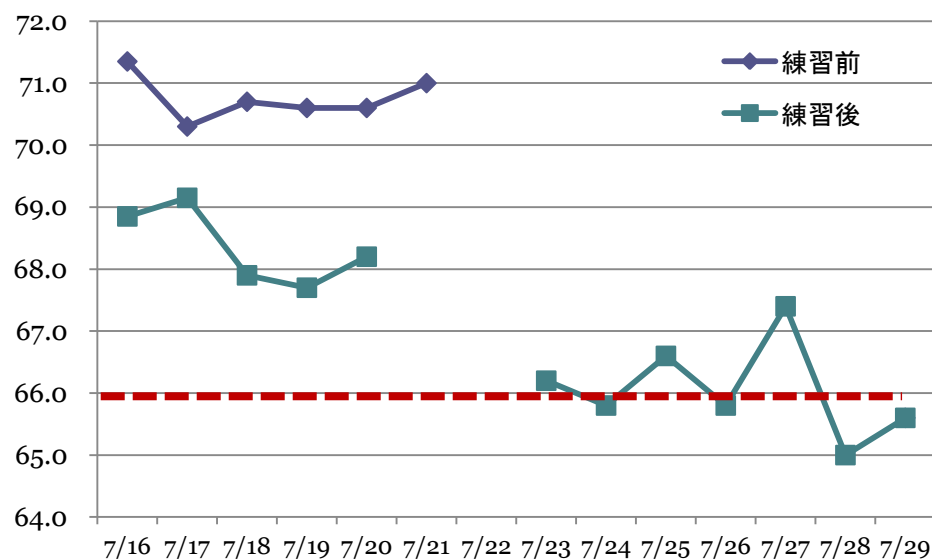
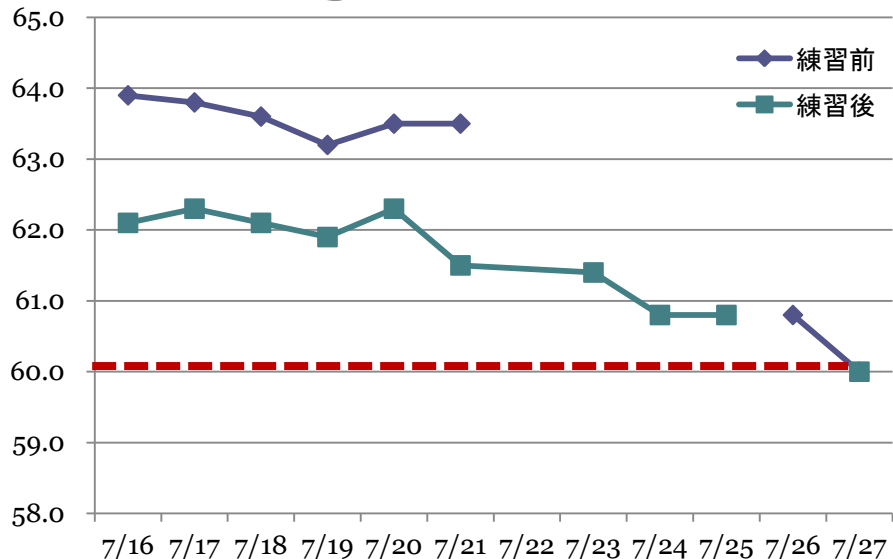
2010世界選手権(試合1か月前～試合)



2010 world
champion ships

Identify the best pattern for conditioning
based on the evaluation in each
competitions

Changes in weights during the preparation period toward OG



Amount of carbohydrate and energy intake during the recovery period

<<Review of Studies 1 : Wrestling>>

- ▶ Performance recovery in 5 hours CHO~275g>~175g
(Rankin et al, 1996)



<<Review of Studies 2 : Judo>>

- During the 4-h recovery period, the weight loss group ingested $1391\text{kcal}\pm 375\text{kcal}$
($201\pm 62\text{g}$ of carbohydrate, $50\pm 16\text{g}$ of fat, $34\pm 23\text{g}$ of protein)
- No significant difference in performance between CON and PRE groups (rapid weight loss 5 days)
- After the recovery period weight loss athletes regained $51\pm 13\%$

Refeeding right after weight-in (Recovery Meal)



Carbohydrate and
Water Intake is
the priority

Carbohydrate intake
250~300g





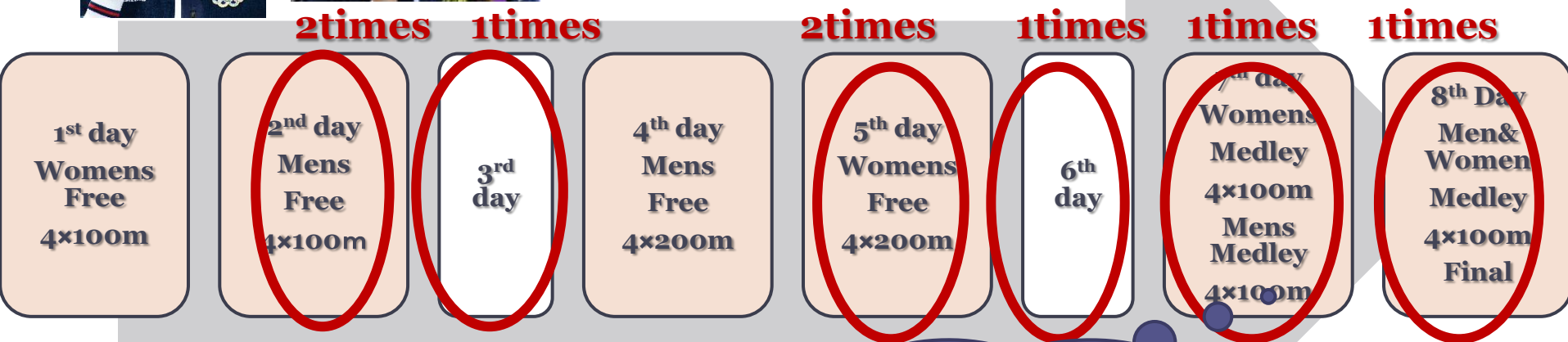
**4 Japan Records · The most number
of medals in 68 years = 11 !**



London2012 · Schedule of Races



In the case of Suzuki
and Irie
100M · 200M · Relay



Weight Loss...
Lose appetite...

Preliminary
10:00 ~ 13:00

← About 7 hours →

Semi Final / Final
19:30 ~ 21:30

Conditioning Issues in OG

- **Conditioning to perform at maximum for 8 days**
- Daily Recovery for 8 days
- Quick recovery between races (Pre, SF, F)

Recovery Tips during Olympic Games

1. Quick Recovery between races

- ▶ Carbohydrate intake after preliminary race and before semi final
- ▶ Carbohydrate intake after semi final and before final in next day

2. Daily recovery to keep performance in races over several days

- ▶ Make sure to take the required amount of energy and carbohydrate on the race day
- ▶ Make sure to take the required amount of energy and carbohydrate on non-race days
- ▶ Protein, Vitamines, Minerals

High carbohydrate availability to promote optimal performance in competition

~IOC Sports Nutrition Consensus Statement 2010

- Preparation for Events < 90min exercise
7-12g · kg⁻¹ · body mass per 24h
- <8 h recovery between two
fuel demanding sessions
**1.0-1.2g · kg⁻¹ · h⁻¹ for
first 4h then resume daily fuel needs**
- Before exercise < 60 min
**1.0-4g · kg⁻¹ consumed 1-4h before
exercise**

Nutritional Strategy on Race Day

~Importance of carbohydrate intake for recovery

- Determine the required amount of carbohydrate intake in one day for the period of competition

⇒7g/kg⁻¹/day

- Determine the required amount in the morning, afternoon, and right after the race

⇒Right after the races, 1g/kg⁻¹



Case of using Nutritional Strategy

Nutrition Program for Recovery

選手

Preliminary Race at 9:50
 Breakfast 6:15 Hodgepodge, soup
 Prior to race 9:00 Energy Jelly
 After the race 10:45 Riceball

Semi final race at 19:30
 Lunch 12:00 Chirashi-sushi, Watermelon, meat, veg.
 Prior to race 17:00 riceball X1
 ⇒ Sub approx. riceball x3.5

Dinner day before the race
 ⇒ Sub approx. riceball x4



1日に必要な炭水化物量

390g

コンビニサイズおにぎり(100g)1個の炭水化物量約37g

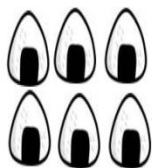
おにぎり7~10個分

主食

50~60%

195~235g

(おにぎり5~6.5個分)



果物・飲み物・ゼリー

20~30%

80~120g

(おにぎり2~3.5個分に相当)



おかずなど

10~20%

いも類、野菜類、ヨーグルトなどを食べましょう

予選レース (朝食~午前中補食)

95g

(3個分)



おにぎり2個+OJ200ml + スープ春雨

朝食・昼食には消化のよいおかずを

決勝レース (昼食~午後補食)

130g

(3.5個分)



おにぎり2個+OJ200ml +ゼリー1個

決勝レース終了直後

55g

(1.5個分)



SS1個+バナナ1本

決勝レース終了後(夕食)

80g

(2個分)



おにぎり2個

消化のよいおかずもプラス

at the athlete village

Enough main dish, small side dish with less fat compared to usual

朝 ※-60kg athletes (energy / carbohydrate)

| | | |
|---------------|---------|--|
| 鶏団子入中華麺 | 146kcal | |
| ごはん1/2杯分 | 73kcal | |
| プレーンオムレツ | 71kcal | |
| オレンジジュース200ml | 84kcal | |
| ヨーグルト+はちみつ | 82kcal | |
| バナナ | 73kcal | |

Breakfast

529kcal/91.6g

| | | |
|---------------|---------|--|
| スパゲティ+マリナラソース | 347kcal | |
| バケツ | 120kcal | |
| 鶏むね肉のグリル | 193kcal | |
| ブロッコリーとトマト | 67kcal | |
| オレンジジュース200ml | 84kcal | |
| グリーンサラダ | | |

Dinner

811kcal/112.8g

昼

| | | |
|-----------------|---------|--|
| ごはん1.5杯 | 219kcal | |
| えびぎょうざ | 116kcal | |
| 白身魚のグリル | 180kcal | |
| 味噌汁 | 62kcal | |
| ほうれんそうのガーリックソテー | 70kcal | |
| パイナップル・メロン | 47kcal | |
| ヨーグルト+はちみつ | 82kcal | |
| グリーンサラダ | | |

Lunch

776kcal/96.4g

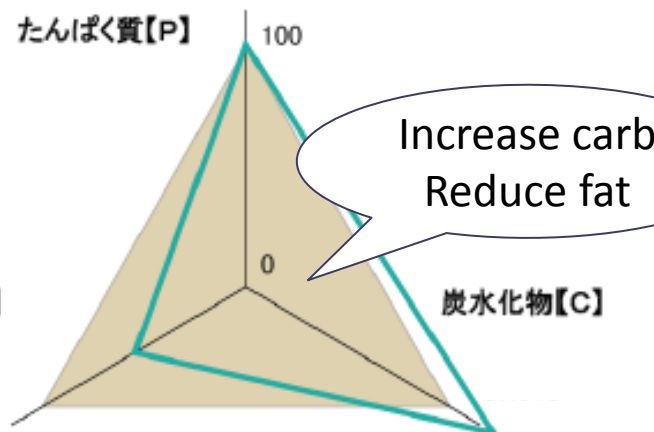
補食

| | | |
|------------|---------|--|
| おにぎり2個 | 268kcal | |
| マルチエネルギー1個 | 160kcal | |
| スポーツ1個 | 100kcal | |

Snack





























528kcal/120g

Total in 1 day 2644kcal/420.8g



Use of McDonalds



| | 商品名 | energy (kcal) | carbohydrate (g) | protein (g) | fat (g) | 備考 |
|--------|---|---------------|--|--|--|-----------------------------|
| Burger | ハンバーガー  | 250 | 30  | 14  | 8  | 炭水化物がとれる 脂肪少なめ |
| | フィレオフィッシュ  | 335 | 38  | 14  | 13  | 炭水化物がとれる 脂肪やや多め |
| | マックチキンサンド  | 385 | 44  | 16  | 16  | 炭水化物がとれる 脂肪やや多め |
| Sand | グリルチキンサラダ  | 435 | 56  | 27  | 10  | 炭水化物・たんぱく質がしっかりとれる 脂肪少なめ |
| | クリスピーチキン&ベーコン  | 620 | 73  | 33  | 21  | 炭水化物・たんぱく質がしっかりとれる 脂肪多め |
| Wraps | グリルドチキン  | 330 | 38  | 24  | 9  | 炭水化物・たんぱく質がしっかりとれる 脂肪少なめ |
| | クリスピーチキン&ベーコン  | 495 | 55  | 23  | 20  | 炭水化物・たんぱく質がしっかりとれる 脂肪多め |

| 商品名 | エネルギー (kcal) | たんぱく質 (g) | 脂肪 (g) |
|---|--------------|--|--|
| ガーデンサラダ  | 10 | 1 | 0 |
| グリルチキンサラダ  | 115 | 18  | 2 |
| クリスピーチキンサラダ  | 270 | 23  | 12  |

パックでサラダがとれるので、ダイニングが混みあっているときに便利です。
他のおかず類との組み合わせでチキンあり/なしを選びましょう。
体重が増えやすい人はノンオイルドレッシングにしましょう。

Case to maximize the use of sport science and medicine support service comprehensively

Develop swim to minimize the water resistance

Weight loss



Objectives from Coaches

+

Athletes subjectivity

To change the swimming form

Training & care



Lactate measurement



Motion analysis



Race analysis



Thank you for your attention