Nutritional Aspects of Jockeys’ Health
ICHSSWJ
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Trainers import the finest blends of hay for the horses, but what about the nutrition of the poor jockey ?!
Overview

• Recommended Nutritional Guidelines
• Dietary habits of Irish Jockeys
• Disordered Eating
  - Why it occurs
  - Consequences of it
  - What are we doing to correct it
• Limitations
• Current study.
Recommended Nutritional Guidelines

- Nutritional guidelines for jockeys!
- Need to look at other weight category sports e.g. Boxing, Judo, Wrestling, Gymnastics etc.
Recommended Nutritional Guidelines

Current Guidelines taken from;

- ADA, ACSM & DoC (J AM Diet Assoc. 2009)
- The New Zealand Dietetic Association (2009)
Recommended Nutritional Guidelines

Estimation of Nutritional requirements:

Body composition;

- Weight, Height, BMI (Body mass index)
- The sum of skinfolds (usually 7 sites)
- DEXA/QCT scan
Recommended Nutritional Guidelines

• BMR is estimated using the Schofield, Harris-Benedict or Cunningham equation if FFM is available.

• TEE estimated depending on the intensity, frequency and duration of exercise (PAL)

• Daily energy intake should not fall below the Jockeys’ RMR or <30kcal/kgFFM.

• Energy demands/energy balance ?

• Energy availability: \[ EA = \frac{(EI - EEE)}{LBM} \]
Recommended Nutritional Guidelines

Making weight

- ‘Programmes designed to change body composition should be undertaken outside the competitive season’ (NZDA, 2009)

- To lose weight reduce intake by 500 – 1000kcals/day.

- Safe weight loss 0.5-1kg/week (ADA, 2009)

- Achieved by following a low fat, low Glycaemic index (GI) diet (High GI between races)
Recommended Nutritional Guidelines

- Carbohydrate 6-10g/kg/day depending on:
  - Total daily energy expenditure
  - Type of exercise
  - Gender
  - Environmental conditions

- Protein
  - Endurance 1.2-1.4 g/kg/day
  - Resistance or strength trained 1.6-1.7 g/kg/day

(Nutrition and Athletic Performance, ACSM and ADA Joint Position Statement 2009)
Recommended Nutritional Guidelines

- Fat intake should not necessarily be restricted
  - No added benefit of having a diet of 15% fat compared to 20% or 25%
  - Keep saturated fat <10% daily energy intake or <30% total fat intake
- Fluid: 35mls/kg/d + an extra 1500mls per kg lost through sweat.
**Recommended Nutritional Guidelines**

- **Timing of nutrient intake is important – refuelling between races & after last race vital**
- **Adequate Vitamin & Mineral intake**
- **Main ones of concern to jockeys are:**
  - **Calcium:** 800 mg/d
  - **Vitamin D$_3$:** 400-800 IU/d
  - **Iron:** 10 mg/d
Irish jockey’s dietary habits

- Research carried out by our group (Dolan et al., 2010; Warrington et al. in 2009) looked at the ‘Lifestyle and dietary habits of Irish Jockeys’.
- Food diaries of 18 jockeys, 11 Flat and 7 National Hunt, were analysed.
# Results of Irish Study

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Mean</th>
<th>FJ n=11</th>
<th>NH n=7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Kcals</strong></td>
<td>2000-2500</td>
<td>1803</td>
<td>1669 ± 436</td>
<td>2013 ± 707</td>
</tr>
<tr>
<td><strong>Total KJ</strong></td>
<td>6368-7960</td>
<td>7576</td>
<td>7012 ± 1824</td>
<td>8462 ± 2979</td>
</tr>
<tr>
<td><strong>Fat (g)</strong></td>
<td>50-70 (25-30% E)</td>
<td>67.7</td>
<td>62.5 ± 24.2</td>
<td>76 ± 23.1</td>
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<tr>
<td></td>
<td>(35% E)</td>
<td></td>
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<tr>
<td><strong>CHO (g)</strong></td>
<td>6-10 g/kg/d</td>
<td>3.4 ±1.6</td>
<td>201.1 ± 52.1</td>
<td>225.4 ± 99</td>
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<tr>
<td><strong>Protein (g)</strong></td>
<td>1.2-1.4g/kg/d</td>
<td>1.3 ±0.5</td>
<td>65.3 ± 19.6</td>
<td>90.3 ± 36.5</td>
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</tbody>
</table>
Results of Dietary analysis

- Diets were lacking in Energy & CHO.
- Protein appeared adequate but ...
- High saturated fat content.
- Deficient in many Vitamins, minerals & micronutrients (e.g. calcium, vitamin D, omega 3 FA, antioxidants A,C & E)
- Low in dietary fibre.
- High incidence of severe/extreme dehydration particularly on race day
Diets were high in saturated fat
13.5% SFA, 11.2% PUFA, 4.4% MUFA
Low in antioxidants & fibre
Mean daily fruit & veg intake was 0.9 ± 0.8
Disordered eating (DE)– why it occurs

- Culture/weight making practices.
- Protracted season – no ‘down time’
- Injury – boredom
- Hectic lifestyle
- Travel
- Literacy skills
- Lack of dietary knowledge/culinary skills.
- Access to appropriate food at the racecourse
Martin Dwyer
2006 Derby-winning jockey

over the winter. It’s difficult, but you get used to it – I’ve been doing it for 12 years. I’ve lost six or seven pounds in the past week. Had a 40-minute sweat in the bath then went to Yarmouth for racing. 1pm Checked weight. Then a sauna to shift the last two or three pounds. My average racing weight is 8st 4lb. 2pm Rode five races. I don’t drink water because it defeats the object. You have to be careful though: I get bad cramp in my hips and hands, so in hot weather I have a rehydration drink to replace salts. They give it to the horses, too. 5pm Had a dirty big hot dog and a glass of Lucozade. That’s not good, is it? It was so nice though. 8.30pm Went for a Chinese with friends. I had a bit of duck and chicken with white rice. Probably ate too much. And four or five glasses of white wine. 11pm Home to bed.

The 2007 Vodafone Derby is on Saturday 2 June (01372 470047)

7am Broke my fast from lunchtime yesterday with half a cup of tea while reading the papers. It had four sugars for energy. When the season starts I have to lose the weight I put on.
A day in the life of a jockey!

B/F: Porridge x 300mls

MM: Red Bull x 2 cans

Lunch: Porridge x 300mls
Red Bull X 2 cans

Mid Aft: Red Bull x 2 cans

Dinner: Porridge x 300mls
Red Bull x 2 cans

BB: Porridge x 300mls
Red Bull x 2 cans
Consequences of DE

- Low muscle energy (glycogen) levels implications for health and performance
- Dehydration
- Poor nutrient intake over time - decreased immune system (Burke LM. 2001)
- Osteopenia/osteoporosis (Warrington et al. 2006)
- Long term health implications of DE—renal dysfunction, endocrine dysfunction
- Impaired mental & emotional health
- Reduced RMR
DE - What we are doing to correct it

Education, Education, Education!

To effect behavioural change
DE - What we are doing to correct it

- Continued professional development courses.
- Making weight the healthy way
- Hydration
- Cookery classes/label reading
- Lectures on bone health and what to eat when injured.
- Healthy eating at the racecourses
- Individual consultations
DE - What we are doing to correct it

• Provision of appropriate food at the racecourses - ongoing

• Interventions
  - Vitamin D, Calcium ? & multivitamin supplementation
  - Omega 3 fatty acid supplementation.
  - Regular DEXA/QCT scans to monitor BMD
  - Continued Professional Development
  - Ongoing access to a sports dietitian to provide individualised dietary advice.
Limitations

- Weight restrictions – unpredictable and unrealistic!
- Vulnerable population
- Tradition – slow to change
- Not all jockeys have the same needs!
Current Study

- Looking at energy balance
  - input Vs output
- Focusing on a race day and a non race day.
- Measuring blood sugar & ketone levels on a race day and non race day.
- Measuring RMR
- There is a need for accurate and validated nutritional data.
- Sensecam.
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