‘PYMS’
Paediatric Yorkhill Malnutrition Score

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Malnutrition

A problem in Africa….

…and in our NHS hospitals!
Malnutrition – What’s the problem?

• 25-35% in-patients suffer from malnutrition \( (\text{Kondrupt et al 2002}) \)

• Malnutrition is a state in which there is an imbalance of energy, protein or other nutrients that leads to detrimental effects on tissue/body function \( (\text{Elia et al 2005}) \)

• Screening tools detect the under-nutrition of protein/energy \( (\text{Kondrupt et al 2002}) \)

• Malnutrition estimated to cost £13 billion/year in UK \( (\text{BAPEN 2009}) \).
Complications of Malnutrition

- Increased susceptibility to infections
- Impaired wound healing
- Delayed growth
- Impaired brain development
- Life-long health implications (i.e. bone health)
- Increased mortality/morbidity
- Reduced quality of life
- Increased hospital stay.

Health Care Responsibilities

• Promote and protect health and well-being of patients (NMC 2008)

• The NPSA identify in their “10 key characteristics of good nutritional care in hospitals” that all patients should be screened on admission and re-screened weekly for risk of malnutrition (NPSA 2009)

• Hospital Nutrition Policy (specific to local Health Boards)

• Screen all patients for risk of under-nutrition with a validated tool appropriate to the patient population (NHS QIS 2003)
About PYMS…

- Created in Glasgow during 2008, in response to national standards set that identified the importance of screening for malnutrition
- This is a means of identifying children who are at risk of malnutrition in order to aid dietetic referral
- ‘PYMS’ designed to detect energy/protein under-nutrition in patients over 1 year of age
- 5 step process
- Quick and easy to use
- Part of admission and ongoing assessment
Women and Children’s Directorate

The ‘PYMS’ Form

Paediatric Yorkhill Malnutrition Score (PYMS)

Name: ___________________________  Hospital No: ___________________________
Surname: ___________________________  Date: ___________________________
DOB: ___________________________  Nurse Signature: ___________________________
Age: ___________________________  Weight: ___________________________
Sex: F/M  Height: ___________________________
Ward: ___________________________  Consultant: ___________________________
BMI: ___________________________

1. Is the BMI below the cut-off value in the table overleaf?
   NO  0
   YES  2

2. Has the child lost weight recently?
   NO  0
   YES  1
   - Unintentional weight loss
   - Clothes loosen
   - Poor weight gain (if <2yrs)

3. Has the child had a reduced intake (including feeds) for at least the past week?
   NO  0
   YES: Decrease of usual intake for at least the past week  1
   - No intake (or a few feeds of very small size) for at least the past week  2

4. Will the child’s nutrition be affected by the recent admission/condition for at least the next week?
   NO  0
   YES  1
   - Decreased intake and/or increased requirements and/or increased losses
   - No intake (or a few feeds of very small size) for at least the next week  2

Calculate total score (total of steps 1-4): Total PYMS Score

PYMS must be completed by a registered nurse


PYMS Dietetic Management Pathway

Total PYMS Score

0 1 2

Repeat PYMS Score in ONE WEEK
Repeat PYMS Score in THREE DAYS
Repeat PYMS Score in ONE WEEK

Body Mass Index (BMI) Scoring Guide

(if the BMI calculated is less than that shown for age and gender, answer ‘Yes’ for Step 1)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
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<tbody>
<tr>
<td>Boys</td>
<td>15.0</td>
<td>14.5</td>
<td>14.0</td>
<td>13.5</td>
<td>13.0</td>
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<td>12.0</td>
<td>11.5</td>
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<td>8.5</td>
<td>8.0</td>
<td>7.5</td>
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<td></td>
</tr>
<tr>
<td>Girls</td>
<td>15.0</td>
<td>14.5</td>
<td>14.0</td>
<td>13.5</td>
<td>13.0</td>
<td>12.5</td>
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<td>7.5</td>
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Notes – Comments

Nursing Comments
(Recording shows action to complete PYMS steps)

Health Professional Request made to:
- Dietitian
- Nurse

Health Professional Comments

Women and Children’s Directorate

BMI Calculation Wheel

• Align weight & height

• Red Arrow indicates BMI.

1. Weight in kilograms (kg) on OUTER wheel.

2. Height/Length in centimetres (cm) on INNER wheel

3. BMI value marked by red arrow.

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Step 1: BMI Score

Paediatric Yorkhill Malnutrition Score (PYMS)

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<thead>
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<tr>
<td>Surname:</td>
<td>CHI:</td>
<td>Nurse Signature</td>
</tr>
<tr>
<td>DoB:</td>
<td>Age:</td>
<td>Sex: F / M</td>
</tr>
<tr>
<td>Ward:</td>
<td>Consultant:</td>
<td>BMI</td>
</tr>
</tbody>
</table>

Step 1

Is the BMI below the cut-off value in the table overleaf?

- NO: 0
- YES: 2

- BMI alters with age and gender
- Don’t round up age
- If unable to obtain height – weight must be plotted on growth chart. Score 2 if below 2nd centile
- Please fill in nurse comments section if this is the case

Body Mass Index (BMI) Scoring Guide

(If the BMI calculated is less than that shown for age and gender, answer Yes for Step 1)

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• Re-do weight each time, ht/length monthly for infants and 3 monthly otherwise
Step 2 : Weight Loss

- Recent weight loss may indicate nutritional risk
- Look at recent records if available
- Under 2’s is there concern about a lack of weight gain
## Step 3: Assess recent change in diet/nutritional support

<table>
<thead>
<tr>
<th>Step 3: Has the child had a reduced intake (including feeds) for at least the past week?</th>
<th>NO Usual intake</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES Decrease of usual intake for at least the past week</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>YES No intake (or a few sips of feed only) for at least the past week</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

- Decrease intake for more than a week can place the child at nutritional risk
- Ask about last week’s food intake. If on artificial feeds any change in amount tolerated?
### Step 4: Acute Admission/Condition Effect

<table>
<thead>
<tr>
<th>Step 4</th>
<th><strong>Will the child’s nutrition be affected by the recent admission/condition for at least the next week?</strong></th>
<th><strong>NO</strong></th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>YES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For at least the next week</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>• Decreased intake and/or</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Increased requirements and/or</td>
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<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
</tr>
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<td><strong>YES</strong></td>
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<tr>
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- Risk of being undernourished during hospital admission due to decreased intake, increased gut losses and increased energy requirements.
Step 5: PYMS Score and Action Plan

<table>
<thead>
<tr>
<th>Step</th>
<th>Calculate total score (total of steps 1-4)</th>
<th>Total PYMS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- A score of 2 or more reflects significant nutritional risk
- Score 2 = a dietetic review must be made
- Score 1 = the child must be on a fluid balance chart and intake carefully observed. Score again in 3 days
- Score 0 = Repeat score weekly
‘PYMS’ Exclusions & Summary

- Exclusions:
  - Patients < 1 year old
  - End stage palliative care

- Local Protocols remain in place

- PYMS should be completed within 24hrs of admission

- Dietetic request must have PYMS Score

- Repeat ‘PYMS’ weekly or after 3 days if score 1
Important!

- Local Policies and clinical judgement are not replaced by this scoring system.

- Medical staff should still be plotting heights and weights on growth charts.

- Any additional nutritional concerns should be discussed with the medical/surgical team.

- Requests to dietetics can still be made in the normal way if scoring 0 (e.g. food allergies, special diets).
What are Sarah and John’s PYMS?

• Sarah Athens is a 7 year old asthmatic admitted via A&E following an acute exacerbation. She has been suffering from a cold for the past few days. Her parents do not report any noted weight loss or change in eating habits. Following back to back nebulisers she appears to be much better and is looking forward to the dinner trolley arriving. Sarah weighs 22.5Kg and is 122.5cms tall.

• John McBlack is just 4 years old and has been admitted following an RTA. He has sustained extensive facial trauma, with multiple mandible and facial fractures which are to be explored and plated/pinned tomorrow in theatre. He weighs 15kg and is 109.5cms tall. According to his Mum he is a ‘healthy wee boy who eats well and loves football.'
References