Randomised controlled trial in care home residents shows improved quality of life (QOL) with oral nutritional supplements

E. L. Parsons
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The need for malnutrition screening and nutrition support

Most recently

- Malnutrition Matters (BAPEN, 2010)
- Nutrition Action Plan (DH, 2007)
- Nutrition Support for Adults (NICE, 2006)
- Care for Older People: National Minimum Standards (DH, 2003)
Malnutrition is common in care homes

- In the UK, 30-42% of care home residents are ‘at risk’ of malnutrition (Russell et al 2008; 2009)

- In Hampshire care homes:
  - 37% ‘at risk’
  - 14% medium risk
  - 23% high risk

- 8% of all residents received ONS
- 0.3% under the care of a dietitian
## Systematic Review: Nutritional Interventions in Care Homes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Study Type</th>
<th>Food Fortification v. Control (5 RCT's)</th>
<th>ONS v. Control (7 RCT's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Intake</td>
<td>small, non significant changes</td>
<td>3 RCT's (n=196)</td>
<td>Mean difference 123kcal, p&lt;.0001</td>
</tr>
<tr>
<td>Weight</td>
<td>1 RCT; small, non significant changes</td>
<td>3 RCT's (n=195)</td>
<td>Mean difference 1.7kg, p&lt;0.0001</td>
</tr>
<tr>
<td>Functional</td>
<td>Few RCT's; no significant differences</td>
<td>No RCT's reported significant changes</td>
<td>No RCT's reported significant changes</td>
</tr>
<tr>
<td>Infections</td>
<td>No RCT's</td>
<td>1 RCT;</td>
<td>ONS; 53% - no infections, Control; 44% - no infections, p=0.001</td>
</tr>
<tr>
<td>Bed days</td>
<td>No RCT's</td>
<td>1 RCT;</td>
<td>ONS: 7.5 ± 2.1 days, Control: 17.3 ± 5.6 days, p&lt;0.001</td>
</tr>
<tr>
<td>Pressure Ulcers</td>
<td>No RCT's</td>
<td>1 RCT;</td>
<td>change in pressure ulcer score; 5.56 vs 2.85, p&lt;0.05</td>
</tr>
</tbody>
</table>
Nutrition Intervention Trial:

Aim:

To carry out a RCT investigating the effect of ONS and dietary advice on quality of life, clinical and functional outcomes and cost effectiveness in malnourished care home residents

12 week RCT in residential and nursing homes
August 2007 to June 2010
Contact With Care Homes

- Care homes database
- Attended regional care home exhibitions
- Meetings with care home
- Phone calls
- Emails
- Letters with reply slips
- Adverts
**Nutrition Intervention Trial**

**Inclusion criteria**
- Male or female
- Age >50 years
- At risk of malnutrition
- Competent to provide written informed consent and able to answer questions
- Able to eat and drink
- Willing to take part in the trial and to follow the trial protocol

**Exclusion criteria**
- Requirement for tube or parenteral nutrition
- Galactosemia
- Receiving current oral nutritional supplementation
- Palliative care
- Chronic kidney disease requiring dialysis
- Liver failure
- Malignancy
- Participation in other studies
Intervention

Oral nutritional supplements
- Ready made supplements
- Range of flavours and styles
- Advice:
  - When and how to take them
  - Flavours / styles

Dietary Advice
- Build up dietary advice
- Diet sheet
- Advice:
  - ‘Little and often’
  - Energy dense meals and snacks
Outcomes measured

- Quality of Life
- Clinical and functional
- Healthcare use
- Anthropometry
- **Nutritional intake**
- Compliance
- Satisfaction
## Screening and Recruitment

1487 residents from 63 care homes were screened (638 residential, 849 nursing)

<table>
<thead>
<tr>
<th>ONS</th>
<th>Dietary Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>53</td>
<td>Baseline n=104</td>
</tr>
<tr>
<td>40</td>
<td>Week 6 n=74</td>
</tr>
<tr>
<td>39</td>
<td>Week 12 n=70</td>
</tr>
<tr>
<td>2</td>
<td>Deaths n=6</td>
</tr>
<tr>
<td>12</td>
<td>Drop Outs n=28</td>
</tr>
</tbody>
</table>

Equal split between malnutrition categories & type of care
Challenges to carrying out research in care homes

- Accessing suitable care homes
- Accessing suitable subjects
- Nutrition awareness in care homes
- Care home vs. project timescales
- Frail elderly population
- Memory loss / dementia
- Deteriorating health conditions
Results: Nutritional Intake

ONS in malnourished residents can be more effective at increasing total energy and protein intakes than dietary advice.

<table>
<thead>
<tr>
<th></th>
<th>ONS</th>
<th>Dietary Advice</th>
<th>P- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Intake (kcal)</td>
<td>1655 ± 502</td>
<td>1253 ± 469</td>
<td>0.001</td>
</tr>
<tr>
<td>Protein Intake (g)</td>
<td>62.1 ± 18.4</td>
<td>49.6 ± 19.9</td>
<td>0.004</td>
</tr>
</tbody>
</table>
ONS can add to (rather than replace) food energy and protein intake, with little effect on appetite sensations.

<table>
<thead>
<tr>
<th>Appetite Sensation</th>
<th>ONS</th>
<th>Dietary Advice</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunger (mm)</td>
<td>39 ± 21</td>
<td>33 ± 28</td>
<td>NS</td>
</tr>
<tr>
<td>Desire to eat (mm)</td>
<td>46.6 ± 19</td>
<td>49.7 ± 27.3</td>
<td>NS</td>
</tr>
</tbody>
</table>
Results: Quality of life

Quality of life scores were significantly higher in the ONS than the dietary advice group.
Summary

- Malnutrition is common in care homes
- Use of nutritional interventions and access to dietetic support is limited for malnourished residents in Hampshire
- ONS in malnourished residents can
  - be more effective at increasing total energy and protein intakes than dietary advice.
  - add to (rather than replace) food energy and protein intake, with little effect on appetite sensations.
  - improve quality of life more effectively than dietary advice.
Acknowledgements

Care home residents and staff