Improved Calorie and Protein Intake Following Implementation of Formed Pureed Food

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Introduction

Acceptability and intake of texture modified diets is generally poor[1-3]. One possible reason for poor acceptability is unappetizing appearance of pureed foods. As a result, patients often require supplemental enteral nutrition to meet calorie and protein needs. Increased acceptability and caloric intake from pureed diets may help hasten the transition from enteral nutrition to oral diet.

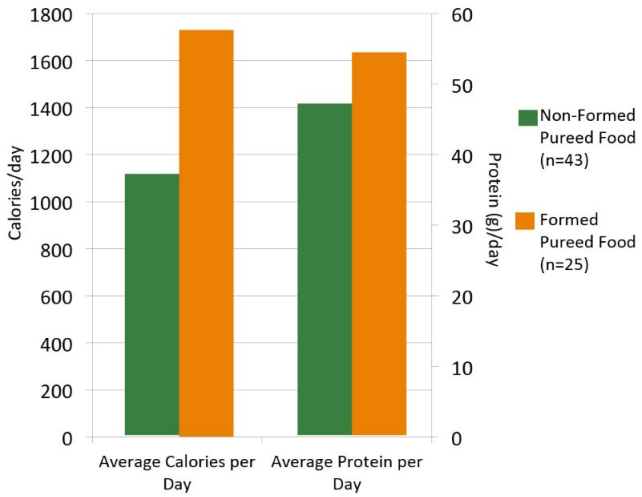
Objective

The purpose of this quality improvement project was to determine if the use of formed pureed foods to improve appearance of meal trays would result in increased calorie and protein intakes when compared to non-formed pureed foods.

Methods

- This QI project utilized a convenience sample of patients admitted to general medical/surgical and rehabilitation floors.
- Before implementation of formed pureed foods, patients received pureed meals in small bowls or divided plates. After implementation, patients received pureed foods that have been formed to be more appetizing.
- Calorie counts were completed for all patients receiving pureed diets before (Aug 2013 – Jan 2014) and after (March 2014 – July 2014) implementation of formed foods.
  - Nursing staff completed calorie counts by estimating percentages of each food item eaten.
  - Food items from home and snacks were not included.
- Total calories and protein consumed at breakfast, lunch, and dinner was summed to determine total calories per day.
  - If meals were missing, average calories and protein per day were imputed from available data.
- Average daily calories and protein were determined by summing all available days and dividing by number of days.
- Daily calorie requirements were estimated at 25-30 kcal/kg dosing weight; protein requirements were estimated at 1-1.2 g/kg dosing weight.
- Due to non-normal distributions, nonparametric statistics (medians (25, 75 percentiles), Mann Whitney U, and chi-square) were used.

Figure 1. Calories and Protein Consumed Pre and Post Formed Pureed Food Implementation



Results

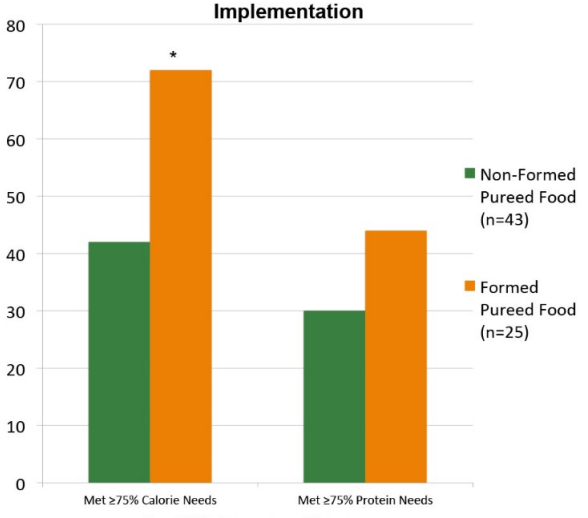
- A total of 68 patients were included; 43 in the pre and 25 in the post formed pureed food group.
- The median age of the sample was 68.5 years and the median BMI was 25.4 kg/m^2; there were no differences in demographic variables between groups.
- Significantly more patients met at least 75% of calorie needs after implementation of formed foods (42% versus 72%, p=0.016, Figure 2). A non-significant increase in patients who met at least 75% of protein was also found (30% versus 44%, p=0.252).

Conclusion

- Patients who received formed pureed foods consumed an average of 500 calories more per day than those not receiving formed foods.
- Significantly more patients met at least 75% of estimated calorie needs after formed foods were implemented.
- Further research is needed to determine the effects of formed foods on duration of supplemental enteral nutrition.
- The use of formed pureed foods may be beneficial in improving intakes of patients on pureed diets and help accelerate transition from enteral nutrition to oral diet.

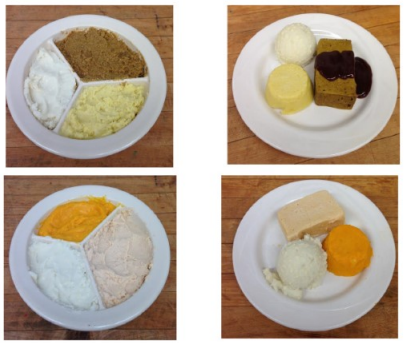
1.Comparison of energy and protein intakes of older people consuming a texture modified diet with a normal hospital diet. *Hum Nutr Dietet 2005*, 18, pp. 213–219.
2.Energy, protein, calcium, vitamin D and fibre intakes from meals in residental care establishments in Australia. *Asia Pacifi J Clin Nutr 2003*, 12 (2): 172-177.
3.Issues Associated with the Use of Modified Texture Foods. *Jour Nutr, Health & Aging* 2012, 16 (3): 195-200.

Figure 2. Percent of Patients Meeting Nutrition Needs Pre and Post Formed Pureed Food Implementation



*= p<0.05 between group difference

Figure 3. Pictures of Pureed Meals



Pre-Formed Food Post-Formed Food
Top: Barbeque pork, corn, mashed potatoes
Bottom: Salmon, carrots, mashed potatoes

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