Oral Nutritional Supplements in the Community—Do They Work?

Oral nutritional supplements (ONS) have been used by healthcare practitioners for years as a treatment to improve the nutritional intakes of clients who have sub-optimal diets. Historically, nutritional supplementation could take various forms, from whole foods to fortified foods and liquids with defined nutrients. The European Society for Clinical Nutrition and Metabolism (ESPEN) has developed a standard definition of ONS: “supplementary oral intake of dietary food for special medical purposes in addition to the normal food.”¹ ONS are often prescribed to individuals found to have or be at risk for malnutrition. Although an explicit definition for malnutrition is controversial, experts agree that malnutrition is a significant problem that is under-recognized and under-treated by the healthcare team. During tough economic times, it seems obvious that the nutritional status of patients moving from the hospital to the community needs to be addressed through timely nutrition screening, assessment, appropriate nutritional interventions with vigilant monitoring for adequacy.

The prevalence of malnutrition in the community is lower than in a hospital or long-term care settings. Guigoz found that in reviewing 35,000 elderly patients in various healthcare settings that only 2% of community-dwelling elderly were identified as having malnutrition compared to 9% in outpatient and home care, and 23% in hospitalized elderly.² These findings are not surprising since independent elderly living in the community are generally believed to be in better overall health. However, this group of elderly is also at high-risk for developing malnutrition. In Europe 41-48% of this group is at moderate to high-risk of malnutrition.³ In the U.S., 1% of elderly in community dwellings were undernourished and 18-39% were at risk of malnutrition.²

Malnutrition results in significant consequences to the elderly person living in a community dwelling. The consequences include increased morbidity and mortality,⁴ decreased quality of life and functioning level,⁵,⁶ increased length of stay in hospitals and increased health care costs.⁷ Infection and complication rates are higher in those
malnourished. U.S. malnourished patients have shown 3 to 7 times the risk of life-threatening complications while in the hospital.

Treatment of malnutrition with ONS fits the current healthcare treatment model well, which is: prompt identification, using evidenced-based treatments which are ethical and cost effective, while using the least resources. A review in 2009 of postdischarge patients undergoing GI surgery, recommended that nutritional supplements be provided to malnourished patients and those at high risk of poor dietary intake at discharge from the hospital. Improved outcomes in terms of nutritional status, lower costs of care, and shorter length of hospital stay has been shown in elderly patients using ONS. This evidence provides strong support for the benefits of providing ONS to the elderly living in the community who may be at-risk for malnutrition.

Edington et al. examined the impact of oral nutritional supplementation in already malnourished elderly after hospitalization discharge to the community. Subjects received nutritional supplements for 8 weeks and then were followed for 24 weeks. Nutritional status of those receiving ONS improved significantly by week 24 compared to controls. However, others may argue when looking at this research that there was no significant difference in nutritional status between the two groups at week 24, and therefore think the treatment was not more effective, however at 8 weeks there was significant difference. However, the results may point to the effect of extra attention to dietary intakes (placebo effect) and/or the importance of early detection and treatment to avoid malnutrition in the elderly, as once it occurs it may be more difficult to reverse and provide less cost-benefit.

A prospective, randomized controlled study of elective GI or vascular surgical patients also provides strong evidence that ONS works post-operatively. In this study those who were malnourished or at risk of malnutrition were provided 2 servings (400 ml of 1.5 kcal/ml liquid supplement) ONS between meals for 10 weeks. Those who received this supplement had improved nutritional status, anthropometric indexes, quality of life
scores, and less infectious complications requiring fewer antibiotic prescriptions compared to the non-supplemented control group.  

Another group in the community that may benefit from ONS are those undergoing active cancer treatments. Both ASPEN & ESPEN have issued clinical guidelines for nutritional treatment of cancer patients. ESPEN guidelines recommend that nutrition therapy be started if undernutrition already exists or the patient will be unable to eat for > 7 days, and that those having radio or radio-chemotherapy receive oral nutritional supplement to prevent therapy-associated weight loss and interruption of radiation therapy. Nayel et al. were one of the first to show strong evidence for using ONS in patients undergoing radiation therapy. In this study those receiving ONS gained weight, completed therapy, and had fewer side-effects such as mucositis compared to controls.

Payette et al. found that total energy intakes were higher in a group of supplemented free-living, frail, undernourished elderly people in a prospective randomized community trial. Their number of days in bed were less and emotional role functioning improved. Gazzotti’s research adds to the strength of this position. They found compliance at 60 days of drinking the ONS was good in elderly (>75 years) who were found to be at risk for malnutrition and instructed to drink ONS twice daily after hospitalization; daily oral intake was enhanced by 407 calories; and ONS was effective in maintaining weight and increasing Mini Nutrition Screening scores.

In 2007, Stratton studied all the meta-analyses and systematic review studies in which ONS was compared to routine care for treatment of malnutrition. The results consistently showed that across all groups, ONS reduced mortality and complications (such as infections and pressure ulcers), improved total nutritional intakes, with little suppression of food intake, and improved weight. Baldwin and Weekes reviewed 36 studies including 2714 randomized participants and found that dietary advice plus nutritional supplements may be more effective than dietary advice alone or no advice, in enhancing short-term weight gain. However, the results of Milne’s review are not quite as positive. Milne examined 62 trials with 10,187 randomized participants in which ONS
had been provided to elderly at risk for malnutrition. They found weight consistently improved, but found no reduction in mortality, except in the group that was first defined as being undernourished, and did not find evidence of improvement in functional benefits or reduction in length of hospital stay with supplements. However, Milne pointed to the lack of good quality designed studies in this review which may have affected results.

Any prescription for ONS in the community cannot ignore acceptability and compliance issues. It is well known that elderly often experience altered taste, smell, vision, early satiety, eat smaller meals and snack less which all negatively affect oral intakes. Wilson et al. concluded that dietary supplements between meals instead of with meals were more effective in increasing energy consumption. In a recent review study Nieuwenhuizen et al. found 37 factors affecting nutritional intake which they categorized into three groups: personal, food, and environmental. They suggest that small volumes of energy and nutrient dense ONS can be effective in improving nutritional intake. In another randomized controlled trial of elderly living in the community who were at risk for malnutrition, ONS of nutrient dense, small volume liquid feedings increased energy intake by 415 kCals compared to 264 kCals by diet advice only group.

**Conclusion**

There is a growing body of evidence for the efficacy of ONS. Meta analyses have clearly shown the positive effects of ONS on the nutritional status of malnourished older adults. The use of ONS increases nutritional intake and improves clinical outcomes as long as compliance is maintained. Compliance may be optimized by offering variety of small volume nutritionally dense ONS which must be tailored to the individual needs/likes and monitored for effectiveness.

There appears to be a gap in the research of the nutritional status of patients when moving from hospital to the community. Systems need to be developed to allow for nutrition screening, assessment, appropriate nutritional interventions, and monitoring in the community. Implementation of nutritional care plans in the elderly living in the
community is vital to decreasing healthcare costs and appropriate allocation of healthcare dollars.

References


