ABSTRACT
Nutrition and diet are important factors that influence the health of the geriatric population. A good general diet is essential to the health of the elderly & to the supporting tissues of the teeth. Diets for the geriatric often present a challenge, not only to the dentist but also to those who are responsible for their care. The diets of the elderly are often nutritionally inadequate, with the result that their nutritional status is poor. Unfortunately, many of the aged live under circumstances predisposing them to malnutrition.

KEYWORDS Denture wearer, Nutrition, Prosthodontic Patient, Swallowing, Diet

INTRODUCTION - The science of nutrition includes the sum of knowledge dealing with the physical, chemical and biological processes that develop and renew tissues and that maintain somatic processes by the absorption and assimilation of materials introduced into the body as food. After the loss of teeth proper nutrition becomes very essential to maintain the health of the individual. 1-8

Nutritional Effect of Denture Use 9-12
(A) Effect on taste and swallowing
A full upper denture can have an impact on taste and swallowing ability. The inability to distinguish the sensory qualities of food reduces a patient’s enjoyment of eating and may lead to reduced calorie intake. Nearly all denture wearers report a transient decline in taste acuity when dentures are first inserted. In the case of complete palatal coverage, it also becomes difficult to determine the location of food in the mouth. As a result, swallowing can be poorly coordinated and dentures can become a major contributing factor to deaths from choking.
(B) Effect on chewing ability
Age, oral motor function, saliva and number of occluding teeth determine the masticatory ability. Masticatory ability (efficiency) in complete denture wearers is app. 80% lower than in people with intact dentition. The chewing ability of individuals with a complete denture in only one arch, appears to be reduced to nearly the same extent as persons with complete dentures in both arches. Denture wearers tend to use more strokes and chew longer to prepare food for swallowing. Even with additional chewing, the average denture doesn’t reduce foods to as small a particle size as does natural dentition.
(C) Effect on food choice, diet quality and general health
The effect of dentures on nutritional status varies greatly among individuals. Texture and hardness, rather than taste & small, determine acceptability of food for many denture patients. Some compensate for reduced masticatory ability by choosing processed foods rather than fresh and by chewing longer before swallowing. Generally speaking, intake of hard foods (raw fruits or vegetables, nuts, meats) is reduced while intake of soft food (breads, cereals) is increased. As the degree of dental impairment increases, diet quality seems to decrease. Intake of vitamin A, fibre and calcium decline as the number of teeth decrease. Replacement of ill-fitting dentures with new ones or exchange of an optimal complete denture for implant-supported denture improves the masticatory ability, however, improvement in nutrient intake doesn’t necessarily occur. To improve diet quality, patients must undergo a dietary counseling.

Dietary Counseling for Prosthodontic Patients 9-11
The quality of a denture wearing patient’s diet can be improved with nutrition counseling. One expectation of patients seeking new dentures is that they will be able to eat a greater variety of foods. Such patients are usually responsive to suggestions aimed at improving their diet composition. Patients receiving dentures should be carefully screened for nutritional risk factors at the first appointment so that follow up can occur during the treatment course. Providing nutrition care for the denture wearer entails the following steps:
A) Obtain a nutrition history and an accurate record of food intake over a 3-5 days period (which should include a weekend) or complete a food frequency form. B) Evaluate the diet (from diet history), assess nutritional risk: nutrient analysis can be
accomplished on the computer with a dietary analysis software program, or reported foods can be classified into 5 basic food groups described in the Food Guide Pyramid. The total reported servings in each food group can be compared to the servings in the Food Guide Pyramid. The minimum recommendations are: 3-4 servings from dairy group (milk, cheese), 2 servings from meat group (meat, fish, poultry, egg, beans or dried peas), 2 servings from the fruit group, 3 servings from the vegetable group, 6 servings from the bread-cereal group. A modified Food Guide Pyramid has been suggested (Russel RM, 1999) keeping in mind the unique needs of the elderly. Compared with the original, it stresses for fewer servings of grain products and more servings of dairy and emphasizes adequate water intake. C)Teach about the components of a diet that will support the oral mucosa, bone health and total body health. D)Help patient establish goals to improve the diet: nutrition goals for the denture wearing patient are to eat a variety of foods that contain essential nutrients from the basic food groups. E)Follow-up to support patients in efforts to change food behaviours: compliance with dietary advice is more likely if follow-up is provided.

Diet for the Early Period Following Denture Insertion

In the case of a new denture wearer, the ability to manage the physical consistency of food is an important consideration. The process of eating food involves 3 steps: biting or incising, chewing or pulverizing and finally, swallowing. The incising or biting of food is actually a grasping and tearing action and involves opening the mouth wide, which might cause a dislodgement of the denture by the action of overtensed muscle attachments. When the leverage force of the incising action is exerted in the anterior segment, the only equal and opposite force to prevent dislodgement is the post dam compression of the soft palate. In short, the counter dislodgement force for the incising action are not so efficient as, for example, the balancing force of occlusal surfaces of the bicuspids and molars used in the chewing process. This makes the first step of eating food, the incising action, the most difficult of the three actions.

The chewing of the bolus of food is less difficult than incising, but the coordination of the many muscles of mastication which produce the hinge and siding movement of the mandible during eating requires some experience. Actually, the easiest and least complex step in the eating process is that of swallowing because deglutition, with the exception of the initial propelling of the bolus back to the pharynx is an involuntary action. Therefore, although the logical sequence of eating food is first biting, second chewing and third swallowing, it is much easier for the new denture patients to master this complex of masticatory movements in the reverse order namely, swallowing first, chewing second and biting last. Consequently: Food of the consistency that will require only swallowing, such as liquids should be prescribed for the first day or two after insertion of the denture. The use of soft foods that require minimum of chewing can be advocated for the next few days eg. cottage cheese, chopped meat, tender cooked foods & vegetables. A firm or regular diet may be added by the end of the first week following insertion.

CONCLUSION

Balanced nutrition (with proper consistency) for edentulous individual is a key to success of prosthesis. Once this factor is overlooked the best treatment administered may turn out to be a failure.

REFERENCES

2. Prosthodontic Treatment for Edentulous Patients; XII ed by George A. Zarb & Charles L. Bolender.