

THE IMPORTANCE OF DIET AND ITS MODIFICATIONS PRIOR AND POST IMPLANT SURGERY- A REVIEW

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ABSTRACT

Diet has played a very significant role in wound healing after surgical treatment in the oral cavity. Diet includes a variety of components which provide proper nutrition to the wound to help in faster wound healing after surgery. A diet should include a mixture of vitamins, minerals, carbohydrates to provide the essential nutrients for proper wound healing. Macronutrients and micronutrients form an essential part in accelerating wound healing and secondary bone formation after implant surgery. Proper wound healing during implant surgery is optimally necessary for a good prognosis and also to reduce postoperative complications during implant surgery. Various researches have been done in the dietary components that may reduce inflammation or stress and help in bone formation. This paper presents an overall view of the diet which can be taken after implant surgery to achieve the best possible result after implant surgery.

KEYWORDS

Implant surgery, Anti-inflammation, Dietary patterns, Wound healing, Nutritional aspect

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Introduction

Implant therapy has helped in restoring the radiant smile of a person who has lost the teeth. Implant therapy also helps in better mastication and chewing efficacy for the patient. Oral health, diet and nutrition have a significant effect on any oral surgical procedures in an individual. Dental implant surgeries are invasive procedures which may lead to failure and postoperative complications if proper care is not taken after the surgery. Patient with underlying systemic conditions such as diabetes, certain habits such as smoking, patient's anatomy has an impact during the placement of implants. Dietary modifications after surgery include a variety of soft foods to aid in proper wound healing as well as prevent the risk of mastication of hard food substances to prevent any further damage to the implant site. Post-operative complications such as edema of the tissues and extreme variations in temperatures should also be considered while incorporating dietary modifications during implant surgery. A change in the dietary pattern helps in patients with underlying systemic conditions and also helps in the physiologic remodeling of the cells to help in accentuated wound healing after implant surgery.

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The various dietary protocols to be followed after the placement of implant

Nutrition and diet play a very important role to meet the various mechanisms which happen in our body such as development, growth, repair and maintenance of the individual. Carbohydrates, fats protein, vitamin, minerals, and water are needed for a healthy lifestyle and for healing of the tissues after surgery^[1]. The chief sources of energy to the body are carbohydrates, proteins and fats.

Carbohydrate plays a major role in fatty acid metabolism and in the catabolism of proteins. Patients undergoing implant surgery require protein for repair of the surgical site and cellular proliferation of cells. Patients with excess levels of glucose can affect wound healing as it leads to metabolic acidosis, dehydration and decreased leucocyte function^[2]. Proteins play an important part in repair of tissues and bone healing is an important aspect of implant surgery. The protocol for implant therapy starts with the placement of implants from the day of surgery. During the first 24 hours after surgery, milkshakes and smoothies should be taken

The precautionary steps which should be taken include disuse

of straws because it causes dislodgement of blood clot and eventually leads to bleeding. Carbonated beverages and very hot food and drinks should be avoided^[3]. A day after implant surgery the food to be consumed are juice, milk warm tea or coffee, Broth the non-chunky soup such as tomato, protein shakes and meal- replacement shakes. After first few days of surgery pureed foods can be taken, but avoid consuming hot foods and use of straws is also suggested. After the first week after surgery food which can be taken are chunkier soups pureed in a blender such as red pumpkin and lentil soup, cheese, mixed vegetable soup and chicken soup, chicken and broccoli soup^[4].

The following foods can be taken up to two weeks of implant surgery. Foods such as rice, quinoa such as methi Khichi, dosa, rava khichidi and other small grains can get lodged in the surgical area. Crunch crackers and chips can may cause trauma to the gums. Heartier food may be sliced into items or pureed in a blender Scrambled eggs, upma, baked or cooked fish, soups, ground beef. minced mutton, shredded chicken, cooked or stewed chicken, chappathi, Idli , tofu, pasta, steamed vegetables, poha, soft bread, soft fruits like bananas , mangoes, peaches and pears may be consumed^[5].

Chicken Pesto Pasta: The basil in pesto contains volatile oils, which might protect the mouth from oral microorganisms. Broccoli Omelet: Broccoli contains enough calcium to accelerate the healing procedure, and therefore the eggs give enough macromolecules to create this a very vital meal. Chicken Salad: Chicken that is sliced into very little pieces will be ingested with a plate of mixed veggies. The chicken provides the macromolecules whereas the plate of mixed greens with delicate vegetables provides intercalary metal and different necessary nutrients^[6]. Avoid foods with seeds such as raspberries, guavas, nectarines, pomegranates and strawberries as a result of these fruits contain seeds and it will get lodged at the implant site once surgery is done.

Macronutrients and micronutrients perpetually offer the required nutrients necessary for upkeep of the implant surface and improve the wound healing at the surgical space. Organic yogurt or kefir that is soured milk is a wonderful source of calcium that you could incorporate in your healing^[7]. Dairy products square measure is a smart source of calcium, though not for semi-permanent consumption nor in excess, because of their calcium-magnesium imbalance. Carrots, broccoli, celery and plenty of green leafy vegetables are glorious sources of calcium that may be best obtained from juicing choices like beans, lentils, avocado—all plant foods that square measure made in super molecule and healing fats^[8]. Eggs are another wonderful option to your macromolecule intake. Consume bite-sized cubes or chopped meat and/or fish with next to zero enclosed fat or salt. Recommendations incorporate tuna, salmon or alternative flaky fish served while not crisp covering with steamed rice and vegetables for a whole feast. Nut butter is another nice supermolecule supply. Maintain a

strategic distance from liquor and tobacco throughout the healing phase^[9].

The role of anti-oxidants and dietary concerns previous and post implant surgery

A diet that is low in sugar and high fiber content helps in reducing the results of inflammation once implant surgery. Ergocalciferol helps within the formation of bone and helps in overall maintenance of the density of the bone. Osseointegration round the implants may be an important activity of ergocalciferol to help within the long- term success of the implant^[10]. Ca intake additionally helps within the maintenance of bone levels once implant surgery. A calcium level of but 400mg is important for the correct maintenance of the bone levels and for regeneration of the bone around the surgical site. Vitamin C is necessary to prevent post – operative bleeding and help in collagen formation to promote overall healing along the implant site. Antioxidants are substances that protect your cells and combat free radicals from attack by oxygen. Vitamin C which should be consumed after implant surgery is 95mg daily to aid in healing at the implant site^[11].

Dietary concerns previous and post operative phase of implant surgery

Prior to implant surgery the right organic process standing of the patient ought to be assessed. The basal metabolic rate of the patient, the systematic standing ought to be taken into thought before implant surgery. Food particles made up of macromolecules, vitamins ought to be taken by the patient to keep up his organic process standing. A daily dose of multivitamin ought to be taken to maintain the general health around the implant site^[12]. Foods that are area unit product of carotenoid that have inhibitor property such as Guavas, Watermelon, red cabbage, cooked raw cherry tomatoes ,papaya, grapefruit, sweet red peppers, cooked asparagus ,mango and carrots need to be taken before implant surgery^[13].

Beta carotene may be an antioxidant compound to blame for giving fruits and vegetables their orange pigment. Beta carotene helps in higher absorption. Foods that have beta carotene embrace sweet potato, carrots, dark green leafy vegetables, cooked pumpkin, cantaloupe melon, romaine lettuce, dried apricots, sweet red peppers, peas and broccoli ought to be taken prior to implant surgery. Green tea is additionally a superb supply of antioxidants^[14].

Intake of correct nutrients together with vitamin pill supplements is useful for operative healing of implants. The feel, consistency and the temperature of food ought to be befittingly consumed cautiously throughout the post operative part of surgery^[15]. Crunchy foods ought to be avoided. Foods like barbecued or smashed potatoes, semi-solids, chilled or cold foods ought to consume postoperatively. Pre-existing medical conditions like a polygenic disease ought to even be thought-about. Intake of heap of fluids like water, calorie free sugar free soft drinks or juices area unit counselled^[16]. Nutritional supplements like diabetic free energy drinks like boost ought to be taken. Many low-fat dairy farm products is also incorporated into a soft diet, like milk or

farmer's cheese. Eggs and tofu are square measure two sources of macromolecule that are also soft enough to be thought about.

Vegetables are square measure vital elements of a diabetic diet, providing nutrients and vitamins essential for health. Several vegetables could also be sautéed to include into a soft diabetic diet following oral surgery^[17]. Vegetables such as carrots, beetroot, eggplant or brinjal and spinach square measure to all soft enough to eat once sautéed totally. Avoid starchy vegetables, such as peas and potatoes, if saccharide levels area unit already too high.

An ideal diabetic diet ought to be carbohydrates concerning about 50 percent of calories. Fruits, that contain fiber, vitamins and nutrients, will be high in sugar and may be counted among saccharide levels^[18]. There are a unit still several fruit decisions on the market for a soft diet. Applesauce and bananas area unit choices for soft foods following oral surgery.

Fruits may additionally be amalgamated with juice or ice to form a smoothie, however avoid selecting fruits such as raspberries that contain seeds. Carbohydrates provide energy to the body, in order that they are area unit a crucial facet of the diet^[19]. Soft saccharide foods for the diabetic patient embrace soft cereals like oatmeal and farina that may be a variety of polished wheat; starchy vegetables like hard-boiled cooked, squash or mashed potatoes; and hard-boiled beans. Full sugar pudding or ice-cream ought to be avoided^[20].

The role of diet and its importance in dental implant surgery

Diet plays awfully necessary role throughout implant surgery. All the essential nutrients that area unit necessary for the right maintenance of the implant web site have to be compelled to be taken in equal balanced amounts by the individual. Carbohydrates offer the essential energy to the body, proteins area unit necessary for the mandatory repair and regeneration of bone at the implant site, Vitamins and minerals offer the essential nutrients for bone regeneration^[21]. Hence all the parts of the diet area unit necessary to minimize the trauma right from incision to the ultimate stages of wound healing .The food consumed ought to be edible and shouldn't harm the wound site .The method of preparation of food and therefore the time taken to organize ought to even be taken into thought .The food ready specially throughout implant surgery shouldn't be time intense, Patient ought to be to not skip meals and that they ought to follow an everyday dietary protocol throughout implant surgery.

Ample fluid intake ought to be suggested to the patient to stop dehydration. After the section of implant surgery, the patient ought to be suggested to come back to their routine consumption pattern to keep up the biological process standing of the body^[22]. Hence implant surgery and therefore the dietary modifications facilitate in maintaining the general tissue health round the implant site and stop trauma to the patient. Change in diet helps in quicker healing, bone regeneration and conjointly prevents post operative complications followed by quicker wound healing and long

success once implant surgery.

Authors contribution

Anusha S, Athiban- Manuscript editing, Literature search, data collection

Pratibha, Shamuganthan- Peer Evaluation and editing

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Conflict of interest

All the authors declare no conflict of interest

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