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**The viewpoint on antioxidative nutrition and functional nutraceuticals following
robotical surgery (Minimally Invasive Surgery)**

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Robotic surgery is one of the types of minimally invasive surgery. In minimal surgery, miniaturized surgical instruments have been utilized that fit through a series of quarter-inch incisions. When performing surgery with the Da Vinci Si- the world's most advanced surgical robot-these miniaturized instruments are mounted on four separate robotic arms, allowing the surgeon maximum range of motion and precision and has 3-D camera. Robotic surgery provides less trauma on the body, minimal scarring, faster recovery time. Medical nutrition therapy comprehends oral nutritional supplements, enteral or parenteral nutrition after surgery. To acquire convenient healing and functional recovery, a metabolic response is indispensable, but this needs nutritional therapy especially when the patient is malnourished and the stress/inflammatory reply is prolonged. Nutrition therapy is the verdict of nutrition or nutrients either orally including regular diet, therapeutic diet, fortified food, oral nutritional supplements or by Enteral Nutrition (EN) or Parenteral Nutrition (PN) to cure or treat malnutrition.

In order to reduce perioperative discomfort including anxiety oral preoperative carbohydrate treatment (instead of overnight fasting) the night before and two hours before surgery should be administered. After operation, especially for gastrointestinal system, the intake of a hypo-osmolar 12.5% carbohydrate rich drink has been shown to reduce postoperative insulin resistance.

After minimal invasive surgery, oral preconditioning with glutamine, antioxidants, and green tea extract versus placebo elevated plasma vitamin C concentrations significantly and improved total endogenous antioxidant capacity without reducing oxidative stress and inflammatory response. It can be difficult to bounce back after an operation, but a number of vitamins, minerals and antioxidant nutrients can support the recovery of patient after minimal invasive surgery operations.

Studies have shown that long used vitamin K, which promotes blood clotting, to help heal incisions in patients after surgery and also aids in building strong bones. Vitamin K1 is present in many foods, especially leafy green vegetables including cabbage and spinach, broccoli, brussels sprouts, spring onions and is also present in liver, cow's milk, egg yolk and some cereals. With antioxidant properties many times more powerful than those found in better-known nutrients (including vitamin C and vitamin E), grape seed extract is a heart-smart and cancer-smart botanical. The mentioned antioxidants have been improved vascular health, has been protected brain cells, and has been increased overall well-being through consuming as ideal supplement after surgery. Besides, coenzyme Q10 may play a role as cancer prevention agent and may show positive effects on heart attacks and other diseases concerning free radical damage. The major function of coenzyme Q10 is as a catalyst for metabolism; it manages the complex chain of chemical reactions while food convert into energy packets which the body can use.

The fat in fish contains a form of polyunsaturated fatty acids called omega-3. These differ from the polyunsaturated fatty acids found in vegetable oils (called omega-6), and they have different effects on the body. The two most potent forms of

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omega-3, EicosaPentaenoic Acid (EPA) and DocosaHexaenoic Acid (DHA), are found in abundance in cold-water fish such as salmon, trout, mackerel and tuna. The body loses iron when bleeding, it may be recommended in supplemental doses after surgery but in the minimal invasive surgery, needing as less. Iron-rich foods include liver, beef and lamb. Oysters, mussels and clams also contain iron. Vegetarians can get plenty of iron from beans and peas, leafy greens, dried fruits (raisins, apricots), seeds (pumpkin, squash, sunflower) and fortified breakfast cereals. Brewer's yeast, blackstrap molasses and wheat bran are also good sources after minimal invasive surgery. Iron helps the body immune system functions, provides energy, gives to mind a supremacy. Deeply colored fruits like blueberries, strawberries, raspberries, blackberries, cherries and pomegranates consuming after minimal surgery boost the antioxidant intake owing to these fruits contain anthocyanidin compounds which are not only enhance the Vitamin C effect, but also improve capillary integrity and stabilize collagen matrix.

Biography

Tokusoglu has completed her PhD at Ege University Engineering Faculty, Dept of Food Engineering at 2001. She is currently working as Associate Professor, Dr faculty member in Celal Bayar University Engineering Faculty Department of Food Engineering. She performed a visiting scholar at the Food Science and Nutrition Department /University of Florida, Gainesville-Florida-USA during 1999-2000 and as visiting professor at the School of Food Science, Washington State University, Pullman, Washington, USA during April-May 2010. She has published many papers in peer reviewed journals and serving as an editorial board member of selected journals. She published the scientific edited two international book entitled Fruit and Cereal Bioactives: Chemistry, Sources and Applications and entitled Improved Food Quality with Novel Food Processing by CRC Press, Taylor & Francis, USA Publisher and third book Food By-Product Based Functional Food Powders by CRC Press, too; She also published three national books entitled Cacao and Chocolate Science and Technology, Special Fruit Olive: Chemistry, Quality and Technology and Frying Oils Science and Technology. She organized and/or administered as Conference Chair at many conferences and congress in various parts of USA and Europe.

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