Benefits of taking vitamin d research paper example

Technology, Development

A mother pleading her child to drink a glass of milk or an old woman inquiring about vitamin supplements is a common scenario that is observed in daily lives. It is not only the elders but also the nutritionists, doctors and the experts who are often emphasizing on the intake of leafy vegetables, citrus fruits, fish and the standard eight glasses of water. Such instructions are often associated with its underlying benefit which is explained by the presence of vitamins, calcium and other minerals. This makes the mind wonder as to why the intake of nutrients is incessantly stressed upon? The answer simply lies in their influence on human life.

Vitamins are organic compounds which are essential for human sustainability and development. There are several vitamins and each of them differs in their chemical composition and the function they perform. For this reason, the unique names of the vitamins are accredited to their biological and functional variations. They are highly important because they foster healthy skin, a properly functioning nervous system, aid in energy release and help the overall functioning of the body. Furthermore, vitamins are classified into fat soluble and water soluble where the former comprises the types of Vitamin Bs and Vitamin C which are easily lost in the cooking water and quickly flushed out of the body. On the other hand, Vitamin A, D, E as well Vitamin K is categorized as fat soluble vitamins which go hand in hand with body fats. In other words, these vitamins are absorbed by the body when it is aided with the intake of fat. The natural source of these vitamins is found in fruits, vegetables, meat, fish, chicken, dairy products and more. For instance, the best source for Vitamin D is sunlight whereas the secondary food sources include fish and cod liver oil. This vitamin aids the absorption of Calcium

which in turn is important for healthy bones and teeth. On the other hand, the intake of Vitamin K through leafy vegetables, legumes and egg yolk, helps in the process of blood clotting. As a matter of fact, the actual vitamin requirement varies mainly on the basis of gender, age and level of activities performed. In this regard, the dietary guidelines recommended by the U. S Department of Agriculture suggests that since Vitamin B and C are not stored in the body and it is mainly consumed through vegetables, the advised amount of this vitamin source for the adults is approximately two and half cups per day along with similar quantity of fruits per day. Similarly, the USDA recommends 3 cups of low fat milk or milk based products specifically for adults as it provides calcium which would be effective with the presence of Vitamin D in the body.

Since vitamins are essential for the growth and development of human body, this paper would specifically focus on the benefits of taking Vitamin D. As mentioned earlier, Vitamin D is a fat soluble vitamin. Since long, it is known to help the human body to use and utilize calcium for healthy bones and teeth. The natural and one of the best sources of Vitamin D is sunlight. The study conducted by Grant William (12-15) incorporates an extensive research on the impact of Vitamin D, highlighting the role of sunlight in saving people from the risk of Cancer. This is further supported by the findings of the observational studies as proposed by KN Evans (263-271) which reveal that a daily intake of approximately 1500- 3600 IU of Vitamin D3 significantly halves the risk of breast as well as colorectal cancer.

A weak immune system is prone to develop illnesses such as viral infections and influenza. Such infections are prevented by the intake of Vitamin D

which is known to enhance immunity (William). Studies also suggest that bodies with Vitamin D deficiency are more prone to face metabolic diseases such as type 2 diabetes, hypertension and various other cardiovascular diseases.

Like Grant William (12-15), Nathaniel Mead also highlights the function of sunlight in enhancing the supply of Vitamin D. He is also of the opinion that lack of sunlight results in Vitamin D deficiency. On this subject, Grant William has proposed a number of contradictions presented by previous researches and the reports presented by the World Health Organization (William, 12-15). While at one hand these studies talk about the harmful effect of UVB rays which penetrates into the skin causing skin cancer, lowering Vitamin A and fostering aging in humans, these studies have also found that the UVB rays leave a benign impact. Furthermore, the lack of exposure towards the sun results in Vitamin D deficiency which ultimately increases the chance of developing life threatening diseases. As compared to the other Vitamins which can be obtained through various food sources, Vitamin D synthesis takes place via a photosynthetic reaction which is initiated because of the UVB exposure. The amount of Vitamin D produced through this process is entirely based upon the UVB photons which penetrate the human skin. This process can be slowed down because of the clothing being worn, body fat, melanin as well as the effect of sunscreen. For example, a half an hour sun bathing in summers result in the generation of approximately 50, 000 IU Vitamin D within 24 hours as compared to the same exposure to the sun which initiates a release of approximately 8000 to 10000 IU Vitamin D amongst people with dark skin (Nathaniel). Vitamin D deficiency gives rise to

stunted growth and bone deformity. It is also a major factor of rickets in children; a disease with deformed growth, body structure and bones. Similar to growth retardation amongst children, Vitamin D deficiency is also the cause of osteoporosis in adult males and females (Nathaniel).

Although Vitamin D is mainly derived from sunlight as well as from fish and cod liver oil, individuals often fail to meet the daily requirement of this vitamin. This is usually either because of their limited exposure to sun (as in the case of Northern areas) or because they do not consume food that is high in Vitamin D. Consequently, they often resort to supplements to boost the supply of Vitamin D in their body. But are these supplements actually benefitting them? Grant William (12-15) talks about the benefit of Vitamin D supplements amongst women in New York who are less prone to cold. Kauffman Joel holds a similar view on the advantage of Vitamin D supplementation who via the clinical trials concluded the role of Vitamin D supplements in lowering the frequency of bone fractures, cold and influenza. These supplements also protect individuals from cardiovascular diseases, depression, and autism. It is also true that people who are receiving an adequate amount of sunlight do not require Vitamin D supplements. However, those individuals who are not exposed to an appropriate amount of sunlight; which according to USDA is approximately15 minutes per day, require an oral dose 1000-2000 UD Vitamin D. The report presented by NHS coherently outlines the increased availability and use of supplements in the form of tablets, capsules, tonics, drinks and food which can be found in almost every store or simply ordered online. It also states that these dietary supplements generated a profit of about 670 million pounds for the UK

market in 2009 (NHS). This shows the frequency with which the supplements are being consumed. Regardless of this growth, NHS clearly presents a mixed idea upon the consumption of supplements as its benefit, use and impact varies from one individual to the other (NHS). However, it emphasizes on the fact that people should know what they are having, why and what would be the impact of taking that particular supplement on the health. In contrast to the benefits of Vitamin D supplements discussed by Grant William, the Food and Drug Administration (FDA) has warned the public regarding the hazards of Vitamin D overdose. The FDA report briefly talks about the current practice of giving Vitamin D liquid supplements to infants through a dropper. It warns caregivers that exceeding a dose 400 IU of Vitamin D to breastfed children can result in kidney damage, nausea and muscle weakness amongst children. Similarly, the excessive dose of Vitamin D over prolonged duration results in kidney stones, irritability, weight loss and may also result in deafness and heart diseases. This is because of the underlying fact that the increased intake of Vitamin D results in greater absorption of Calcium and Phosphorous which at one hand strengthens the bone development in people with weaker bones, while on the other, it increases the risk of developing heart diseases (Bebel). Contrary to this idea, Amerongen and Feron (1-23) are of the opinion that vitamins more specifically the Vitamin D supplements prevent females from developing Multiple Sclerosis thereby reducing muscle pain and strengthening the body. However, although Amerongen and Feron (1-23) highlight the benefit of taking vitamins like William Grant, the research coherently states that prolonged moderate dose of Vitamin D pose no serious threats thereby not

mentioning the impact of high vitamin doses as discussed by the work conducted by Bebel Mitchell and FDA.

Thus, there are several different types of vitamins, each with a different name and function. The vitamin requirement generally varies on the basis of age and the level of physical activity. While taking Vitamin D in consideration, the main source of this vitamin is sunlight. The secondary sources include food items such as fish and cod liver oil. As a matter of fact, individuals often resort to Vitamin D supplements as prescribed by the doctor or because of the Vitamin deficiency; studies propose the role of Vitamin D in preventing fractures and the risk of cancer. On the other hand, research has also proposed the harm of Vitamin D overdose as it gives rise to kidney stones, heart diseases, nausea and other illnesses. Therefore, for the sustainability of human life, it is not only desirable to be cautious in taking the right vitamin supplement, but it is also essential to directly consume the appropriate amount of Vitamin D from its natural and secondary sources.

Work Cited

Amerongen, V. M. B., and Feron Francois. “ Effect of High-Dose Vitamin D3 Intake on Ambulation, Muscular Pain and Bone Mineral Density in a Woman with Multiple Sclerosis: A 10-Year Longitudinal Case Report.” International Journal of Molecular Sciences 13 (2012): 1-23. Web. 20. October. 2012

Bebel, Mitchell. Herb, Nutrient, and Drug Interactions: Clinical Implications and Therapeutic Strategies. Missouri: Elsevier Health Sciences, 2008. ProQuest. Web. 21. October. 2012

Evans, KN. Vitamin D and placental-deci dual function. J Soc Gynecol Investig

11. (2004): 263-271

FDA Consumer Health Information. Infant overdose risk with liquid Vitamin D. 2010. Web. 22. October. 2012. http://www. fda. gov/downloads/ForConsumers/ConsumerUpdates/UCM215586. pdf

Grant, William. The effect of solar UVB doses and vitamin D production, skin cancer action spectra, and smoking in explaining links between skin cancers and solid tumors. Eur J Cancer 44. 1 (2008): 12-15. Web. 22. October. 2012.

Kauffman, Joel. Benefits of Vitamin D supplementation. Journal of American Physicians and Surgeons 14. 2 (2009): 38. Web. 23. October. 2012.

Nathaniel, M. " Benefits of Sunlight: A Bright Spot for Human Health." Environmental Health Perspectives. 116. 4 (2008). Web. 22. October. 2012

NHS Choices. Supplements who needs them? June. 2011. Web. 20. October. 2012 < http://www. nhs. uk/news/2011/05May/Documents/BtH_supplements. pdf>

USDA. Dietary Guidelines for Americans. 2010. Web. 19. October. 2012. www. cnpp. usda. gov/DGAs2010-PolicyDocument. htm