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The Detrimental Effects of Dietary Supplements

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Introduction

The same supplements that are marketed to enhance and enrich overall health are sending thousands of teens and young adults to urgent care every year. Dietary supplements such as weight-loss, bodybuilding, and energy supplements are widely used in the hopes of attaining a more toned physique, or a variety of other advertised health benefits ranging from better digestion to increased focus. A recent study published in the *New England Journal of Medicine* found that “More than one quarter (28 percent) of emergency department visits for supplement-related adverse events in our study involved young adults between the ages of 20 and 34 years” (Geller et. al. 2015). The young adults admitted for complications due to dietary supplements suffered from cardiac symptoms such as rapid heartbeat, chest pain, and heart palpitations, often due to the stimulants present in the pills ingested. Although supplements are not supposed to contain active drug ingredients, many consist of prescription drugs yet are misleadingly labeled as “natural” or “organic.” Products such as vitamins, minerals, and probiotics in addition to dietary supplements are often thought of as benign and beneficial; when in reality they have the potential to cause life-threatening adverse health effects. Potential stakeholders in this situation include the vast majority of young adults in addition to their families who take daily supplements. Given the demonstrated health risks for young adults, dietary supplements should be held to stringent regulations to ensure the safety of humans as well as work to prevent environmental contamination.

Presentation of Argument

The consumption of dietary supplements has become commonplace within the United States. Statistics collected by the Centers for Disease Control and Prevention show that the

“Use of dietary supplements is common among the U.S. adult population. Over 40% used supplements in 1988–1994, and over one-half in 2003–2006” (NCHS 2011). These statistics are suggestive of a larger trend in the use of over the counter supplements. Additionally, the CDC concludes that “Multivitamins/multiminerals are the most commonly used dietary supplements, with approximately 40% of men and women reporting use during 2003–2006” (NCHS 2011). As more of the population chooses to take supplements, more people are at risk for the potential life threatening health effects that can occur as a result of these pills.

The increased usage in turn yields greater risk, as demonstrated by statistics published in the *New England Journal of Medicine* that state “An estimated 23,000 emergency department visits in the United States every year are attributed to adverse events related to dietary supplements” (Geller et. al, 2015). These statistics demonstrate the danger in such a readily accessible product. The complications that can result from use of unregulated supplements “commonly involve cardiovascular manifestations from weight-loss or energy products among young adults and swallowing problems, often associated with micronutrients, among older adults” (*New England Journal of Medicine* 2015). Consumers deserve to know that a pill marketed to benefit their health will not in fact endanger it.

The FDA is the primary regulatory agency that is responsible for the safety of dietary supplements. Herbal dietary supplements are regulated according to the guidelines listed in the Federal Food, Drug, and Cosmetic Act, however, it is not mandatory for those responsible for the product to receive approval. Currently, dietary supplements (such as botanical products, vitamins and minerals, amino acids, and tissue extracts) are regulated under the Dietary Supplement Health and Education Act of 1994, which includes several provisions that apply only to dietary supplements and dietary ingredients of dietary supplements. These provisions no longer required

the food additives in these supplements to be regulated or to be verified by the FDA that their ingredients do not pose a serious risk to human health if used under the conditions listed on the label. This requirement is in contrast to what is required for drugs, which must be shown to be safe and effective for a particular indication before they are approved for marketing (Slifman et. al. 1998). As millions of people choose supplements to achieve optimal health, many encounter health hazards instead due to the unregulated nature of the market. Allowing these unapproved products to reach the shelves of the general public is unacceptable, and “if the composition and quality of the ingredients cannot be reliably ensured, the validity of research on dietary supplements is questionable” (Starr et. al. 2015). Ensuring the safety and efficacy of the ingredients included in widely used dietary supplements is the first step to making this market healthier for the average consumer.

Due to these non-existent regulations, supplements include active ingredients that are not advertised and pose a serious health risk to consumers who unknowingly ingest the pills without being informed of the possible side effects. For example, a patient that presented to urgent care detailed that they were taking a supplement marketed to achieve the following: “gently assist in the systemic cleansing of the body, and in the removal of impurities from the intestinal tract”, a combination of 14 herbs (Slifman et. al. 1998). Other claims of dietary supplements that have been the potential to send users to the hospital include: “a fibrous bulking powder (psyllium-husk powder), to be mixed with the hydrated bentonite to form a shake-like drink; and capsules to “normalize bowel pH and help maintain a healthy bowel environment” (a combination of *Bifidobacterium infantis*, *B. bifidum*, *B. longum*, *Lactobacillus acidophilus*, *L. casei*, *L. plantarum*, colostrum, and fructo-oligosaccharides) (Slifman et. al.1998). The patient subsequently experienced extreme lethargy, nausea, and severe vomiting yet continued to use the

regimen for another two days. She then was admitted to the hospital, however, because of persistent nausea, irregular heartbeats, and hot flashes (Slifman et. al. 1998). Consumers are not often made aware of these adverse events and severe symptoms because it is detrimental to the businesses that produce these pills for profit rather than to benefit human health.

Along with its risks in humans, there is concern about the active prescription drug ingredients polluting the wastewater and subsequently, the surrounding environment such as the soil. As people consume more of these supplements, more waste is being produced and often is not disposed of properly. Wildlife may be exposed to these toxic ingredients, and the results may be unprecedented because of the unregulated nature of these drugs. If we do not have stringent policies in place to ensure the safety, efficacy, and quality of these supplements, any amount of toxic substances may be found within the pills that eventually find their way back into our environment.

The precautionary principle outlines a preventative course of action to preemptively reduce any possible harm that may come to the environment due to a human activity. Abiding by this principle, action should be taken against these unregulated dietary supplements due to the potential for pollution and environmental harm that may result. Guided by the precautionary principle, preventative measures should be taken even before conclusive, irrefutable data is collected that demonstrates the risks posed to the environment. This action would work to stop any damage before it has the chance to irreparably impact the earth.

Counterclaims/Opposing Arguments

Although dietary supplements carry considerable associated risks, some argue for their continued use for nutritional purposes. Dietary supplements do, in most cases, provide an adequate intake of necessary nutrients that some members of the population may not receive

elsewhere in their diet. Primary care physicians as well as pediatricians often advocate the use of such supplements to augment a diet or lifestyle that is otherwise not nutrient rich. Concerned parents also might advocate for these supplements if they are raising underweight or malnourished children who receive the majority of their health benefits from these kinds of supplements. The companies that are behind the marketing and sale of these supplements would certainly be opposed to the requirement of answering to a regulatory agency such as the FDA or the EPA. Adhering to stricter standards would result in a rapid loss of profit, as they would most likely have to stop the sale of their drugs while the investigation takes place. These companies would also have to sacrifice a great deal of time and effort into modifying their products to meet the proposed higher standards, and this process may also result in a costly expenditure to acquire quality ingredients.

Conclusion

Dietary supplements should be strictly regulated by agencies such as the FDA and EPA because of their demonstrable health risks and potential for environmental harm. Supplements should be treated as any other medication on the market because, often times, they are remedying an observed deficiency and carry a large impact on the individual's health. As a student environmental group, you hold the power to influence your peers and incite real change in the perception of dietary supplements. The simple act of raising awareness can lead to media attention and further investigation of the health risks associated with many of the popular weight loss, sleep aid, and energy supplements that so many college students utilize, often without being aware of the potential side effects. By requiring the supplement companies to comply with regulatory policies, safer, better quality, and more effective supplements will become available and the public can trust that what they see on the label is accurate and unbiased information. The

enormous potential your environmental group has for organizing and enacting change can be used to advocate on the behalf of the thousands of young adults like yourself who have experienced the negatives of dietary supplements and ensure a safer future for those seeking nutritional benefits from these pills.

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