

Introduction

Diet and Acne

Adolescents with acne struggle in finding an effective treatment because of the many different factors that cause acne. "According to The International Society of Dermatology (2009), Moreover, approximately 80-90% of American adolescents experience acne and have faced low self esteem, poor body image, social withdrawal and depression (pg. 344)." Although acne is portrayed to be a non-detrimental dermatologic noisome, many people don't realize that it can be a prevention signaling harm within the body. An environmental factor such as diet is linked to biological factors such as genetic and hormonal factors. "Diet plays a role in implicating biological factors because the large intake of high-glycemic increases glucose levels, which causes the body to release insulin and other hormones that can stimulate oil production and inflame skin (pg. 345)." According to Davidovici and Wolf (2010), an acne diet connection shows adolescents have a higher prevalence of acne in modern western population compared to adolescents who live in rural, non-industrialized societies (pg. 13). The western diet consists of high glycemic foods, which include white bread, rice, potatoes, soft drinks, sugar-riched foods and processed cereals and snacks. The problem of food justice that we are facing in our society is that the high glycemic foods are popular, convenient, and cheaper. Adolescents don't realize that having a high glycemic diet can increase acne because they are unaware of the links between diet and acne. They aren't required to receive a nutrition education in middle school or high school.

Good News

"In a clinical dietary intervention study, Smith et al. (2009) found that a low glycemic diet is linked to a reduction in counts of lesions and inflammatory lesions (343). Participants in the intervention group experienced a significant improvement in insulin sensitivity and significant change in androgen levels, compared to participants in the control group that had a regular diet with carbohydrates and no knowledge of the glycemic index (pg. 344)." This data shows a positive correlation between the change of number of lesions and change of insulin sensitivity. Students should have a diverse education, such as a nutritional education in middle school and high school, which can be used as a passive intervention to help adolescents learn about diet and the effects it has on the human body. Having a background of food science, adolescents would be encouraged to live a healthier lifestyle that promotes a balance diet and exercise. School should be required to have registered dietitians that can counsel their students and help them create a personal diet plan. This would give parents and students the opportunity to receive advice on food choices, food intake and other resources. Students need counseling from all factors that acne causes in their lives. This intervention can support adolescents by focusing on regular everyday issues teenagers face, for example, (1) psychological damage of low self esteem, depression and feeling insecure about the way they look, (2) biological damage to their facial or bodily tissues resulting in permanent scarring, (3) Sociological damage that causes them to withdraw from social activity, Environmental damage from the media, businesses, and health industry that confuses adolescents to think acne treatments only come from medication, cosmetics products or dermatologist.

Opportunities for Improvement

Despite all the problems in our food system, in our schools and communities, our social capitol in food justice is improving. "According to Davidovici and Wolf (2010), In our society,

improvements are possible because the increase of public awareness of the cause-effect relationship between diet and health from the media (pg. 12).” Government organizations are also playing a role in providing programs that support nutrition. “For example, Michelle Obama’s Lets Move Program that focuses on raising American children to live a healthy lifestyle of a balance diet and being active (pg. 1).” We are still growing as a society and coming up with health policies that involve food service and nutritional education, where regulation need to be taken place in businesses that bombard our youth. Many activist and communities are continuing to fight for the public’s rights in food justice and influence those that are unaware that a healthy diet can improve health. The public is starting to recognize the decrease of human health due to nutritional problems of food intake. Public awareness is always a great opportunity for improving our food justice, education and food system.

Background of Intervention

Biological points of view

“Mann states (2007); Biological intervention would be that adolescents should consume a low glycemic diet to decrease the risk of high blood sugar level (pg 2). A study was done by measuring for GI of food in 10 subjects where measurements of blood sugar level were taken after 2 hours of consuming 50g pure glucose or food containing 50g carbohydrates. They found that blood sugar levels were 70% higher due to consumption of glucose and white breads compared to beans. Large quantities of insulin is being release in the blood due to consumption of high glycemic foods, which has an affect on hormones and other functions that link to acne. For example, Androgens, regulator of sebum production are being more active. The insulin promotes growth of keratin in skin cells, where follicles are being block. Build up is occurring the in the duct which causes infection and inflammatory response (pg. 2 to 3).” If children understand the science background of nutrition and the physiology of how acne is caused, they would understand how diet links to acne.

Environmental point of view

According to Davidovici and Wolf (2010), An environmental intervention would be that we need to make the public aware of high glycemic diets and its consequences within our community (pg. 2). A study that shows that acne prevalence increases as a population adopts a western diet. “Kitavan Islanders of Papua New Guinea and the Ache study were done on the prevalence of acne in non-westernized area. 1200 kitavans where about 300 were the ages of 15-25 and 115 Aches where about 15 were in the age range of 15-25 had no single case of acne (pg. 2).”

Psychological point of view

From American College of Physicians (2008), A large survey was done to show that about 96% of adolescents have reported that acne had a negative impact on self-image (pg. 7). A psychological intervention would be to provide adolescents with counseling on self image and a nutritionist guide to help with their eating habits. Adolescents are usually embarrassed about their imperfections and keep it to themselves. Yet if they know they can receive guidance and support from a professional about regular teenage issues, they would be able to help themselves internally and externally.

Sociological point of view

“According to an article Diet and Acne: a review of the evidence (2009), In a study, researchers reported that the 34% of people believe diet causes acne, 64% believe hormones are the cause and 38% believe it is caused by genetics (pg. 342-43).” This shows that the public

people in America believe hormones and genetics cause acne compared to diet. If interventions can also focus on how diet causes acne, more adolescents would be aware. By developing a required nutrition program in middle school and high school then more adolescents would be more likely to watch what they eat and how much they take in.

Finding/Results, Describe the

Study

A study was done by nutrition researchers from RMIT University and dermatologist from Royal Melbourne Hospital (2007) that wanted to study the links of diet and acne (pg. 3-4). They used young males who had acne and split them into a control group, a group who eat a high GI diet or their normal diet and experimental group, a group that consumed higher proteins and low GI carbohydrates. This study was about 3 months and all subjects were supplied with the same facial wash and lotion and no other medication was allowed. Each month acne measurements were taken and at the beginning and end of each month, blood levels of hormones linked to the causation of acne were also measured (pg. 3).” They wanted to compare data and the effects that the two diets had on the acne symptoms and hormone related acne.

Results

During the 3 months of study, both groups showed improvements in their acne, yet reduction of acne was greater in the experimental group. “The experimental group had a 51% reduction and the control group had a 31% reduction of acne (pg. 3-4).” The experimental group had great psychological improvements than the control group. According to hormonal differences, the experimental group had slightly lower reductions of insulin and androgen levels, whereas the control group had high increasing levels of both. The experimental group also showed lower levels of keratin production resulting that the growth factor of acne decreased as well.

The (h) incidence, (i) relative risk, and (j) confidence intervals related to diet linking to acne from the RMI university and Royal Melbourne Hospital study (2007) will be presented in a Table format.

k. Table and graphs

Table 1

	Acne	No Acne	Total	Acne Risk Ratio	Relative Risk	Attributed %
High Glycemic diet	69	31	100	0.69	71%	20%
Low Glycemic diet	49	51	100	0.49		
Total	118	82	400			

Table 2

	Control Group	Experimental Group
1 month	100	100
2 month	80	60

3 month

60

40

Graph

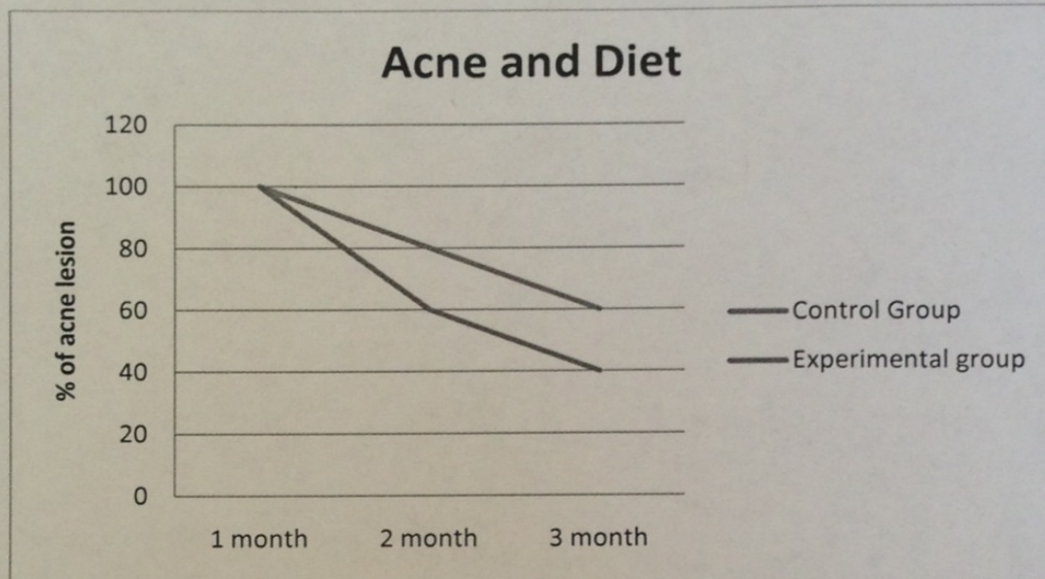


Figure 1: In each dietary visit, percentages change in the number of acne lesion. The experimental group shows a higher decrease of acne lesions compared to the control group.

1. Budget

Position	Base salary	% of Effort	Project Salary	Fringe %	Fringe amt.	Project Salary + Fringe amt.
Registered Dietician	60,000	25%	15000	35%	5250	20250
Psychologist	95,000	75%	71250	35%	24937.5	96187.5
Administration	40,000	15%	6000	15%	900	6900
Project Managers	60,000	25%	15000	15%	2250	17250
						140587.5

Other costs	total	Intervention Materials	total	Facility	total
Office Supply	1,000	Handouts	500	Meeting	1000
Software	1,000	Text books	500		1000
Furniture	1,000		1000		2000

Telephone	1,000
Printing	1,000
Computer	5,000
	10,000

Discussion/Conclusion, Discuss

I. Advantages

By understanding nutrition and how diet influence acne, adolescents will learn to live a healthier lifestyle. This is an advantage for adolescents because they can have a higher reduction of acne by diet and good hygiene. They could have many resources because the interventions offer psychological help. Psychological help would help adolescents become more active and have more confidence in themselves. Starting a habit of eating and living healthy, can prevent many chronic disorders people face because of environmental factors. Adolescents wouldn't have to suffer physically because of the scarring of long-term acne. Although acne isn't deadly, it can create a lot of damage to an adolescent.

m. Limit of Intervention

Interventions should be there to promote growth in a person and not to disadvantage or advantage a particular group. Adolescents need an intervention where they can better themselves such as gaining a nutrition background, guidance and support from professionals. Limits in interventions would be taking away adolescents rights or discriminating.

n. Policy Implications

Policy implication would be having people support an increase in budge to develop the interventions. It would cost money to develop a nutrition program at middle schools and high schools and it would cost money to implement, so we would have to pass budget by the county and city. Because our economy is down, many people aren't willing to increases taxes or bills to support the intervention budget for school programs in all county or city.

p. Summary

By doing this Report on how diet links to acne, I found that adolescents that have a high glycemic diet are 71% more likely to get acne compared to adolescents who have a low glycemic diet. Studies show that in non-westernized areas, there were no cases or very little incidence of acne (pg. 3-4). Western diets have shown more cases of acne due to dairy products and high glycemic foods compared to today's diet from the past diet. Adolescents in America have been suffering from acne and from its consequences, which show we need to fix this problem. The media helps adolescent to look for chemical cosmetic treatment with the overflow of businesses ads, yet by creating proactive intervention of teaching nutrition, adolescents are guaranteed an education to better themselves. In the future, health policies would need to be made to support education and to the public. Our society needs regulations in businesses that promote a high glycemic diet, so our people and especially our youth won't have to suffer. Research shows that high glycemic diets have linked to too many chronic disorders and obesity. "According to an online cite called Acne Causes, Further research is necessary to establish whether a reduced consumption of high-glycemic foods, or treatment that results in increased insulin sensitivity can significantly alleviate acne, though consumption of high-glycemic foods should in any case be kept to a minimum, for general health reasons (pg 1)." As research starts to question more and confirm diet has an effect on acne, this will benefit society. By focusing on how a high glycemic diet links to acne, we are guaranteed an educated youth and help spread prevention of chronic illness that has been harming America.

5. References

1. Mann, Neil, and Robyn Smith. "Spotting the problem - Does diet play a role in acne." *Warringal Publications*. 18.2 (2007): 1-4. Print.
2. Davidocivi, Batya, and Ronni Wolf. "The role of diet in acne: facts and controversies." *Elsevier*. (2010): 12-16. Print.
3. Danby, William . "Nutrition and acne." *Elsevier*. (2010): 598-604. Print.
4. O'connor, Anahad. "The claim: Sugar in the diet can lead to acne." *New York Times* 24 February 2009, Late edition: D.5. Print.
5. Spencer, , Ferdowsian, and Barnard. "Diet and acne: a review." (2009): 339-347. Print.
6. "Treatment." *American College of Physicians* . (2008): 5-12. Print.
7. Popkin, BM, and P Larsen. "The nurition transition: worldwide obesity dynamics and their determinants." *Nature Publishing Group* . (2004): 52-59. Print.
8. <http://www.news-medical.net/health/Acne-Causes.aspx>. Retrieved Nov 10, 2010