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Cover Memo

 This article discussing the views of the experts and the media on the possibility of a relationship between diet and acne appears in a special skincare issue of a beauty web magazine. The web magazine provides advice and tips to its readers on how to look their best. It also recommends products that readers can buy to achieve certain looks or solve beauty problems. The target audience for this web magazine is women interested in beauty. The women reading my article desire flawless skin, an understanding of the cause of their acne, and how to get rid of their pimples.

 Acne results from the inflammation of skin glands and hair follicles (FDA). The National Institutes of Health says that acne is a scourge of the skin as “about 80 percent of people between the ages of 11 and 30 have outbreaks of the skin disorder at some point” (FDA). While acne does not pose a serious physical health problem, it often results in low self-esteem and other psychological problems. Additionally, acne, if left untreated, may permanently scar the skin.

 There are a number of myths purported by the media surrounding the causes of acne. One such myth is that eating chocolate, dairy products, and greasy foods like pizza and hamburgers leads to breakouts. The purpose of this article is to inform readers about whether or not this myth is fact or fiction. Readers will learn that most experts have concluded that a causal relationship between diet and acne has yet to be confirmed or disproved.

**Is Your Skin is what you Eat?**

By Alexa Tsintolas



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Nothing is worse than waking up on a Monday morning with the unfortunate realization that the weekend has ended and it’s time for work and school all over again. Nothing is worse, except for maybe waking up to a major overnight breakout of acne. For many women, this scenario occurs daily. A number of women have tried to eliminate their blemishes with expensive products and extreme hygiene routines to no success. Perhaps one of these women is you.

The reason why so many women have been unsuccessful is that they do not understand why they have acne in the first place. A major component in the prevention of any problem is knowing the causes. If women are equipped with an understanding of what causes their acne they can take action to eliminate their pesky blemishes once and for all and improve their confidence in their appearance.

The media has popularized the idea that eating particular foods leads to breakouts. Carly Cardellino states in her *Cosmopolitan* article, “13 Surprising Reasons You Keep Breaking out” that eating spicy foods can result in bouts of acne. She says spicy foods contain acidic lycopene, which can alter the skin’s pH levels producing acne. Additionally, Cardellino claims dairy products and bread may cause acne. She shares that certain foods maybe triggers in some people but not others.

Sophie Schulte-Hillen writing for *The Dr. Oz Show* upholds the view that diet causes acne. She says that even though past research on the matter is inconclusive and that some dermatologists think that there is no relationship between diet and acne, “the latest research suggests the food/acne relationship is not a myth.” Schulte-Hillen discusses how researchers think eating processed carbs can cause breakouts. These carbs are broken down quickly into sugars increasing the amount of insulin in the body, which in turn increases the production of sebum, the main ingredient for acne. She states that chocolate has been shown to “inflame existing acne,” not cause it, so it is safe for those who are not prone to acne. Schulte-Hillen shares that researches believe milk can cause acne as most of the milk we drink is produced by pregnant cows “contains high levels of hormones that can send oil glands into overdrive.” The media holds fast to the idea that diet does indeed cause acne.

 Experts from the field of dermatology believe that the media’s view has not yet either been verified or refuted. Drs. Davidovici and Wolf address many of the same experiments that Schulte-Hillen mentions in her article; however, they express concern about the methods used in the experiments. They claim that a relationship between diet and acne is inconclusive: “Unfortunately, convincing trials are lacking because it turns out that no meta-analyses, randomized controlled clinical studies, or well-designed scientific trials have followed evidence-based guidelines for providing solid proof in dealing with this issue” (13). The dermatologists believe that while the few studies that have been performed have failed to show any link between diet and acne, their methodology is questionable and more experiments are needed to prove if there is a causal relationship or not.

Dermatologists Magin, Pond, Smith, and Watson also express their dissatisfaction with the experiments conducted to see if acne is caused by certain foods. They claim that “surprisingly little evidence exists for the efficacy or lack of efficacy of dietary factors” (62). Like Drs. Davidovici and Wolf, they believe there have been far too few studies each with small sample populations and flawed methodology. They acknowledge that the experiments seem to evidence no relation between diet and acne but the absence of any causation is not strong. They conclude by saying the evidence is “incomplete at best” and that more experiments with better approaches should be performed.

Schulte-Hillen and the dermatologists discuss many of the same experiments; however, they arrived at different conclusions. Schulte-Hillen writes mainly on the rationales behind the experiments and does not delve much into specific data. She probably thought that her article would be far more interesting and widely read if she focused on the idea that diet causes acne rather than the data. Unfortunately, she misinformed her readers greatly by not carefully examining the data.

 Unlike the dermatologists, the U.S. Food and Drug Administration suggests that there is no relationship between diet and acne. In a Consumer Update released to the public about acne and its myths and treatments, the FDA blatantly states “Acne is not caused by diet. No scientific connection has been found between diet and acne. No food—not chocolate, fries, pizza, or any other food—has been shown to cause acne.” The issue here is that the FDA is probably more interested in informing the public about safe solutions and treatments for acne and may not be as concerned about acne’s causes. For this reason, the FDA likely looked into the studies and took the findings for face value instead of examining them as the dermatologists did.

Of all the sources of information, the dermatologists are the most credible because they have extensively examined whether diet and acne are causally related. Unfortunately, this means that the answer to the question of whether the two are linked is still unknown. While the dermatologists sort out this issue, there is nothing stopping you from conducting your own dietary experiments. Cardellino suggests paying attention to your skin after eating certain foods. If you think you are breaking out after eating a food stop eating the potential culprit for month and see if you have a reduction in the number of blemishes. Schulte-Hillen recommends that eating certain foods with omega-3 fatty acids like fish, antioxidants like vitamin C, and flavonoids, which are found in red wine and vegetables, may reduce acne woes. Performing your own experiment can’t hurt; at best your skin will improve. Who knows, you might even come up with the million dollar acne-free diet solution.

Annotated Bibliography

Cardellino, Carly. "13 Surprising Reasons You Keep Breaking out." *Cosmopolitan* 3 Nov. 2014: n. pag. Web. 20 Oct. 2015. <http://www.cosmopolitan.com/style-beauty/beauty/advice/a32686/surprising-things-that-cause-acne/>.

In this article from *Cosmopolitan*, Cardellino lists thirteen things women do that may cause them to break out. She then gives suggestions on how to avoid these acne-inducing behaviors such as making lifestyle changes or buying new beauty products.

 The second reason in her list, “You’re eating spicy foods” is the most relevant to this paper. In this section, Cardellino claims that the acidic lycopene found in spicy foods can alter the skin’s pH levels resulting in bouts of acne. She then says that there are a number of other foods like dairy and bread that may cause breakouts. As each person is different, some foods may cause acne in one person but not another. She suggests that if one breaks out after eating a particular food she stop eating that food for a month and see if her skin condition improves. Cardellino’s argument that a change in diet can reduce breakouts is a useful piece of information to share with the readers of my article.

Davidovici, Batya B., and Ronni Wolf. "The Role of Diet in Acne: Facts and Controversies." *Clinics in Dermatology* 28.1 (2010): 12-16. *Science Direct*. Web. 20 Oct. 2015. Print.

 In this article, Davidovici and Wolf evaluate studies that have examined if eating dairy products, chocolate, fatty foods causes acne. The authors determine from their analysis that a relationship between diet and acne is inconclusive at best. They ascribe this conclusion to the fact that the few studies conducted on the subject have flawed methodology. For example, asking participants to record what they ate in food journals led to problems in accuracy and consistency. Although previous experiments concluded that there is no concrete evidence that certain foods cause acne, the hypothesis that acne and diet are related cannot be dismissed due to the studies’ unsound methods.

 Davidovici and Wolf examine a couple of hypotheses for reasons why certain foods may cause acne. For example, the milk we drink is more likely to come from a pregnant cow, which is experiencing a spike in certain hormones that are linked to acne in humans. However, the tests performed to determine the validity of this and other hypotheses succumbed to weak methodology preventing any conclusions from being drawn. It is important for me to stress in my paper that more and better experiments are needed to determine if there is indeed a relationship between diet and acne.

Magin, Parker, et al. "A Systematic Review of the Evidence for ‘Myths and Misconceptions’ in Acne Management: Diet, Face-washing and Sunlight." Family Practice 22.1 (2005): 62-70. Oxford Journals. Web. 20 Oct. 2015. <http://fampra.oxfordjournals.org/content/22/1/62.full.pdf+html>.

 The authors of this article assert that experiments performed thus far to investigate if there is correlation between diet and acne are unsatisfying. They claim there have been far too few studies each with small sample populations and flawed methodology. The article contains a table of some of the studies performed with their corresponding results. In each results column are the phrases “no significant change”, “limited”, “no difference”, and “no correlation.” The authors believe that the evidence in these experiments, while it seems to indicate the absence of any causation, is not strong. They conclude by saying the evidence is “incomplete at best” and that more experiments with better approaches should be performed.

In my paper I need to emphasize the importance of how more tests with improved methodology are needed to see if there is a causal relationship between diet and acne. I should also share that dermatologists agree that a correlation between acne and diet is not yet certain. Furthermore, I should contrast these journal articles with the FDA article to show that there is some disagreement between the experts on the diet and acne issue.

Schulte-Hillen, Sophie. "Can Food Cause Acne?" *The Doctor OZ Show*. N.p., 30 Jan. 2013. Web. 20 Oct. 2015. <http://www.doctoroz.com/article/can-food-cause-acne>.

In her article, Schulte-Hillen states that dermatologists originally did not think there was any connection between diet and acne. However, many of the past studies were flawed. Fast foods, milk, and chocolate have always been rumored to cause acne, but Schulte-Hillen indicates that the rumors do have some truth to them. She says there is some strong evidence that suggests a correlation between the two. The article also raises an interesting point that certain foods may promote clear skin. I plan on sharing the skin friendly foods in the article.

U.S. Food and Drug Administration. "Facing Facts about Acne." *U.S. Food and Drug Administration*. N.p., 25 July 2015. Web. 20 Oct. 2015. <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm174521.htm#BewareofMyths>.

This webpage is a Consumer Update released by the FDA to inform the general public about acne and some common myths that surround and treatments for it. The FDA explains how acne is a widespread skin condition that affects not just teenagers but people well into middle age. The FDA also describes the different types of acne and how it is caused mainly by hormonal changes that result from puberty and pregnancy. The government organization also discusses treatment options and gives a warning about the use of the vitamin supplement Isotretinoin, as it can cause birth defects. The FDA addresses myths about the causes of acne such as poor hygiene and diet. Finally, it provides some suggestions on how to minimize acne like not rubbing or picking the skin and using non-comodogenic (doesn’t clog pores) make-up products.

 The most useful section of this source is the part about misconceptions about the causes of acne. The FDA blatantly states that there is no “scientific connection” between diet and acne. It is interesting that the FDA seems to disagree with both the media and the other experts. I will mention in my paper that perhaps the FDA is not as knowledgeable and concerned about the causes of acne as it is determining what the safe solutions for acne are.