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**Assignment 3: Fact Checking**

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 Jonathan Benson, staff writer for NaturalNews.com wrote an article titled *When pregnant women take Tylenol, their children are more likely to be born with autism.* The article was published on December 1st, 2013 on NaturalNews.com. On their Facebook page, NaturalNews claims that they are an independent news resource that covers natural health and wellness topics that allows for healthier consumer choices via informed skepticism.

 The article begins with the unverified claim that 65 percent of women take “it” during pregnancy. By “it” the reader can only assume the writer means Tylenol. The article title is using scare tactics suggesting that taking Tylenol anytime during pregnancy will result in a higher chance of your child being born with autism. The information relating to autism in this article was actually never sourced from the original peer reviewed research that represents the scientific facts supporting the article. Benson does include that the study was published in the *International Journal of Epidemiology* but fails to mention factual quotes from the study. The four additional articles sourced for this information are from the popular press. Most of the information for this article was taken from Reuters.com from their article titled *Too much Tylenol in pregnancy could affect development* written by Kathryn Doyle.

The beginning of the article briefly touches on the original Norwegian study. It seems as though they are using the information from this study to introduce the second part of the article which is based primarily on the sole option and undocumented research of doctorial candidate Ann Z. Bauer. Bauer inferred that “pregnant women may want to avoid taking Tylenol”. After reading the original study in the *International Journal of Epidemiology,* I found they made no such claim. Bauer also suggests “acetaminophen may trigger these and various other symptoms in children, which categorically speaking can be defined as autism”. What Bauer fails to inform the reader of is that the statistical data that she bases her claims on was separated into two groups in the original study. One group took the paracetamol for more than 28 days while the other group took Tylenol for less than 28 days. By not stating this information Bauer is misleading the reader to believe that any amount of Tylenol can be dangerous and have long lasting effects on their unborn child. The original article by Brandlistuen, Ystrom, Nulman, Koren, & Nordeng (2013) was meant for peer review study, research and academic purposes. When taken out of context and apart from the whole, the information provided can be depicted in an unintended way. For instance, when you read the article you assume that if you have taken Tylenol you are at a higher risk of bearing a child with language, behavioral and gross motor issues. Another potential risk factor is an overreaction to the shortened popular press version. Expecting mothers who come across the article and do not follow up with more extensive research may become distressed about taking Tylenol causing more harm to their unborn baby. This article could also cause more harm for the unborn baby if the mother has a fever and refuses to take Tylenol to control the symptoms causing a miscarriage, kidney problems and other physiological problems associated with high fevers.

The most interesting information I discovered was that never once in the Norway study was there any mention of paracetamol or acetaminophen (the key ingredient in Tylenol) being linked to Autism. Throughout the whole original article, Autism was never mentioned. What the researchers concluded was that there is a correlation between taking paracetamol for an extended period of time (over 28 days) and a child being born with poorer gross motor development, communication, externalizing behavior, internalizing behavior and higher activity levels. Children exposed prenatally to short-term (less than 28 days) use of paracetamol also had poorer gross motor outcomes but the effects were much smaller than when compared with long-term exposure.

 There is an interesting statistic in the original article that could potentially be a limitation to the data. When comparing the statistics in Table 2 it is important to note the consumption of alcoholic beverages during pregnancy. Of the 1831 expecting mothers who also took Tylenol for over 28 days, 612 of them (33.4%) drank alcohol 1-3 times a month. We also know from previous studies that physical, mental, or behavioral problems can result in a child whose mother drank alcohol during pregnancy.

 The popular press article is trying to create controversy and seems to attack the band-name Tylenol. It advises the readers to take alternative medication but never mentions what alternatives pregnant woman should be taking. The analysis on this popular press article is more about how an author can use a scientific study to support their claims without actually using the statistical data and therefore, misleading the reader.

**Study Found on Website**

<http://www.naturalnews.com/043087_Tylenol_autism_pregnant_women.html>

**Original Study from Norway**

[http://ije.oxfordjournals.org.ezproxy-eres.up.edu:2048/content/early/2013/10/24/ije.dyt183.full.pdf+html](http://ije.oxfordjournals.org.ezproxy-eres.up.edu:2048/content/early/2013/10/24/ije.dyt183.full.pdf%2Bhtml)

**Other Studies Found**

<http://news.nationalpost.com/2013/11/06/new-study-rings-alarm-bells-for-pregnant-women-using-large-amounts-of-acetaminophen-based-drugs-such-as-tylenol/>

<http://www.reuters.com/article/2013/11/22/us-tylenol-pregnancy-idUSBRE9AL15L20131122>

<http://www.nbcnews.com/health/too-much-tylenol-pregnancy-could-affect-childs-development-study-finds-2D11644164>

<http://www.mtwholehealth.com/2013/07/just-say-no-to-tylenol-acetaminophen-causes-autism>

References

Benson, J. (December 1, 2013). *When pregnant women take Tylenol, their children are more likely to be born with autism*. Retrieved from <http://www.naturalnews.com/043087_tylenol_autism_pregnant_women.html>

Brandlistuen, R., Ystrom, E., Nulman, I., Koren, G., & Nordeng, H. (2013). Prenatal paracetamol exposure and child neurodevelopment: a sibling-controlled cohort study. *International Journal of Epidemiology. First published online October 24, 2013 doi:10.1093/ije/dyt183*