

# Consumer Perceptions Regarding Caffeine Sources

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## Abstract

We wanted to study certain consumer perceptions regarding the sources of caffeine in consumer products. We used a simple on-line survey format to study consumer perceptions regarding coffee and tea, and caffeine source. The survey results show that consumers prefer tea over coffee as being healthier but consume more coffee than tea. Consumers perceive natural sourced caffeine as being healthier but are likely not aware that most added caffeine is synthetic, since this is not declared on product labels. Consumers prefer caffeine from tea as they perceive it as being healthier than caffeine from coffee. This has implications for products containing added caffeine from natural sources, where brands usually like to declare the source on the label in order to distinguish themselves from synthetic sources.

## Introduction

Caffeine is a central nervous stimulant and is the world's most consumed psychoactive drug [1]. Caffeine is available over-the-counter in foods, beverages, and dietary supplements. There are several different sources of caffeine. For example, there are over 60 plants which contain caffeine [2] that can be extracted. The 3 most common sources of caffeine are tea leaves, cocoa beans and coffee beans. Other plants include yerba mate, guarana, and kola nuts. Caffeine is also made by chemical synthesis [3].

Consumer perceptions regarding the health benefits of caffeine has been extensively studied [4]. However, there is little information related to consumer preferences with respect to the source of caffeine. Do consumers prefer to consume, and/or believe to be better for them, caffeine from a specific source, or does it not matter to consumers? We wanted to better understand consumer preferences with respect to caffeine source.

## Methods

In order to better understand consumer preferences with respect to source, we created an on-line consumer survey (Table 1). We chose to study the 4 major sources of caffeine – synthetic, from tea, from coffee and from cocoa (chocolate). We publicized the consumer survey through various channels and collected the responses. We did not collect any demographic information (e.g. age, gender, etc) as we wanted a simple, overall gauge with respect to consumer preferences as to sources of caffeine. Through the on-line survey, the responses we collected were blind – we do not know who the respondents were. Through the on-line survey process, each respondent could not respond more than once, so we are assured of one response per person. Question 1 required forced choice meaning consumers could only choose 1 option. Question 2 required forced ranking, meaning consumers were forced to rank in order of preference and needed to rank all options. We then tabulated the results.

Table 1: Survey questions

Question #	Question	Possible Responses
1	Between tea and coffee, which do you think is healthier to consume?	Tea, coffee, Neither, I'm not sure
2	Please rank the following sources of caffeine according to what you believe is most healthy to least healthy	Caffeine from tea, Caffeine from coffee, Synthesized caffeine, Caffeine from Chocolate

## Results

We arbitrarily stopped collecting responses at 200. All respondents answered Question 1 (200 responses). 198 responses were received for Question 2. The results for the survey are shown in Figures 1 and 2. Consumer preference for tea rather than coffee as a healthier option (> 10:1) is clear from Figure 1. From Figure 2, consumer preference for caffeine from a natural source – tea, coffee or chocolate is greater than for synthesized caffeine (> 7:1) by forced ranking. Within the natural source caffeine, consumer preference is for tea over coffee or chocolate (> 1.35:1) by forced ranking.

Fig. 1 Question 1 Results

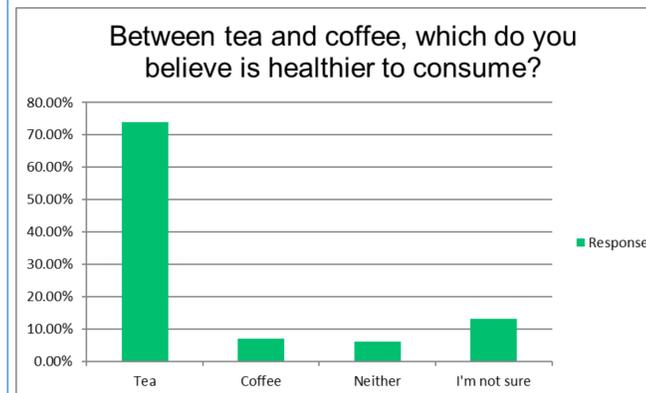
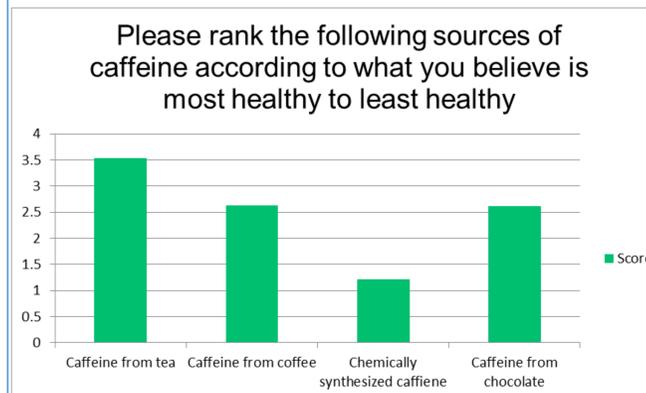


Fig. 2 Question 2 Results



## Discussion:

Consumers perceive tea as a healthier option than coffee. This is in contrast with American consumer appetite for coffee, which is > 2.5 times that of tea.[5] It seems that consumption of coffee is driven not by perception of health, but rather by other factors. These factors may include stronger marketing of coffee, coffee as a more favored breakfast drink, a perception that coffee contains more caffeine than tea, etc.

When asked to rank caffeine source from the perspective of most healthy to least healthy, consumers chose caffeine from natural sources (tea, coffee, chocolate) as most healthy, rather than caffeine from synthetic source, by a wide margin (> 7:1). This is in contrast with the fact that most of the caffeine on the market is synthetic. Consumers are likely not aware of this because the source of added caffeine is typically not disclosed on labels. We hypothesize that since consumers know that coffee, tea and chocolate naturally contain caffeine, they assume that the added caffeine in their drinks is natural caffeine. If regulations required the source of caffeine to be declared, we think that consumers will be surprised to see that the source is primarily synthetic

## Conclusions:

Consumers prefer tea over coffee but consume more coffee than tea. Consumers prefer natural sourced caffeine as being healthier but are likely not aware that most added caffeine is synthetic, since this is not declared on product labels. Consumers prefer caffeine from tea as being healthier, over caffeine from coffee as being less healthy. This has implications for products containing added caffeine from natural sources, where brands usually like to declare the source on the label in order to distinguish themselves from synthetic sources.

## References:

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- <https://www.sciencedirect.com/science/article/pii/S0187893X15720926>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6471209/>
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## Conflicts:

The authors are employees of NutriScience Innovations LLC, which markets and distributes InnoTea®, a natural source of caffeine from tea leaves.