

## RESEARCH OF THE HOLIDAY KIND

### Tabulating Ingestion of Mocha Solution (TIMS): a longitudinal prospective cohort study

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#### ABSTRACT

The annual “Roll Up the Rim to Win” contest at Tim Hortons restaurants provides customers the opportunity to win prizes. This study investigated win ratios, prize types and patterns of coffee consumption.

Tim Hortons, better known as “Timmy’s” to true Canadians, is Canada’s largest fast-food chain and is best known for introducing the term “double-double” into the *Canadian Oxford Dictionary*. For the past 25 years, between the months of February and May, Canadians have been given the opportunity to “Roll Up the Rim to Win” (RUTRTW). These rollable rims may reveal prizes ranging from a vehicle to a donut (exchangeable for a muffin, for those who did not realize).

According to the Canadian Association for Sanitation Science, discarded rim-rolled Tim Hortons cups are prevalent in all regions of the country, suggesting widespread rolling behaviour. In most instances, this rolling behaviour is benign. However, case studies of excessive rim-rolling have reported conditions such as coffee drinker’s thumb, burnt tongue syndrome and the more recently characterized Timmy’s insomnia. Though serious and warranting further research, these conditions are beyond the scope of this paper.

Despite the high prevalence of this rolling behaviour, no peer-reviewed publications exist to our knowledge that examine win ratios or characteristics of coffee consumption associated with the RUTRTW contest. This study aims to compare published and observed win rates and describe patterns of coffee consumption before and during this contest period.

#### Methods

This was a multiyear, prospective study conducted during the RUTRTW periods in 2008, 2010 and 2011. Additionally in 2011, information was collected for eight weeks before the beginning of RUTRTW. This information was collected to conduct a comparison of consumption patterns during the pre-RUTRTW and RUTRTW periods.

All cups were purchased by graduate students during their allocated six hours of unstructured socialization time per day.



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During the data collection periods from 2008 to 2011, participants were required to report date and location of purchase, size of cup and win status (win/lose and prize) to the Tabulating Ingestion of Mocha Solution (TIMS) study coordinator electronically. Home brews were not reported. Participants were not provided reimbursement or compensation for participating in the trial.

Although we attempted to obtain research ethics board approval, to our dismay, we were informed that this study “was not a real trial” and therefore did not require review.

#### Results

##### Cup characteristics

A total of 987 cups were included in the study, with 279 collected during the pre-RUTRTW period in 2011, leaving 708 cups for the primary analysis. Of these cups, 153 (21.6%), 245 (34.6%) and 310 (43.8%) were from the 2008, 2010 and 2011 RUTRTW periods, respectively. However, of the 310 cups collected in 2011, 33 were purchased from other coffee vendors, leaving 277 cups from the 2011 RUTRTW period. This

information was collected to assess choice of coffee establishment during RUTRTW. Of the cups reported, 97.6% were purchased in the Greater Toronto Area. Within the total sample, percentages of medium, large and extra-large cups purchased during the three-year period were 61.0%, 35.7% and 3.3%, respectively.

### Observed win ratios

A total of 24 cups (15.7%), 26 cups (10.6%) and 42 cups (15.2%) were reported as winners during the 2008, 2010 and 2011 RUTRTW periods, respectively. Moreover, the win ratios were 1:6.4 for 2008, 1:9.4 for 2010 and 1:6.6 for 2011. Tim Hortons' win-ratio data were not available for 2008; however, the values obtained in this study were in accordance with Tim Hortons' advertised win ratios of 1:9 in 2010 and 1:6 in 2011.

### Prize type and size among winning cups

Over the course of the entire study period, 77.4% of prizes won were coffees and 22.6% were donuts. There were no significant differences in prize type across years. Although no nonedible prizes were won by study participants, an author's friend's sister won a bicycle during the 2011 RUTRTW period.

In 2008, wins were most common in large-sized cups (71%), whereas in 2010 and 2011, wins were most common in medium-sized cups (54% and 67%, respectively). However, no relation between cup size and likelihood of winning was seen when all winning cups were analyzed independently of year.

### Choice of coffee establishment and cup sizes purchased before and during RUTRTW

During the pre-RUTRTW period, 81.0% of all coffees were purchased at Tim Hortons, whereas during the RUTRTW period, 89.4% were purchased at Tim Hortons ( $p < 0.001$ ). A significant shift in cup size purchased between these periods was also observed. During the pre-RUTRTW period, the percentage of large or greater cups purchased was 11.9% (88.1% medium, 11.9% large and 0.0% extra large). In comparison, during the RUTRTW period, 33.9% of all cups purchased were either large or extra large (66.1% medium, 30.7% large and 3.2% extra large) ( $p < 0.001$ ).

## Discussion

To our knowledge, this is the first study to fully characterize win characteristics and patterns of coffee consumption associated with the annual Tim Hortons RUTRTW contest.

In this study, we found that the win ratios observed during the contest were consistent with those reported by Tim Hortons. The results also show that there is no greater likelihood of winning a prize by purchasing larger cups during the RUTRTW period, further confirming the age old adage that size truly does not matter.

Interestingly, during the 2011 RUTRTW period, we observed a shift in purchasing behaviour toward larger cup

sizes. This may be indicative of a cognitive distortion regarding win probability across cup sizes during the RUTRTW period, similar to that observed in problem gamblers.<sup>1</sup> Widespread dissemination of this finding may have important clinical implications. Specifically, a reduction in caffeine consumption may decrease the harms associated with excessive intake, such as insomnia, nervousness,<sup>2</sup> TDJ (Thesis Defence Jitters) and a spectrum of supervisor-induced anxiety disorders.

This study also determined that the RUTRTW contest is effective at increasing the percentage of coffees purchased by participants at Tim Hortons relative to other coffee establishments. This model of reinforcement could potentially be translated to modify other consumption-related behaviours, for instance, to revitalize the consumption of locally grown fresh fruits and vegetables. This could be accomplished through the development of transgenic fruits and vegetables that include a message in the produce itself. Rather than rolling up the rim, Canadians could choose to "Pop the Pod," "Crack the Carrot" or, better yet, "Split the Banana" and win healthy prizes, such as gift certificates for fresh produce.

Despite these highly impressive results, there was one limitation to the current study. It was conducted almost exclusively in a graduate student population and, therefore, may not be generalizable to other populations. This may be because graduate students consume coffee at a rate that would be lethal in any other population, perhaps with the exception of medical residents. Using this population allowed for the timely acquisition of data, as a much larger group of participants would be needed if this study were conducted in the general population. Nonetheless, further research in more diverse participant populations is warranted. The authors recommend the creation of the Canadian Institute for Tim Hortons Research (CIthR) to provide necessary funding opportunities in this new and emerging field, with 10% of the funds allocated to feeding the authors of the present study and starving graduate students nationwide.

## References

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**Competing interests:** None declared.

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