

# Evaluation: Milk Means More Jump with Jill Live Tour 2019

## Key Findings:

*Jump with Jill* partnerships represent a cost effective way to educate students and teachers about dairy consumption and healthy eating choices directly linked to attitude and behavior changes that drive dairy sales.

- **After the Jump with Jill program, students had an increased:**
  1. willingness to choose milk at meals,
  2. confidence that choosing milk will positively impact bone health, and
  3. enthusiasm for choosing milk compared to before the program.
- **These attitudes and enthusiasm translated into increased milk sales.** The days immediately following the show show the greatest increases. Milk sales remain higher than pre-program mean even after 20 days. This is the first documentation of sales exclusively tied to the implementation of the *Jump with Jill* program.
- **The survey schools show us that more time participants spend with the program positively impacts results.** Students and their teachers attach to the characters through the process of viewing videos, interacting with the show, and working in small groups with the characters to complete the survey where their opinion is valued and documented.
- Differences between schools of low and high need were not apparent. Rather, **exposure and engagement are the main factors for positive change.** Having a designated Jump with Jill program champion in the school is an essential relationship to see positive outcomes.
- **“I feel proud when I drink milk with my meals” increased even when “I would drink milk with my meals” did not.** The program deconstructs the framework that kids have built with their dislikes and breaks ground with newfound aspirational attitudes, as seen by the decrease in the number of extreme negative responses for all questions.
- **Teachers also showed an increase across all areas from before to after the show.** This indicates that teachers believe the *Milk Means More Jump with Jill Live Tour* has had a positive impact on their students attitudes and behaviors around dairy.

## 1.0 Background

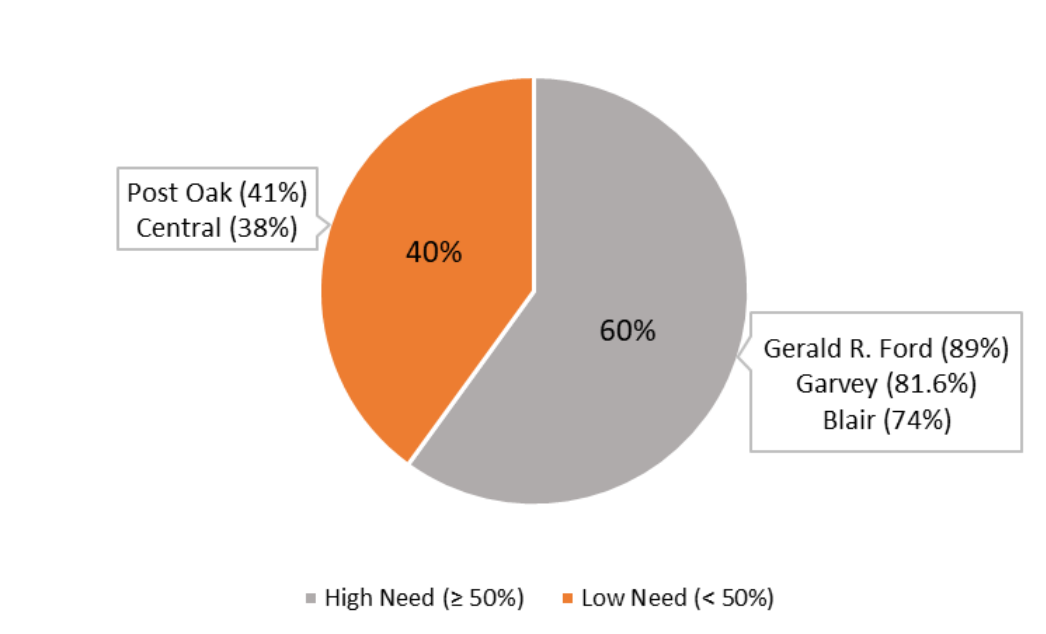
The *Jump with Jill* program helps to teach students about healthy eating and exercise using an interactive experience (edutainment). This pilot study assesses the impact of the partnership between *Jump with Jill* and the United Dairy Industry of Michigan professionally known as the *Milk Means More Jump with Jill Live Tour*. Schools were offered a chance to be on the tour if they fit the classification “low milk consumption” according to the United Dairy Industry of Michigan data. This pilot study was conducted in five of the 28 schools on tour. One 4<sup>th</sup> grade classroom from each school was included in the pilot, with the exception of Blair Elementary, which had two 4<sup>th</sup> grade classrooms, for a total of six 4<sup>th</sup> grade classrooms participating in the pilot.

Survey schools were selected to showcase a variety of geographies, racial makeups, and free and reduced lunch percentages. Every attempt was made to include schools with low free and reduced lunch (less than 35%) but they were unable to schedule the performance. The data was collected by the *Jump with Jill* staff using publicly available secondary data:

**Table 1: Demographics for Five Survey Schools**

School	District	Size and Grade Levels	Racial Makeup	Show Date	Percentage of Free and Reduced Lunch	Median Household Income
Garvey Academy	Detroit Public School District Detroit, MI	348 students K-8	99.1% African American 0.3% American Indian/ Alaskan Native 0.3% Native Hawaiian/ Other Pacific Islander, 0.3% Multi-racial	2.14.2019	81.6%	\$43,702
Blair Elementary		657 students K-5	64% African American 30.4% Hispanic 2.8% White 2.8% Multi-racial	2.21.2019	74%	\$44,369
Central School	Traverse City School District Traverse City, MI	250 students K-8	90.6% White 3.2% Hispanic 2.7% Multi-racial 1.8% Asian 1.2% African American, 0.3% American Indian/ Alaskan Native 0.2% Native Hawaiian/ Other Pacific Islander	2.20.2019	38%	\$53,237
Post Oak Academy	Lansing School District Lansing, MI	251 students K-6	45% White 21.5% Hispanic 19.5% African American, 10% Multi-racial 4% Asian	1.16.2019	41%	\$38,642
Gerald R. Ford Academic Center	Central Grand Rapids School District Grand Rapids, MI	250 students K-8	64% African American 30.4% Hispanic 2.8% White 2.8% Multi-racial	3.28.2019	89%	\$44,369

**Figure 1: Spread of Free and Reduced Lunch Percentages for Five Survey Schools**



## 2.0 Research Question

The purpose of this pilot study is to assess the impact of the *Milk Means More Jump with Jill Live Tour* on students and their attitudes toward choosing milk by comparing their responses before and after the show. Student attitudes are assessed by measuring their willingness to choose milk at meals, confidence that choosing milk positively impacts bone health, and enthusiasm for making healthy choices like milk. The overall research question for this study is:

How does the *Milk Means More Jump with Jill Live Tour* shape student attitudes toward milk consumption?

## 3.0 Methods

To assess the effectiveness of the *Milk Means More Jump with Jill Live Tour*, student and teacher surveys were developed and administered before and after the show. The teacher survey asked teachers to assess their impression of the impact of the *Jump with Jill* show on students, while the student survey asked youth to assess their attitudes towards choosing milk.

### 3.1 Student Survey

Students participated in the pre- and post-surveys by standing in front of an emoji face that best represents how they feel about each of the following statements:

- 1) I would drink milk with my meals.
- 2) I feel confident that when I choose milk, I am making my bones and teeth strong.
- 3) I feel proud when I drink milk with my meals.

Each statement was evaluated on the following scale: 1=absolutely no, 2=no, 3=not sure, 4=yeah and 5=yes!

# WILLINGNESS



1. I would drink milk with my meals.

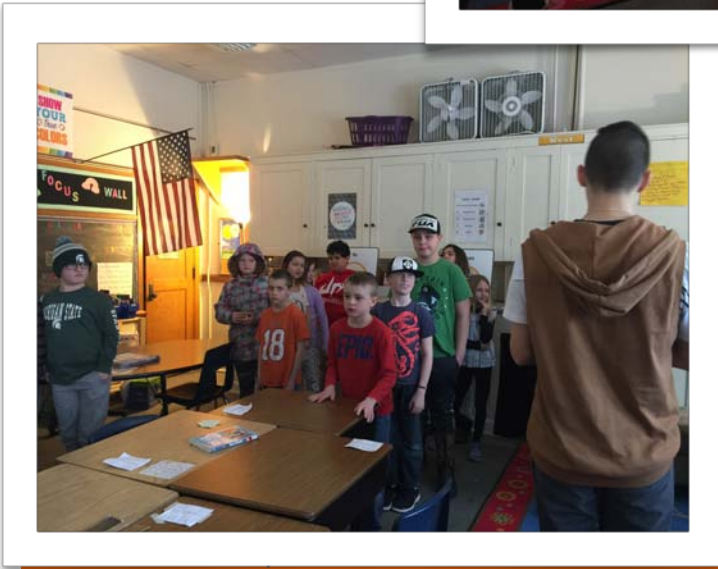
# CONFIDENCE

2. I feel confident that when I choose milk, I am making my bones and teeth strong.

# ENTHUSIASM

3. I feel proud when I drink milk with my meals.

Coded as 1	Coded as 2	Coded as 3	Coded as 4	Coded as 5
ABSOLUTELY NOT	No	Not Sure	Yeah	YES!
				



## 3.2 Teacher Survey

Teachers completed pre- and post-surveys that included statements concerning the effectiveness of *Jump with Jill's* program on educating students and getting the youth excited about milk and nutrition. The surveys were administered via iPads using the 5-point Likert scale, ranging from Strongly Disagree = 1 to Strongly Agree = 5. The surveys included statements about teachers' confidence that the *Jump with Jill* program is:

- 1) Influencing students to choose dairy at meals.
- 2) Increasing student's awareness of ways to prioritize dairy.
- 3) Empowering students to make healthy choices.
- 4) Teaching students the connections between dairy foods and bone health.
- 5) Encouraging students to be proud of their healthy choices.
- 6) Increasing student's excitement about nutrition.

**MILK MEANS MORE JUMP WITH JILL LIVE TOUR**

Part 1: UDIM Classroom Teachers - Pre-Show

Survey

2. I am confident that the Jump with Jill program\* is:  
\*live show, MILK CRATE, and online tools

	1 - Strongly Disagree	2 - Disagree	3 - No opinion	4 - Agree	5 - Strongly Agree
influencing students to choose milk at meals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
increasing students' awareness of ways to prioritize milk at meals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
empowering students to make healthy choices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
teaching students the connections between milk and bone health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
encouraging students to be proud of their healthy choices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
increasing students' excitement about nutrition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Back Submit

50%

## 3.3 Milk Data

*Jump with Jill* communicated with Food Service Directors with schools on the tour to receive data on the milk served for the dates surrounding the *Jump with Jill* performance. Ten schools of the 28 representing three districts were able to contribute:

Holt Public Schools: Elliott Elementary

Lansing Public Schools: Cavanaugh Elementary, Forest View Elementary, Post Oak Academy and Vivian Riddle Elementary

Traverse City Area Public School District: Blair Elementary\*, Central Grade School\*, Silver Lake Elementary, Traverse Heights Elementary, Westwoods Elementary

\*Indicates survey school. Detailed demographics provided for these schools in 1.3 and 1.4.

## 4.0 Findings

The sections below outline the findings from student and teacher surveys. One-way ANOVA analysis was performed on the student data. This test was used because students’ pre- and post- data could not be paired. The one-way ANOVA results provides information regarding the significance of the differences between students’ mean scores from before to after the show. A paired t-test was used for calculating the significance of the differences between the mean scores for the teacher surveys.

### 4.1 Student Survey (n = 152/151)

Table 1 shows frequencies for the student pre- and post-surveys. **The number of responses for “absolutely no,” “no,” and “not sure” response category for post-survey decreased compared to pre-survey, while responses for “yeah” and “yes!” increased, indicating the shift in students’ attitudes in the desired direction.** The most notable improvement is in the ‘yes!’ response category for “I feel proud when I drink milk with my meals,” from 13.8% to 35.8%. **Table 2 shows overall pre- and post-means for the student survey that indicates improvement across all areas.** The most significant ( $p < .001$ ) increase is shown in question 3, “I feel proud when I drink milk with my meals,” which increased from 2.56 before the show to 3.54 after the show.

**Table 2: Student Survey Frequencies Overall**

	Absolutely No (1)		No (2)		Not Sure (3)		Yeah (4)		Yes! (5)	
	Pre (n=152)	Post (n=151)	Pre (n=152)	Post (n=151)	Pre (n=152)	Post (n=151)	Pre (n=152)	Post (n=151)	Pre (n=152)	Post (n=151)
I would drink milk with my meals.	24.3%	21.9%	17.1%	7.9%	23.0%	20.5%	16.4%	15.2%	19.1%	34.4%
I feel confident that when I choose milk, I am making my bones and teeth strong.	13.2%	10.6%	10.5%	2.6%	17.1%	9.3%	14.5%	15.2%	44.7%	62.3%
I feel proud when I drink milk with my meals.	34.9%	14.6%	13.8%	11.3%	25.7%	15.2%	11.8%	23.2%	13.8%	35.8%

Table 3: Student Survey Means Overall

	Pre		Post	
	Mean (n=152)	St. Dev. (n=152)	Mean (n=151)	St. Dev. (n=151)
I would drink milk with my meals.	2.89***	1.44	3.32***	1.55
I feel confident that when I choose milk, I am making my bones and teeth strong.	3.67**	1.46	4.16**	1.33
I feel proud when I drink milk with my meals.	2.56*	1.42	3.54*	1.44

Means calculated based on a scale: 1= Strongly Disagree; 2 = Disagree; 3 = No Opinion; 4 = Agree; 5 = Strongly Agree

One-way ANOVA was used (paired data was not available).

\*\*\* Significance at .05 level

\*\* Significance at .01

\* Significance at .001

Additional analysis was performed with respect to student survey responses by school. The results are shown in Table 3 for pre-surveys and Table 4 for post-surveys. One-way ANOVA test indicated that there is a significant difference between participating schools with respect to “drinking milk with meals” ( $p < .001$  for pre-data and  $p < .001$  for post-data) and “feeling proud when drinking milk with meals” ( $p < .001$  for pre-data).

The post-hoc results of the one-way ANOVA analysis identified the only decrease in the data set: Garvey students (1.92) at pre-survey were significantly less likely to drink milk with their meals compared to all other schools. Similar results came up even after the show, with Garvey students (1.90) significantly less likely to drink milk with their meals compared to all other schools. A similar pattern was found for Garvey for question 3 before the show, “I feel proud when I drink milk with my meals.” Garvey students (1.46) were significantly less proud ( $p < .001$ ) when they drink milk with their meals compared to all other schools. This difference disappeared at post-survey.

Table 4: Student Pre-Survey Means by School

	Pre (n=152)									
	High Need					Low Need				
	Garvey (n=26)		Gerald R. Ford (n=25)		Blair (n=46)		Central (n=28)		Post Oak (n=27)	
	Mea n	St. Dev.	Mea n	St. Dev.	Mea n	St. Dev.	Mea n	St. Dev.	Mea n	St. Dev.
I would drink milk with my meals*	1.92	1.20	2.28	1.31	3.54	1.30	3.04	1.50	3.11	1.31
I feel confident that when I choose milk, I am making my bones and teeth strong <sup>t</sup>	3.27	1.71	3.60	1.47	4.11	1.08	3.82	1.31	3.22	1.74
I feel proud when I drink milk with my meals*	1.46	.989	2.76	1.59	3.00	1.21	2.57	1.35	2.67	1.57

Means calculated based on a scale: 1= Strongly Disagree; 2 = Disagree; 3 = No Opinion; 4 = Agree; 5 = Strongly Agree

One-way ANOVA was used (paired data was not available).

Scheffe post-hoc test was used.

\* Significance at .001

<sup>t</sup> Approaching significance

Table 5: Student Post-Survey Means by School

	Post (n=151)									
	High Need					Low Need				
	Garvey (n=28)		Gerald R. Ford (n=23)		Blair (n=45)		Central (n=28)		Post Oak (n=27)	
	Mea n	St. Dev.	Mea n	St. Dev.	Mea n	St. Dev.	Mea n	St. Dev.	Mea n	St. Dev.
I would drink milk with my meals*	1.90	1.42	3.36	1.47	3.96	1.17	3.54	1.37	3.56	1.60
I feel confident that when I choose milk, I am making my bones and teeth strong.	4.11	1.55	3.96	1.64	4.42	.783	3.96	1.61	4.16	1.33
I feel proud when I drink milk with my meals.	3.14	1.76	3.57	1.50	3.53	1.20	3.79	1.34	3.70	1.51

Means calculated based on a scale: 1= Strongly Disagree; 2 = Disagree; 3 = No Opinion; 4 = Agree; 5 = Strongly Agree

One-way ANOVA was used (paired data was not available).

Scheffe post-hoc test was used.

\* Significance at .001



### 4.2 Teacher Survey (n = 7)

Table 3 below shows frequencies of responses. **Mean scores for pre- and post-surveys improved across all areas;** the most notable improvement being “increasing student awareness of ways to prioritize dairy,” which increased significantly from 3.43 to 4.71 ( $p < 0.05$ ).

**Table 6: Teacher Survey Results**

Teachers’ confidence that Jump with Jill program is:	Pre		Post	
	Mean (n=7)	St. Dev. (n=7)	Mean (n=7)	St. Dev. (n=7)
Influencing students to choose dairy at meals.	3.57 <sup>t</sup>	1.13	4.71 <sup>t</sup>	.488
Increasing student’ awareness of ways to prioritize dairy.	3.43***	1.13	4.71***	.488
Empowering students to make healthy choices.	4.00	1.41	4.86	.378
Teaching students the connections between dairy foods and bone health.	3.57	1.27	4.71	.488
Encouraging students to be proud of their healthy choices.	3.71	1.38	4.57	.535
Increasing student’s excitement about nutrition.	3.71 <sup>t</sup>	1.25	4.86 <sup>t</sup>	.378

*Means calculated based on a scale: 1= Strongly Disagree; 2 = Disagree; 3 = No Opinion; 4 = Agree; 5 = Strongly Agree*

*Paired t-test was used.*

*\*\*\* Significance at .05 level*

*<sup>t</sup> Approaching significance*

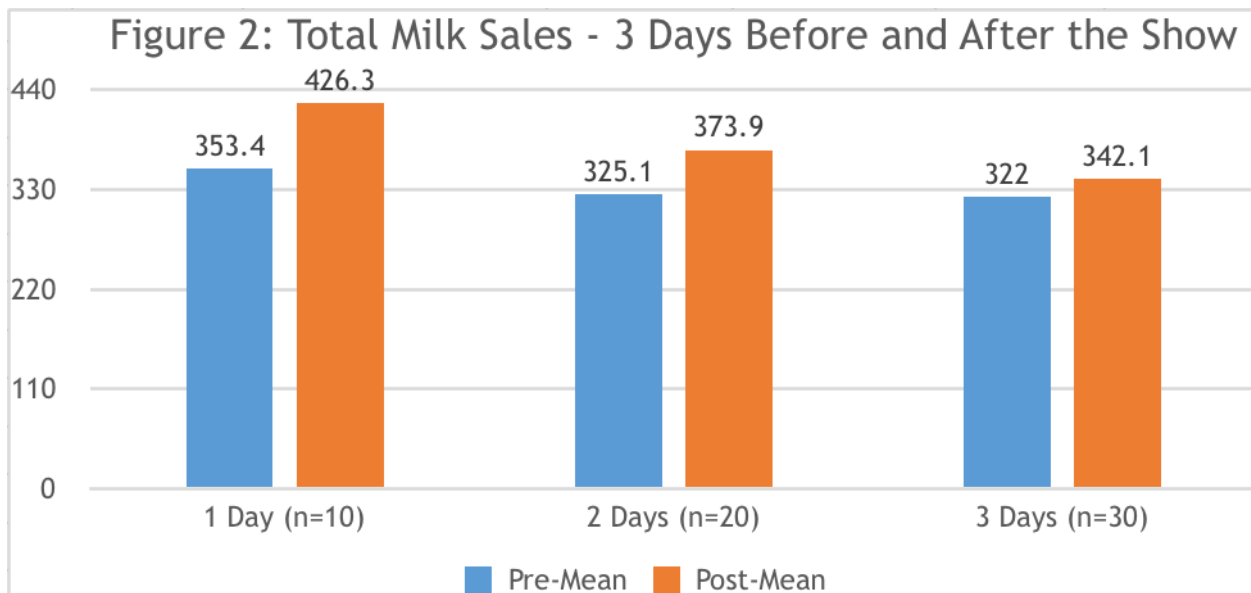
### 4.3 Milk Data

The data represents pre- and post-show total milk sales for ten schools across six days: one day, two days, and three days before and after the show. Days before and after the show were determined based on the time of the show (AM or PM). If the show was scheduled in the morning, all milk data for that day would be considered “after the show.” If the show was scheduled in the afternoon, all milk data for that day would be considered “before the show.” There were 4 schools missing day-of-show data and the next available data was used as “One day before and after”: Cavanaugh Elementary, Forest View Elementary, Post Oak Academy and Vivian Riddle Elementary.

**Table 7: Total Milk Sales Pre- and Post-Show - 3 Days Before and After Show**

	N	Pre-Show		Post-Show		Percent Change
		Mean	St. Dev	Mean	St. Dev	
One day before and after	10	353.4	94.3	426.3	184.9	+ 20.6%
Two days before and after	20	325.1	86.6	373.9	150.1	+ 15.0%
Three days before and after	30	322.0	80.8	342.1	139.2	+ 6.2%

One-Way ANOVA was performed. No statistical significance is found.



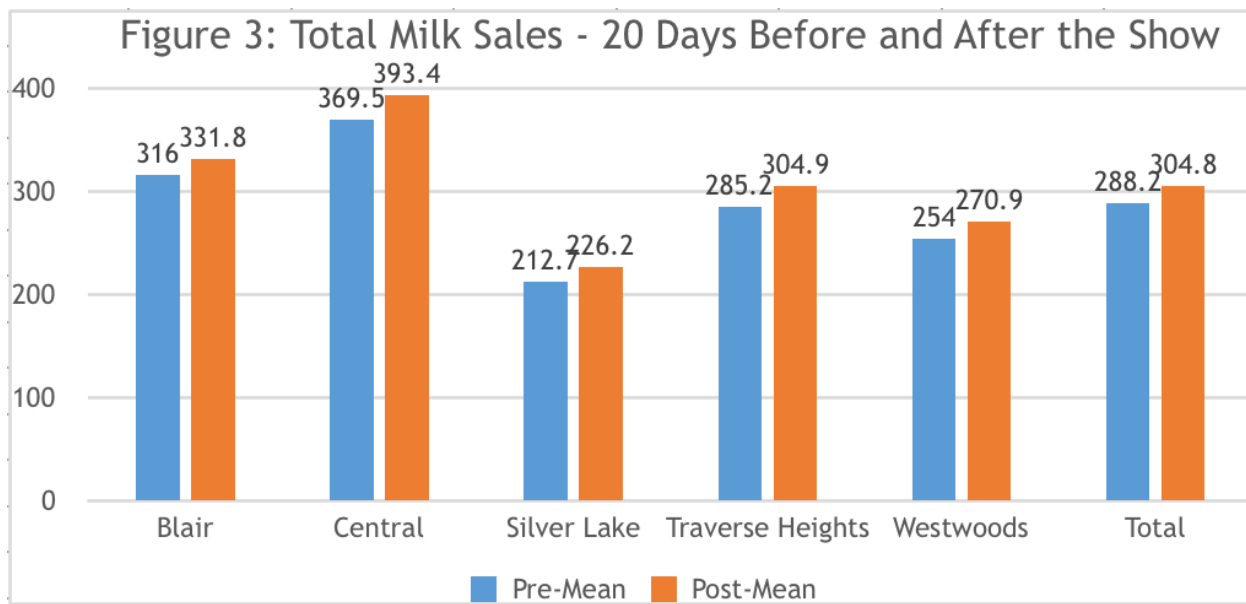
**All post-show means were higher than those at pre-show.** The largest increase in total milk sales is seen in one day before and after the show, where **milk sales increased on average by 20.6% across all 10 schools**, or by 72.9 milks sold. **As more time passes after the show (two and three days), the total milk sales still show improvement but at a slower rate.** The sample is too small to conduct statistical testing.

Table 7 and Figure 2 show the total milks sold on average 20 days before and 20 days after the show by school for five schools in Traverse City Area Public School District: Blair Elementary, Central Grade School, Silver Lake Elementary, Traverse Heights Elementary, and Westwoods Elementary. **Comparing pre-means to post-means demonstrates an increase in milk sales (by 5.0% to 6.9%) across all school locations.** The most notable increase is seen at Central Grade School where milk sales increased by 23.9 milks sold. **Overall, the *Jump with Jill: Milk Means More Live Tour* is having a positive impact on student dairy sales at these schools as much as 20 days after the live show.**

**Table 8: Total Milk Sales Pre- and Post-Show - 20 Days Before and After Show**

School	N	Pre-Show 20 Days		N	Post-Show 20 Days		Percent Change
		Mean	St. Dev		Mean	St. Dev	
Blair*	21	316.0	49.3	20	331.8	50.7	+ 5.0%
Central*	20	369.5	77.3	21	393.4	32.7	+ 6.5%
Silver Lake	19	212.7	33.1	22	226.2	19.3	+ 6.3%
Traverse Heights	20	285.2	46.4	21	304.9	39.6	+ 6.9%
Westwoods	21	254.0	51.2	20	270.9	29.1	+ 6.7%
Total	101	288.2	74.6	104	304.8	67.1	+ 5.8%

One-Way ANOVA was performed. Sample size too small for statistical significance.



The final phenomenon to note is the spike of milk sales on the day of the show in the survey schools, Blair and Central. It is the highest number of milks sold for that school compared to all other days on the list provided to us.

**Table 9: Milk Sales in Survey Schools First Meal After the Show**

Blair Elementary

Serving_Date	Total sold at lunch
2/1/19	189
2/5/19	231
2/6/19	222
2/11/19	230
2/12/19	219
2/13/19	239
2/14/19	219
2/15/19	208
2/19/19	220
2/20/19	253
<b>2/21/19 AM Show</b>	<b>285</b>
2/22/19	215
2/26/19	217
2/27/19	228
2/28/19	222
3/1/19	190
3/4/19	220
3/5/19	226
3/6/19	229
3/7/19	230
3/8/19	201

Central Grade School

Serving_Date	Total sold at lunch
1/24/19	360
2/1/19	280
2/5/19	340
2/6/19	310
2/11/19	339
2/12/19	349
2/13/19	360
2/14/19	349
2/15/19	326
2/19/19	325
<b>2/20/19 AM Show</b>	<b>439</b>
2/21/19	338
2/22/19	325
2/26/19	360
2/27/19	349
2/28/19	375
3/1/19	310
3/4/19	349
3/5/19	359
3/6/19	340
3/7/19	351

**Table 10: Milk Sales in Non-Survey Schools at Lunch After the Show**

Silver Lake

Serving_Date	Total sold at lunch
1/23/19	178
1/24/19	170
2/1/19	139
2/5/19	184
2/6/19	180
2/11/19	181
2/12/19	158
2/13/19	183
2/14/19	184
2/15/19	169
<b>2/19/19 AM Show</b>	<b>180</b>
2/20/19	189
2/21/19	185
2/22/19	184
2/26/19	228
2/27/19	153
2/28/19	196
3/1/19	184
3/4/19	178
3/5/19	189
3/6/19	188

Traverse Heights

Serving_Date	Total sold at lunch
1/23/19	180
1/24/19	198
2/1/19	173
2/5/19	206
2/6/19	181
2/11/19	199
2/12/19	190
2/13/19	183
2/14/19	187
2/15/19	183
<b>2/19/19 PM Show</b>	<b>191</b>
2/20/19	170
2/21/19	192
2/22/19	176
2/26/19	188
2/27/19	163
2/28/19	184
3/1/19	182
3/4/19	202
3/5/19	183
3/6/19	186

## 5.0 Conclusions

The evaluation of the *Milk Means More Jump with Jill Live Tour* offers insight into the effectiveness, and overall impressions students and teachers had before and after the live show. The results demonstrate that after the program students had increased willingness to choose milk at meals, confidence that choosing milk will positively impact bone health, and enthusiasm for choosing milk compared to before the show.

Several powerful results were revealed in relation to the question, “I feel proud when I drink milk with my meals,” including many students moving into the ‘yes!’ response category after seeing the show. *Jump with Jill* gets kids excited about drinking milk, and that excitement can be measured with results that are statistically significant. This finding is also noted in Garvey where scores pre- and post-survey for “drinking milk with meals” was lower than for any other survey school. Although they started low for “I feel proud when I drink milk with my meals,” Garvey students’ scores are on par with the other survey schools at post-survey, speaking to the transformational power of the *Jump with Jill* program. The program deconstructs the framework that kids have built with their dislikes and breaks ground with newfound aspirational attitudes, as seen by the decrease in the number of extreme negative responses for all questions.

The survey schools show us that more time with the students influences outcomes. While it’s not statistically significant, Central Grade School shows the greatest mean increase in milk sales. Additionally, the raw data provided for Blair and Central reveal the largest day of milk sales across 40 data points is the meal after their morning show and engagement with the characters while taking the pre-post surveys. Students and their teachers attach to the characters through a distinct process by viewing videos to interacting with the show to working in small groups with the characters to complete the survey where their opinion is valued and documented.

Ultimately we see this behavior reflected in the milk data, where *Jump with Jill* fans are modeling Jill’s behavior. With increased pride and enthusiasm for drinking milk, the spike at lunch after a morning show appears to be the instantaneous opportunity to take action on the messages they just heard. The days immediately following the show show the greatest increases. Milk sales remain higher than pre-program mean even after 20 days. While maintaining this bump is the longterm goal, this is the first documentation of sales exclusively tied to the implementation of the *Jump with Jill* program.

Differences between schools of low and high need were not apparent. Rather, exposure and engagement are the main factors for positive change. Garvey students’ less favorable perceptions of milk could be due to their urban location - there are no dairy farms in Wayne County. Additionally, this is the only school surveyed that *Jump with Jill* staffers did not have direct contact prior to presenting the show. This speaks to the importance of a champion within the school - a principal, teacher, or Food Service Director - as the point of contact for the show and materials to properly prime students for the experience. This finding has been confirmed in other *Jump with Jill* studies.

Teachers also showed an increase across all areas before and after the show. This indicates that teachers believe the *Milk Means More Jump with Jill Live Tour* has had a positive impact on their students’ attitudes and behaviors around dairy.

This study is only a snapshot of what the *Milk Means More Jump with Jill Live Tour* is doing in Michigan. Several limitations must be acknowledged. This current study lacks follow-up to demonstrate changes over the longterm. Other limitations include lack of a control group and

unpaired pre- and post- survey student data, both of which restrict generalizability. Furthermore, complete statistical testing was not possible due to small sample sizes for some questions.

**This partnership represents a cost effective way to educate students and teachers about dairy consumption and healthy eating choices directly linked to attitude and behavior changes that drive dairy sales.**