

GutSense Product Review

Colorectal Recovery Program Survey

Submitted by

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Executive Summary

Colorectal Recovery Program Survey

The Colorectal Recovery Program Survey was an online questionnaire designed to determine customer satisfaction and product efficacy for the Colorectal Recovery Program (CRP) and the Hydro-C Colonic Moisturizer (Hydro-C). From beginning to end, the project was a success.

Survey Response

Briefly, over 20% of the customers invited to complete the survey did so, well above the industry standard of 5-10%. Ninety percent of respondents completed the entire survey, 70% of whom were current users of GutSense products. Forty-seven percent of these GutSense customers had been using the products for more than six months.

Customer Satisfaction

Satisfaction with GutSense products was exceptionally high with over 83% of the survey respondents reporting being either satisfied (57.6%) or very satisfied (25.6%). Only 1.5% of the survey respondents indicated being very dissatisfied.

Along with high satisfaction scores, survey respondents indicated a strong willingness to recommend GutSense products. Over 50% of the respondents reported that they had already recommended the products to friends or family. An additional 32% of the respondents indicated that they were either extremely likely (18%) or likely (14%) to recommend GutSense products to friends or family.

Product Efficacy

The primary goal of this survey was to assess product efficacy in key areas of colorectal health. Customers were asked to rate the severity and frequency of their colorectal symptoms and their overall quality of life both before and after using GutSense products. For each of the six key symptoms (constipation, painful bowel movements, incomplete elimination, flatulence, bloating, and abdominal cramping), survey respondents reported greater reductions in both the severity and frequency of symptoms while using GutSense products. Additionally, survey respondents expressed a benefit to their overall quality of life. These health changes were both statistically and clinically significant.

Supporting the quantitative data, comments were overwhelmingly positive and supportive of the products, the company and Mr. Monastyrsky, the author of the GutSense.org website

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Survey Design

A 19-question survey was constructed to evaluate elements of product use, efficacy and satisfaction for the Colorectal Recovery Program (CRP) and the Hydro C Colonic Moisturizer (Hydro-C). The questionnaire was hosted on SurveyMonkey and managed by Lucine Health Sciences. GutSense employees aided in the development of the questionnaire but had no access to the data collection or input in the data analysis.

An invitation to complete the survey and a single survey reminder were sent via email to GutSense customers who had purchased either of the two products during the previous twelve months (June 2014 – June 2015). The survey was live for two weeks.

Methods

Data Collection

A total of 2936 survey invitations were sent and 629 customers responded (21.4%), 90% of whom completed the entire survey. Additionally, 111 (3.8%) customers opted out of receiving emails from Survey Monkey and 41 of the email invitations bounced (1.4%).

Analysis

Descriptive statistics were calculated using the data set available for each question. For paired comparisons of symptom severity and frequency pre and post product usage and quality of life pre and post product usage, matched data sets were necessary for analyses. Here only data from those respondents who completed the entire questionnaire were included.

The descriptive statistics provided included mean and standard deviation. For the paired comparisons used to evaluate product efficacy and satisfaction, two-tailed, paired *t*-Test for sample means and Cohen's *d* were calculated.

Data Set

Complete quantitative and qualitative data files will be provided separately.

Results

General Information

Questions 1- 3 (Q1, Q2, Q3) of the survey assessed age, sex and product usage while Q7 measured common diagnoses associated with GutSense customers. The average age of survey respondents was 50 years old, 69% of whom were women. Among the respondents, chronic constipation was the most common diagnosis, followed by irritable bowel syndrome and hemorrhoidal disease. Table 1, demonstrates these data.

Table 1. General information.

Age	Product	Duration of Use	Current Use	Sex	Diagnoses	No. of Diagnoses
					SC (100)	
					CC (262)	
					IBS (134)	
					HH (125)	
		31d-6m	CRP (191)	M(196)	DIV (59)	
49.92	CRP (418)	(r = 2.74;	HC (250)		AFA (85)	
(15.44)	HC (211)	SD 1.2)	Neither (188)	F(433)	SIBO (24)	1.5

N =629

Age range: 1 -101 years

Duration of use scale: 1 - <30 days, 2 - 31 days - 6 mos., 3 - >6 mos. - 1 yr., 4 - >1yr. - 2 yrs., 5 - >2 yrs. Twelve respondents entered two numbers, the greater of the two numbers was chosen for the product use duration score.

Diagnoses legend: SC-sporadic constipation, CC-chronic constipation, IBS - irritable bowel syndrome, DIV - diverticulosis, AFA - anal fissure or abscess, SIBO - small intestinal bacterial overgrowth.

Additional diagnoses were submitted via the comments option. Briefly, many of the respondents reported self-diagnoses with the disease processes listed either in the survey or in the comments section, but indicated no formal diagnosis. Among the additional conditions listed:

- Lymphocytic colitis
- Yeast overgrowth, food allergies and/or intolerances (including gluten)
- L1 nerve trauma
- Leaky gut, gastric reflux, dysbiosis
- Bowel obstruction, adhesions, redundant colon, rectal prolapse,
- Hashimoto's thyroiditis
- Medication - induced colon damage
- Chronic vomiting, encopresis, enuresis
- Crohn's Disease
- Pancreatic insufficiency

Product Use Patterns

Duration

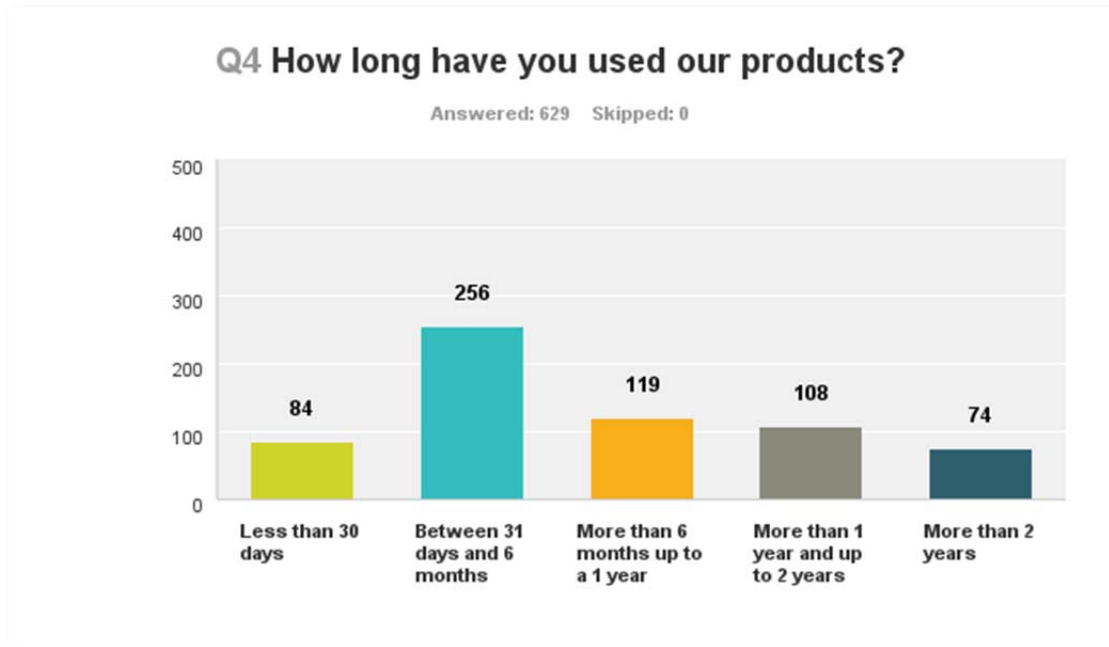
Q4 assessed the duration of use for the two products combined. It was assessed with a 5-point categorical scale where:

- 1 - <30 days
- 2 – 31 days – 6 months
- 3 - >6 months – 1 year
- 4 - >1 year – 2 years
- 5 - > 2 years

The average duration of product use was between one and six months with ~40% of the 629 respondents selecting option 2.

Figure 1 demonstrates the results.

Figure 1. Duration of product use.

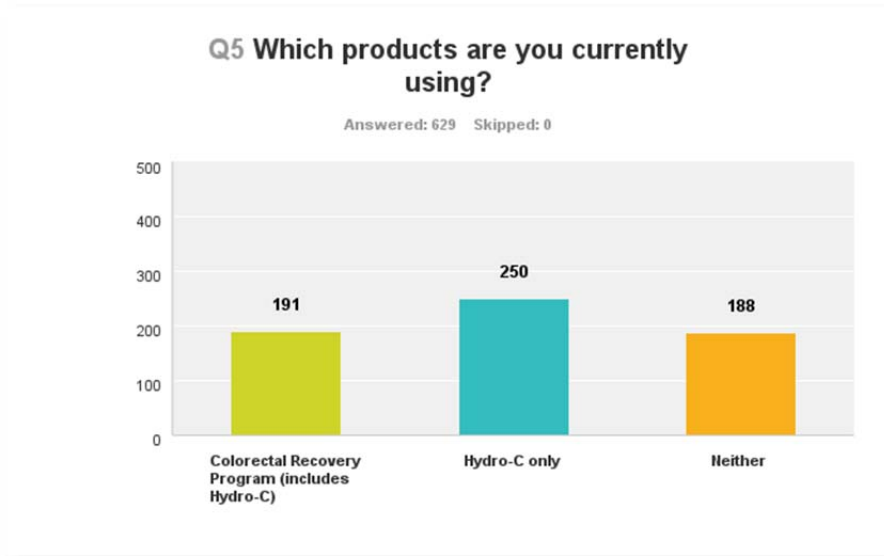


Current Use

Q5 determined whether and which products respondents were currently using. With Figure 2 we see that from the total pool of respondents, 441 currently utilize either CRP or Hydro-C. It is notable that 70% of the survey takers were current users of GutSense products and 47% had been using the products for more than six months (Figure 1).

Figure 2, listed below, illustrates current use results.

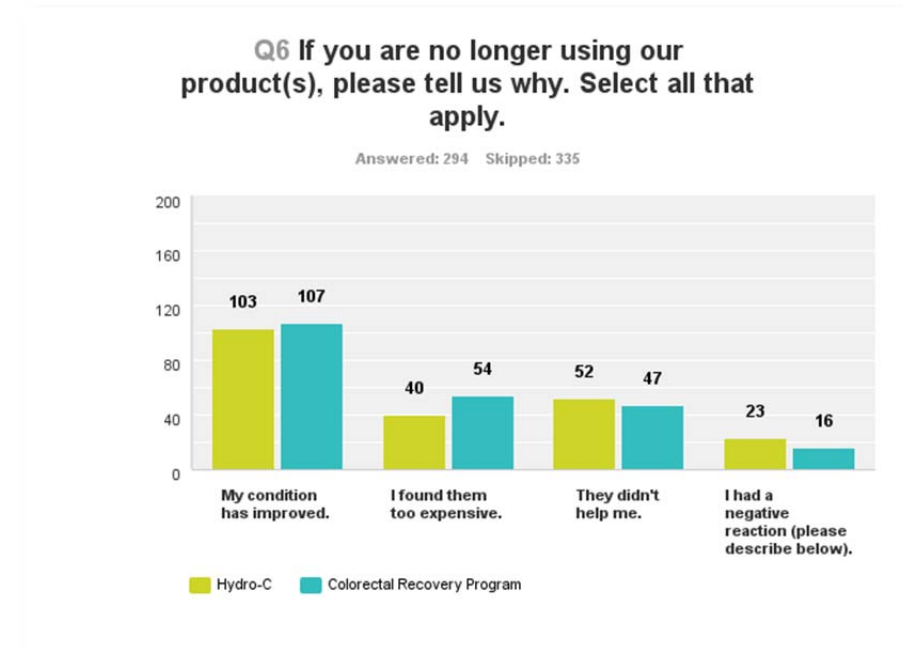
Figure 2. Current use.



Discontinuation

Q6 assessed reasons for product discontinuation. Respondents could select more than one answer for each of the products listed. It is notable that among 294 respondents no longer using one or both of GutSense products surveyed, 72% rated their condition improved sufficiently as to not to need one or both products. Given the high rate of current users (70% of survey respondents were current users of at least one GutSense product); it is likely that as health improves, customers move from the full CRP to the Hydro-C).

Figure 3. Product discontinuation.



Symptom Severity Before and During Product Use

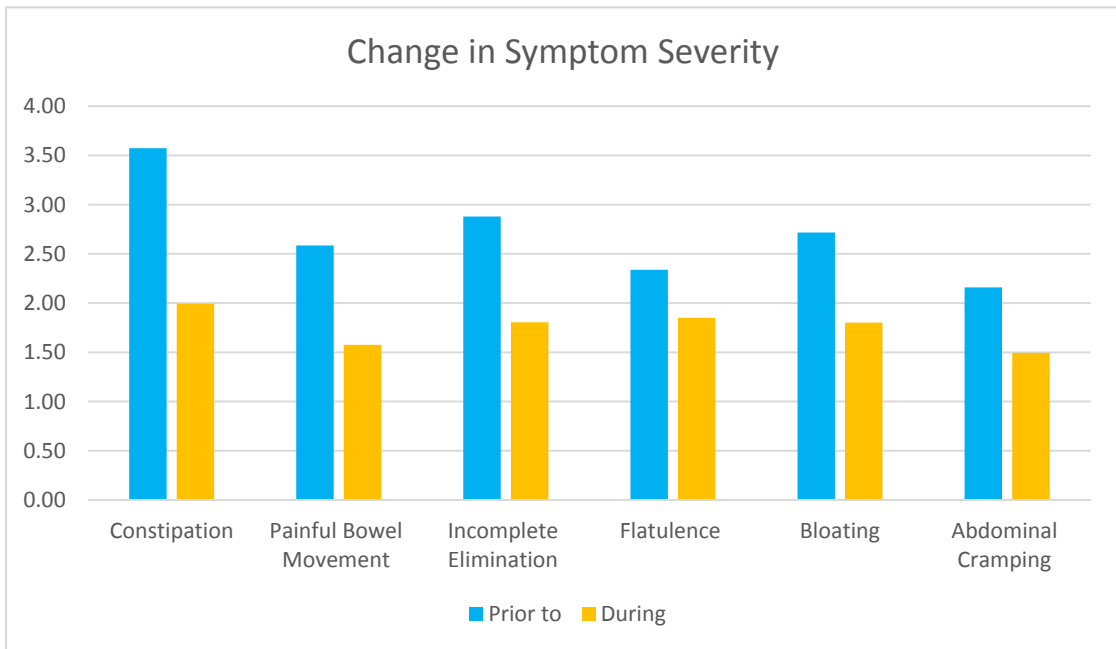
The primary purpose of this survey was to assess product efficacy and satisfaction amongst the GutSense customers. Q8 and Q10 asked respondents to rate the severity of six key symptoms prior to using the GutSense products and again while using the products. Symptoms were rated on a five point Likert-like scale:

- 1 - None
- 2 - Mild
- 3 - Moderate
- 4 - Severe
- 5 - Worst imaginable

For these calculations, only data from those respondents who answered both pre and post use questions were included in the analyses. The sample size was 575. The sex, age and product use distributions remained consistent in this abridged data set as compared to the total data set.

Each of the symptoms was significantly improved at the $p < .00001$ level with the use of the GutSense products as determined by two-tailed, paired t -Tests for sample means. Figure 4 demonstrates the rate of symptom improvement with product usage.

Figure 4. Mean changes in symptom severity.



Change in Symptom Severity: t-Tests

The severity of constipation symptoms improved the most significantly with a greater than 1.5-point reduction. This was followed by a little more than a 1-point improvement in people with incomplete elimination symptoms. Table 2 demonstrates the rate of symptom improvement reported with product usage.

Table 2. Change in symptom severity with product usage.

Symptom	Score	SD	Paired t-Test Significance	Cohen's <i>d</i>
Constipation before	3.57	0.83		
Constipation during	1.99	0.96	P<.00001	2.7
Painful Bowel Movement before	2.59	1.25		
Painful Bowel Movement during	1.58	0.85	P<.00001	0.95
Incomplete Elimination before	2.88	1.22		
Incomplete Elimination during	1.80	0.9	P<.00001	1
Flatulence before	2.34	1.12		
Flatulence during	1.85	0.84	P<.00001	0.49
Bloating before	2.72	1.23		
Bloating during	1.80	0.93	P<.00001	0.52
Abdominal Cramping before	2.16	1.16		
Abdominal Cramping during	1.49	0.77	P<.00001	0.67

N= 575

Change in Symptom Severity: Cohen's *d*

With such a large sample size, statistical significance can be attained without clinical significance. To determine the clinical significance of the observed changes from pre-use to post-use, Cohen's *d*, a measure of effect size, was calculated (Table 2). Here again, we see largest clinical improvement with constipation, followed by incomplete elimination. When evaluating a treatment effect size using the Cohen's *d* statistic, the following parameters should be considered.

- Small: 0 - .2
- Moderate: >.2-.5
- Large: >.5-.8

For more on Cohen's *d*, see Appendix A.

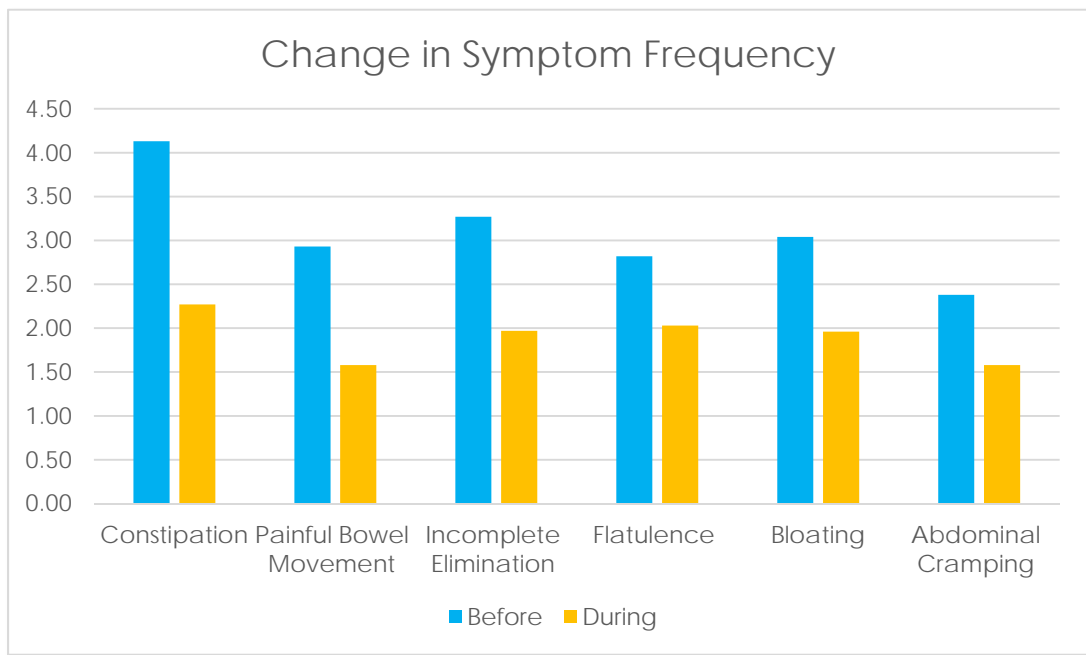
Frequency of Symptoms Before and During Product Use

Q9 and Q11 of the survey asked respondents to report the frequency symptoms that were experienced both prior to and during product use. To be consistent with the severity questions, a five point Likert-like scale was used here as well. The scale:

- 1 - Never
- 2 - Seldom
- 3 - Sometimes
- 4 - Often
- 5 - Always

For these calculations only data from those respondents who answered both pre and post use questions were included in the results. The sample size was 575. The sex, age and product use distributions remained consistent in this abridged data set as compared to the total data set. Figure 5 demonstrates the results.

Figure 5. Mean changes in symptom frequency.



Change in Symptom Frequency: *t*-Tests

As was the case with the severity of symptoms, the frequency of symptoms was reduced significantly ($p < .00001$) with product usage, with four of the six categories showing a greater than 1-point reduction. Significance was determined with two-tailed, paired *t*-Tests for sample means. Table 3 demonstrates these results.

Table 3. Change in symptom frequency with product usage.

Symptom	Score	SD	Paired <i>t</i> -Test Significance	Cohen's <i>d</i>
Constipation T1	4.13	0.83		
Constipation T2	2.27	1.08	P<.00001	1.93
Painful Bowel Movement T1	2.93	1.33		
Painful Bowel Movement T2	1.58	0.85	P<.00001	1.21
Incomplete Elimination T1	3.27	1.36		
Incomplete Elimination T2	1.97	1.01	P<.00001	1.04
Flatulence T1	2.82	1.32		
Flatulence T2	2.03	0.98	P<.00001	0.68
Bloating T1	3.04	1.35		
Bloating T2	1.96	1.05	P<.00001	0.89
Abdominal Cramping T1	2.38	1.27		
Abdominal Cramping T2	1.58	0.86	P<.00001	0.73

N= 575

Change in Symptom Frequency: Cohen's *d*

To determine the clinical significance of the observed changes from pre to post, Cohen's *d*, a measure of effect size, was calculated. Table 3, shown above, demonstrates the clinical improvements. Here again we saw large clinical improvements in each symptom with product use. Indeed, the reductions in symptom frequency exceeded those observed in symptom severity. It is notable that the largest improvement in symptom frequency was observed with constipation scores.

When evaluating a treatment effect size using the Cohen's *d* statistic, the following parameters should be considered.

- Small: 0 - .2
- Moderate: >.2-.5
- Large: >.5-.8

For more on Cohen's *d*, see Appendix A.

Quality of Life

Q12 and Q13 asked GutSense customers to rate their overall quality of life prior to and while using GutSense products. A five-point Likert-like scale was used:

- 1 - Poor
- 2 - Fair
- 3 - Good
- 4 - Very good
- 5 - Excellent

The results are demonstrated in Table 4 and Figure 6.

Table 4. Change in quality of life with product use.

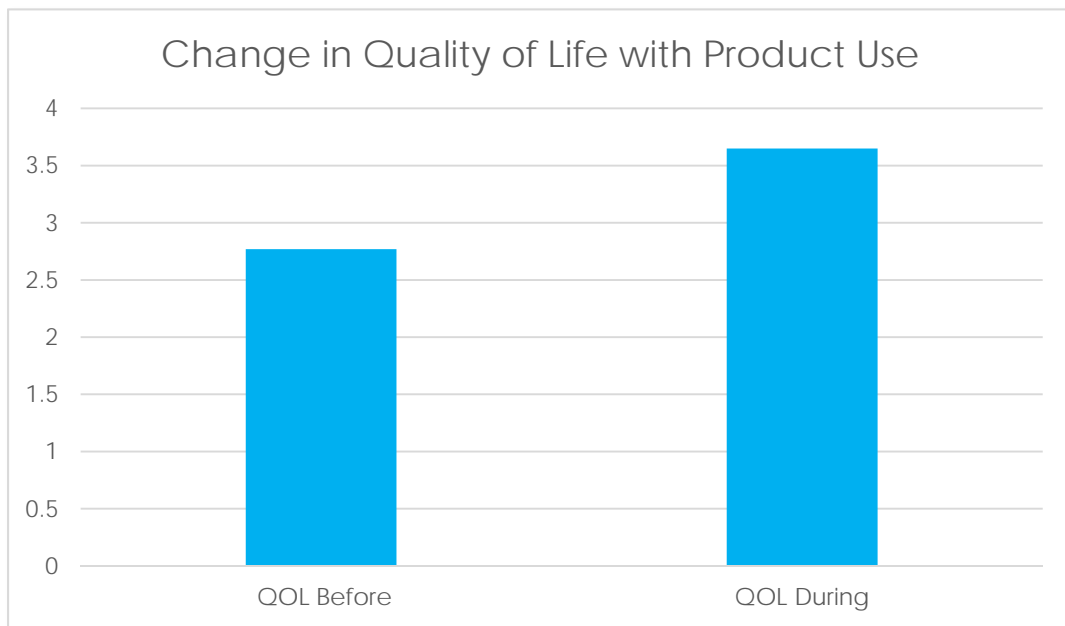
QOL Before Product Use		QOL during Product Use	
Mean (SD)	2.77(1.08)	Mean	3.65 (.92)
Median	3.00	Median	4.00
Mode	3.00	Mode	4.00
Count	569.00	Count	569.00
Confidence Level(95.0%)	0.09	Confidence Level(95.0%)	0.08

The P-Value is < 0.00001. The result is significant at $p < 0.01$.

Cohen's d : -.880 indicating a large clinical improvement.

Here again we see a statistically significant change in the quality of life ratings amongst the individuals who use of the GutSense products. A large, corresponding clinical improvement was also observed.

Figure 6. Mean change in quality of life.



Product Satisfaction

Q14 asked GutSense customers to rate their satisfaction with GutSense products. The following rating scale was used to assess satisfaction.

- 1 – Very Satisfied
- 2 – Satisfied
- 3 – Neutral
- 4 – Dissatisfied
- 5 – Very Dissatisfied

Product satisfaction was very high. Of the 577 respondents who answered this question, fully 57.6% reported being very satisfied. An additional 25.6% reported being satisfied and only 9.5%, 5.7% and 1.5% reported being neutral, dissatisfied or very dissatisfied, respectively. The mean satisfaction score was 1.68 with a .97 standard deviation. Figure 7, illustrates product satisfaction.

Figure 7. Product satisfaction.



Customer Referrals and Marketing

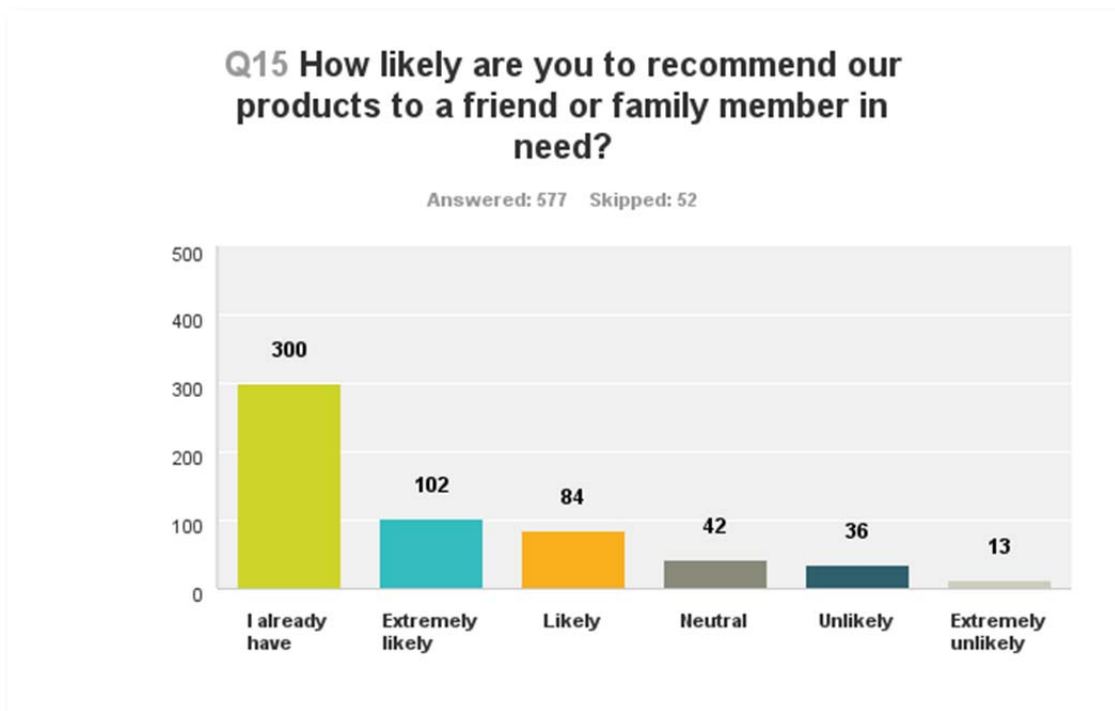
Refer a Friend or Family Member

Q15 asked if current customers would refer GutSense and their products to friends and family members. Selection options included:

- 1 – I already have
- 2 – Extremely likely
- 3 – Likely
- 4 – Neutral
- 5 – Unlikely
- 6 – Very unlikely

Figure 8 demonstrates the results.

Figure 8. Friend and family recommendations.



Of the 577 who completed this question, over 50% of the respondents reported that they have already recommended the products to friends or family. An additional 32% of the customers indicated that they were either extremely likely (18%) or likely (14%) to recommend GutSense products to friends or family. Once again, very few of the responses fell into the neutral, unlikely or very unlikely categories.

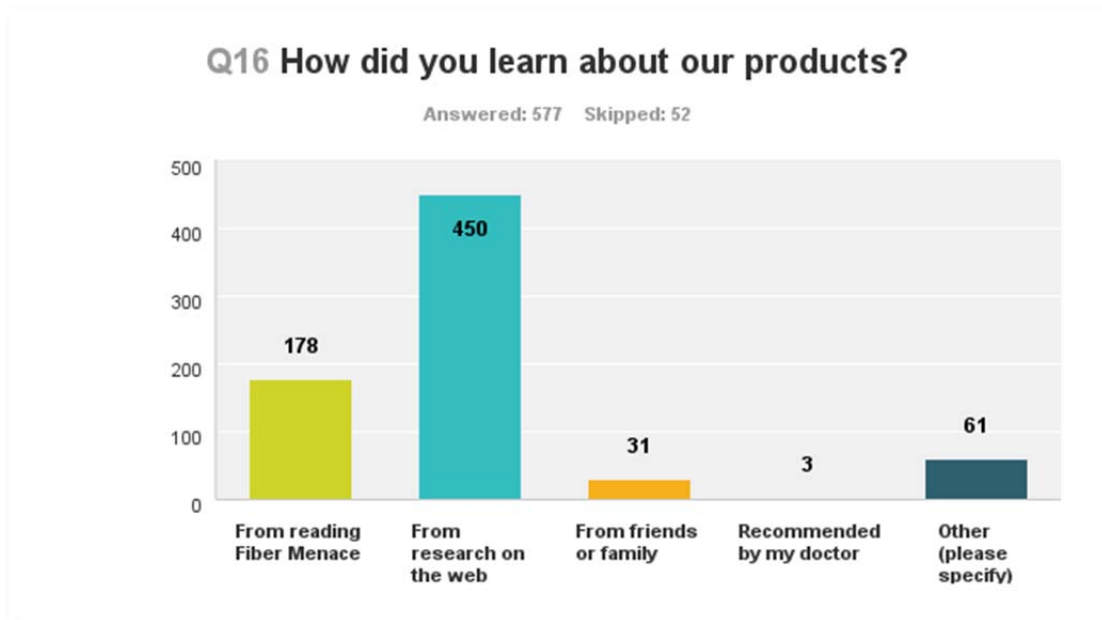
Finding GutSense Products

To determine the most successful forms of marketing GutSense products, Q16 asked customers how they found the company. Respondents were allowed to make more than one selection. Selections included:

- 1 - From reading Fiber Menace
- 2 - From research on the web
- 3 - From friends or family
- 4 - Recommend by my doctor
- 5 - Other

We see from Figure 9 that most customers find GutSense products either via the website or from reading Fiber Menace.

Figure 9. Finding GutSense products.



Conclusion

The results from this study demonstrate unequivocally that CRP and Hydro-C work as intended for a large majority of the customers who purchase and use these products correctly.

Repeatedly, survey respondents touted the life-changing effect these products had on their overall health. For each of the six symptoms assessed, the use of these products was associated with both statistically and clinically significant improvements in both severity and frequency of the symptoms assessed. Constipation and pain with bowel movements were relieved the most dramatically.

The few areas where there was dissatisfaction with the products were taste (Hydro-C) and cost, particularly the costs and difficulties associated with shipping overseas. Additionally, dosing confusion may have played a role in overall satisfaction, as dosing questions were common in the comments section, most notably for children. Without quantitative data to evaluate comment items more carefully, this remains only an observation. In general, however, product satisfaction was very high, as was customer loyalty, as indicated by the number of individuals who have already recommended these products to friends or family and/or are likely to do so.

Recommendations

Future Research

While it is clear that the vast majority of customers who use GutSense products see improvements in their health, the current study was not sufficiently detailed to delineate the factors limiting improvement, the causes for dissatisfaction and/or the reasons for product discontinuation. From the comments sections we see questions about dosing, early product cessation, and underlying conditions and medications that would limit improvement. We also saw a number of comments regarding pediatric populations and a few involving pregnancy. More comprehensive studies are needed to fully understand how age, reproductive status, dosing and underlying conditions and medications interact and lead to product satisfaction or dissatisfaction. Answering these questions could provide additional insight, new products and expand market opportunities. Despite these questions, however, it is clear from the data gathered from this survey that the GutSense customers find relief from these products and are loyal to the company.

Appendix A. Cohen's d table of effect sizes.

Cohen's d represents the difference in effect size between two means. It is typically used to understand treatment effects across time where testing is conducted before administering the treatment and after administering the treatment. [Cohen \(1988\)](#) defined effect sizes as "small, $d = .2$," "medium, $d = .5$," and "large, $d = .8$ ").

For an interactive demonstration of Cohen's d , see: [Interpreting Cohen's d effect size: an interactive visualization](#). For a more academic discussion, see: [Effect Size \(ES\)](#). Table 5 below illustrates the complete range of effect sizes using Cohen's d calculation.

Table 5. Cohen's d .

Cohen's Standard	Effect Size	Percentile Standing	Percent of Nonoverlap
	2.0	97.7	81.1%
	1.9	97.1	79.4%
	1.8	96.4	77.4%
	1.7	95.5	75.4%
	1.6	94.5	73.1%
	1.5	93.3	70.7%
	1.4	91.9	68.1%
	1.3	90	65.3%
	1.2	88	62.2%
	1.1	86	58.9%
	1.0	84	55.4%
	0.9	82	51.6%
LARGE	0.8	79	47.4%
	0.7	76	43.0%
	0.6	73	38.2%
MEDIUM	0.5	69	33.0%
	0.4	66	27.4%
	0.3	62	21.3%
SMALL	0.2	58	14.7%
	0.1	54	7.7%
	0.0	50	0%