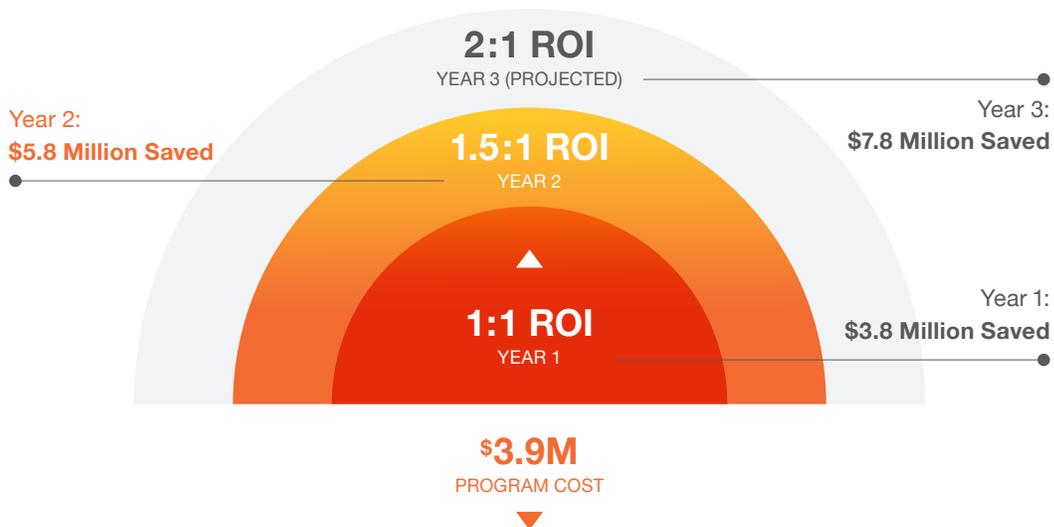




# Real Appeal is on track to meet or exceed 2:1 ROI over three years

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An interim analysis of 21,879 Real Appeal® participants registered between July 2015 and June 2016 showed a 1.5:1 ROI 24 months after they registered in the Real Appeal intensive lifestyle intervention (ILI) program. Approximately \$5.8 million in medical costs was saved, compared with \$3.9 million in program costs; Real Appeal is on track to deliver more than \$7.8 million in savings for this cohort after year three.<sup>1</sup>



## Greater participation can mean even greater savings

This ongoing study has shown that participants' weight loss, and subsequent health care cost savings, increased with the number of sessions attended.<sup>2</sup>

Results from this interim analysis matched research from The Look Ahead Group and the Diabetes Prevention

Program Research Group that showed that ILI participation was key to reducing health care utilization and costs.<sup>3,4</sup> Real Appeal can deliver on that need for high ILI participation, with engagement rates of 15% to 23% on average,<sup>5,6</sup> whereas studies of similar programs showed average engagement rates of 5% to 10%.<sup>7,8</sup>



Average medical cost savings after 24 months, per participant

## Methods

Medical costs from a cohort of Real Appeal ILI participants were compared with those incurred by a propensity-matched cohort of nonparticipants. A difference-in-difference measurement was used to account for the upward trend in year over year (YoY) medical cost. The change from baseline to costs over the following two years for participants was calculated then compared with that of nonparticipants.

A propensity-matched technique was necessary to adjust for the differences between the two cohorts and to ensure that medical cost differences stemmed from program effects and not case mix. Matching also adjusted for possible selection bias in which those who chose to participate in Real Appeal differed from nonparticipants in ways that may also have influenced their health care utilization patterns. A more detailed description of the matching process is in the year one analysis.<sup>1</sup> Medical costs were defined as the total amount paid for all medical expenses (excluding pharmacy costs) inclusive of both the insurers' and the study subjects' responsibility.

## Cohort terminology

This study describes results using two cohorts, participant and nonparticipant, which were based on program enrollment. The participant cohort was separated into two groups based on the Centers for Disease Control (CDC) definition of participation.<sup>6</sup> Active participants were people who registered, enrolled and attended at least four Real Appeal ILI sessions. Nonactive participants registered, enrolled and attended fewer than four Real Appeal ILI sessions. The nonparticipants are people who registered for Real Appeal but did not enroll in the program.

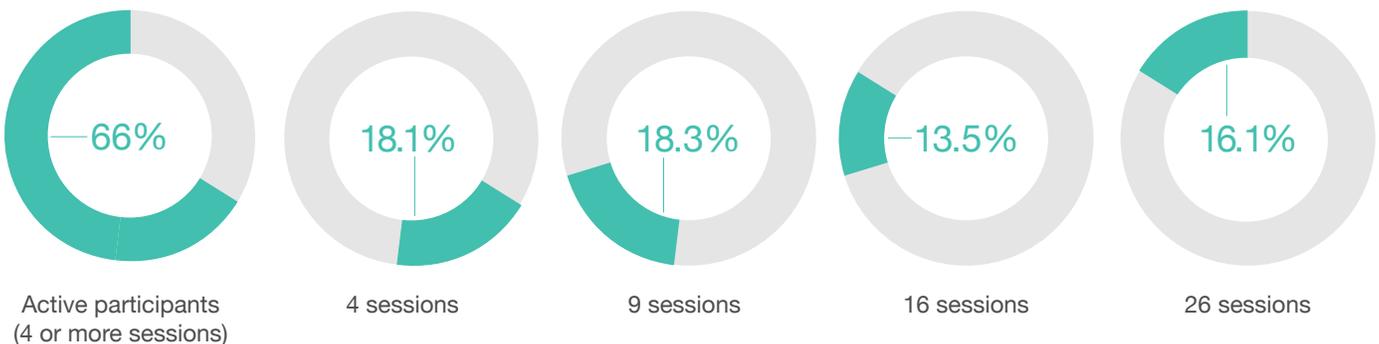
## Results

A total of 21,879 people who registered for Real Appeal between July 2015 and June 2016 and met the inclusion criteria were eligible for the study. There were 14,770 participants and 7,109 nonparticipants. Sixty-six percent of the participant cohort were active participants (Figure 2). Approximately 43% of the subjects from the year one cost savings analysis<sup>2</sup> were not retained for the year two study. Changes to health plan benefits were the primary reason.

## Study subjects

Eligible study subjects registered for Real Appeal between July 2015 and June 2016, were at least 18 years old and were continuously enrolled in their medical plan at least one year before and two years after their Real Appeal registration date. The nonparticipant cohort comprised people who registered for Real Appeal but chose not to enroll. Excluded from the study were those who had been given a diagnosis of or treated for an exclusion condition: dementia and organic disorders; HIV; inflammatory or degenerative CNS; ESRD; hemophilia; transplants; hospice care; cancer; pregnancy and birth; congenital disorders, bariatric surgery; high cost claimant > \$100k.

Figure 1: Participant Session Attendance Distribution



**Table 1. Calculating the difference in medical expenditures**

Minimum level of ILI engagement*		Baseline cost (pre-ILI)	Average 24-month cost (includes program year and one year post program)	Pre/Post Difference	Average Savings per Participant (Difference in Difference)
4 classes	Participants	\$2,021	\$4,912	\$2,891	\$371**
	Nonparticipants	\$2,059	\$5,321	\$3,262	
9 classes	Participants	\$2,025	\$5,070	\$3,045	\$416**
	Nonparticipants	\$2,072	\$5,533	\$3,461	
16 classes	Participants	\$2,051	\$5,184	\$3,133	\$591**
	Nonparticipants	\$1,985	\$5,709	\$3,724	
26 classes	Participants	\$2,074	\$5,102	\$3,028	\$1,036**
	Nonparticipants	\$2,022	\$6,086	\$4,064	

\*participants; \*\* statistically significant p < .05

Baseline costs (pre-ILI) were medical expenditures incurred in the 12 months prior to registering for Real Appeal while the post period contained the medical costs incurred in the 24 months after registration. For each cohort, a pre/post difference was calculated: Costs incurred during the baseline period were subtracted from costs incurred during the post period. The final step in the computation was the difference-in-difference calculation, which examined the pre/post difference cost between participants and nonparticipants. The resulting difference-in-difference dollar amount is the difference in medical spend between the two cohorts. As shown in Table 1, participants had lower pre-post difference cost across all levels of ILI engagement. This lower pre/post medical spend translated into the average savings per participant amount listed in Table 1. As shown on page 1, savings increased with level of ILI engagement.

## Calculating the ROI

### Program fees

There is no additional cost to registering for Real Appeal; thus, nonparticipants did not incur any program fees. For participants, Real Appeal's unique pay-for-performance model means that not every session the participant attends costs the payer. For the participant cohort covered in this study, payers paid only for sessions the participant attended and was on track for 5% weight loss. Program fees were \$103 for the assessment and \$37 per billable session, with a maximum charge of up to 16 sessions between July 2015 and June 2016. Active participants attended an average of 14 sessions; 6.6 of those were billable, which translated to an average total program cost of \$347 per participant. Nonactive participants enrolled and incurred the \$103 assessment fee, but did not meet the CDC's requirement for beneficial participation and subsequent progression toward the 5% weight loss threshold; the program fees for nonactive participants are included in the ROI calculation detailed below.

**Table 2. Participant program costs and savings**

Minimum level of ILI engagement*	Number of participants	Program expenditures	Average savings per participant	Total Savings
Nonactive participants	5023	\$517,369	\$0	\$0
4 sessions	2667	\$925,449	\$371	\$989,457
9 sessions	2708	\$939,676	\$416	\$1,126,528
16 sessions	1990	\$690,530	\$591	\$1,176,090
26 sessions	2382	\$826,554	\$1,036	\$2,467,752
<b>Total</b>	<b>14,770</b>	<b>\$3,899,578</b>		<b>\$5,759,827</b>

### Savings

The savings calculation uses the average savings per participant multiplied by the number of study subjects meeting the level of ILI engagement category, as shown in Table 2. For example, subjects who attended a minimum of 26 sessions averaged \$1,036 in savings. Thus, the 2,382 study subjects who attended a minimum of 26 sessions had a total savings of \$2,467,752 (2,382 x \$1,036).

### ROI

The savings attributed to study participants totaled \$5,759,827, compared with total program costs of \$3,899,578. That translates to a 1.5:1 ROI for Real Appeal participants, in the 24 months following their Real Appeal registration. Not every participant will have a 1.5:1 ROI, however the Real Appeal ILI as a whole delivers a significant return on investment. The active participants in this cohort not only recouped their program fees and nonactive participant fees, but also produced an additional \$1.9 million in medical cost savings.

These results represent an ROI approach that includes direct medical costs — physician, inpatient, outpatient, lab, urgent care, and ER visits — only. Pharmaceutical costs and indirect costs associated with obesity, including lost productivity, disability expenses, and absenteeism, were not included in the ROI calculation. The total financial benefit of Real Appeal participation may have been greater if these indirect costs were considered.

### References

- 36 months of data post Real Appeal registration is required for the complete 3 year ROI. Real Appeal was launched in July 2015. To allow for an adequate amount of elapsed time for claims to be processed, a 3-year ROI study will not be available until 1st Qtr 2020.
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