

LIFESTYLE MEDICINE INSTITUTE

HUNTSMAN CORPORATION

A CHIP Case Study

What We Know:


- ✓ Annually, obese workers cost **\$1,436** more in healthcare costs and **\$500** more in lost productivity than non-obese employees.
- ✓ Employees with cardiovascular disease cost **\$6,886** more than those without the disease.
- ✓ Diagnosed diabetics cost more than **\$8,817** in annual healthcare costs than non-diabetics.

Cowley J, Meyerhoefer C. The medical care costs of obesity. JGIM. 2012. The State of Obesity: RWJ Foundation and the Trust for America's Health Report 2016. <http://www.stateofobesity.org/healthcare-costs-obesity>. Vital inches national data 2017.

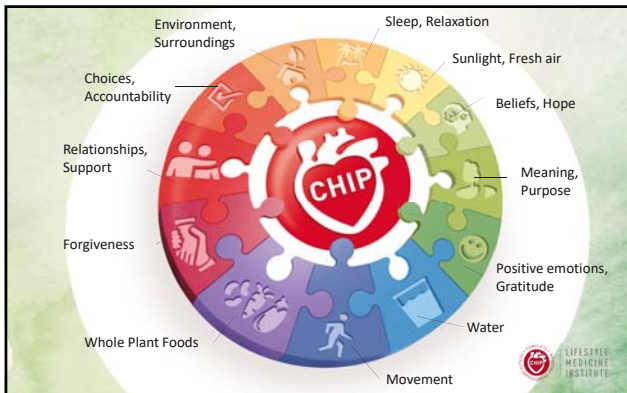
What We Learned:

- ✓ Healthcare costs can be **reduced**, and lifestyle-related diseases can be **reversed** when employees participate in intensive lifestyle change programs.
- ✓ Employees can change their lifestyle habits if they are given the proper tools.
- ✓ The cost of doing nothing to help employees improve their lifestyles is much higher than providing them with proven interventions.


Introducing The Complete Health Improvement Program (CHIP)




- CHIP is an intensive lifestyle intervention program with proven results based on years of scientific research.
- Participants commit to make lifestyle changes for 9 weeks and significant health improvements become evident.
- Change happens in the way individuals eat, move, and think. CHIP challenges participants to make those changes.
- After the program, individuals decide if they want to continue or revert to their old lifestyle habits.




HUNTSMAN CHIP



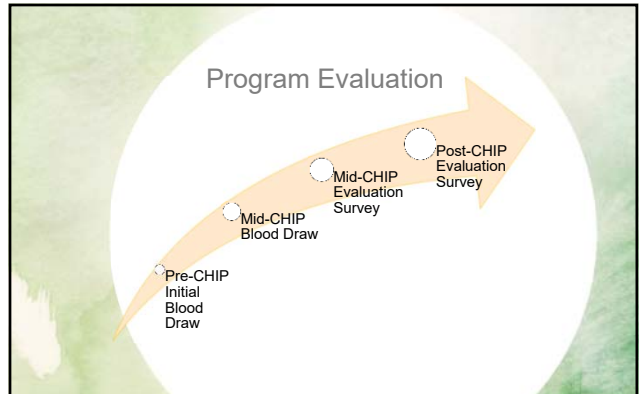
113 Huntsman employees completed the CHIP intervention.



Huntsman has completed 6 CHIP programs so far.



CHIP programs were facilitated by Huntsman employees, trained by LMI.



OUR STARTING POINT:

INITIAL BIOMETRIC SCREENING RESULTS

- 43 had elevated total cholesterol
- 66 had elevated LDL cholesterol
- 37 had elevated fasting glucose
- 59 were obese
- 73 had elevated blood pressure

Biometric Indicator Levels

Biometric Indicator Levels	Green Zone	Yellow Zone	Orange Zone	Red Zone
Total Cholesterol	<200	200-239	220-239	240+
LDL Cholesterol	<100	100-129	130-159	160+
Glucose	<100	100-112	113-125	126+
BMI	<25	25-27.5	27.5-29.9	30+
Blood Pressure	<120/<80	<140/<90	<159/<99	160+/100+

Indicators from cdc.gov

Changes in Biometrics with CHIP

Biometric Indicator	Before CHIP				Midway			
	Green Zone	Yellow Zone	Orange Zone	Red Zone	Green Zone	Yellow Zone	Orange Zone	Red Zone
Total Cholesterol	69	17	12	15	86	14	6	7
LDL Cholesterol	42	40	17	9	66	30	11	4
Fasting Glucose	76	22	8	7	87	14	5	6
Weight (BMI)	13	14	14	59	15	16	13	56
Blood Pressure	39	53	16	4	51	46	13	2

Overall Biometric Improvements in Just 4 Weeks

Biometric Indicator	Average Improvement
Total Cholesterol	8.8%
LDL Cholesterol	9.5%
Fasting Glucose	3.8%
Weight	2.4%
Systolic B/P	1.8%

Biometric Results

Improvements in Participants with High Initial Readings

Biometric Indicator	Average Improvement
Total Cholesterol	17.2%
LDL Cholesterol	25.2%
Fasting Glucose	20%
Weight	2.9%
Systolic B/P	7.5%

Mid-CHIP Evaluation Survey Highlights (Response Rate 79%)

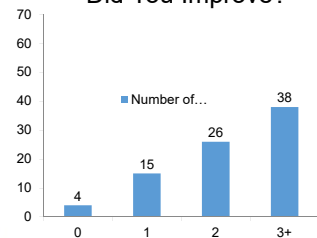
Mid-CHIP Evaluation Survey Highlights (Response Rate 79%)	All Huntsman CHIP Participants
At this point in the class, do you think you will continue to follow a plant-based diet and incorporate CHIP principles into your life after the class has ended?	Totally: 66% Partially: 34% No: 0%
Participating in CHIP with my colleagues is fun and could have a positive impact on our company culture that could make it easier for me to maintain healthy choices.	Yes: 99%
I have noticed improvements since I started CHIP.	Yes: 92%
Enrolling in CHIP was a great decision for me. I am learning a lot!	Yes: 99%
My facilitator engages and encourages me to apply what I'm learning and take charge of my health.	Yes: 100%

Post-CHIP Evaluation Survey Subjective Questions

Question (response rate 74%)	Average Score 1-5 (5 = the highest)
Overall, how satisfied were you with the CHIP program?	4.69
Rate the value of the lifestyle principles you learned in CHIP.	4.73
How likely are you to use some of the CHIP principles in your daily life?	4.58
How likely would you recommend CHIP to others?	4.67
By offering CHIP to me at work, I feel that my employer cares about my health and well-being.	4.78

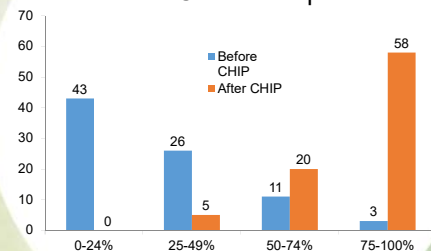
Post-CHIP Evaluation Survey

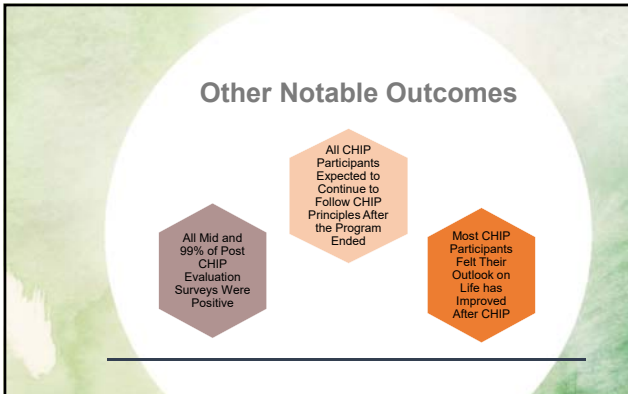
How Many Biometric Indicators Did You Improve?



Post-CHIP Evaluation Survey

How Much of Your Diet Follows CHIP Principles?





Business Case for CHIP Research Indicators

- ✓ **FACT:** Increased depression risk increases yearly healthcare spending by 48%.
After CHIP Most Huntsman participants reported improved outlook on life after CHIP
- ✓ **FACT:** 31.8% reduction in expenditure for people with controlled blood glucose versus high blood glucose.
After CHIP Huntsman participants with high initial readings decreased serum glucose by an average of 20% in 5 weeks
- ✓ **FACT:** 30.9% increase in health care expenditures for people who are obese compared to people at a healthy weight.
After CHIP Huntsman participants lost a total of 578 pounds over only 5 weeks

