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Recent Experience In Health Promotion At Johnson & Johnson: Lower Health Spending, Strong Return On Investment

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ABSTRACT Johnson & Johnson Family of Companies introduced its worksite health promotion program in 1979. The program evolved and is still in place after more than thirty years. We evaluated the program's effect on employees' health risks and health care costs for the period 2002–08. Measured against similar large companies, Johnson & Johnson experienced average annual growth in total medical spending that was 3.7 percentage points lower. Company employees benefited from meaningful reductions in rates of obesity, high blood pressure, high cholesterol, tobacco use, physical inactivity, and poor nutrition. Average annual per employee savings were \$565 in 2009 dollars, producing a return on investment equal to a range of \$1.88–\$3.92 saved for every dollar spent on the program. Because the vast majority of US adults participate in the workforce, positive effects from similar programs could lead to better health and to savings for the nation as a whole.

Whenever leading examples of worksite health promotion programs are cited, Johnson & Johnson Family of Companies typically heads the list.^{1–3}

The company's Live for Life program was introduced in 1979 by then chairman James Burke, with the stated purpose of making Johnson & Johnson workers the "healthiest in the world."⁴

Background

EVALUATION In addition to investing millions of dollars over many years in program implementation and improvement, Johnson & Johnson also spent large sums of money to evaluate program outcomes across multiple dimensions that included health risks and financial returns. The first set of studies, conducted in the 1980s, found that the health promotion and disease prevention program was associated with improved employee health, reduced inpatient health care spending, decreased employee absenteeism,

and better employee attitudes.^{4–10}

As a result, Live for Life was implemented at all Johnson & Johnson companies, with the expectation that the initiative would continue to produce positive results for the company and its employees. Over time, employee health and wellness has become a central tenet of Johnson & Johnson's organizational culture.

Evaluation of the program continued into the 1990s, when studies focused on Johnson & Johnson employees' health risks and patterns of medical care use during the period 1990–99. Once again, these studies found that the program resulted in notable health improvements among employees.

In addition, cost reductions to the company followed a breakthrough benefit plan design that offered a \$500 credit toward the annual medical premium for workers who participated in health screening and followed up with targeted health improvement programs. There were very high rates of participation in the screening and follow-up programs.^{11–13}

CURRENT PROGRAM Today, every Johnson & Johnson employee has access to the company health and wellness program through a team of health professionals who promote and support a healthy lifestyle. Johnson & Johnson's programs include offerings related to improving physical activity (such as on-site fitness centers, reimbursement for exercise expenditures, a pedometer program, and seasonal fitness challenges); nutrition (including healthy cafeteria choices, Weight Watchers membership, and on-line weight management tools); lifestyle management and computerized coaching programs (health coaching for blood pressure management, tobacco cessation, and blood lipid control); and chronic disease management.

Johnson & Johnson routinely analyzes aggregate health assessment data to identify health risk trends among employees. Health assessments, sometimes called health risk assessments, are survey tools that ask individuals about their health habits and risk factors. They are often accompanied by biometric screenings of height and weight, blood pressure, and cholesterol values. Customized programs to address employees' health risks are then developed, implemented, and evaluated through subsequent health assessments.

During the past decade, and most recently prompted by national health reform legislation, employers have shown increasing interest in adopting comprehensive worksite health promotion programs. The aim is to improve employees' health and reduce medical costs. Many of these programs are modeled after Johnson & Johnson's. The landmark Affordable Care Act of 2010 contains incentives intended to encourage still more companies to implement and sustain wellness programs.

PREVIOUS STUDIES Despite the touted benefits of health promotion, it is unknown whether these programs can sustain health improvements and cost savings in the long run. In 2010 *Health Affairs* published a meta-analysis of the return on investment from worksite wellness programs. The article, by Katherine Baicker and colleagues, concluded that these programs, on average, can within three years achieve medical cost savings that exceed program expenses at a ratio of \$3.27 for every \$1.00 spent.¹⁴ A similar return was calculated for reduced absenteeism as a result of workplace wellness programs.

Although compelling, the studies we reviewed typically focused on newly introduced programs, rather than ones that had been in place for many years or even decades. Another limitation associated with worksite health promotion studies is that many rely on quasi-experimental study designs, where program participants are compared

to nonparticipants over time.

Methods for matching participants and non-participants have improved. However, many studies still suffer from selection bias, in which people who are healthier may or may not be more likely to join health promotion programs, given the voluntary nature of participation. It is also important to note that several articles contributing to the evidence base focused on programs implemented in the 1990s, coincident with the rise of managed care.¹⁴ Thus, it is reasonable to be concerned about the potential conflation of savings from health promotion and managed care.

CURRENT STUDY In this study we evaluated the effect of Johnson & Johnson's health and wellness program on employees' health risks and medical care costs in the third decade of the program's existence. Because all of Johnson & Johnson's employees are exposed to the "culture of health" created by the program, this study took a unique approach that minimizes self-selection bias in identifying treatment and control groups.

We compared data from Johnson & Johnson with data from sixteen other large companies, some of which also have health and wellness programs in place. The comparison was over a seven-year period, 2002–08. The experience of Johnson & Johnson, a company with a very mature program, thus was contrasted with that of companies that may have only recently introduced wellness programs and, in some cases, may have fashioned their programs after Johnson & Johnson's.

Study Data And Methods

OVERVIEW We compared 2002–08 medical and drug cost trends of Johnson & Johnson employees to those of employees working for companies similar in industry and size. Propensity-score matching was applied to minimize the effects of selection bias—a common problem faced by researchers conducting real-world evaluations of intervention programs.

The aim of propensity-score matching is to find statistical "twins" of employees at Johnson & Johnson (treatment group) and the comparison companies (control group). When those twins are found, one can track health and cost measures for the two groups over time to determine whether the treatment group outperforms the control group on key outcome measures.

In a second analysis, we compared Johnson & Johnson employees' health risks to those of employees from a subset of the comparison companies for whom health risk data were available, adjusting for employee demographics. Finally,

we estimated the company's return on investment from the health and wellness program by comparing medical savings to program costs.

DATA We created a database of demographics, medical care enrollment, medical care claims, and health assessment records for employees of Johnson & Johnson and the comparison group of employers. The sixteen comparison-group companies were blindly selected by Johnson & Johnson based on their similarities to Johnson & Johnson in terms of the industry in which they operated (manufacturing) and their size (large, self-insured).

Selection of anonymous comparison companies was left to Johnson & Johnson because the researchers were aware of the comparison companies' identities and did not wish to bias the choice of comparators. Unnamed comparison companies represented the following industries: chemical and drug manufacturing; health care products; beverage and food manufacturing and distribution; and paper/material/transportation manufacturing and distribution.

To measure the comprehensiveness of the wellness program offerings at comparison companies, we conducted a brief survey of client managers of these companies and Johnson & Johnson. The survey included items from a study commissioned by the US Office of Disease Prevention and Health Promotion.¹⁵

On a four-point scale ranging from "not in place" to "fully operational/mature," the survey measured the presence of five core program elements that are considered essential to a successful wellness program: health education; linkage to related employee programs; supportive physical and social environments; integration of the worksite program into the organization's structure; and worksite screening programs with follow-up and appropriate treatment.

Johnson & Johnson was rated "fully operational/mature" on all five elements. Four of the sixteen comparison companies (25 percent) also received a "fully operational/mature" rating on all components. However, fewer than half of the companies received such a rating on all key program elements. A sizable proportion were rated 0 or 1, which meant that those components were not in place or that there were future plans to include them as part of the company's wellness program. (Detailed survey findings are available upon request.)

All companies contributed at least two continuous years of medical claims data to the Thomson Reuters MarketScan Commercial Claims and Encounters database. This database includes fully integrated, unidentified, individual-level medical care claims data.

The comparison group for the health risk

analysis consisted of a subset of six of the sixteen companies that also contributed health assessment files, in addition to medical claims, to the MarketScan database. Health assessment comparison data were available only for 2005–08.

SAMPLE The sample included US employees from Johnson & Johnson and comparison companies who were active, employed full time, and ages 18–64. Employees had to be continuously enrolled in a health plan offered by their employer for one year to be included in the analysis of health risks and two years to be included in the medical cost analysis.

Employees with pregnancy-related medical care claims, employees not enrolled in a prescription drug plan, and employees who had records of claims adjustments resulting in negative medical cost values were excluded from the sample during the year of the occurrence. Employees enrolled in health plans featuring capitation (health maintenance organizations or point-of-service plans with capitation) also were excluded because complete claims data were not available for them. Employees had to have completed at least one health assessment to be included in the analysis of health risks.

MEASURES Medical care costs were calculated as total payments (inpatient, outpatient, and pharmaceutical) and included both the employer and employee shares of costs. Yearly medical care and drug payments were inflation-adjusted to 2007 US dollars using the Medical Care Services Consumer Price Index and Medical Care Commodities Consumer Price Index, respectively.

The following nine health risks were considered: obesity (body mass index of 30 or higher); high blood pressure (systolic blood pressure of 140 mm Hg or more, or diastolic blood of 90 mm Hg or more); high cholesterol (total cholesterol of 240 mg/dl or higher); physical inactivity (moderate exercise on fewer than two to three days a week); poor nutrition (fewer than five servings of fruit and vegetables daily); excessive alcohol consumption (more than fourteen alcohol servings per week for males, or seven per week for females); tobacco use (any current tobacco use); depression (feeling unhappy with little interest or pleasure in doing things); and high stress (feeling stressed and having trouble coping). (Detailed health-risk definitions are available on request.)

It is important to note that the study samples we analyzed were subsets of the entire employee populations after certain inclusion and exclusion criteria were applied. Therefore, our results might not be generalizable to all employees at Johnson & Johnson and the comparison companies. This is especially relevant to the risk analysis because only employees who completed a

health assessment were included in that study. At Johnson & Johnson, 76 percent of eligible employees completed a health assessment between 2002 and 2007 (data available upon request). This relatively high rate was largely due to a significant financial incentive tied to program participation. Health assessment participation rates at the comparison companies were likely to be lower, which might have influenced the observed prevalence of health risks among employees at those companies.

The key independent variable in all our analyses was the employer. Two severity adjustment scores were included in the growth curve model as time-varying covariates: the Charlson Comorbidity Index,¹⁶ and a count of psychiatric diagnostic groupings.¹⁷

The Charlson Comorbidity Index estimates a patient's risk of death or serious disability in the coming year, based on whether diagnosis codes for eighteen conditions are observed during a baseline period. Psychiatric diagnostic groupings are analogous to the major diagnostic groups in the diagnosis-related group system. We constructed our measure by adding the number of psychiatric diagnostic groupings on a patient's medical claims record in a given period.

Other model covariates included employees' age and sex, health plan type (point-of-service without capitation versus other), and region (West, North Central, South, Northeast).

To reduce the variation in medical care due to benefit plan design differences, most notably the "richness" of the plan, we created a plan design variable, calculated as the ratio of the employer-paid amounts divided by total allowed costs. This plan richness ratio was measured each year for each employer and included in the growth curve model as a time-varying covariate.

MEDICAL CARE SAVINGS ANALYSIS After we identified our sample, we used one-to-one propensity-score matching (nearest neighbor with caliper method)¹⁸ to match each Johnson & Johnson employee to a similar employee from the comparison group. In constructing the propensity match model, we followed the advice of Stefano Iacus and colleagues,¹⁹ who advocate for a coarsened exact matching approach to propensity matching. In their recent analysis comparing alternative propensity matching methods, they show that using less granular (more coarsened) matching methods produces a more reliable and valid result than traditional methods.¹⁹ Thus, we chose variables that were unique and relevant to the development of a parsimonious model that would match individuals from Johnson & Johnson and comparison companies on basic demographic characteristics.

The variables chosen were baseline age, sex,

health plan type, and region. These variables were readily available in the MarketScan database and are typically used when matching individuals across employers. We matched employees using regions of the country rather than state or ZIP code so that a better match could be achieved and a larger number of subjects would be retained.

We measured the relative balance in baseline characteristics across the two cohorts using the standardized difference.²⁰ The standardized difference is a preferred measure for assessing balance as it does not depend on the unit of measurement or on the size of the sample.²¹

To determine savings from Johnson & Johnson's program, we estimated the difference in medical care cost growth over time between Johnson & Johnson employees and the comparison group employees, using multilevel growth curve modeling. This was done to account for within-subject correlation typically found in longitudinal studies.²² These models estimate trends for an average individual and account for unequal spacing and unbalanced numbers of measurement occasions among individuals.

To accommodate the skewed distribution of the outcome (annual medical and drug costs), we recorded employee spending as a natural logarithm. Because 89 percent of employees had claims for more than \$1, we added \$1 to all \$0 claims. The independent variables included in the model were as follows: Johnson & Johnson employment, year, Johnson & Johnson employment multiplied by year, year squared, number of years of claims data, Charlson Comorbidity Index, psychiatric diagnostic groups, and plan richness ratio. We produced annual, adjusted estimates for the average employee of Johnson & Johnson and the comparison group by retransforming the predicted values to a dollar scale using a year-specific smearing method described by Naihua Duan.²³ We calculated the average annual rate of growth from retransformed estimates. Starting with Johnson & Johnson's predicted costs in 2002, we estimated what its costs would have been during 2003–08 if the company had experienced the same average annual rate of growth as the comparison group.

We did not examine specific medical services use or cost patterns, or disease conditions most influenced by the wellness program. This would be a fruitful avenue for future research.

RETURN ON INVESTMENT Program savings were calculated by estimating the average adjusted annual costs per employee for Johnson & Johnson minus expected costs, assuming the same annual growth rate as the comparison companies. These per employee per year savings were then divided by \$144, the average per em-

ployee annual cost of employer health and wellness programs cited in the recent review by Baicker and colleagues.¹⁴

To be conservative, we produced an upper-end return-on-investment estimate assuming a \$300 per employee per year program cost. This amount, more than double the program cost found by Baicker and colleagues,¹⁴ represents the higher end of program costs in other published reviews.^{24,25}

HEALTH RISK ANALYSIS We measured the sample characteristics and health risk prevalence each year for Johnson & Johnson and comparison-group employees. Comparisons in the likelihood of each health risk among Johnson & Johnson and comparison-group employees were made using logistic regression models predicting high risk for each health risk, adjusting for age group, sex, and region. We estimated a separate model for each year of data.

Study Findings

STUDY SAMPLE There were 32,478 Johnson & Johnson employees and 473,213 employees from comparison companies in the medical care savings analysis sample after inclusion and exclusion criteria were applied (Exhibit 1). Before matching, there were notable demographic differences between the two employee populations. After propensity score matching, the cohorts were well balanced. The matched sample included 31,823 Johnson & Johnson employees and an equal number of employees from the comparison companies.

SAVINGS AND RETURN ON INVESTMENT We found that Johnson & Johnson experienced a 3.7 percent lower average annual growth in medical costs compared to the comparison group ($p < 0.001$) for the period 2002–08. All of the covariates—except years of data—in the growth curve model were significant at the $p < 0.001$ level. (Model estimates are available upon request.)

EXHIBIT 1

Johnson & Johnson And Comparison-Group Medical Care Sample Before And After Matching

Characteristic/sample	Before match	Standardized difference ^a	After match	Standardized difference ^a
NUMBER				
Johnson & Johnson	32,478	— ^b	31,823	— ^b
Comparison	473,213	— ^b	31,823	— ^b
AGE (YEARS)				
Johnson & Johnson	39.7	14.1	39.6	1.4
Comparison	41.1		39.4	
PERCENT FEMALE				
Johnson & Johnson	45.5	38.2	45.2	4.2
Comparison	27.4		43.1	
PERCENT IN EACH REGION				
North Central				
Johnson & Johnson	4.0	59.8	14.7	0.4
Comparison	23.8		14.6	
Northeast				
Johnson & Johnson	55.3	96.6	45.0	1.7
Comparison	13.9		45.9	
South				
Johnson & Johnson	1.8	123.5	11.6	2.2
Comparison	46.8		15.1	
West				
Johnson & Johnson	14.8	9.3	14.9	0.7
Comparison	11.6		15.1	
PERCENT ENROLLED IN POINT-OF-SERVICE WITHOUT CAPITATION OR PREFERRED PROVIDER ORGANIZATION				
Johnson & Johnson	85.0	21.9	86.7	1.2
Comparison	91.9		87.1	
YEARS OF DATA				
Johnson & Johnson	3.7	12.1	3.7	1.0
Comparison	3.9		3.7	

SOURCE Authors' analysis of data from Johnson & Johnson and sixteen comparison companies in the Thomson Reuters MarketScan Commercial Claims and Encounter database. ^aStandardized difference represents the difference in means between the two groups in units of standard deviation. A standardized difference greater than ten is typically considered a serious imbalance. ^bStandardized difference is not a relevant statistic for the before-and-after match sample counts and therefore is not included.

Exhibit 2 shows results from the growth curve model of medical care costs retransformed into 2007 dollars. Johnson & Johnson's annual average percentage increase in medical and drug costs was 1.0 percent, which was lower than the 4.8 percent average expected increase in costs, estimated from the experience of the sixteen comparison companies. (Detailed results available upon request.)

The average annual savings for Johnson & Johnson, when its total medical costs are contrasted to expected costs from the comparison companies, was \$535 per employee per year in 2007 dollars. Adjusting this savings estimate to 2009 dollars using the Medical Care Services Consumer Price Index yielded an average annual per employee savings of \$565.

These savings outweigh the 2009 average annual health promotion program cost of \$144 per employee reported by Baicker and colleagues,¹⁴ producing a return on investment estimate of \$3.92 saved for every dollar spent. With a conservative annual program cost of \$300, the return on investment would be lower at \$1.88 saved for every dollar spent.

HEALTH RISK ANALYSIS There were 31,220

Johnson & Johnson employees and 169,153 comparison-group employees included in the health risk analysis after inclusion and exclusion criteria were applied (see Exhibit 3). Comparing the two samples, in general, there were more women in the Johnson & Johnson sample than in the comparison companies.

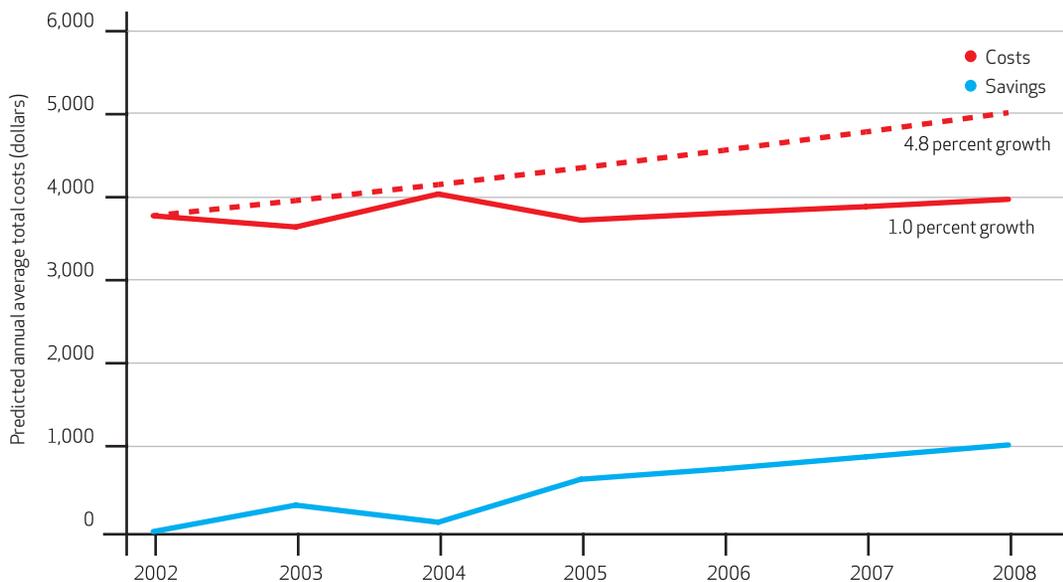
Johnson & Johnson employees had a lower average predicted probability of being at high risk for six of the nine health risks examined: high blood pressure, high cholesterol, poor nutrition, obesity, physical inactivity, and tobacco use (Exhibit 4). The most favorable trends were for tobacco and obesity risks. The two health risks where Johnson & Johnson employees were at higher risk than those in the comparison group were psychosocial in nature: depression and stress.

Discussion

Johnson & Johnson's health promotion programs continue to improve employees' health and produce cost savings many years after they were first implemented. By our calculations, Johnson & Johnson's program is delivering a

EXHIBIT 2

Johnson & Johnson Adjusted Medical And Drug Costs Versus Johnson & Johnson Expected Medical And Drug Costs With Comparison-Group Trend



SOURCE Authors' analysis of data from Johnson & Johnson and sixteen comparison companies in the Thomson Reuters MarketScan Commercial Claims and Encounter Database. **NOTES** Sample included matched Johnson & Johnson employees ($N = 31,823$) and comparison-company employees ($N = 31,823$). The parameter measuring the difference in annual growth between Johnson & Johnson and the comparison group was -0.037 ($p < 0.001$). This indicates that Johnson & Johnson has a 3.7 percent lower average annual growth in costs compared to the comparison group. Johnson & Johnson estimates from logged growth curve model retransformed to dollars using year-specific smearing factors are shown in the solid red line. Dotted red line shows expected cost if Johnson & Johnson had the comparison group's average annual rate of growth as calculated from the retransformed model (4.8 percent). All costs are standardized to 2007 dollars, adjusted for inflation using the Medical Care Services Consumer Price Index (CPI) for medical care costs and Medical Care Commodities CPI for pharmaceuticals.

EXHIBIT 3

Johnson & Johnson And Comparison-Group Health Risk Sample, 2005-08

Characteristic/sample	Year			
	2005	2006	2007	2008
NUMBER				
Johnson & Johnson	7,500	9,603	9,284	4,833
Comparison	20,800	33,650	55,178	59,525
PERCENT IN EACH AGE GROUP (YEARS)				
18-34				
Johnson & Johnson	31.6***	24.0***	25.2***	26.9
Comparison	25.6	29.9	27.7	27.0
35-44				
Johnson & Johnson	34.3***	34.9	35.0	33.7
Comparison	36.3	34.2	34.4	33.3
45-54				
Johnson & Johnson	26.2***	31.3***	29.4	29.6
Comparison	30.2	28.7	29.6	30.6
55-64				
Johnson & Johnson	7.8	9.8***	10.4***	9.9
Comparison	7.8	7.2	8.3	9.2
PERCENT FEMALE				
Johnson & Johnson	45.7***	45.6***	47.2***	45.0***
Comparison	30.0	25.3	31.8	32.8
PERCENT IN EACH REGION				
Northeast				
Johnson & Johnson	47.6***	48.0***	50.0***	48.8***
Comparison	20.4	23.2	18.8	18.2
North Central				
Johnson & Johnson	16.1***	14.9***	14.5***	15.0***
Comparison	26.1	21.2	31.9	32.5
South				
Johnson & Johnson	24.3***	22.8***	22.9***	24.1***
Comparison	44.9	43.3	36.4	36.2
West				
Johnson & Johnson	12.1***	14.3***	12.7	12.2
Comparison	8.5	12.3	13.0	13.1

SOURCE Authors' analysis of data from Johnson & Johnson health assessment vendors and data from six comparison companies in the Thomson Reuters MarketScan Health Risk Assessment Database. **NOTES** Sample included all Johnson & Johnson employees and comparison-company employees who met eligibility criteria and had completed at least one health assessment between 2005 and 2008. Chi-square tests of significance were used to test for differences. *** $p < 0.01$

positive return on investment estimated at \$1.88–\$3.92 for every dollar spent in its third decade of existence.

This study adds new evidence to the health promotion evaluation literature by reporting the experience of employees at an entire company along with that of employees at other like companies, rather than studying the effect of program participation within an organization. In this multilevel analysis, all workers exposed to Johnson & Johnson's comprehensive health and wellness program were compared to workers at sixteen other companies not exposed to that program for the health care cost analysis.

By comparing treatment and comparison-group subjects, this analysis applies a novel approach that addresses an ongoing problem of

selection bias in corporate health promotion research. Furthermore, the analysis of Johnson & Johnson's experience offers evidence that health promotion program savings may be long lasting and not reflective of the immediate effects of implementing a health promotion or managed care program.

As noted above, the effects reported here are likely to be understated because the comparison employers, all large clients of Thomson Reuters, had also implemented health promotion and cost management programs during the study period, to varying degrees. In addition to employee health risks, there are many other forces driving medical care cost growth, not directly influenced by health promotion programs.

Although our analysis points to very promis-

EXHIBIT 4

Johnson & Johnson And Comparison-Group Adjusted Health Risk Trends, 2005-08

Health risk/sample	At risk each year (%)				Average difference ^a
	2005	2006	2007	2008	
ALCOHOL USE					
Johnson & Johnson	2.0***	3.0	3.3**	3.1***	0.0
Comparison	3.1	3.2	2.9	2.4	
BLOOD PRESSURE					
Johnson & Johnson	11.1	6.5***	6.7***	7.0***	-4.1
Comparison	11.6	12.7	12.3	11.1	
CHOLESTEROL					
Johnson & Johnson	8.3	6.8***	6.8	7.6**	-0.3
Comparison	8.8	7.9	7.3	6.8	
DEPRESSION					
Johnson & Johnson	5.9***	7.4***	7.3***	6.3***	3.8
Comparison	3.5	3.1	2.6	2.4	
NUTRITION					
Johnson & Johnson	73.2***	67.5***	66.5***	65.1***	-6.7
Comparison	77.2	75.6	73.9	72.6	
OBESITY					
Johnson & Johnson	21.1***	19.0***	20.8***	21.5***	-6.6
Comparison	26.0	27.2	27.6	27.8	
PHYSICAL ACTIVITY					
Johnson & Johnson	37.2***	31.4***	31.8**	29.8***	-0.7
Comparison	31.9	35.9	33.0	32.2	
STRESS					
Johnson & Johnson	6.9***	12.6***	12.4***	10.9***	6.7
Comparison	4.7	4.0	3.9	3.5	
TOBACCO USE					
Johnson & Johnson	7.5***	4.4***	4.1***	3.8***	-10.6
Comparison	14.7	19.2	16.5	11.9	

SOURCE Authors' analysis of data from Johnson & Johnson health assessment vendors and data from six comparison companies in the Thomson Reuters MarketScan Health Risk Assessment database. **NOTES** Percentages shown are the predicted probabilities that the average employee at Johnson & Johnson and the comparison companies are at high risk for the stated health risk. Predicted probabilities were calculated from logistic regression models for each health risk and each year controlling for age, sex, and region. Sample included all Johnson & Johnson employees and comparison-company employees who met eligibility criteria and had completed at least one health assessment between 2005 and 2008. ^aAverage difference is the difference between Johnson & Johnson and the comparison companies in 2005-08. ***p* < 0.05 ****p* < 0.01

ing outcomes related to health improvements among employees and medical care cost attenuation for the company, there are many unanswered questions. With the growing evidence of savings, what are the key factors that drive program success?

Johnson & Johnson's program is comprehensive; features both individual risk reduction and environmental components; and achieves a high participation rate, based on the company's benefit plan design that directly links an employee's medical insurance premium to program participation. In addition, Johnson & Johnson has an ingrained "culture of health," exemplified by strong leadership that encourages program participation and health improvement.

Future studies should examine the importance of various structural and program delivery vari-

ables in an organization, such as environmental supports, policy changes, and company culture, that influence health and financial outcomes.

Although this study applied a quasi-experimental design, a true randomized experiment would be the only way to causally relate the health promotion program to cost savings and health improvements. Such an experiment would be difficult to conduct in a real-world corporate setting where company executives are reluctant to offer a set of benefits or programs to one group but not another.

The Affordable Care Act of 2010 emphasizes worksite wellness programs. For instance, the law provides grants to small employers that establish wellness programs. In addition, the federal government is required to provide technical assistance and other resources to employ-

ers of all sizes to support their design and implementation of wellness programs.

The law also permits employers to offer larger employee financial incentives than was the case previously for participation in wellness programs and achieving positive health outcomes. Results from this study suggest that these legislative initiatives are warranted. Companies adopting comprehensive wellness programs that are similar to those offered at Johnson & John-

son should feel more secure that their investments in employee health have the potential to lower health risks among employees and possibly save the company and its employees money.

Given that the vast majority of American adults participate in the workforce, positive effects from health promotion programs could lead to population health benefits and medical care cost savings for the nation as a whole if such programs were widely implemented. ■

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Rachel Henke, Ron Z. Goetzel, Janice McHugh, and Fik Isaac evaluate Johnson & Johnson's thirty-two-year employee worksite health promotion program for the period 2002–08. They compared Johnson & Johnson's initiative against the wellness and prevention programs of other large companies and found that Johnson & Johnson's program yielded greater reductions in employee medical spending over time and greater improvements in several health indicators. The sheer longevity of the Johnson & Johnson program "provided an unequalled opportunity to examine the long-term impact of wellness programs on employed populations," Henke says.

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