

Gauging Progress toward a Healthier IU: Focus on IUPUI

A Comparison of the IU Workplace Health and Wellness Survey Results from 2013 and 2015

1 INTRODUCTION

In 2013, Indiana University implemented the first university-wide survey of employee health and wellness. In support of building a culture of health and wellness across all campus locations, the aims of the IU Workplace Health & Wellness Survey were to:

- 1) establish baseline measures of workplace health to gauge the impact of the Healthy IU initiative over time;
- 2) understand how well IU workplaces are supporting the health of employees;
- 3) identify health advantages and challenges of this university community;
- 4) identify opportunities for change that are actionable from an organizational standpoint.

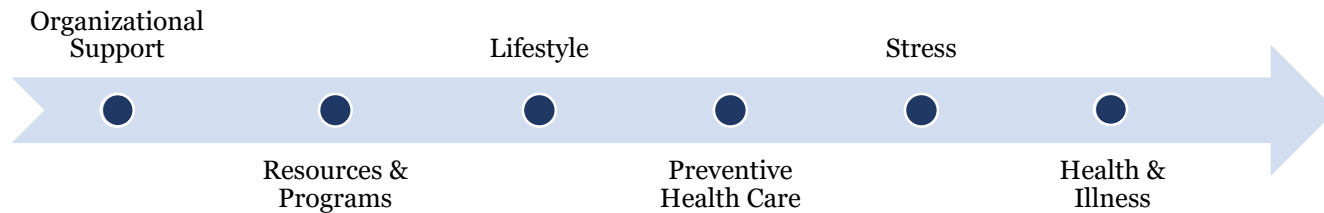
In 2015, the survey was repeated. This report focuses on the first aim, as we systematically compare 2013 survey results for IUPUI with 2015 results to assess our progress toward a healthier IU.

2 METHODS

2.1 SURVEY CONTENT

The wording of most questions in the 2015 survey remained consistent with 2013 wording, enabling valid year-to-year comparisons. Some questions were modified, deleted, or added to improve the value of information for organizational planning. Please note in the tables that follow, “NA” identifies questions that were Not Asked or Not Asked in a comparable way in both years.

The survey’s main content areas are shown on the diagram below along a continuum of change. Moving from left to right along the continuum, the difficulty and time required for change increases. Areas further to the left represent the greatest potential for rapid change when organizational interventions are implemented; right-most areas are anticipated to take far longer to reflect change. We will consider the changes observed at IUPUI between 2013 and 2015 in the context of this continuum.





2.2 COMPARATIVE ANALYSIS & INTERPRETATION

A total of 1,694 IUPUI employees responded to our survey, yielding a 24.1% response rate. Quantitative data were analyzed using IBM SPSS Statistics 23.0 (IBM Corp., 2015). For valid comparison, survey data for both survey years (2013 and 2015) were weighted to the 2013 employee population using three weighting variables: sex (female or male), race/ethnicity (Hispanic/Latino, African American/Black, other minority, or White), and job type (faculty or staff). Respondent demographics compared to the employee population overall are shown in the table below. There is consistency in the demographic characteristics of respondents in 2015 compared to 2013. In both years, there were proportionally more females and those of white race. The weighting process compensates for such differences.

Demographics	2013		2015	
	Respondents	Full-Time Employees	Respondents	Full-Time Employees
Sex				
Female	71%	54%	70%	54%
Male	29%	46%	30%	46%
Race/Ethnicity				
Black, non-Hispanic	8%	9%	9%	10%
Hispanic	2%	3%	3%	3%
White, non-Hispanic	84%	75%	81%	74%
All others	6%	14%	8%	13%
Job Type				
Staff	72%	77%	73%	77%
Faculty	28%	23%	28%	23%

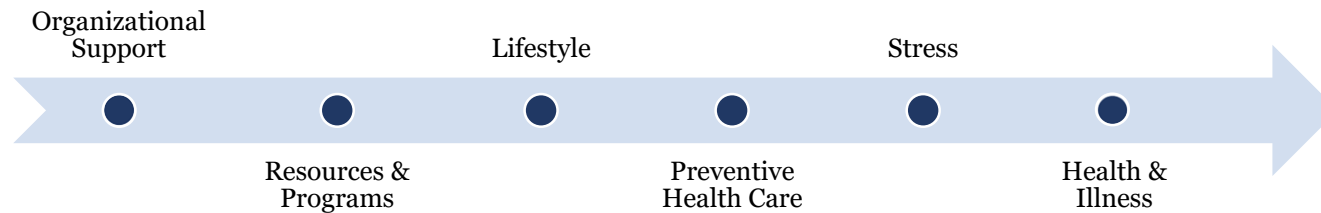
**2013 Full-Time Employee proportions have been corrected since originally reported*

For each question being compared, we calculated and considered two measures of change, described and explained in the table below: 1) absolute change, and 2) relative change. Further, we considered both the statistical and practical significance of these changes in the rates. Chi-square testing was conducted to assess whether the absolute difference in rates was *statistically significant*. However, given the large number of respondents to our survey University-wide (4,314), differences may be statistically significant though not practically meaningful, so criteria were set for both statistical and practical significance. The benchmark set for practical significance was $\geq 10\%$ relative change, either better or worse.

	Absolute Change	Relative Change
Meaning	The simple difference between the two rates being compared	Expresses the change <i>relative</i> to the starting point; allows us to compare the degree of change across factors that vary widely in prevalence
Calculation	= 2015 Rate - 2013 Rate	= $\frac{(2015 \text{ Rate} - 2013 \text{ Rate})}{2013 \text{ Rate}}$
Example 1: Employees told they have pre-diabetes or borderline diabetes	= 7.5% - 5.6% = 1.9% A small absolute change but... 	= $\frac{(7.5\% - 5.6\%)}{5.6\%} = 1.9\%$ 5.6% 5.6% = 33.9% A large relative change
Example 2: Employees who participated in some physical activities or exercises...in the past month	= 87.9% - 83.9% = 4.1% A larger absolute change than in example 1 but... 	= $\frac{(87.9\% - 83.9\%)}{83.9\%} = 4.1\%$ 83.9% 83.9% = 4.9% A much smaller relative change
Significance of Differences	Statistical significance evaluated at $\alpha=0.05$ using Chi-square testing	Practical significance if $\geq +/-10\%$ relative change

3 COMPARATIVE RESULTS

The IUPUI comparisons between 2015 and 2013 IU Workplace Health & Wellness Survey results are presented in this section, primarily in the form of tables. Each section focuses on a content area, proceeding from left to right along the continuum of change.



In comparing the survey measures comprehensively, we color-coded our interpretations based on the combination of statistical and practical significance. The color-coding is intended to provide a quick visual impression of the strength and degree of change observed in each content area.

	Improvement is statistically and practically significant
	Worsening is statistically and practically significant
	Change lacks statistical and/or practical significance

Also, the tables reflect whether or not there were interventions being implemented at IUPUI that focused on that aspect of workplace health in the two-year period. Such interventions were provided by a variety of groups, and information regarding these interventions was provided to the survey team by Healthy IU. Emblems distinguish between two levels of intervention:

 Face-to-face intervention provided

 Communication only provided

3.1 ORGANIZATIONAL SUPPORT

TABLE 1. ORGANIZATIONAL SUPPORT	COMPARISON						
	2013	2015	Absolute Change	Relative Change	p-value	Change Code	Intervention Provided
Q10. Overall, how supportive is IU of your personal health? (Percent rating 7-10 on scale of 1-10)	65.9%	74.9%	9.0%	13.7%	<0.001*		▲
Q9. Overall, how safe do you think your workplace is? (Percent rating 7-10 on scale of 1-10)	81.7%	85.9%	4.2%	5.1%	<0.001*		
Q20. All in all, how satisfied would you say you are with your job? (Percent satisfied/very satisfied)	81.0%	81.4%	0.4%	0.5%	0.652		
Q11. Employees who Agree or Strongly Agree...							
The people you work with take a personal interest in you.	NA	69.9%					
In your workplace, your co-workers support your efforts to be healthy.	62.5%	62.8%	0.3%	0.5%	0.700		▲
Your supervisor is concerned about the welfare of those under him or her.	NA	72.3%					
In your workplace, management considers workplace health and safety to be important.	61.2%	64.5%	3.3%	5.4%	<0.001*		
IU has provided you with the opportunity to be physically active .	37.5%	52.6%	15.1%	40.3%	<0.001*		Ψ
IU has provided you with the opportunity to eat a healthy diet .	36.7%	42.9%	6.2%	16.9%	<0.001*		
IU has provided you with the opportunity to live tobacco free .	85.8%	85.0%	-0.8%	-0.9%	0.227		▲
IU has provided you with the opportunity to manage your stress .	29.6%	42.0%	12.4%	41.9%	<0.001*		Ψ
IU has provided you with the opportunity to work safely .	71.4%	77.4%	6.0%	8.4%	<0.001*		▲

*Statistically significant; NA = not asked/not comparably asked in given year

The content area of Organizational Support showed statistically and practically significant improvements in four measures (green). The greatest relative improvement (41.9% increase over 2013) was in the percentage of employees who say that IU has provided them with the opportunity to manage their stress. Levels of stress reported by employees in the initial 2013 survey were a top concern, and subsequent efforts were focused on improving this area of wellness. There was also a 40.3% increase over 2013 in the percentage of employees who say that IU has provided them with the opportunity to be physically active. Perceptions of University support for personal health and for opportunities to eat a healthy diet also were both statistically and practically significant, although to a much lesser extent (13.7% and 16.9%, respectively). Remaining measures did not show significant practical change.

3.2 RESOURCES & PROGRAMS

TABLE 2. Q12: Are the following PROGRAMS OR RESOURCES currently available at your workplace? (Percent who said yes)	COMPARISON						
	2013	2015	Absolute Change	Relative Change	p-value	Change Code	Intervention Provided
Access to clean drinkable water	NA	86.8%					
Opportunities to buy fresh fruits and vegetables	40.5%	49.7%	9.2%	22.7%	<0.001*		Ψ
Healthy food options in vending machines	14.3%	25.3%	11.0%	76.9%	<0.001*		Ψ
Healthy food options to purchase in the cafeteria or other food service	60.0%	63.8%	3.8%	6.3%	<0.001*		Ψ
1-on-1 nutritional counseling	NA	24.1%					Ψ
Stress management or stress reduction classes/programs	19.6%	33.0%	13.4%	68.4%	<0.001*		Ψ
A convenient place to work out or exercise (2015) - A place to work out or exercise such as an onsite exercise room (2013) †	15.8%	31.8%	16.0%	101.3%	<0.001*		Ψ
A place to bike or walk	66.8%	76.0%	9.2%	13.8%	<0.001*		Ψ
A walking program	14.4%	29.3%	14.9%	103.5%	<0.001*		Ψ
Ergonomics (work station or computer setup, proper lifting, etc.)	44.5%	57.5%	13.0%	29.2%	<0.001*		▲
Flu shots at work	91.5%	90.5%	-1.0%	-1.1%	0.041*		▲
Employee Assistance Program (access to professional counseling)	60.2%	66.1%	5.9%	9.8%	<0.001*		Ψ
Programs to help people stop smoking (of current smokers)	81.9%	82.0%	0.1%	0.1%	0.993		▲
Healthy weight/weight loss programs	33.2%	43.6%	10.4%	31.3%	<0.001*		Ψ
Blood pressure monitoring device available for self assessment	10.4%	35.1%	24.7%	237.5%	<0.001*		Ψ
A true smoke-free workplace	85.4%	69.5%	-15.9%	-18.6%	<0.001*		▲
A private area/lactation room for moms who are breast-feeding (of women aged 18-44)	30.6%	44.7%	14.1%	46.1%	<0.001*		▲
Signs that encourage stair use	20.2%	23.2%	3.0%	14.9%	<0.001*		▲
Markers that identify walking trails	NA	18.5%					
Easy to access maps of walking trails	NA	17.3%					Ψ
A designated person who communicates health and wellness information to your work group	NA	23.9%					▲

*Statistically significant; NA = not asked/not comparably asked in given year

Improving employee awareness and access to health-supporting Resources & Programs at their IU workplace was identified in 2013 as an opportunity for rapid change and organizational action. The numerous intervention emblems shown in the final column of this table reflect the broad action taken in this area. Healthy change is clearly evidenced in the broad improvements seen in 11 measures – improvements that are both statistically and practically

significant. In fact, relative increases of over 100% were measured for blood pressure self-monitoring devices, walking programs, and access to a convenient place to exercise. Only the percentage of employees with access to “a true smoke-free workplace” significantly worsened (by 18.6% relative to 2013). Four measures did not change substantially per our criteria: access to healthy food options in cafeteria/food service, flu shots at work, presence of an employee assistance program (EAP), and the availability of smoking cessation programs.

3.3 LIFESTYLE

TABLE 3. LIFESTYLE INFLUENCES ON HEALTH	COMPARISON						
	2013	2015	Absolute Change	Relative Change	<i>p-value</i>	Change Code	Intervention Provided
Q22. Employees getting enough restful sleep to function well in job and personal life - always/most of the time	57.7%	57.6%	-0.1%	-0.2%	0.904		Ψ
Q64 & Q65. Employees whose BMI falls within normal range (18.5-24.9)	38.4%	33.6%	-4.8%	-12.5%	<0.001*		Ψ
Q23. Employees who do not smoke cigarettes	97.0%	97.3%	0.3%	0.3%	0.281		▲
Q24. Current smokers who stopped smoking for one day or longer because they were trying to quit	61.7%	43.4%	-18.3%	-29.7%	<0.001*		
Q25. Employees who participated in some physical activities or exercises...during the past month	81.6%	86.2%	4.6%	5.6%	<0.001*		Ψ
Q26 and 27. Employees meeting the aerobic physical activity guidelines	60.0%	60.5%	0.5%	0.8%	0.755		
Q28. Employees meeting the strength-training guidelines	50.0%	46.7%	-3.3%	-6.6%	<0.001*		
Q26-28. Employees meeting both aerobic and strength-training guidelines	41.0%	39.0%	-2.0%	-4.9%	0.035*		
Q33. (Of those who mostly sit on the job) Employees who are able to get up and move around 8 or more times during a usual 8 hour work day	53.7%	45.3%	-8.4%	-15.6%	<0.001*		Ψ
Q18. Employees who Always/Usually get the social and emotional support they need	60.9%	63.7%	2.8%	4.6%	0.001*		Ψ

*Statistically significant; NA = not asked/not comparably asked in given year

The content area of Lifestyle Influences on Health moves us toward the middle of the continuum of change. None of the changes in lifestyle measures met our criteria for being both statistically and practically significant for improvement. However, three of the measures met the criteria for being significantly worse in 2015 compared to 2013: the percentage of employees with a normal BMI, the percentage of smokers who tried to quit smoking, and the percentage of employees who are able to get up and move around 8 or more times during a work day. The remaining measures were stable over the 2013-2015 time period.

3.4 PREVENTIVE HEALTH CARE

TABLE 4. PREVENTIVE HEALTH CARE	COMPARISON						
	2013	2015	Absolute Change	Relative Change	<i>p-value</i>	Change Code	Intervention Provided
Q34. Employees who visited a doctor for a routine checkup within the past 2 years	86.2%	85.0%	-1.2%	-1.4%	0.061		
Q35. Employees who had blood pressure checked by a health professional within the past year	90.7%	91.4%	0.7%	0.8%	0.149		Ψ
Q36. Employees who last had a cholesterol test less than 5 years ago	96.0%	96.4%	0.4%	0.4%	0.124		Ψ
Q37. Employees who had a lab test for high blood sugar or diabetes within the past 3 years	75.9%	78.7%	2.8%	3.7%	<0.001*		Ψ
Q38. Employees who had a seasonal flu vaccine during the past 12 months	71.3%	65.8%	-5.5%	-7.7%	<0.001*		▲

*Statistically significant; NA = not asked/not comparably asked in given year

2015 Preventive Health Care survey measures were stable and consistent overall with 2013 measures. Changes were not practically significant. Given the excellent baseline rates reported by IUPUI employees for routine checkups, blood pressure checks, and cholesterol testing, there is little room for improvement in this area, while the proportions undergoing blood sugar testing and receiving a seasonal flu vaccine show some room for improvement.

3.5 STRESS

TABLE 5. IMPACT OF STRESS	COMPARISON						
	2013	2015	Absolute Change	Relative Change	<i>p-value</i>	Change Code	Intervention Provided
Q21. Employees who said stress (from all sources at work or at home) had <i>a lot</i> or <i>some</i> impact on their health in the past year	68.7%	69.4%	0.7%	1.0%	0.476		Ψ
Q19. Employees who responded Always/Often							
How often do you find your work stressful?	41.2%	41.1%	-0.1%	-0.2%	0.950		Ψ
How often do things going on at <u>work</u> make you tense or irritable at home?	NA	27.1%					
How often do things going on at <u>home</u> make you tense or irritable at work?	NA	7.8%					
How often in past month have you felt used up at the end of the day?	47.1%	46.9%	-0.2%	-0.4%	0.907		Ψ

*Statistically significant; NA = not asked/not comparably asked in given year

Measures of the impact of stress persisted from 2013 to 2015 with little change overall. In 2015, we added two new measures to help us better understand the interplay of stress between home and work. Based on these results, work stress affects employees at home more often than home stress affects employees at work. Despite greater reported access to opportunities to manage stress (as seen in Table 3.1), we do not yet see a reduction in the impact of that stress on employees' health.

3.6 HEALTH & ILLNESS

TABLE 6. HEALTH & ILLNESS	COMPARISON						
	2013	2015	Absolute Change	Relative Change	p-value	Change Code	Intervention Provided
Q14. Employees rating their health as fair or poor	9.5%	10.8%	1.3%	13.7%	0.010*		
Q15. Employees with one or more days of poor physical health in past 30	36.4%	36.4%	0.0%	0.0%	0.932		
Q16. Employees with one or more days of poor mental health in past 30	42.6%	42.4%	-0.2%	-0.5%	0.833		
Q17. Employees with one or more days in past 30 when poor physical/mental health interfered with usual activities	29.6%	30.3%	0.7%	2.4%	0.332		
<i>[Employees responding yes - Have you EVER been told by a doctor, nurse, or other health professional that you have...]</i>							
Q39. High blood pressure	24.2%	25.1%	0.9%	3.7%	0.223		Ψ
Q39. Borderline high or pre-hypertensive	9.3%	11.2%	1.9%	20.4%	<0.001*		Ψ
Q42. High blood cholesterol	38.3%	35.8%	-2.5%	-6.5%	0.003*		Ψ
Q45. Diabetes	6.3%	7.0%	0.7%	11.1%	0.068		
Q45. Pre-diabetes or borderline diabetes	4.9%	7.0%	2.1%	42.9%	<0.001*		Ψ
Q48. Asthma - ever	15.3%	16.6%	1.3%	8.5%	0.042*		
Q49. Asthma - among those ever diagnosed, those who <i>currently</i> have asthma	NA	71.4%					
Q51. Arthritis	22.6%	30.6%	8.0%	35.4%	<0.001*		
Q53. Arthritis-related activity limitations	37.7%	41.2%	3.5%	9.3%	0.043*		
Q57. Depressive disorder	21.9%	25.8%	3.9%	17.8%	<0.001*		▲
Q60. Heart disease	3.2%	3.4%	0.2%	6.3%	0.574		▲
Q61. Carpal tunnel syndrome	10.0%	10.9%	0.9%	9.0%	0.100		
<i>[Employees who self-identified having ...]</i>							
Q54. Chronic or recurrent low back pain	26.2%	30.1%	3.9%	14.9%	<0.001*		
Q64 and Q65. Obesity (calculated BMI ≥30.0)	28.7%	32.6%	3.9%	13.6%	<0.001*		Ψ
Q64 and Q65. Overweight (calculated BMI 25.0-29.9)	31.6%	32.6%	1.0%	3.2%	0.226		
Q62. Health problems they think may be due to physical surroundings at workplace	NA	23.2%					

*Statistically significant; NA = not asked/not comparably asked in given year

The final content area, to the far right of the continuum of change, describes the Health & Illness measures of IUPUI employees. No significant improvements were observed. However, in this content area, the color-coded changes cannot be interpreted in the same straightforward manner as in previous sections. Some of the measures coded red (for significant increases) may, in fact, be positive and health-promoting. For example, an increase in those diagnosed with borderline high or pre-hypertension as well as pre-diabetes or borderline diabetes may mean that employees are being screened and made aware of their risk at an earlier point where prevention of full disease is possible.

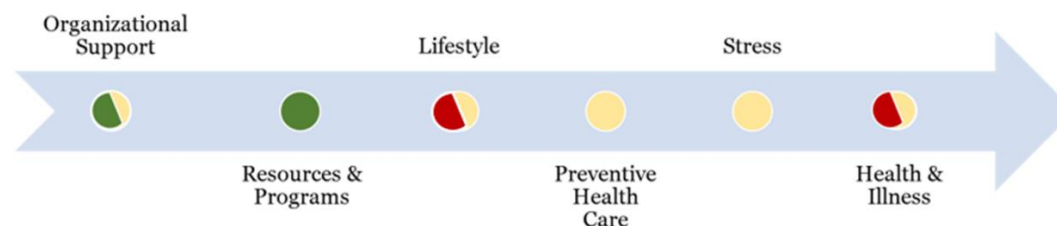
Overall, more employees reported their health being fair or poor in 2015 compared to 2013. In addition, significant increases in the proportion of employees ever diagnosed with arthritis, arthritis-related activity limitations, chronic back pain, and depression were reported. Obesity remains an area of challenge, with more employees reporting BMIs exceeding 30.0 (relative change of 14.9%).

It is important to note that most of these conditions develop over a period of years. A leveling-off of disease rates is considered success through fewer new diagnoses among employees, as it is essentially impossible for employees who have once been diagnosed with a condition to be “un-diagnosed.” Stabilization of these rates is a long-term aim.

4 CONCLUSIONS

What does this comparison of the 2013 and 2015 survey results tell us?

- Statistical and practical significance, as well as consistency between 2013 and 2015, give us confidence that observed changes (for better or worse) are **real changes** in the IUPUI community.
- **Improvements** are seen particularly in those content areas to the left of the continuum of change.
- Where interventions were implemented, on the whole, more change occurred. In contrast, few measures significantly improved that did not have an associated intervention.
- We **held our ground** in some longer-term outcomes, but **worsened in others** during the 2-year period. The most challenging outcomes, especially disease rates, take longer to show improvement, as chronic diseases typically develop over a period of years, and once an employee is diagnosed, they cannot revert back to the undiagnosed group. Holding ground in long-term outcomes such as disease rates is, therefore, success.
- We still have work to do, but we are moving in the right direction.





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A team within the **IU Richard M. Fairbanks School of Public Health at IUPUI** designs, conducts, and analyzes the IU Workplace Health & Wellness Survey on behalf of the multi-campus IU community. We are a team committed to employee confidentiality and quality data that drive healthy change. *Any questions? Contact us at bhealthy@iu.edu*

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