

Health Impact Assessment

Worksite Wellness in Davidson, NC

A Health Impact Assessment detailing the current state of worksite wellness among major employers in Davidson, NC, recommendations for improving worksite wellness, and the potential health impacts of implementing these recommendations.

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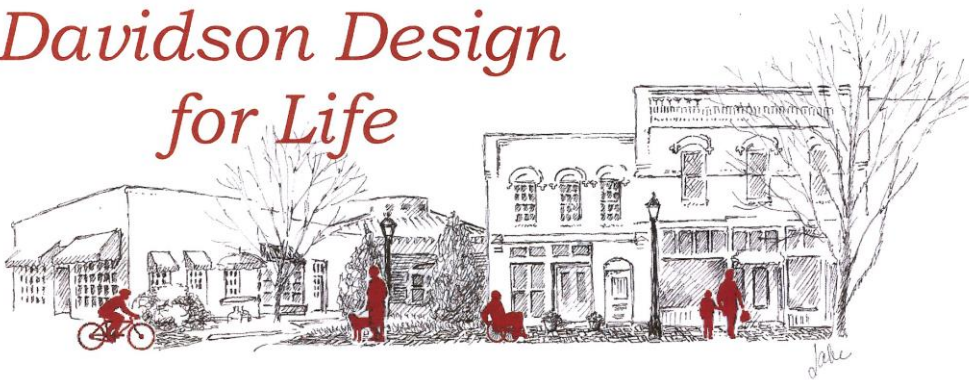
Davidson Design for Life

Davidson Design for Life is a 3-year initiative of the town of Davidson, North Carolina, to use Health Impact Assessments to promote healthy community design. Davidson was awarded a grant by the Healthy Community Design Initiative of the Center for Disease Control and Prevention's National Center for Environmental Health, in September 2011. There were five other grant winners, including the local health departments in San Francisco, Baltimore, and Douglas County, Nebraska, and the state health departments of Oregon and Massachusetts. Davidson Design for Life is the only grantee operating outside of a health department and the only one in the Southeast. Operating within the town's planning department, Davidson Design for Life will demonstrate how HIA works in a local government setting of a small town. Due to limited resources, Davidson Design for Life has relied on partnerships to conduct the 3 HIAs and 2 trainings required yearly by the grant. These partnerships were formed through the Davidson Design for Life Regional Advisory Commission, consisting of statewide public health and planning leaders, nonprofit organizations, and universities (Hebert, 2012).

The mission of Davidson Design for Life is "to help Davidson be a community that is healthy today and even healthier tomorrow while serving as a model for other small towns by implementing healthy design." Davidson Design for Life has the following four goals:

1. Develop a better understanding of the HIA process as it applies to small, rural towns and use HIA to evaluate and inform built environment decisions by the Town of Davidson as well as regional and statewide decision-makers.
2. More fully and broadly engage our citizens in the decision making process to make healthier lifestyle options available.
3. Collaborate with local, regional, and national partners to promote the use and understanding of HIA and healthy community design principles.
4. Document and share the steps we take and the partnerships we form in order to serve as a model for communities to follow nationwide.

Davidson Design for Life



Executive Summary

Overall, worksite wellness programs are very worthwhile, as they can result in significant health improvement of the workforce and economic savings for businesses. With the number of working adults developing chronic diseases or having risk factors for chronic diseases on the rise, addressing employee health is critical. Having an unhealthy workforce, contributes to rising health care costs, disability costs, and worker's compensation expenses, as well as reduced productivity and increased absenteeism. The risk factors for chronic disease, including obesity, high blood pressure, and high cholesterol, are directly associated with productivity. In fact, those with many risk factors are 12.2% less productive than those with no risk factors. Additionally, as each risk factor is removed, there is a 1.9% increase in productivity. It is also worthwhile to note that the worksite can have harmful effects on health through multiple mechanisms such as exposure to hazards, discrimination, insufficient income, chronic stress, and unreasonable or inconsistent work schedules.

There is substantial evidence that high-quality worksite wellness programs improve the health of employees and save employers money. The return on investment for medical costs has been estimated at \$3.27 for every dollar spent on worksite wellness. The return on investment for absenteeism is estimated to be between \$2.50 and \$10.10 for every dollar spent. A review of 32 worksite wellness programs found that 87.5% of them yielded cost savings and all of them reduced absenteeism. The key to having a successful worksite wellness program is to create a comprehensive program, which includes 1) health education, 2) supportive social and physical environments, 3) integration of the worksite wellness program into your organization's culture, 4) linkage to related programs, and 5) screening programs. For the purposes of this HIA, we categorized worksite wellness initiatives into programmatic initiatives, policy-oriented, and structural initiatives.

Currently, about half of the United States employers with more than 50 employees offer wellness programs. However, only 6.9% of employers offer a comprehensive worksite wellness program. Larger employers are more likely to offer comprehensive programs, with 24.1% of employers with more than 750 employees having comprehensive programs, compared to only 4.6% of those with 50-99 employees. It is also important to note that small businesses (those with less than 500 employees) represent 99.7% of the employers and employ 50.1% of the workforce, so worksite wellness programs at small businesses have great potential to improve public health.

Davidson, North Carolina has 237 businesses, the largest four being Ingersoll-Rand, Davidson College, MSC Industrial Supply Company, and Carolinas Healthcare System. Davidson's largest employers are doing well regarding worksite wellness. We were able to interview Ingersoll-Rand, Davidson College, and Carolinas Healthcare System and determined that these facilities offer comprehensive worksite wellness programs. However, since these are very large businesses with multiple sites and greater resources at their disposal for worksite wellness programs, additional research is needed to find out how Davidson's small businesses compare.

Davidson Design for Life proposes the following recommendations for the Town of Davidson to improve worksite wellness in Davidson:

1. Organize a corporate challenge through the Town of Davidson to promote health and wellness among all Davidson employers.
2. Distribute surveys to additional employers and employees in Davidson, NC.
3. Support a trained worksite wellness coordinator at a local level.
4. Expand the worksite wellness capacity of small businesses in Davidson.
5. Partner with larger businesses to improve worksite wellness initiatives for Town of Davidson employees.

Davidson Design for Life proposes the following recommendations for Davidson employers to improve worksite wellness in Davidson:

1. Aim to provide comprehensive worksite wellness programs for employees.
2. Focus on providing high-quality worksite wellness programs.
3. Address the specific needs of the employees of each business.
4. Focus on smoking cessation and alcohol use reduction when planning worksite wellness initiatives.
5. Build partnerships among businesses, both large and small, to provide comprehensive, high-quality worksite wellness programs.

1. Introduction to Health Impact Assessments (HIA)

The National Research Council defines HIA as:

“A systematic process that uses an array of data sources and analytical methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. HIA provides recommendations on monitoring and managing those effects” (National Research Council of the National Academies, 2011).

Health Impact Assessments follow a six-step process to gather information and systematically evaluate the effects of a proposed project on the health of a population. The six steps are: screening, scoping, assessment, recommendations, reporting, and monitoring and evaluation. Each of these steps is further explained in Figure 1. The process is fluid, with each step of the process typically influencing the others. HIAs are applied to the 4Ps: policies, plans, programs, and projects. This flexibility allows HIAs to be used in various sectors to evaluate diverse types of decisions. HIAs are also participatory, incorporating stakeholder and public input. The HIA process assesses the distribution of health impacts associated with a decision in order to address health inequities. Finally, HIAs are proactive, meaning they must be completed before a decision is made, to allow for the HIA recommendations to be considered within the decision-making process.

2. Purpose

The purpose of this HIA is to assess the current state of worksite wellness in Davidson, North Carolina. Additionally, this HIA will examine potential mechanisms by which the Town of Davidson can assist or support small and large employers in efforts to increase worksite wellness capacity. By increasing the worksite wellness capacity, the health of both the employees and their families in Davidson should improve.

3. Methodology

For this HIA, several methods were used to thoroughly assess the potential effects of worksite wellness in Davidson, NC. A literature review was conducted to determine: what the field of worksite wellness includes, various types of worksite wellness programs offered, and both the health and economic effects of these programs. Interviews were conducted with business leaders connected with worksite wellness initiatives at major employers, including human resources department staff and wellness coordinators. Surveys were developed to distribute to employees of these businesses to determine their interest in and preferences for worksite wellness. These surveys can be found in Appendices D-F of this report. A summary of the relevant literature and major findings from these interviews are presented in this report. Using this information, recommendations were made to increase worksite wellness in Davidson and improve the health of Davidson employees.



Figure 1. The Health Impact Assessment Process

4. Introduction to Worksite Wellness

4.1 Health Status of the U.S. Workforce

Chronic conditions, including diabetes, heart disease, [pulmonary conditions](#), and mental illness have become a major burden in the United States, decreasing quality of life and leading to premature death and disability. Recently, chronic diseases have begun to affect Americans earlier in life; therefore, chronic disease is affecting people during their working years, rather than during their retirement. The number of working adults with a chronic disease has risen 25 percent in the past ten years, from 46 million to 57.7 million adults (Hoffman and Schwarts, 2008). Currently, 23% of adults living in Mecklenburg County have at least one chronic disease, and 20% have two or more chronic diseases (Mecklenburg County Health Department, 2013).

These chronic conditions cost businesses directly through rising and unsustainable health care costs, worker’s compensation, and disability costs. Additionally, chronic conditions lead to indirect costs through lost productivity, absenteeism, and employee turnover. It is estimated that employees with chronic diseases cost businesses four times more in indirect costs, such as missed workdays, than healthy employees. These indirect costs are influential since they outweigh the costs associated directly with health care (PricewaterhouseCoopers Health Research Institute, 2010). The direct medical costs associated with chronic disease are also substantial, accounting for more than 75% of the United States’ total medical care costs (CDC, 2009). See Table 1 for the average cost of hospitalizations in Mecklenburg County.

Table 1. Average Cost of Hospitalization Cases in Mecklenburg County, by Condition (Mecklenburg County Health Department, 2013).

Condition	Average Cost per case	Cases per year	Total Cost per year
Heart disease	\$44,423	5,954	\$264.5 million
Stroke	\$37,531	2,087	\$78.3 million
Cancer	\$56,333	2,489	\$140.2 million
Diabetes	\$22,589	1,610	\$36.4 million
Chronic lower respiratory disease	\$21,553	1,093	\$23.6 million
Total		13,233	\$543 million

In North Carolina specifically, the cost of treatment and lost productivity due to chronic disease was more than \$40 billion in 2003 and projected to be \$140 billion in 2023 (DeVol & Bedroussian, 2007). From 1991 to 2009, North Carolina experienced a 7.9% average annual percent growth in health care expenditures, the third highest percentage in the country, tied with Idaho and Utah, and surpassed by Alaska and Nevada (Kaiser Family Foundation, 2014). Additionally, North Carolina ranked 6th in the nation in 2012 for the highest average employer contribution for insurance premiums per enrolled employee, at \$4,637 (Kaiser Family Foundation, 2014).

A review of the literature published prior to 2008, yielded strong evidence that health risks of employees, including high [BMI](#), smoking, alcohol use, high [cholesterol](#), [high blood pressure](#), not using a seatbelt, stress, unhealthy eating, physical inactivity, and mental illness, are associated with higher health care costs and pharmaceutical costs. Specifically, those who smoke, are overweight, and inactive have 49% greater health care costs than those who have never smoked, are a healthy weight, and exercise 3 days a week. Such health risks are associated with 15-30% of health care costs. In 2003, each additional health risk was associated with a \$76 increase in pharmaceutical costs alone. Fortunately, as employees decrease the number of health risks, the health care costs decrease as well (Edington & Schultz, 2008). See Table 2 for data on the prevalence of these health risks and associated chronic diseases in Mecklenburg County, North Carolina, and the United States.

The literature review also demonstrates an association between these risks and productivity, absenteeism, and worker’s compensation. In fact, those in the “medium” risk category are 6.2% less productive at work, and those in the “high” risk category are 12.2% less productive than those in the “low” risk category. Specifically, obese women have twice the absenteeism as women of healthy weight, and male smokers have twice the absenteeism as male nonsmokers. Finally, 71% of worker’s

compensation costs are due to excess health risks. The review also states that as each of the risk factors is removed, there is a 1.9% increase in productivity (Edington & Schultz, 2008).

Table 2. Prevalence of Various Health Risks and Conditions by Geography (Kaiser Family Foundation, 2014; Mecklenburg County Health Department, 2013)

Risk Factor/Condition	Mecklenburg County (%)	North Carolina (%)	United States (%)
Obesity	62	65.8	63
High cholesterol	33	39	38
High blood pressure	28	32	31
No physical activity	20	25	23
Regular physical activity	--	46.9	51.4
Binge drinking	19	15	--
Eat >5 servings of fruit and vegetables daily	18	14	--
Current smoker	20	20.9	18.8
Poor Mental Health	--	32.1	35.6
Diabetes	9.5	10.4	10.2
Asthma	--	7.5	8.6
Disability	--	13.3	12.1

-- data is not available

4.2 How the Worksite Influences Health

Not only does the health status of employees affect costs and productivity, but the worksite also can influence health of employees, subsequently affecting their work. The workplace exposes employees to physical conditions that impact health, as well as provides a setting that can promote or discourage healthy behaviors. Worksites can positively and/or negatively influence health through the following mechanisms: physical working conditions, hazardous exposures, work schedules, commuting, control and decision-making, balance between efforts and rewards, organizational justice, social support, discrimination, work-related benefits, and income (Robert Wood Johnson Foundation, 2008). See Box 1 for more detail about these mechanisms.

Stress is a factor related to many of the mechanisms described above, including work schedules, commuting, decision-making, discrimination, and income. Stress can have a detrimental effect on health, and two-thirds of Americans report that work is a significant source of stress in their lives. This stress can come from a variety of sources, low salaries, heavy workloads, lack of opportunity for growth and advancement, and unrealistic job expectations. Other sources of stress include noisy work environments and long work hours. The health effects from stress alone are estimated to cost businesses \$200-300 billion in lost productivity (Health Advocate, 2009).

Box 1. Mechanisms by which the Worksite Impacts Health

- 1. Physical Working Conditions:** The type of work and tasks involved influence a worker's risk of physical injury and illness. For example, jobs requiring heavy lifting put workers at higher risk for muscle strains and injuries. On the other hand, sedentary desk jobs put workers at risk for obesity and related chronic conditions.
- 2. Hazardous Exposures:** Examples of workplace-related chemicals that cause illness include lead, asbestos, pesticides, ammonia, and aerosols. Additionally, hearing loss can result from constant exposure to a noisy work environment.
- 3. Work Schedules:** Evening and night shifts, holding multiple jobs, long work hours, and excessive overtime work can be detrimental to health by causing fatigue and sleep deprivation.
- 4. Commuting:** Longer commutes are associated with greater levels of stress, lower back pain, increased likelihood of obesity, and less time for leisure and social activities.
- 5. Control and Decision-Making:** Jobs with high demand and high levels of decision-making authority and skill utilization promote self-esteem and self-efficacy. However, workers with high demands, yet little decision-making authority, experience job strain and are at higher risk for chronic diseases and unhealthy coping behaviors.
- 6. Balance between Efforts and Rewards:** Perceived imbalance between a worker's efforts and rewards (in terms of earnings, benefits, recognition, job security, and career opportunities) has been associated with poor physical functioning, increased incidence of heart disease, and risk of impaired mental and social functioning.
- 7. Organizational Justice:** Low levels of organizational justice (decisions made without input from affected parties, not being treated fairly by supervisors, or not being treated with respect) is associated with long illness-related absences, higher morbidity, and increased mental health problems.
- 8. Social Support:** Mutual support between coworkers reduces job stress and other health problems.
- 9. Discrimination:** Discrimination based on gender, race, ability, and sexual orientation is harmful for mental and physical health.
- 10. Work-related Benefits:** Health insurance, paid sick leave, workplace wellness programs, and retirement benefits can all shape major health-related choices available to employees.
- 11. Income:** Well-paying jobs allow greater economic security and ability to secure wealth, enabling workers to access nutritious food, quality child care, education, and participate in other healthy behaviors.

4.3 The Current State of Worksite Wellness

Chronic conditions and health risks are largely preventable or manageable through lifestyle changes such as increased physical activity, improved nutrition, [tobacco cessation](#), and reduced alcohol consumption. To keep medical costs and the indirect costs associated with chronic diseases from continuing to increase, employers are turning to worksite wellness programs dedicated to creating a healthy worksite environment and helping employees adopt healthy lifestyles. Worksite wellness is an

effective method of reaching adults since they spend much of their time at work. It can also spread to the worker's family if benefits are extended to families or simply by the worker incorporating healthy habits into his or her family's routine.

Currently, about half of United States employers with more than 50 employees offer wellness promotion initiatives, which reach about 75% of the workforce (RAND Health, 2013). However, a 2004 national survey found that only 6.9% of employers offer a comprehensive worksite wellness program (Linnan, Bowling, Childress, Lindsay, & Blakey, et al., 2008). Comprehensive worksite wellness programs are defined as those that incorporate the five key elements defined in the Healthy People 2010 goals: health education, a supportive social and physical work environment, integration of health promotion into the culture of the organization, linkage to related programs, and worksite screening for lifestyle habits and health risks (Linnan, Bowling, Childress, Lindsay, & Blakey, et al., 2008). Refer to Box 2 for more detail about these elements. Larger employers were more likely to offer comprehensive programs, with 24.1% of sites with more than 750 employees offering such a program, compared with 11.3% of sites with 250 to 749 employees, 6.0% with 100 to 249 employees, and 4.6% with 50-99 employees. Additionally, worksites in manufacturing and business/professional services were most likely to have comprehensive programs (Linnan, Bowling, Childress, Lindsay, & Blakey, et al., 2008). The most common type of service offered was linkage to related programs, offered by 41.3% of worksites. Supportive social and physical environments were reported by 29.9% of worksites; integration into organizational structure was reported by 28.6% of worksites; health education was reported by 26.2%, and worksite screenings by 23.5% (Linnan, Bowling, Childress, Lindsay, & Blakey, et al., 2008).

Since comprehensive worksite wellness programs are most prevalent in large businesses, there is a large potential to improve public health by improving worksite wellness at small worksites, especially since small businesses (less than 500 employees) represent 99.7% of U.S. employers and employ 50.1% of the workforce (Linnan, Bowling, Childress, Lindsay, & Blakey, et al., 2008). Common barriers to implementing comprehensive worksite wellness programs include lack of employee interest, lack of resources, lack of participation by high-risk employees, lack of management support, conflicts with work demands, and lack of access to data (Linnan, Bowling, Childress, Lindsay, & Blakey, et

Box 2. Elements of a Comprehensive Worksite Wellness Initiative

- 1. Health education:** focuses on skill development and lifestyle behavior change along with information dissemination and awareness building, preferably tailored to employee's interests and needs.
- 2. Supportive social and physical environments:** environments that reduce barriers to employee engagement and reinforce a culture of health. Establishing norms for healthy behaviors and implementing policies that promote health and reduce risk of disease.
- 3. Integration of the worksite wellness program into your organization's culture:** includes support from upper management and dedicated wellness staff.
- 4. Linkage to related programs:** including employee assistance programs (EAPs) and other company functions and benefits (i.e. health benefits, safety) to optimize participation and employee engagement.
- 5. Screening programs:** initiatives that help employees assess their health risks and provides referrals to appropriate resources (i.e. health coaching, medical care) to ensure follow-up and appropriate treatment as necessary.

Source: Frederick County Chamber of Commerce Major Employer Group, 2012

al., 2008). The barriers are more substantial for small businesses due to limited staff, higher costs per capita, and lack of resources.

4.4 The Health and Economic Impacts of Worksite Wellness Programs

Worksite wellness initiatives have been successful at improving health of employees. For example, participation in a smoking cessation program has shown 30% reduction in smoking rate among five major employers (RAND Health, 2013). Participation in weight control programs for five years have been associated with a 1.9 reduction in [BMI](#) compared to nonparticipants with an average 0.5 increase in BMI over the same time period; similarly, participation in an exercise program for five years is associated with 1.5 additional days of exercise each week in the same employee population (RAND Health, 2013). Finally, a literature review of 13 wellness programs found that 62% of programs improved physical activity, 50% improved diet, and 50% found improvement in at least one physiological marker, including BMI, [cholesterol](#), and blood pressure (RAND Health, 2013). A long-term longitudinal study over 8 years found that participants in the wellness program had lower increases in BMI than the general population and that the most improvement in BMI, blood pressure, and cholesterol were among those at the highest risk levels at baseline. Long-term participation in this program improved BMI, blood pressure, and cholesterol (Neville, Merrill, & Kumpfer, 2011).

Not only have worksite wellness programs successfully improved the health of employees, they also have the potential to save businesses money in health care costs and other indirect costs. A literature review of 56 programs found that participants in workplace wellness programs had about 25% lower medical or absenteeism expenditures than non-participants (Chapman, 2003). Additionally, a recent review found the return on investment was \$3.27 for medical costs and \$2.73 for absenteeism for every dollar spent on worksite wellness programs (Baicker, Cutler, & Song, 2010). However, the return on investment for absenteeism is less certain with a wide range of \$2.50 to \$10.10 in the literature (Aldana, 2001). A review of 32 programs that examined the economic impact of worksite health promotion on medical costs determined that 28 (87.5%) of them yielded cost savings, and all of the 14 programs that examined the impact on absenteeism found that these programs reduced absenteeism (Aldana, 2001).

Pelletier (2011) has completed a thorough literature review of worksite wellness programs and their impact on health outcomes and savings through 2010, including over 200 studies. He states that the vast majority of studies show positive health and cost outcomes from worksite wellness programs and argues that the question is no longer whether or not an employer should have a program, but to focus on what kind of programs are most effective. He lists the following as being the characteristics of the most successful programs: 1) organizational commitment, 2) incentives for employees to participate, 3) effective screening and targeting of high-risk individuals, 4) state-of-the-art theory and evidence-based interventions, 5) effective implementation, and 6) ongoing program evaluation, 7) linking of program to business objectives, 8) executive management support, 9) effective planning, 10) employee input, 11) wide variety of programs, 12) program accessibility, and 13) effective communications.

4.5 Types of Worksite Wellness Initiatives

Worksite wellness programs can range from multi-component programs to single intervention programs. Additionally, the wellness benefits may be offered by the employer directly, through a vendor, group health plans, or some combination of these sources (RAND Health, 2013). For the purposes of this HIA, wellness initiatives have been grouped into the following three categories: program decisions, policy decisions, and structural decisions. Structural decisions refer to physical resources that facilitate healthy living. Programs are specific events or resources the employer organizes that help employees reach their health potential. Policies are the guidelines and protocols of a business that directly or indirectly impact health. A list of examples for each category is provided in Boxes 3-5 below. The health impacts of each initiative are included within the pathway diagrams found in Appendices A-C.

Box 3. Examples of Structural Worksite Wellness Initiatives

- Healthy cafeteria, break room with food storage and prep facilities, and/or vegetable stand
- On-site childcare
- Breastfeeding rooms
- On-site clinic/nurse
 - On-site blood pressure monitoring device
 - On-site AED
- On-site gym
- Hiking/Walking trails with exercise stations
- On-site showers
- Noise considerations
- Inviting stairways, hidden elevators, signs with step/calorie count
- Desk modifications
 - Yoga ball
 - Walking/Standing desks
 - Ergonomic equipment

Box 4. Examples of Programmatic Worksite Wellness Initiatives

- Educational programs/materials (nutrition, injury prevention, sports/exercise techniques, safety/first aid/CPR/AED, disease-specific topics, stress identification/reduction)
- Exercise programs
- Weight-loss challenge
- Weight Watchers or nutritional programs
- Tobacco cessation hotlines
- Health screenings with appropriate follow-up/clinical referral
- On-site vaccinations
- Individual health coaching
- New employee orientation
- Programs available to family members of the employee

Box 5. Examples of Policy-oriented Worksite Wellness Initiatives

- Calorie labeling/other nutritional information/identify healthier foods with signs/symbols
- Healthy food purchasing and vending options
- Tobacco ban (use and sale)
- Health insurance
- Flextime
 - Used for physical activity, sleep, medical appointments, second job, schooling, avoid traffic, family time, childcare, caregiver for family member/child
- Technology-free time
- Pets allowed at work
- HSA incentive programs
- Absenteeism management (i.e. caregiver leave, medical leave, grief leave, maternity leave)
- Flexible dress codes
- Allergen/Toxin reduction policy (dust, scents, foods, etc.)
- Employee Assistance Program, one-on-one or group counseling

5. Health Benefits Associated with Worksite Wellness

Many different worksite wellness initiatives impact health through similar pathways. The most common ones are through improved nutrition, physical activity, stress reduction, social interaction, [tobacco cessation](#), decreased sitting and screen time, breastfeeding, and health insurance coverage. The health benefits associated with each of these behaviors are listed below.

5.1 Improved Nutrition

Improving one's diet by eating the recommended servings of fruits and vegetables, eating more whole grains, and limiting fats, sugars, and salt:

- Decreases risk of overweight/obesity
- Decreases risk of [type 2 diabetes](#)
- Decreases risk of [hypertension](#) and high [cholesterol](#), which reduces risk of [cardiovascular disease](#), cancer, and [diabetes](#)
- Decreases risk of certain cancers (lung, esophageal, stomach, colorectal, prostate)
- Decreases risk of [osteoporosis](#)
- Decreases risk of dental cavities
- Decreases risk of stroke
- Decreases risk of micronutrient deficiencies, including iron deficiency
- Promotes optimal growth and development of children

Sources: CDC, 2014a; CDC, 2014c

5.2 Physical Activity

Physical activity can improve one's physical health. Getting the recommended 150 minutes of physical activity per week

- Improves weight management
- Decreases risk of [cardiovascular disease](#)
- Decreases risk of [type 2 diabetes](#)
- Decreases risk of metabolic syndrome
- Decreases risk of certain cancers
- Strengthens bones and muscles
- Prevents falls
- Improves ability to do daily activities
- Increases life expectancy
- Improves sleep

Physical activity can also improve one's mental health. Getting the recommended 150 minutes of physical activity per week:

- Improves mental health and mood

- Decreases stress
- Decreases risk of depression and cognitive decline

Source: CDC, 2011a

5.3 Stress Reduction

Workplace stress is a significant health concern for employees. Sources of workplace stress can include lack of job security, overwhelming workload, issues with coworkers, and balancing work and personal lives. Another source of stress related to work is financial stress. Financial stress can arise from unemployment, underemployment, and insufficient compensation in order to afford a basic standard of living. Stress reduction improves the mental health of employees. Reducing stress, especially stress related to work:

- Decreases risk and severity of depression
- Decreases risk of anxiety
- Decreases risk of anger and irritability
- Decreases psychological/mental/emotional distress
- Promotes greater sense of control
- Results in less workplace absenteeism
- Results in greater workplace performance

Sources: Choi, 2009; NIMH, n.d.

Not only does stress reduction improve the mental health of employees, it can also impact many aspects of physical health. Reducing stress:

- Improves immune function and decreases inflammatory response, which can prevent [heart disease](#), stroke, [diabetes](#), and low-birth-weight babies
- Decreases number of headaches
- Decreases blood pressure
- Improves sleep
- Decreases chest pain and heart palpitations
- Decreases skin rashes
- Decreases digestive problems
- Decreases fertility problems
- Decreases frequency of viral infections and promotes more effective response to vaccinations
- Decreases unhealthy coping behaviors (alcohol, cigarettes, drugs, food) and the associated physical outcomes of these behaviors

Sources: ADAA, n.d.; NIMH, n.d.

5.4 Social Interaction

Social interaction in the workplace is very important, especially since adults spend most of their waking hours at work. Social interaction can include spending time both with other people and with animals.

There are many mental health benefits of social interaction. Creating a workplace that promotes social interaction with people:

- Decreases severity and occurrence of depression and psychological distress
- Increases well-being
- Increases [social cohesion](#)
- Increases [social capital](#)
- Decreases stress (and associated benefits of stress reduction)
- Fosters positive psychological states, including identity, purpose, self-worth, and [positive affect](#)

A specific type of social interaction includes interaction with pets. Pet interaction also has mental health benefits. Creating a workplace that allows pets:

- Increases social contact/interaction with others, leading to associated benefits
- Provides a type of social support/interaction itself
- Leads to less behavioral distress, decreases stress, and reduces depression

Sources: Casciotti, 2012; Cohen, 2004; McNicholas, Gilbey, Rennie, Ahmedzai, Dono, & Ormerod, 2005; SOPHIA, 2013; Todman, Taylor, McDowell, Driscoll, Cooper, & Kim, 2013

In addition to the mental health benefits, social interaction can also improve physical health. Creating a workplace that promotes social interaction with people:

- Increases life expectancy
- Decreases risk of [heart disease](#), heart attacks, [atherosclerosis](#), and [high blood pressure](#)
- Decreases risk of cancer
- Promotes faster healing
- Improves immune function and decreases inflammation
- Creates social pressure to engage in certain health-protective behaviors, such as walking

Interaction with pets is a specific type of social interaction. Pet interaction can also improve physical health benefits. Creating a workplace that promotes animal interaction:

- Increases survival rate from heart attacks, decreases risk of heart disease, lowers heart rate, and lowers blood pressure
- Reduces risk of asthma/allergies in children exposed early in life
- Decreases number of doctor visit
- Decreases number of sick days
- Promotes physical activity

Sources: McNicholas, Gilbey, Rennie, Ahmedzai, Dono, & Ormerod, 2005; Umberson & Montez, 2011

5.5 Tobacco Cessation

Smoking is the leading preventable cause of death in the United States. Quitting can not only add more years to one's life, but also:

- Decreases risk of lung and other cancers (bladder, cervix, esophagus, kidney, larynx, mouth, pancreas, stomach, throat)
- Decreases risk of [abdominal aortic aneurysm](#)
- Decreases risk of [acute myeloid leukemia](#)
- Decreases risk of cataracts
- Decreases risk of heart attacks, coronary [heart disease](#), and [cardiovascular disease](#)
- Decreases risk of stroke
- Decreases risk of chronic lung disease and pneumonia
- Decreases risk of low birth weight and sudden infant death syndrome

Sources: CDC, 1990; CDC, 2011

5.6 Less Sitting Time (Independent of physical activity)

Many employees have jobs that require sitting at a desk for the majority of the day. Large amounts of time spent sitting are associated with poor health outcomes, even if the reduction in time sitting is not correlated with an increase in physical activity. Reducing the time spent sitting:

- Decreases risk of premature mortality
- Decreases risk of [cardiovascular disease](#)
- Decreases risk of [diabetes](#)
- Decreases risk of cancer
- Decreases risk of metabolic syndrome
- Decreases risk of obesity
- Lowers [waist circumference](#) and [BMI](#)
- Improves [triglyceride](#) levels, total [cholesterol](#) levels, [HDL cholesterol](#) levels, and [GGT](#) levels
- Improves glucose levels
- Lowers blood pressure

Sources: Chau, Grunseit, Midthjell, Holmen, & Holmen, 2014; Pronk, Katz, Lowry, & Payfer, 2012

5.7 Less Screen Time

With advances in technology, adults are spending more time looking at screens, including computers, televisions, and phones. When one's job requires a lot of work and time on the computer, this can lead to health problems. Reducing the amount of time looking at screens or taking breaks:

- Reduces risk of overweight/obesity
- Reduces risk of depression, low [self-efficacy](#), and [conduct disorder](#) (in children/adolescents)
- Improves health-related quality of life
- Improves [BMI](#) and [waist circumference](#)
- Improves [triglyceride](#) levels, total [cholesterol](#) levels, [HDL cholesterol](#) levels, and [GGT](#) levels
- Lowers blood pressure
- Improves glucose levels

- Decreases eye strain

Source: Busch, Manders, & de Leeuw, 2013; Chau, Grunseit, Midthjell, Holmen, & Holmen, 2014; Davies, Vandelanotte, & van Uffelen, 2012

5.8 Prolonged Breastfeeding

Breastfeeding is the recommended method of feeding infants until they are 6 months old. However, breastfeeding can often be difficult once a woman returns to work. Being breastfed:

- Provides antibodies that protect the infant from bacterial/viral infections
- Decreases risk of overweight
- Eases digestion and reduces diarrhea
- Provides ideal amount of fat, sugar, water, and protein for growth
- Reduces ear infections
- Decreases risk of [necrotizing enterocolitis](#)
- Decreases risk of lower respiratory infections and asthma
- Decreases risk of [type 1](#) and [type 2 diabetes](#)
- Decreases risk of childhood leukemia
- Decreases risk of [atopic dermatitis](#)
- Decreases risk of SIDS
- Improves health through skin-to-skin contact and bonding with mother

Breastfeeding not only improves the health of the infant, it can also have the following benefits for the mother. Breastfeeding:

- Decreases risk of certain breast and ovarian cancers
- Decreases risk of postpartum depression
- Decreases risk of [type 2 diabetes](#)
- Boosts [oxytocin](#)
- Decreases risk of [osteoporosis](#)
- Promotes greater post-pregnancy weight loss
- Improves health through skin-to-skin contact and bonding with baby

Sources: CDC, 2014b; USDHHS Office on Women's Health, 2011

5.9 Health Insurance Coverage

Health insurance coverage in the United States is closely linked to employment. Therefore, one's workplace can affect the health of employees by offering health insurance, and the type of coverage offered. Having health insurance:

- Increases access to clinical preventive services
- Improves timeliness of care
- Promotes regular/consistent care, with same provider

- Decreases severity of outcomes
- Decreases long-term medical expenditures

Source: CDC, 2010

6. Background Information on Davidson, North Carolina

Davidson is a small college town about 20 miles north of Charlotte, North Carolina, with a population of 11,750. The median age of the population is 31, and the median household income is \$83,730, making it one of the highest income zip codes in North Carolina (U.S. Census Bureau, 2014). A larger percentage of Davidson's population has health insurance coverage (93.9%) as compared to the state (83.8%) (U.S. Census Bureau, 2012).

There are a total of 237 businesses in the Town of Davidson. The largest employers in Davidson are Ingersoll-Rand, Davidson College, MSC Industrial Supply Company (unable to interview at this time), and Carolinas HealthCare System (Town of Davidson, 2014). The most prevalent types of employers are: educational services, health care, and social assistance (25.9% of employees); professional, scientific, management, administrative, and waste management services (13.2%); and retail trade (12.4%) (U.S. Census Bureau, 2012).

Of the population ages 16 and over in Davidson, 61.3% are in the labor force, which is similar to the percentage statewide. Of this labor force, 7.3% are unemployed, which is much lower than the statewide unemployment rate of 10.5% (U.S. Census Bureau, 2012). The average travel time to work is 23.1 minutes, which is similar to the statewide average (U.S. Census Bureau, 2012).

Davidson residents reported the following as the top 3 health concerns for their town: 1) mental health; 2) choosing healthy behaviors to prevent chronic disease and disability; and 3) substance abuse prevention (Mecklenburg County Health Department, 2013).

7. Findings of Employer Surveys

Table 3. Number of Davidson Residents Hired by Davidson's Largest Employers

Employer	Number of Employees	% Davidson Residents	# Davidson Residents
Ingersoll Rand	22,188	5%	92
Davidson College	900	41%	375
CHS Behavioral Health Clinic	148	5%	8

Table 4. Commonly Offered Benefits by Davidson Employers

Benefit	
Insurance including Healthy, Dental, & Vision	Employee Assistance Program
Disability	Dependent Care Flexible Spending Accounts
Work at Home/ Telecommuting	Life Insurance
Sick Leave/ Well Days Off	Tuition Reimbursement
Leave of Absence	Job Sharing
Vacation	Family Leave
Retirement/ Investment Plan	Health Promotion Program Prepayment or Reimbursement

Table 5. Number of Employers Offering Each Component of Comprehensive Programs

Component	Number of Businesses Offering
Health Education	3
Links to related employee services	3
Supportive physical and social environment	3
Integration	2
Screenings with adequate follow up	2
Percentage offering comprehensive program	67%

Table 6. Most Common Health Education Topics Offered by Major Davidson Employers

Topic	Number of Businesses Offering
Nutrition and/ or weight management	3
Physical fitness and/ or exercise	3
Smoking Cessation	3
Stress management	2
Ergonomics	2

Table 7. Most Common Employee Health Screenings Among Davidson Employers

Screening	Number of Businesses Offering
Physical exam	3
Diet/ nutrition evaluation	3
Health risk assessment	2
Blood pressure	2
Cholesterol	2
Body fat or body weight	2
Blood sugar	2

Table 8. Number of Employers Incorporating Various Worksite Wellness Initiatives

Initiative	Number of Businesses Offering
Policy to make healthy food options available	2
Policy to support exercise or physical activity of employees during work time	2
Exercise facilities available at worksite	3
Corporate agreement with health club or gym to offer subsidized memberships to employees	2
Promotes use of stairs	2
Provides pedometers	2
Policy about tobacco use at worksite	3
Policy about disciplinary measures for tobacco policy violation	3
Total ban on smoking on premises	1
Total ban on other tobacco use on premises	1
No sale of tobacco on-site	3
Subsidized/free tobacco cessation counseling	3
Stress reduction programs/policies	3
Ergonomically sound workstations	3
Monitors heating, lighting, and ventilation	3
Encourages stretch and fitness breaks during the work day	3

Table 9. Worksite Wellness Opportunities for Employees of the Town of Davidson

Initiative
Health education online courses (nutrition, weight management, physical fitness, smoking cessation, stress management)
Links to related employee services (employee assistance programs)
Supportive physical and social environment for health improvement (no-smoking policy in buildings and vehicles)
Integration of health promotion into organization's culture (board goals to promote health)
Employee screenings with adequate treatment and follow up (online health risk assessment, physical fitness tests with police, physical exam)
Supportive exercise facilities (basketball hoop, showers and changing areas)
Agreement with gyms (for police)

Table 10. Opportunities to Increase Worksite Wellness for Employees of the Town of Davidson**Initiative**

Additional onsite screenings and recommended follow up (perhaps during monthly or quarterly health days)

Establish wellness committee with operating budget

Adopt a healthy food policy including offering healthy options in vending machines and during meetings

Adopt a physical activity policy promoting walking breaks or walking meetings, stretch breaks, and flexible hours

Secure discounts for gym or YMCA memberships for all employees

Adopt a tobacco free policy for all buildings, vehicles, and grounds

Increase the number of practices and policies to reduce or address stress in the workplace (i.e. establish a formal employee grievance procedure, allow “well days” off or mental health days, provide training to management in particular for recognizing the signs of stress in other employees and reducing stress in their team)

8. Recommendations**Recommendations for the Town of Davidson**

The Town of Davidson is in a position to support employers in their efforts to improve the health of their employees. The following recommendations are ways in which the town can be a leader in promoting worksite wellness.

1. Organize a corporate challenge through the Town of Davidson to promote health and wellness among all Davidson employers.

The Town of Davidson Parks & Recreation Department has expressed interest in supporting Davidson area businesses in promoting health and wellness by organizing a Corporate Challenge. This challenge would involve each business (or group of smaller businesses) setting up a team(s) to participate in various athletic events, such as basketball, volleyball, weightlifting, and softball, in which they compete against other businesses. This challenge would not only promote physical health, but would build connections among employees at the same business and between employees at different businesses. This challenge could foster a stronger community-wide commitment to health and wellness.

2. Distribute surveys to additional employers and employees in Davidson, NC

As part of this HIA, we interviewed Ingersoll Rand, Davidson College, and Carolina’s Healthcare System. Due to time constraints, we were unable to speak with more employers. It would be helpful to hear from more employers than these few, especially small businesses. This would give a baseline of what is currently being done in different types and sizes of businesses in the Davidson area. Since the businesses we interviewed collected health data from their employees already and already had very comprehensive worksite wellness programs, we did not send surveys to the employees of these businesses so as not to duplicate efforts. Hearing from employees of other businesses, however, would provide stronger data regarding the interests and needs of the population. Using the surveys developed by Davidson Design for Life would allow comparison between the different employers, allowing for potential areas for collaboration to be easily identified. For example, if a larger business next door to a

smaller business has a gym on-site, we could identify this and suggest these two businesses collaborate in some way to extend this benefit to the employees of the neighboring small business.

3. Support of a trained worksite wellness coordinator at a local level

Starting or implementing a worksite wellness program can be challenging, especially for untrained staff. Designating or hiring a local trained worksite wellness coordinator to assist Davidson employers would help initiate this process. This person could assist employers with day-to-day guidance, particularly in the early stages of program implementation. The expert support means employers will provide higher quality wellness programs (such as those mentioned in Recommendations #4-6), resulting in health improvement and improved economic conditions.

4. Expand the worksite wellness capacity of small businesses in Davidson.

Through the literature review, it was found that small businesses are the least likely to offer worksite wellness programs, and especially unlikely to offer comprehensive programs. However, most employees work for small businesses. In Davidson, there are only 4 large employers; the rest qualify as small businesses. Therefore, assisting small businesses is an important concern when trying to expand worksite wellness in Davidson.

One way small businesses can improve worksite wellness is by collaborating with other small businesses in the same geographic area to put on programs collectively. For example, the businesses in the downtown area might collaborate to put in exercise stations along a designated walking path through town. This would benefit all the employees, yet the cost of the structure to each employer is offset by collaborating with other businesses. Similarly, one staff person can coordinate a weight loss or exercise challenge for all businesses. This saves money through costs of labor, since one employee is doing the work for several businesses rather than having an employee at each business. Additionally, businesses should take advantage of the health and fitness-oriented businesses in town when working to expand worksite wellness.

5. Partner with larger businesses to improve worksite wellness initiatives for Town of Davidson employees.

The Town of Davidson can improve upon its own worksite wellness initiatives to support the health of its employees. One potential way to do this is by partnering with one of the large businesses in Davidson. For example, developing a partnership with Ingersoll Rand to make their fitness classes available to Town of Davidson employees would build worksite wellness capacity.

Recommendations for Davidson Employers

Because the literature review found that the efficacy of worksite wellness programs in improving health, as well as the cost savings and return on investment amounts, depend on the type and quality of programs that are implemented, we encourage businesses to be intentional when designing and implementing worksite wellness programs.

Components necessary for a successful worksite wellness program include comprehensive programming, employee input, organizational support, effective communications with employees, making the programs accessible (location, times, days, etc.) to all employees, and using evidence-based interventions.

The following recommendations are ways in which businesses can pursue successful worksite wellness programs.

6. Aim to provide comprehensive worksite wellness programs for Davidson employees.

One important aspect to focus on is developing a comprehensive worksite wellness program. Of the major employers in Davidson, 67% of them had comprehensive programs. These programs include health education, links to related services, supportive physical and social environments, integration, and screenings with adequate follow-up. The most common components missing were integration of health promotion into the organization's culture and providing health screenings with adequate treatment and follow-up. Focusing on increasing the number of employers that offer comprehensive programs should improve the health of Davidson employees.

7. Focus on providing high-quality worksite wellness programs.

Additionally, businesses need to ensure their programs are of high quality in order to guarantee health improvements and cost savings. Organizational support is very important for the success of a worksite wellness program. Having a dedicated worksite wellness coordinator, a dedicated budget, participation in programs among all levels of management, executive management support, and the improvement of employee health as a business objective are all ways to develop organizational support for high quality programming.

8. Addressing the specific needs of employees at each business.

It is also important to plan the programs considering the needs of the employees by conducting a needs assessment and asking for employee input. In addition, regular evaluation of the programs will help guide the program to be tailored to meet the needs of the employees. This, along with providing motivational incentives, will boost participation and make the program more successful. Finally, it is important to target high-risk individuals in order to achieve the maximum impact.

9. Focus on smoking cessation and alcohol use reduction when planning worksite wellness initiatives.

According to Table 2, residents of Mecklenburg County as well as North Carolina as a whole, have higher percentages of current smokers than the national average. We recommend tobacco cessation be a focus for worksite wellness programs among Davidson's employers. Additionally, a higher percentage of Mecklenburg County residents binge drink than statewide. Therefore, alcohol consumption should be a focus of these programs as well. While we do not have data specific to Davidson, the trends in Mecklenburg are a good representation from which to formulate initial program focus. Additionally, even though we do not have quantitative data for these topics, Davidson residents identified mental health, choosing healthy behaviors to prevent chronic disease and disability, and substance abuse prevention as key health concerns. Therefore, covering these topics is likely to result in good participation rates.

10. Build partnerships among Davidson businesses, both large and small, to provide comprehensive, high-quality worksite wellness programs.

Davidson has businesses with various resources and expertise regarding health. Therefore, taking advantage of the strengths of each business can help Davidson businesses maximize the impact of

worksite wellness initiatives and prevent duplication of efforts. For example, if one business in an area has a fitness facility, developing a partnership allowing employees of surrounding businesses to use this gym would result in that facility having greater health impact by reaching more people and decreasing the need for another business to build a gym. Rather, this business can focus on a different wellness initiative to offer its partners and expand worksite wellness in Davidson.

9. Concluding Remarks

Overall, worksite wellness programs can result in significant health improvement of the workforce and economic savings for businesses. However, it is important that programs are comprehensive, high-quality, and tailored to the needs and interests of the employee population in order to achieve these results. Davidson's large employers provide good worksite wellness programs that are comprehensive; however, the overwhelming majority of Davidson businesses are small businesses, which are shown to be least likely to provide comprehensive worksite wellness programs. Therefore, there is much potential to improve the health of Davidson employees and residents through a coordinated effort to improve worksite wellness in these small businesses in town.

Glossary

Abdominal aortic aneurysm	A balloon-like swelling in the wall of the main artery in the abdomen. This weakens the artery wall and, because of the great volume of blood flowing under high pressure in the artery, it can rupture.
Acute myeloid leukemia (AML)	A quickly progressive cancer of the cells that become white blood cells, which fight infections. In AML, these cells do not mature, and there are too many of them.
Atherosclerosis	A process of progressive thickening and hardening of the walls of arteries as a result of fat deposits.
Atopic dermatitis	A common, often long-lasting skin disease in which the skin becomes extremely itchy and inflamed, causing redness, swelling, blisters, cracking, weeping, crusting, and scaling.
BMI (Body Mass Index)	An index that relates body weight to height. BMI is calculated by dividing a person's weight in kilograms by their height in meters squared. This value is used to define normal weight, overweight, and obesity. Overweight is a BMI of 27.3 or higher for women and 27.8 or higher for men; obesity if a BMI of 30 or higher for women and men. Note: Some very muscular people may have a high BMI without undue health risks.
Cardiovascular disease	Disease affecting the heart or blood vessels, often related to atherosclerosis. Can result in a heart attack and/or stroke.
Cholesterol	Cholesterol is a substance the body needs. The liver produces 80% of the body's cholesterol, and the rest comes from dietary sources. When too much cholesterol is present in the body, it can build up in deposits called plaque along the inside walls of arteries, causing them to narrow (atherosclerosis). LDL cholesterol is the "bad cholesterol", and elevated levels can lead to heart disease. HDL cholesterol is the "good cholesterol"; it is best to have a high HDL to LDL ratio for protection against heart disease.
Conduct disorder	A behavioral and emotional disorder in children and teens. Symptoms include aggressive, destructive, and/or deceitful behavior and violation of rules.

GGT (gamma-glutamyl transpeptidase)	An enzyme located in the liver. GGT levels are monitored because elevated levels can indicate liver disease, heart failure, diabetes, or pancreatitis.
Heart disease	See cardiovascular disease.
Hypertension	Also known as high blood pressure. High blood pressure increases the risk of developing heart disease, kidney disease, atherosclerosis, eye damage, and stroke.
Necrotizing enterocolitis	A disease causing the tissue in the intestine of a baby to begin to die off. This can cause inflammation, or in rare cases, a hole in the intestine, allowing waste to pass through the intestine into the baby's bloodstream or abdominal cavity. This can lead to a life-threatening infection.
Osteoporosis	A condition characterized by a decrease in bone density, which can lead to fractures.
Oxytocin	A hormone released during and after childbirth, that has many roles, including facilitating lactation, reducing anxiety, and promoting bonding between mother and child.
Positive affect	Those with high levels of positive affectivity are typically enthusiastic, energetic, and confident. Those with low levels are characterized as being sad, lethargic, or distressed.
Pulmonary conditions	Diseases of the lungs. Can include asthma, allergies, chronic obstructive pulmonary disease (COPD), bronchitis, emphysema, and cystic fibrosis.
Self-efficacy	The belief in one's own ability to complete tasks or reach goals.
Social capital	The institutions, relationships, and norms that shape the quality and quantity of a society's social interactions.
Social cohesion	The willingness of members of a society to cooperate with each other in order to survive and prosper.
Smoking cessation	The process of discontinuing tobacco smoking.

<p>Triglyceride</p>	<p>The most common type of fat that people digest, found in vegetable oils and animal fats. Elevated triglyceride levels are a risk factor for atherosclerosis, which may lead to heart attack, stroke, fatty liver disease, and pancreatitis.</p>
<p>Type 1 Diabetes</p>	<p>The body's immune system destroys cells that release insulin. Without insulin, cells cannot absorb sugar to produce energy. Type 1 only accounts for 5-10% of those that have diabetes and cannot be prevented. Diabetes can lead to heart disease, stroke, amputations, kidney failure, and/or blindness.</p>
<p>Type 2 Diabetes</p>	<p>Accounts for the majority of people who have diabetes. The body is not able to use insulin correctly, called insulin resistance. Eventually, the pancreas makes less insulin, causing insulin deficiency. Type 2 diabetes can be prevented with healthy behaviors. Diabetes can lead to heart disease, stroke, amputations, kidney failure, and/or blindness.</p>
<p>Waist circumference</p>	<p>The size of one's waist is a risk factor for type 2 diabetes, high blood pressure, high cholesterol, and heart disease. This number should be no more than 40 inches for men and 35 for women.</p>

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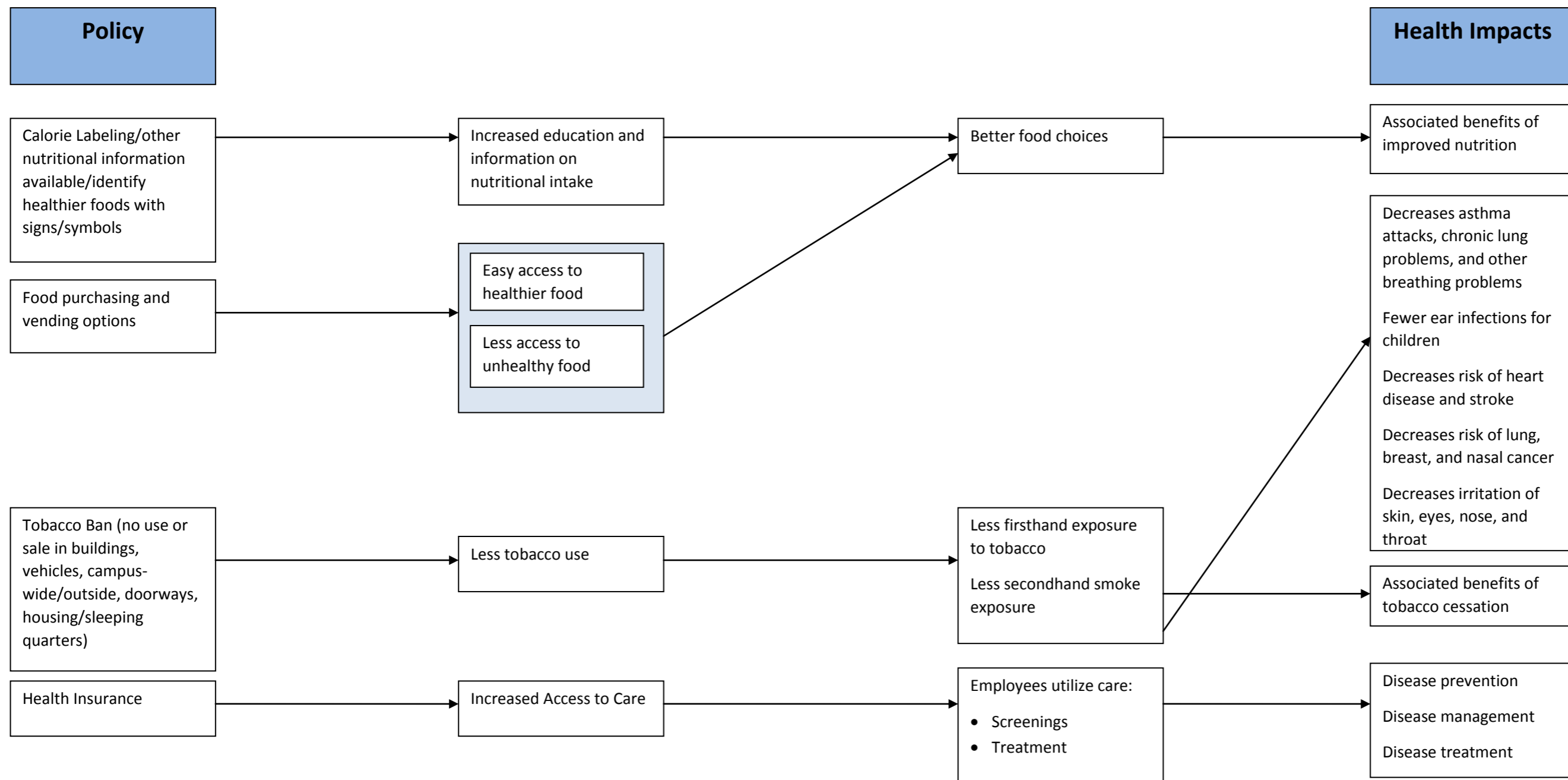
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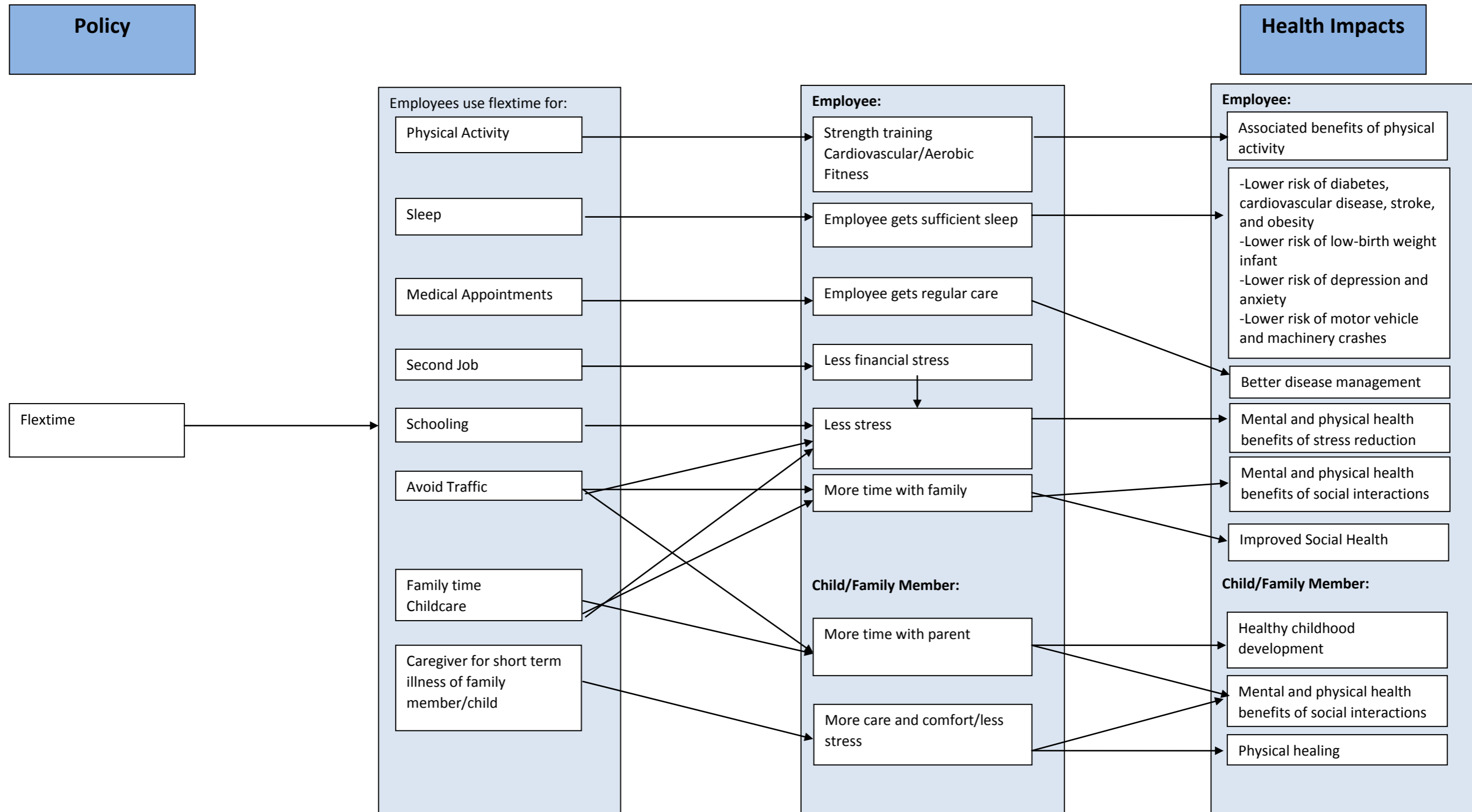
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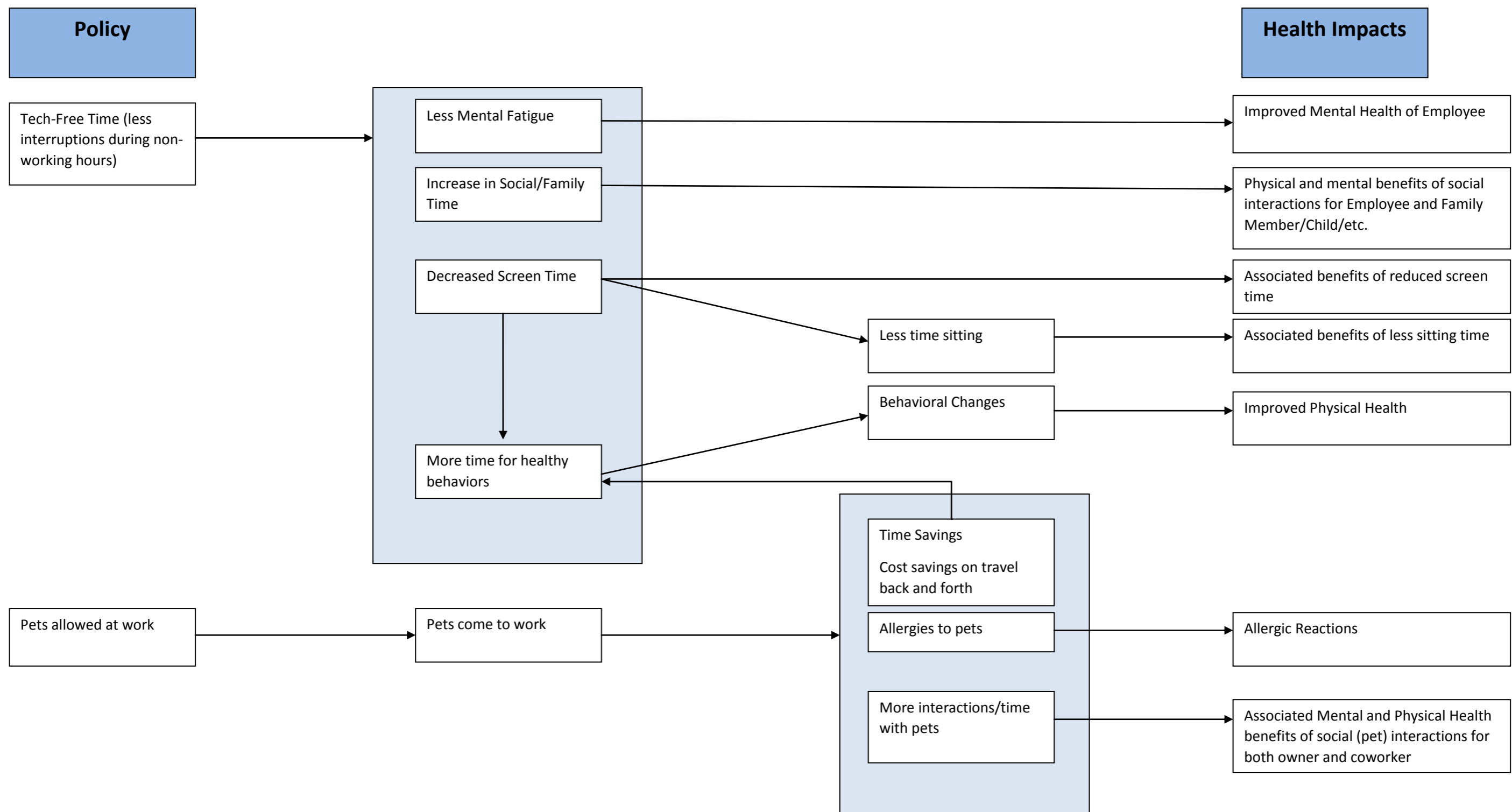
Appendix A: Worksite Wellness Policy Pathway Diagram



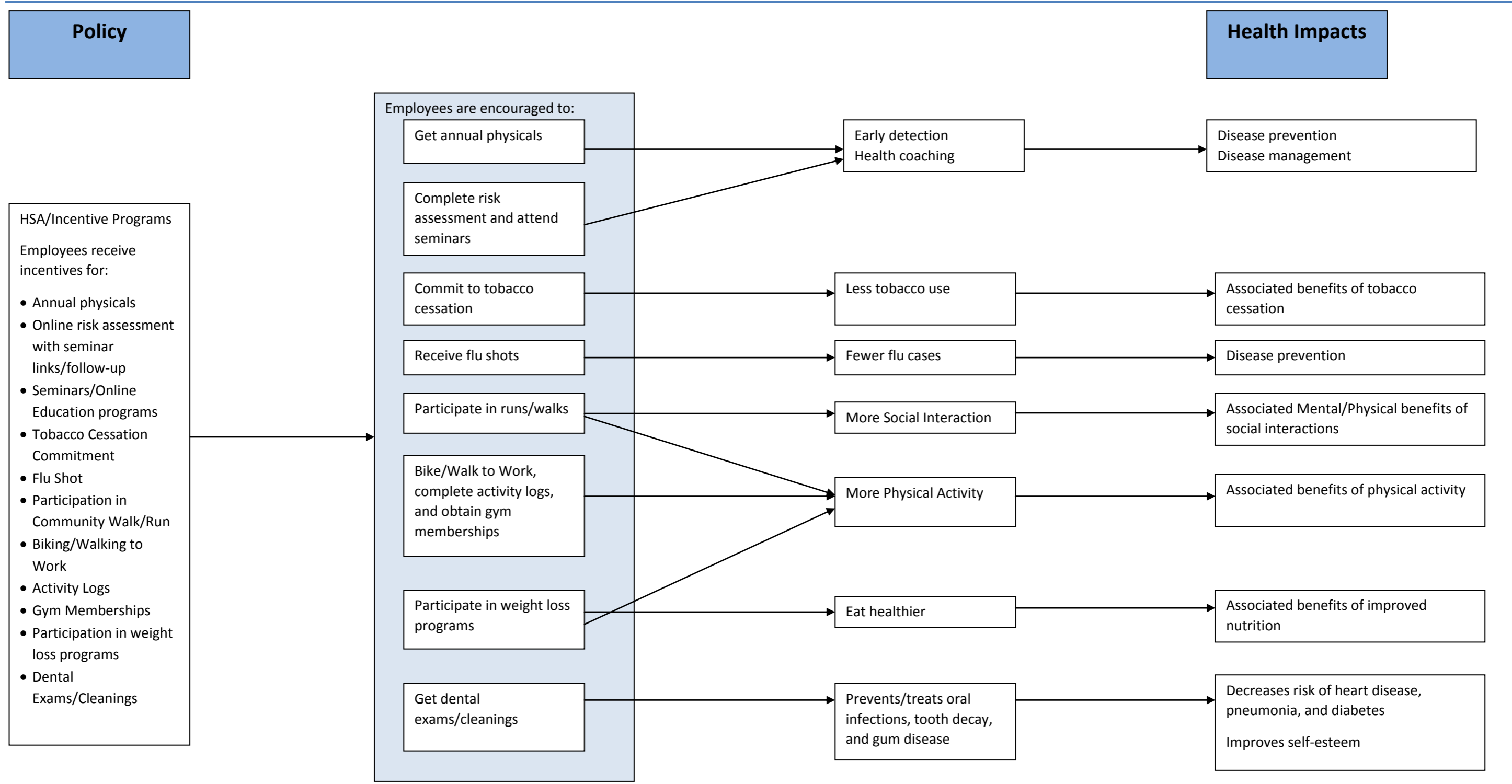
Worksite Wellness Policy Pathway Diagram



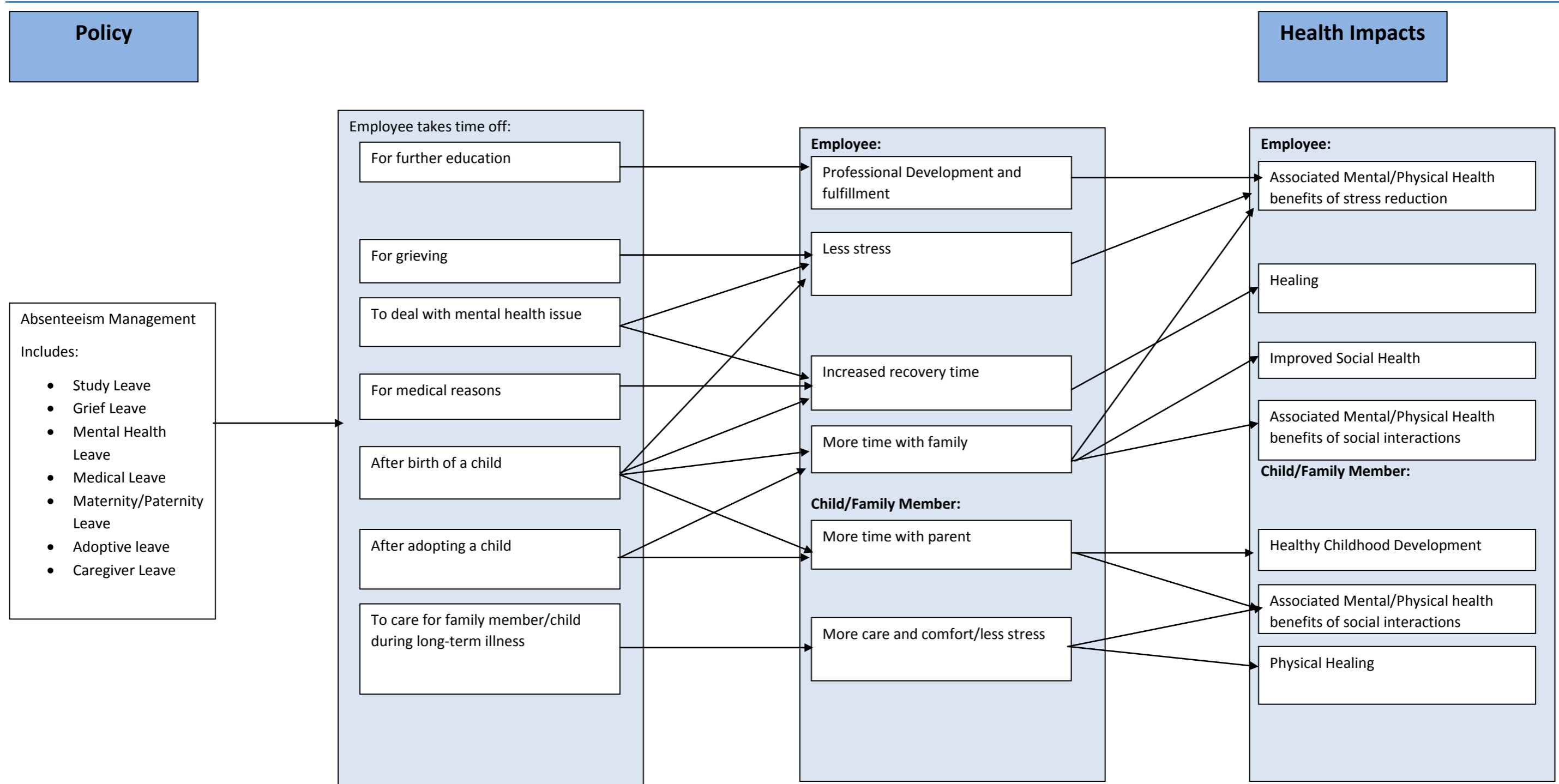
Worksite Wellness Policy Pathway Diagram



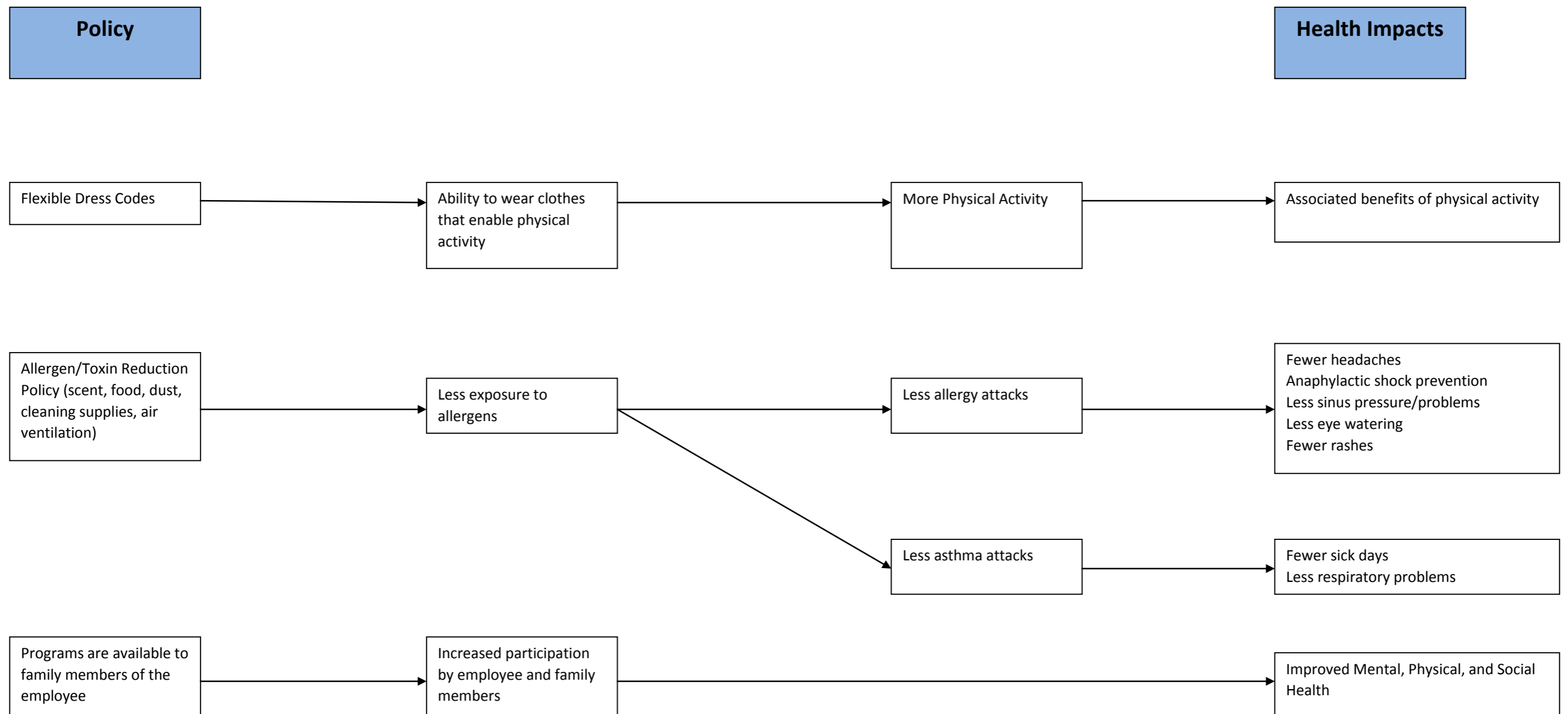
Worksite Wellness Policy Pathway Diagram



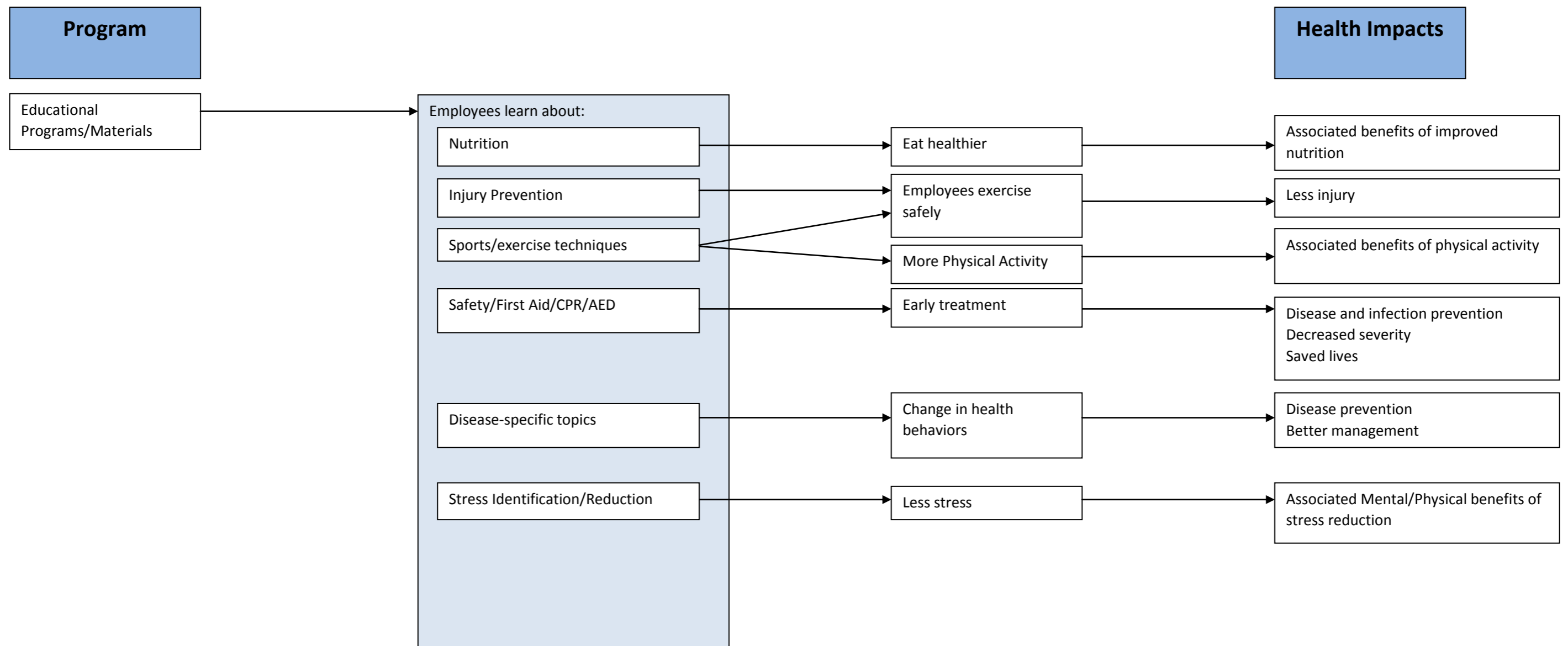
Worksite Wellness Policy Pathway Diagram



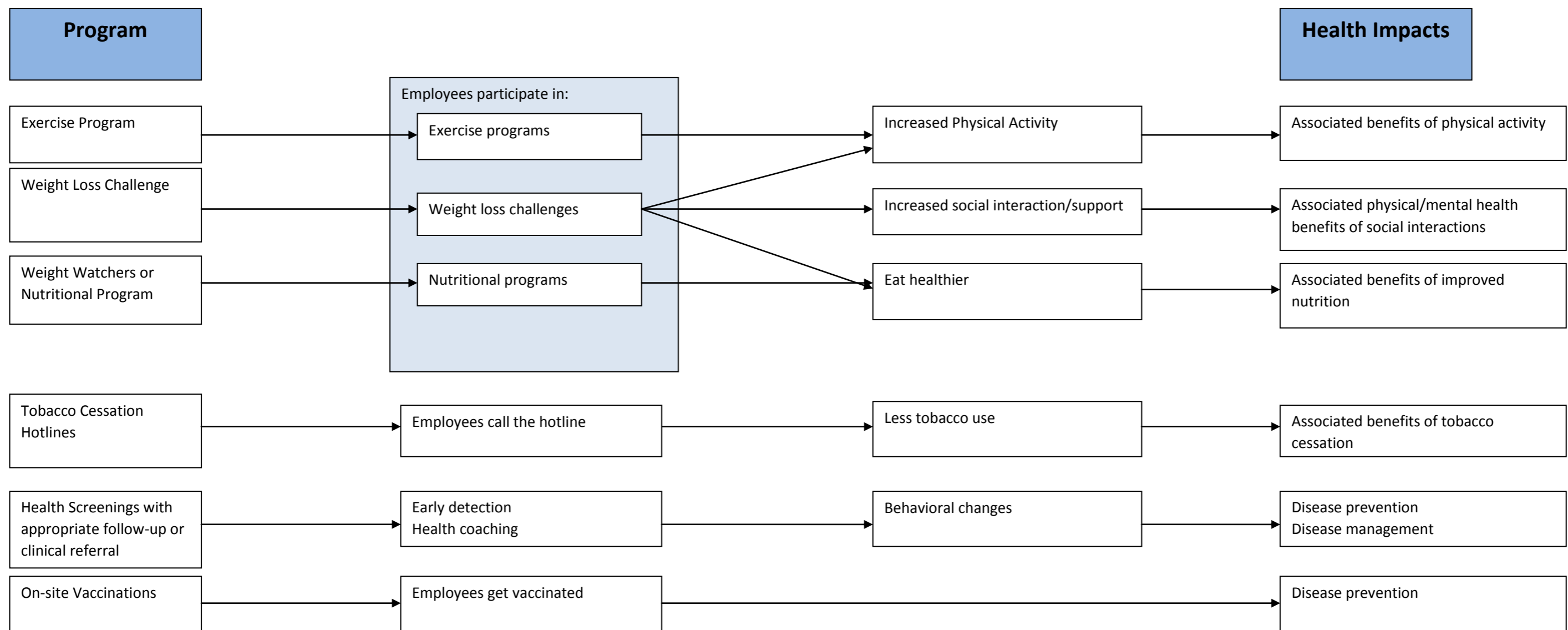
Worksite Wellness Policy Pathway Diagram



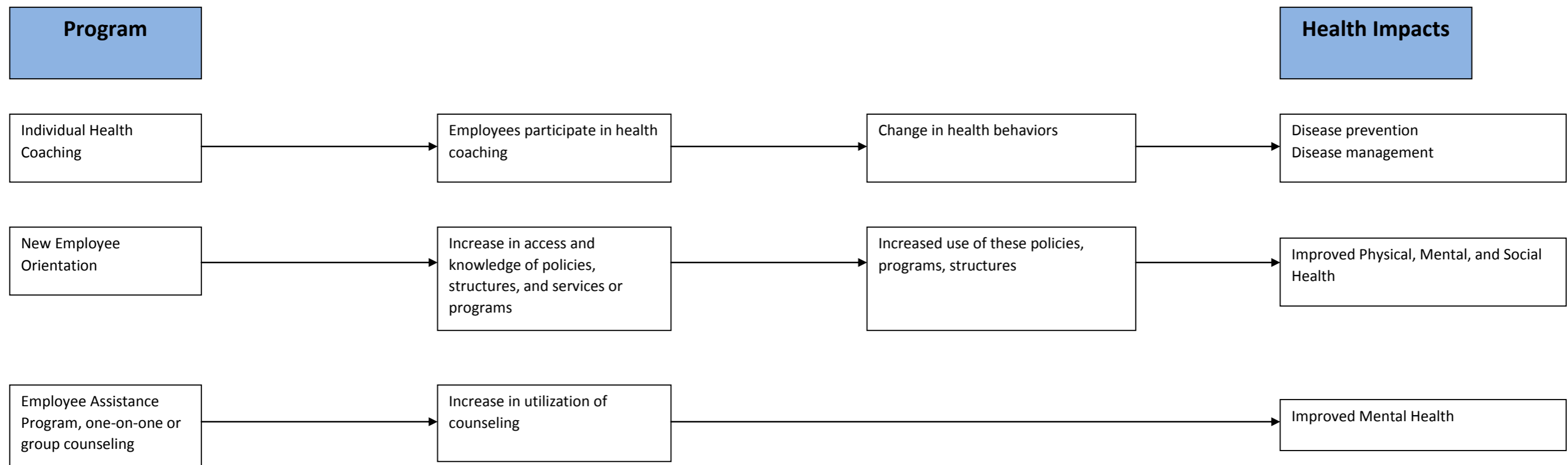
Appendix B: Worksite Wellness Programs Pathway Diagram



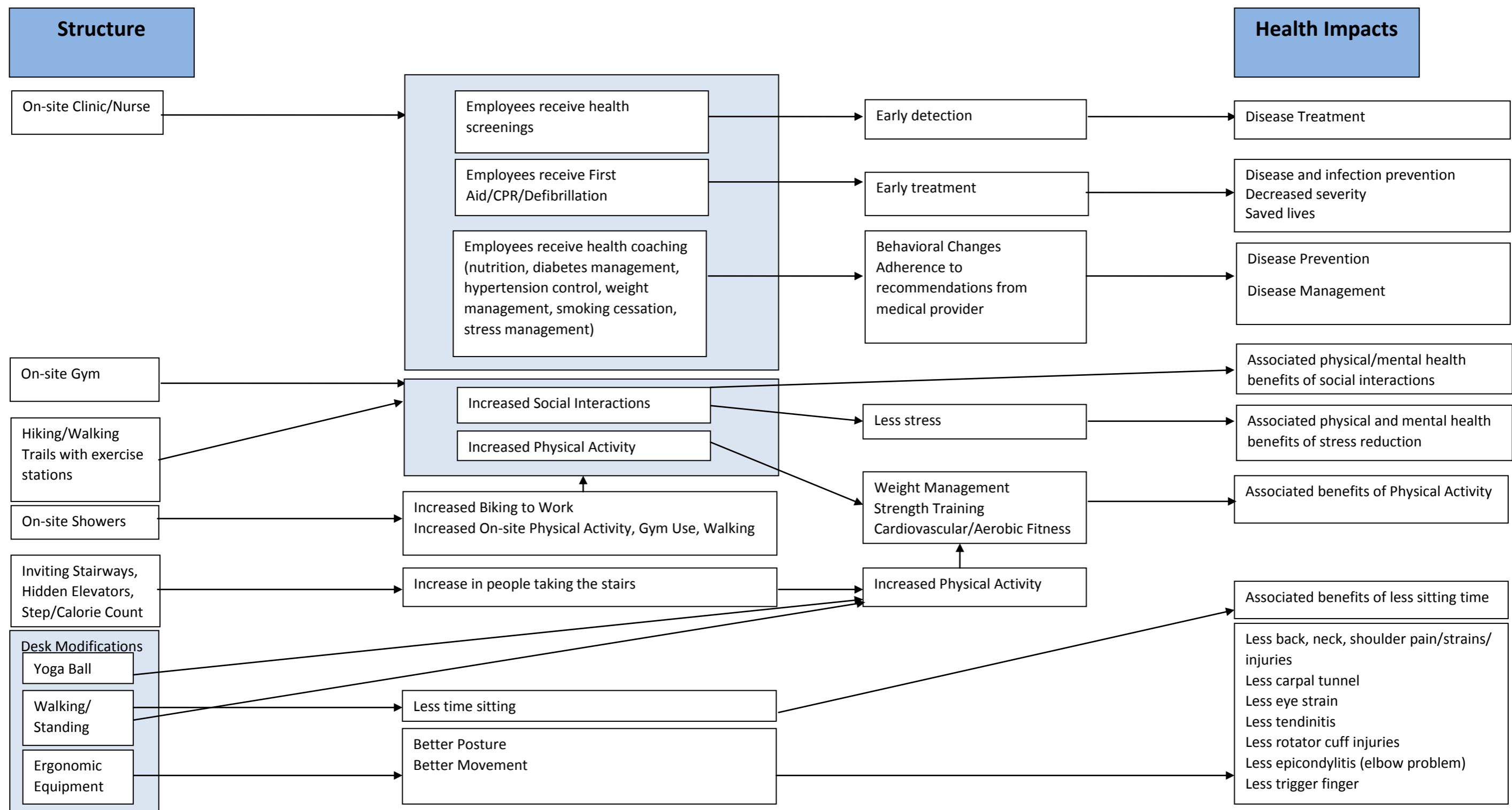
Worksite Wellness Programs Pathway Diagram



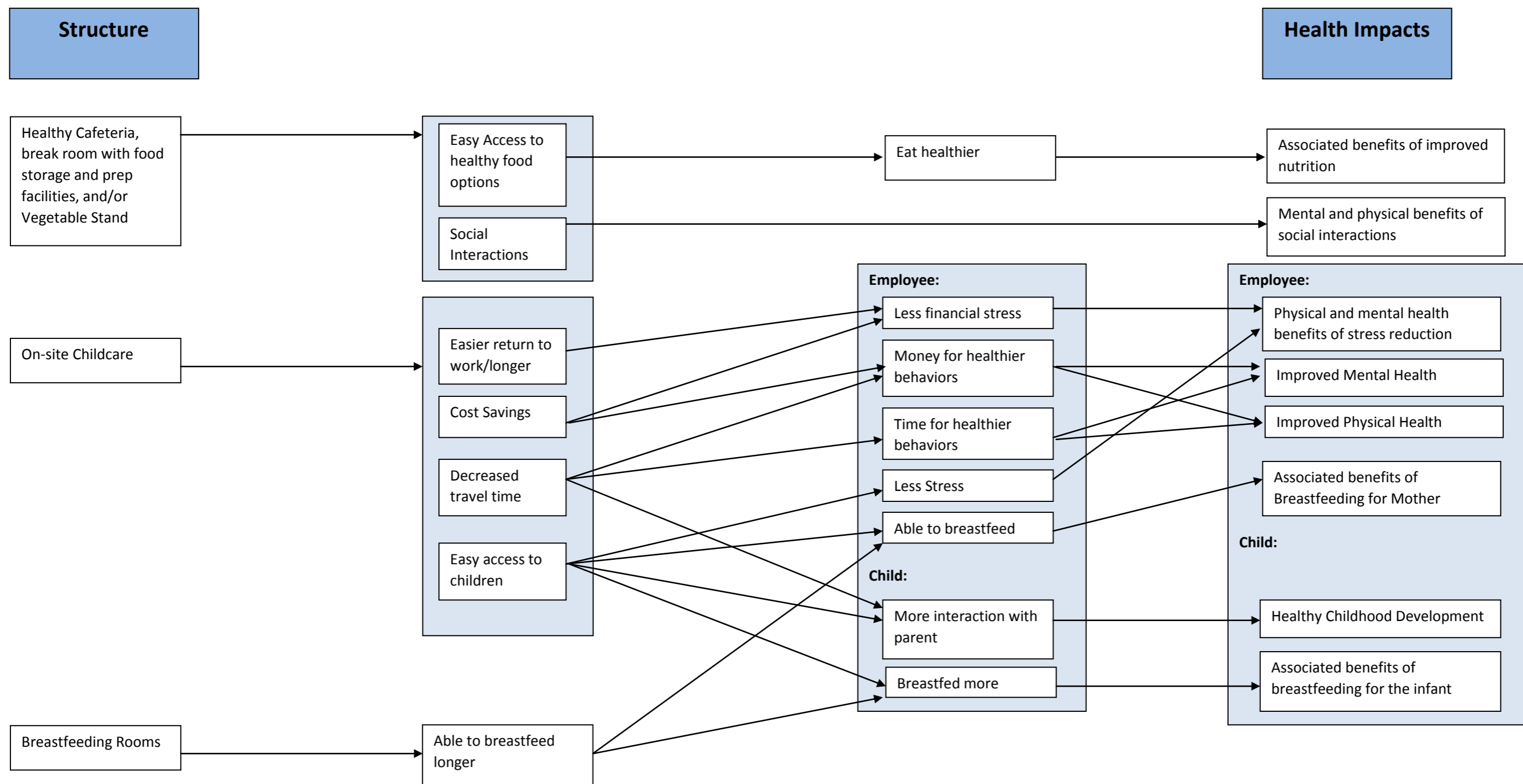
Worksite Wellness Programs Pathway Diagram



Appendix C: Worksite Wellness Structures Pathway Diagram



Worksite Wellness Structures Pathway Diagram



Appendix D: Pre-interview Questionnaire for Employers

This questionnaire was sent to our interviewees at each business prior to our interview with them to get contact information, basic information about the business, and demographic information about their employees. The questionnaire was sent through SurveyMonkey.

Pre-Interview Questionnaire

Thank you for your willingness to collaborate with the Town of Davidson in our effort to promote worksite wellness. As one of Davidson's largest employers, your input is important for this process. Feel free to answer any or all of the following questions prior to our interview. We look forward to working with you more!

1. Contact Information

Name: _____

Job Title: _____

Address: _____

Telephone number: _____

Email address: _____

2. Your Organization's Business Type

- For-profit
- Nonprofit
- Government
- Other

3. Your Organization's Industry Type

- Agriculture, Forestry, Fishing, and Hunting
- Mining, Quarrying, and Oil and Gas Extraction
- Retail/Wholesale Trade
- Accommodation & Food Services
- Professional, Scientific, & Technical Services
- Transportation, Warehousing, & Utilities
- Health Care & Social Assistance
- Real Estate & Rental & Leasing
- Finance and Insurance

- Information
- Construction
- Educational Services
- Manufacturing
- Administrative & Support & Waste Management & Remediation Services
- Arts, Entertainment, and Recreation
- Public Administration
- Other Services

4. Employee Characteristics

- a. Number of employees: _____

- b. Sex
 - i. % Male: _____
 - ii. % Female: _____

- c. Age Group
 - i. % <18 _____
 - ii. % 18-34 _____
 - iii. % 35-44 _____
 - iv. % 45-64 _____
 - v. % \geq 65 _____

- d. Average Age: _____

- e. Racial/ethnic Group
 - i. % Non-Hispanic White: _____
 - ii. % Non-Hispanic Black/African American: _____
 - iii. % Hispanic/Latino: _____
 - iv. % Asian/Asian American: _____
 - v. % American Indian/Alaska Native: _____
 - vi. % Native Hawaiian/Pacific Islander: _____
 - vii. % Other: _____

- f. Work Status
 - i. % Full-time: _____
 - ii. % Part-time: _____
 - iii. % Temporary: _____

- g. Job Type
 - i. % Salaried: _____
 - ii. % Hourly: _____

- h. % Who are Davidson residents: _____
Who are Davidson residents: _____

- i. Education Level
 - i. % Less than high school: _____
 - ii. % High school graduate/GED: _____
 - iii. % Some college/technical school: _____
 - iv. % College graduate: _____
 - v. % Post-graduate/advanced degree: _____

5. Please check all of the benefit options offered by your organization:

- Health Insurance
- Dental Insurance
- Vision Insurance
- Disability
- Work at home/Telecommuting
- Sick Leave/Well Days Off
- Leave of Absence
- Compensatory Time Off
- Vacation
- Flex Time
- Retirement/Investment Plan
- Maternal/Paternal Leave
- Family Leave
- Tuition Reimbursement
- Job Sharing
- Employee Assistance Program (EAP)
- Dependent Care Flexible Spending Accounts
- Child Care
- Life Insurance
- Health Promotion Program Prepayment or Reimbursement
- Other, please specify: _____

6. Does your worksite have a person responsible for providing, supervising, or coordinating health promotion or wellness program delivery?

Yes

No

What is the name of this person? _____

Survey adapted from CDC Wellness Scorecard.

Appendix E: Employer Interview Questions

These questions were used by Davidson Design for Life staff during the interview with the employers. In the case that the employer could not meet in person, this survey was sent to them electronically.

Interview Questions for Employers

Instructions: To be used as a general outline for interview with employers by Davidson Design for Life staff.

Worksite Wellness Program-General

1. Elements of worksite health promotion programs offered at your organization (check all that apply):

- Health education (e.g., skills development and behavior change classes; awareness building brochures, posters)

Please check all topics that apply:

- Nutrition and/or weight management
- Physical fitness and/or exercise
- Smoking cessation
- Stress management
- Ergonomics
- Other, please specify _____

- Links to related employee services (e.g., referral to employee assistance programs [EAPs])
- Supportive physical and social environment for health improvement (e.g., tobacco-free policies, subsidized gym memberships)
- Integration of health promotion into your organization's culture (e.g., health promotion being a part of business' mission statement)
- Employee screenings with adequate treatment and follow up (e.g., Health Risk Assessments (HRAs) and biometric screenings)

Please check all that apply.

- Health risk assessment
- Blood pressure
- Cholesterol
- Physical fitness tests
- Body fat or body weight
- Physical exam
- Diet/nutrition evaluation
- Blood sugar
- Other, please specify: _____

2. Does your worksite have a wellness committee?

Yes

No

If yes, does it have a budget?

Yes

No

3. Does your worksite have a policy to make healthy food options, such as low-fat snacks, fresh fruit, water, or 100% fruit juice, available to employees:

Please check all that apply:

In vending machines?

In cafeteria?

In the coffee shop?

During employee meetings?

During other company functions?

Other, please specify _____

4. Does your worksite have a written policy to support exercise or physical activity of employees during work time (e.g. flexible work schedules, breaks, lunch period to engage in physical activity)?

Yes

No

5. Is there any exercise fitness facility available to employees at the worksite?

Yes

No

If yes, please check any or all of the following facilities available:

Indoor gym

Indoor courts

Outdoor courts

Showers, Changing Areas, and/or Lockers

Indoor track or walking path

Outdoor track or walking path

Other, please specify: _____

6. Does your worksite have a corporate agreement with health clubs or gyms to offer the employees discounted or subsidized memberships?

Yes

No

7. Does your worksite promote or encourage the use of stairs at your worksite (i.e. prominent stairways, signage, etc.)?

Yes

No

8. Does your worksite provide employees with pedometers?

Yes

No

9. Does your worksite have a written policy about smoking or tobacco use at the worksite?

- Yes No

If yes, does your workplace have a written policy about disciplinary measures (warnings, fines, etc.) for policy violation?

- Yes No

10. Please check the rules about **smoking** at your workplace (including vehicles, outdoor areas, and buildings):

- There is a partial ban (designated areas for smoking in the building)
 Smoking is allowed on the grounds, but not in the building
 There is a total ban on smoking throughout the premises

11. Please check the rules about **other tobacco use** (i.e. snuff, chew, e-cigarettes) at your workplace (including vehicles, outdoor areas, and buildings):

- There is a partial ban (designated areas for tobacco use in the building)
 Tobacco is allowed on the grounds, but not in the building
 There is a total ban on tobacco throughout the premises

12. Do the employees have the opportunity to purchase tobacco products at the worksite?

- Yes No

13. Does your organization provide subsidized/free tobacco cessation counseling?

- Yes No

14. Please check all of the following practices or policies your worksite has to reduce stress at the workplace:

- None
 An employee assistance program (EAP)
 A formal employee grievance procedure
 Management training on stress related issues (performance review, communication)
 Organized social events open to all employees
 A break room/lounge for employees, not including the cafeteria or lunchroom
 "Well Days" off for employees
 Other, please specify: _____

15. Does your organization ensure all workstations are ergonomically sound?

- Yes No

16. Does your organization monitor heating, lighting, and ventilation?

- Yes No

17. Does your organization encourage stretch and fitness breaks throughout the day?

- Yes No

18. Do you evaluate your employee wellness program?

Yes

No

If so, how often? _____

If so, what do you measure? _____

19. Do you have any success stories from your employee wellness program you'd like to share?

Yes

No

If yes, please elaborate:

20. Are you interested in receiving a copy of our report when we complete the Health Impact Assessment?

Yes

No

21. How can the Town of Davidson help you start/implement worksite wellness?

22. If the Town were to organize a Corporate Challenge, would you be interested in participating or collaborating in any way?

23. Are you interested in collaborating more with the Town of Davidson in the future to increase the capacity for worksite wellness?

Yes

No

Survey adapted from: "Healthy Workforce 2010: An Essential Health Promotion Sourcebook for Employers, Large and Small", CDC Wellness Scorecard, and WELCOA Culture of Wellness

Appendix F: Survey for Employees

This survey was sent to employees at the businesses where we interviewed the employer. It was sent via SurveyMonkey.

Survey Questions for Employees

Thank you for participating in the Town of Davidson's survey regarding worksite wellness in Davidson. This is part of a Health Impact Assessment to provide recommendations for promoting worksite wellness among the Town's employers.

Feel free to answer any or all of the following questions. The survey should take approximately 10-15 minutes to complete. All answers will be kept confidential.

Your Interest in Worksite Wellness:

1. What company do you work for?

- Ingersoll Rand
- MSC
- Davidson College
- CHS Behavioral Health Clinic
- Other, please specify: _____

2. How do you like to learn about health and lifestyle information? (Select all that apply).

- | | |
|--|--|
| <input type="checkbox"/> One-on-one counseling | <input type="checkbox"/> Contests and incentive programs |
| <input type="checkbox"/> Phone counseling | <input type="checkbox"/> Employee Assistance Programs |
| <input type="checkbox"/> Health screenings (i.e. Blood pressure) | <input type="checkbox"/> Videos/DVDs |
| <input type="checkbox"/> Health fairs | <input type="checkbox"/> CDs |
| <input type="checkbox"/> On-site workshops/seminars | <input type="checkbox"/> Books/Materials/Pamphlets |
| <input type="checkbox"/> Online programs | <input type="checkbox"/> Self-directed programs |
| <input type="checkbox"/> Group support/Discussion groups | <input type="checkbox"/> Physician |

3. How would you prefer to receive information about worksite wellness programs?

- | | |
|---|--|
| <input type="checkbox"/> A dedicated bulletin board | <input type="checkbox"/> In a flyer distributed with paychecks |
| <input type="checkbox"/> Written materials (newsletters, flyers, memos) | <input type="checkbox"/> In the internet/intranet |
| <input type="checkbox"/> Weekly emails | <input type="checkbox"/> Discussion at staff meetings |
| | <input type="checkbox"/> Other, please specify:
_____ |

4. Please rank how interested you are in receiving information about the health topics below. Circle a number 1-5, 1 indicating not interested and 5 indicating very interested.

Health care Topics	Not interested		Neutral		Very Interested
Understanding health insurance	1	2	3	4	5
Questions for your doctor	1	2	3	4	5
Preventive dentistry	1	2	3	4	5

Healthy Lifestyle	Not interested		Neutral		Very Interested
Controlling high blood pressure	1	2	3	4	5
Weight management techniques	1	2	3	4	5
Starting a walking/exercise routine	1	2	3	4	5
Recreational safety	1	2	3	4	5
Nutritious cooking tips	1	2	3	4	5
Smoking reduction/cessation tips	1	2	3	4	5

Disease/condition-specific Topics	Not interested		Neutral		Very Interested
Heart disease prevention	1	2	3	4	5
Diabetes management	1	2	3	4	5
Cancer detection and prevention	1	2	3	4	5
Asthma management	1	2	3	4	5
Carpal tunnel disorders	1	2	3	4	5
Arthritis	1	2	3	4	5
Back care/injury prevention	1	2	3	4	5
Foot care	1	2	3	4	5
Osteoporosis	1	2	3	4	5
Sleep disorders	1	2	3	4	5
Allergies	1	2	3	4	5
Cold/Flu prevention and treatment	1	2	3	4	5
Headache prevention and treatment	1	2	3	4	5
Sexually transmitted diseases	1	2	3	4	5

Overall Wellness	Not interested		Neutral		Very Interested	
Stress reduction tips	1	2	3	4	5	
Men's health	1	2	3	4	5	
Women's health	1	2	3	4	5	
Mental health	1	2	3	4	5	
Work/Life balance	1	2	3	4	5	
Substance abuse	1	2	3	4	5	
Spiritual wellness	1	2	3	4	5	
Eldercare issues	1	2	3	4	5	
Parenting tips	1	2	3	4	5	
Personal violence protection	1	2	3	4	5	
Health issues for shift workers	1	2	3	4	5	
Workplace ergonomics	1	2	3	4	5	

5. Which of the following types of programs would you participate in? Check all that apply.

- Multi-week group programs
- Single session workshops
- Self-directed program
- Online program
- Group events in the community
- None

6. Would you utilize vaccines (flu, tetanus, Lyme disease, hepatitis B, etc.) if they were provided on-site?

- Yes
- No

7. Would you participate in any of the following wellness activities on a regular basis if they were offered at work? Check all that apply.

- Exercise classes
- Sports league
- Walking event or club
- Complete a personal fitness contract
- Weight management program
- Health risk assessment/screening
- Health fair
- Smoking cessation program
- Workshop on self-esteem
- Parenting skills and support group
- Monthly wellness seminar
- Fitness or wellness contest
- Join a support group
- Health and wellness information provided on the internet

8. Please indicate which screening test(s) you would participate in if offered at your worksite (your screening results will be confidential).
- | | |
|--|--|
| <input type="checkbox"/> Blood pressure | <input type="checkbox"/> Skin Analyzer (Skin Cancer) |
| <input type="checkbox"/> Body fat | <input type="checkbox"/> Cardiovascular (EKG) |
| <input type="checkbox"/> Cholesterol | <input type="checkbox"/> Prostate Checks |
| <input type="checkbox"/> Hearing | <input type="checkbox"/> Mammograms |
| <input type="checkbox"/> Glucose (blood sugar) | <input type="checkbox"/> None. I am not interested in screenings at this time. |
| <input type="checkbox"/> Bone density | |
| <input type="checkbox"/> Vision | |
9. Would you buy healthy snacks at the worksite if they were available? (For example, low fat yogurt, fresh fruit or pretzels *instead of* candy, chips, etc.)
- | | |
|---|---|
| <input type="checkbox"/> Definitely | <input type="checkbox"/> Probably not too often |
| <input type="checkbox"/> Some of the time | <input type="checkbox"/> Not at all |
10. Would you use break time for physical activity, such as stretching, yoga, or a walk, if there were a place to do so?
- | | |
|---|---|
| <input type="checkbox"/> Definitely | <input type="checkbox"/> Probably not too often |
| <input type="checkbox"/> Some of the time | <input type="checkbox"/> Not at all |
11. Would you utilize on-site exercise facility or a subsidized gym membership, if available?
- | | |
|--|--|
| <input type="checkbox"/> Yes, I would use either one. | <input type="checkbox"/> Yes, I would use a subsidized gym membership. |
| <input type="checkbox"/> Yes, I would use an on-site facility. | <input type="checkbox"/> No, I would not utilize these. |
12. Some worksites get books, videos, recipes, and other items for use by employees who want to learn more about health and wellness issues. Would you use this kind of resource center if available?
- | | |
|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> Definitely | <input type="checkbox"/> Probably not |
| <input type="checkbox"/> Maybe | <input type="checkbox"/> No |
13. Would you support any of the following? Check all that apply.
- Increasing healthy food and drink options in the cafeteria and vending machines
 - Decreasing unhealthy food and drink options in the cafeteria and vending machines
 - Policy encouraging healthy foods for catered meetings
 - Policy encouraging walking meetings when applicable
 - Tobacco-free workplace including all outdoor areas of the property
 - Establishment of a wellness or relaxation room
 - Safe, accessible and inviting stairwells
 - Safe, accessible walking routes (indoors or outdoors)

14. In the last 12 months, how many days have you been absent from work due to personal illnesses or injuries? _____

15. In the last 12 months, how many times have you visited the doctor? _____

16. In the last 12 months, how many times were you in the hospital as a patient? _____

17. What, if any, kind of incentives would motivate you to take better care of your own wellness? Check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Financial rewards (cash, gift cards, lower cost in health insurance) | <input type="checkbox"/> Raffles for gifts or financial rewards |
| <input type="checkbox"/> Days/hours off | <input type="checkbox"/> No incentive would motivate me |
| <input type="checkbox"/> Free food at the program | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Small gifts (T-shirts, hats, water bottles) | |

18. Are there any barriers that prevent you from participating in wellness activities? Check all that apply.

- Inconvenient time or location
- Lack of time
- Privacy: my employer should not be involved in my personal health
- Confidentiality: concern about others knowing of my personal health
- Lack of management support or my job duties do not allow me to participate
- Financial costs
- Just not interested
- Other: _____

Your Current Health Status	Yes	No
1. I exercise for at least 20 minutes 3 or more days a week.		
2. I regularly smoke cigarettes.		
3. I am more than 20 lbs. over my ideal weight.		
4. I avoid eating too much fat.		
5. I practice some type of stress management on a regular basis.		
6. I have had my blood pressure checked in the last year.		
7. I wear a seat belt all the time when I am in a motor vehicle.		
8. I have had a bout of low back pain in the last six months.		
9. I have 3 or more alcoholic drinks every day.		
10. I make an effort to eat enough fiber from whole grains, cereals, fruits, and vegetables.		
11. I eat breakfast every day.		

Survey Adapted from: "Healthy Workforce 2010: An Essential Health Promotion Sourcebook for Employers, Large and Small", Blue Cross Blue Shield of Massachusetts, and Health Alliance Plan of Michigan