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Autoimmune Conditions

The health and productivity impact of chronic conditions series

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About this Series

Helping employees manage chronic illnesses is one of the most effective strategies for reducing employers' healthcare and disability costs. The *Health and Productivity Impact of Chronic Conditions* series by IBI leverages high-quality data to model healthcare, illness-related absences (i.e., sick days), and disability costs for employers. These results provide a scalable cost benchmark that employers and their supplier partners can use to assess potential savings from reducing the prevalence of conditions, treatment costs, and illness-related absences and disability leaves.

Founded in 1995, the **Integrated Benefits Institute (IBI)** is a national, nonprofit research and educational organization focused on workforce health and productivity. IBI provides data, research, tools and engagement opportunities to help business leaders make sound investments in their employees' health.

Executive Summary

Autoimmune diseases affect nearly 50 million Americans, yet many employer benefit strategies fail to capture their full impact on healthcare expenses, absenteeism, and workforce productivity. With prevalence rising and treatment costs escalating, these conditions are emerging as one of the most significant—and frequently underestimated—challenges to employee health and productivity.¹

This report examines the health and productivity impacts of five of the most prevalent and costly autoimmune conditions: **rheumatoid arthritis, multiple sclerosis, inflammatory bowel diseases, psoriasis, and thyroid autoimmune disorders**. While these conditions represent some of the major types of autoimmune diseases, they do not encompass the full magnitude and prevalence of the over 100 recognized autoimmune conditions. Our analysis identifies crucial trends and actionable insights for organizations looking to improve their employee health offerings.

Data for this study comes from the Agency for Healthcare Research and Quality's (AHRQ's) *Medical Expenditure Panel Survey* (MEPS), IBI's *Health and Productivity Benchmarking System*, and the U.S. Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) program and National Compensation Survey. Methods and regression models are described in the Appendix.

Overall Cost Analysis: For every 1,000 U.S. employees, the five autoimmune conditions examined in this report result in about **\$580,000** in excess and potentially avoidable healthcare treatment costs and lost work time from sickness and disability. This does not include the value of lost productivity due to early exits from the labor force, excess turnover costs, and presenteeism (impaired job performance due to autoimmune conditions and their symptoms).

For comparison, this represents roughly **5%** of a typical annual healthcare budget for an organization with 1,000 employees (excluding imputed absence costs). These excess and potentially avoidable costs are comparable in magnitude to that of other chronic conditions, such as diabetes, which typically receive more attention from employers.

- **Prevalence of Autoimmune Conditions:** In a nationally representative sample of employed U.S. adults, **7.2%** received treatment for one of the five highlighted autoimmune conditions. However, this figure likely underrepresents the true prevalence of these conditions in society, as many autoimmune conditions are significantly under-diagnosed and untreated. Additionally, this represents only a subset, as the analysis does not encompass all 100+ known autoimmune conditions.
- **Disparities in Incidence and Outcomes:** The incidence of autoimmune conditions among **women** was almost **twice** that of men overall, with certain conditions exhibiting even greater gender disparities. Additionally, **racial and ethnic disparities** contribute to variations in the prevalence and outcomes of autoimmune conditions.
- **Comorbid Conditions:** Mental health conditions, including **anxiety** and **depression**, are among the most common and significant comorbidities in individuals with autoimmune conditions.

- **Excess Medical and Pharmacy Costs:**

- Excess medical and pharmacy treatment costs for employees with autoimmune conditions range from **\$2,200** to **\$33,500** per year. On average across all 5 conditions this is over **2 times** as expensive as an average employee, but can be as great as **6 times**. For some conditions, prescription medications, particularly high-cost specialty drugs, can be **16 times** higher.
- For a 1,000-employee organization, the aggregated annual excess medical and pharmacy costs for the five highlighted autoimmune conditions amount to approximately **\$542,000**. This excess cost represents an incremental **5%** of the typical annual healthcare expenditure for an employer of that size.

- **Excess Worker Absences:**

- **Sick Days and Costs:** Employees with some autoimmune conditions had an average of **1-2** excess sick days per year (**30%-60%** above average), costing about **\$700-\$800** in lost annual wages and benefits per employee.
 - **Short-Term Disability Claims:** Employers' short-term disability (STD) insurance programs experience an average of **4.5** new claims for autoimmune conditions per 10,000 covered lives annually. STD claims for autoimmune conditions incur **44-73** calendar days of disability per claimant, costing about **\$16,300-\$27,200** per year in wage replacements and paid employee benefits per claim.
 - **Long-Term Disability Claims:** Employers' long-term disability (LTD) insurance programs manage an average of **2.7** active claims for autoimmune conditions per 10,000 covered lives annually. Of LTD claims across all five highlighted conditions, **67%** remain open two years after they begin, varying by condition, with thyroid autoimmune disorder claims closing most quickly and multiple sclerosis claims remaining longest. LTD claims for autoimmune conditions incur an average of **183-287** calendar days of disability per claimant per year, costing about **\$52,400-\$82,300** in average wage replacements and paid employee benefits per claim per year.
- **Impact of Presenteeism:** Even when physically present at work, employees experiencing symptoms of autoimmune conditions can be functionally impaired, leading to significant reductions in cognitive function, concentration, and overall performance. This phenomenon, known as "presenteeism," often results in errors, delays, and decreased work quality and output. Although not quantified in this report, prolonged presenteeism can contribute to burnout, decreased job satisfaction, challenges in effective collaboration with colleagues, and lower overall engagement.
 - **Treatment and Workplace Interventions:** There is no known cure for autoimmune diseases, but treatments can help manage symptoms. Employers can play a crucial role by providing benefits programs and flexible, supportive and inclusive work environments that enable employees to perform at their best, despite their conditions.

Introduction

Autoimmune conditions are a group of more than 100 chronic illnesses where the immune system mistakenly attacks the body's own organs, tissues and cells. Instead of protecting the body from harmful invaders like viruses and bacteria, the immune system targets healthy cells, leading to inflammation and damage.²

These conditions don't always show visible symptoms, making them particularly challenging to recognize and understand in a workplace setting. Living with an autoimmune disease is akin to navigating a world where one's own body is an unpredictable adversary. On the outside, these individuals may appear perfectly healthy, but internally, they are often grappling with a storm of symptoms. Each day can bring a new challenge, be it debilitating fatigue, joint pain, or brain fog that clouds their thoughts and hampers their ability to focus.

Although the causes of many autoimmune diseases remain unknown, a person's genetics in combination with infections and other environmental exposures are likely to play a significant role in disease development. Treatments are available for many autoimmune diseases, but cures have yet to be discovered.

Although there are over 100 recognized autoimmune diseases, this report focuses on five of the most prevalent and costly conditions:

1. **Rheumatoid Arthritis (RA)**

Rheumatoid arthritis (RA) is the most common type of inflammatory arthritis globally. It primarily affects joints, causing inflammation, pain, and potential joint damage. In RA, the immune system attacks the synovium, the lining of joint membranes. This leads to chronic inflammation and joint destruction over time. RA often affects smaller joints first, such as those in the hands and feet, and can also impact other body systems.³

2. **Multiple Sclerosis (MS)**

Multiple Sclerosis (MS) is a chronic autoimmune disorder affecting the central nervous system. It causes the immune system to attack myelin, the protective covering of nerve fibers in the brain and spinal cord. This damage disrupts communication between the brain and body, leading to symptoms such as fatigue, vision problems, and mobility issues. MS typically begins between ages 20 and 40 and affects people differently, with varying symptom severity and progression.⁴

3. **Inflammatory Bowel Diseases (IBD)**

Inflammatory bowel diseases (IBD) are a group of chronic conditions that cause inflammation in the digestive tract. The two main types of IBD are Crohn's disease and Ulcerative colitis. These conditions cause chronic inflammation of the gastrointestinal tract and are characterized by periods of active symptoms (flares) and periods of remission. Symptoms may include abdominal pain, diarrhea, weight loss, and fatigue, and can range from mild to severe. IBD can also lead to complications outside the digestive system, such as joint inflammation or skin problems.⁵

4. **Psoriasis**

Psoriasis is a chronic autoimmune skin condition characterized by rapid skin cell growth, resulting in thick, red, scaly patches. It commonly affects areas like elbows, knees, scalp, and lower back. Psoriasis is more than skin-deep; it can also lead to psoriatic arthritis in some cases. The condition tends to cycle through flare-ups and remissions, and can significantly impact quality of life.⁶

5. **Thyroid Autoimmune Disorders**

Autoimmune thyroid diseases (AITD) affect over 10% of US adults, although under-diagnosis and under-treatment is significant.⁷ These conditions occur when the body's immune system mistakenly attacks the thyroid gland, leading to two potential problems:

- **Graves' Disease:** The thyroid becomes overactive, producing too much hormone. This speeds up many bodily functions, leading to symptoms like a rapid heartbeat or palpitations, unexpected weight loss despite increased appetite, anxiety and hyperactivity, increased bowel movements, heat intolerance and excess sweating, and light sensitivity or eye irritation.
- **Hashimoto's Thyroiditis:** The thyroid becomes underactive, not making enough hormone. This slows down many bodily processes, leading to symptoms like fatigue, weight gain, joint and muscle pain, constipation, depression, muscle weakness, slowed heart rate and sleepiness.

In both cases, the immune system sends white blood cells to invade the thyroid gland. This invasion disrupts the thyroid's normal function, causing it to work either too hard or not hard enough. As a result, people with these conditions may experience a wide range of symptoms affecting their overall health and quality of life. The prevalence of hypothyroidism in the US has significantly increased over the past 2 decades,⁸ and the incidence of Graves' disease in children appears to be rising globally.⁹

Autoimmune conditions share common features of immune system dysregulation but affect different parts of the body. They can be roughly categorized based on the body systems they impact. Here are the major categories and examples of autoimmune conditions in each:

1. **Skin and Connective Tissue:** Psoriasis, vitiligo, scleroderma.
2. **Blood and Blood Vessels:** Lupus, rheumatoid arthritis.
3. **Digestive System:** Inflammatory bowel diseases, celiac disease.
4. **Endocrine System:** Hashimoto's thyroiditis, Graves' disease, type 1 diabetes.
5. **Nervous System:** Multiple sclerosis, Guillain-Barré Syndrome.
6. **Musculoskeletal System:** Rheumatoid arthritis, ankylosing spondylitis.

This wide range of systems affected by autoimmune conditions presents significant challenges for employers attempting to understand and manage these conditions in their workforce.

- **Fragmented Standards of Care:** The variety of specialists that patients must see for their specific conditions (e.g., a dermatologist for psoriasis, a rheumatologist for rheumatoid arthritis, a gastroenterologist for celiac disease, an endocrinologist for Hashimoto's thyroiditis) can lead to disjointed and fragmented standards of care.
- **Under-recognized Impact:** Because conditions fall under different major diagnostic categories, they do not appear collectively in aggregated claims data. As a result, the categorical impact of autoimmune conditions often goes unnoticed.
- **Diagnosis Challenges:** The complexity of diagnosing autoimmune conditions often leads to patients appearing in claims reports with an "unspecified" diagnosis, further understating the impact. On average, it takes about 4.5 years and visits to 4-5 doctors to receive a diagnosis. This lengthy process is due to the wide range of overlapping symptoms, making accurate diagnosis challenging.

Employers seeking to better understand the impact of autoimmune conditions in their workforce can begin by requesting their carriers, brokers, and/or consultants to analyze the data on their population, focusing on more accurately identifying the underlying prevalence and impact of these conditions. The analysis in this report can also provide scalable cost benchmarks to assess potential savings from reducing the prevalence of symptoms, treatment costs, and illness-related absences and disability leaves.

GENDER AND RACIAL DISPARITIES

Autoimmune conditions disproportionately affect women and minority populations, impacting diagnosis, prevalence, and outcomes.

Some autoimmune conditions are **more prevalent in women** than in men. For instance, conditions like rheumatoid arthritis, multiple sclerosis, Hashimoto's thyroiditis, and systemic lupus erythematosus (SLE) are significantly more common in women. The female-to-male ratio for these diseases can range from 3:1 to 16:1. Researchers hypothesize that factors contributing to this disparity include hormones like estrogen, which can modulate immune responses, sex-specific microbiome (gut microorganism) differences, and genetic predispositions linked to the X chromosome.^{10,11}

Racial and ethnic differences also play a role in the prevalence and outcomes of autoimmune conditions. For example, African American and Hispanic populations have higher rates of lupus compared to Caucasian populations. Additionally, Asian women are more susceptible to certain autoimmune conditions like SLE. These disparities can be influenced by genetic factors, access to healthcare, and social determinants of health such as income and education levels.¹²

Addressing these disparities requires a multifaceted approach, including better access to healthcare, increased awareness, and tailored treatment strategies to improve outcomes for all affected individuals.

Prevalence

HOW MANY PEOPLE RECEIVE HEALTHCARE TREATMENT FOR AUTOIMMUNE CONDITIONS?

The following figures represent individuals with autoimmune conditions identifiable through national data. As noted elsewhere in this report, these figures likely underrepresent the true prevalence of these conditions, as many autoimmune conditions are significantly under-diagnosed and untreated. Additionally, the complexity of diagnosing autoimmune conditions and the extended timelines before an accurate diagnosis is reached often result in patients appearing in claims reports with an "unspecified" diagnosis, further understating the true prevalence.

As a result, these prevalence figures should be considered a conservative estimate.

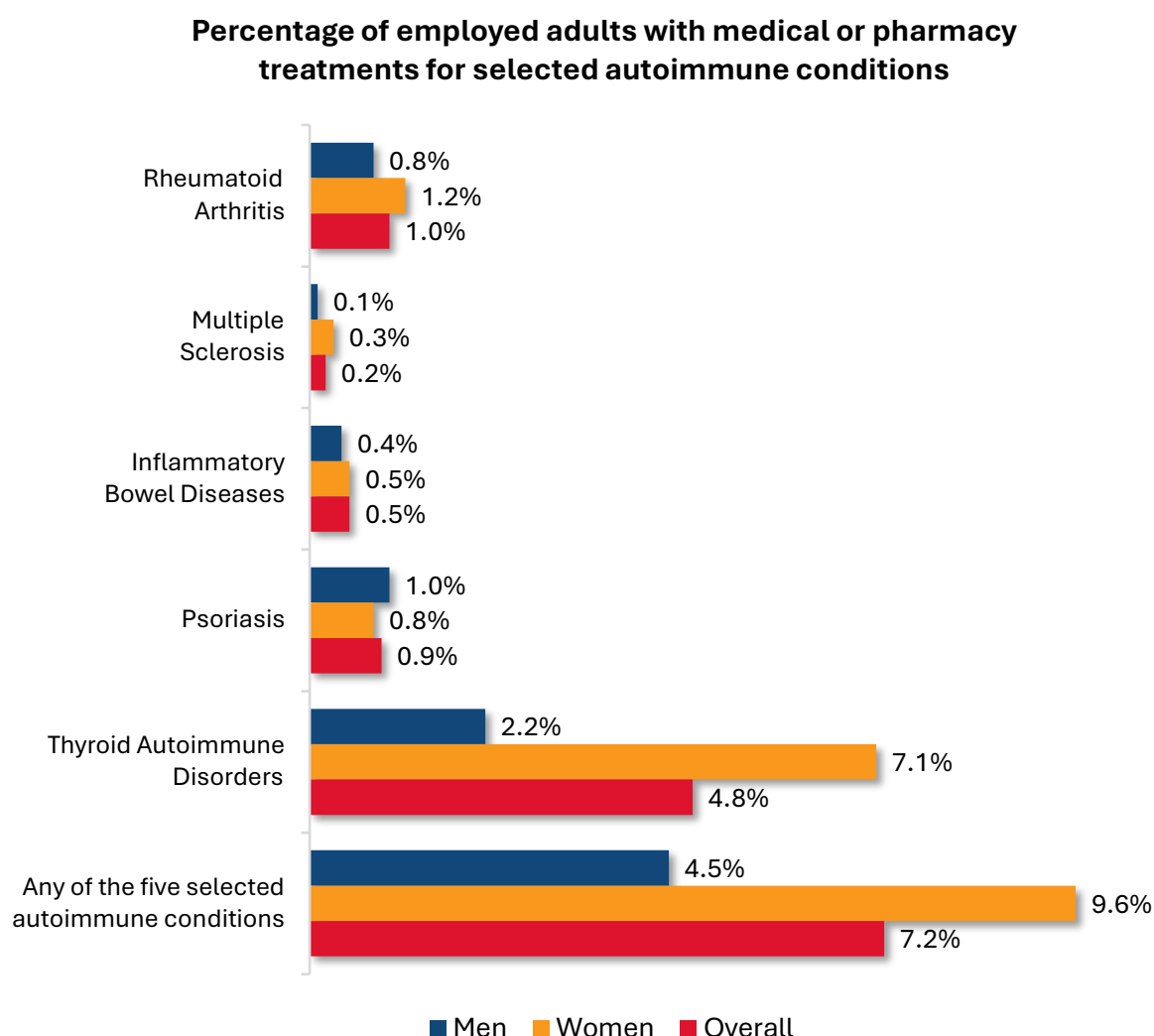


Figure 1

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022.

WHAT OTHER CONDITIONS (COMORBIDITIES) AFFLICT EMPLOYEES WITH AUTOIMMUNE CONDITIONS?

The following five figures illustrate the prevalence of other chronic conditions (comorbidities) that coexist with each of the highlighted autoimmune conditions.

Rheumatoid Arthritis

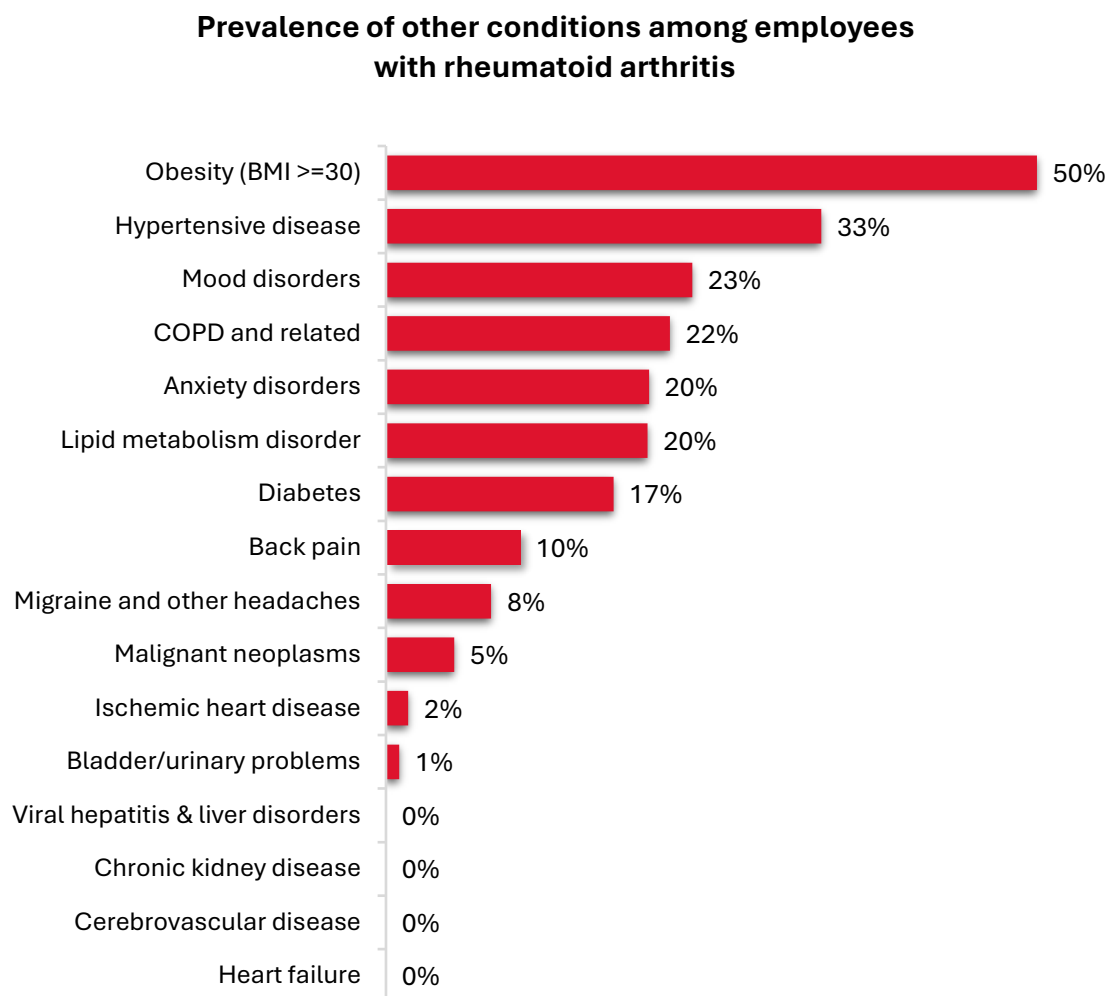


Figure 2a

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. BMI = body mass index; BMI data comes from the 2022 dataset only as question was not administered in 2021. COPD = chronic obstructive pulmonary disease. Conditions displayed as "0%" have a small prevalence that rounds down to zero.

Multiple Sclerosis

Prevalence of other conditions among employees with multiple sclerosis

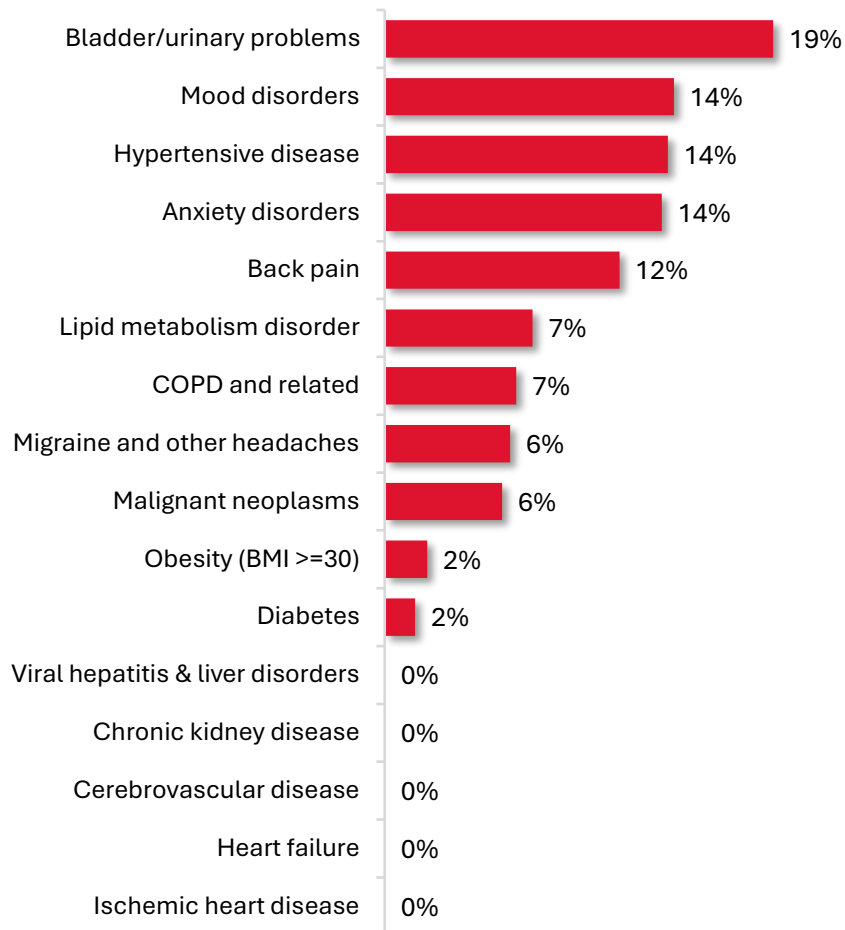


Figure 2b

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. BMI = body mass index; BMI data comes from the 2022 dataset only as question was not administered in 2021. COPD = chronic obstructive pulmonary disease. Conditions displayed as "0%" have a small prevalence that rounds down to zero.

Inflammatory Bowel Diseases

Prevalence of other conditions among employees with inflammatory bowel diseases

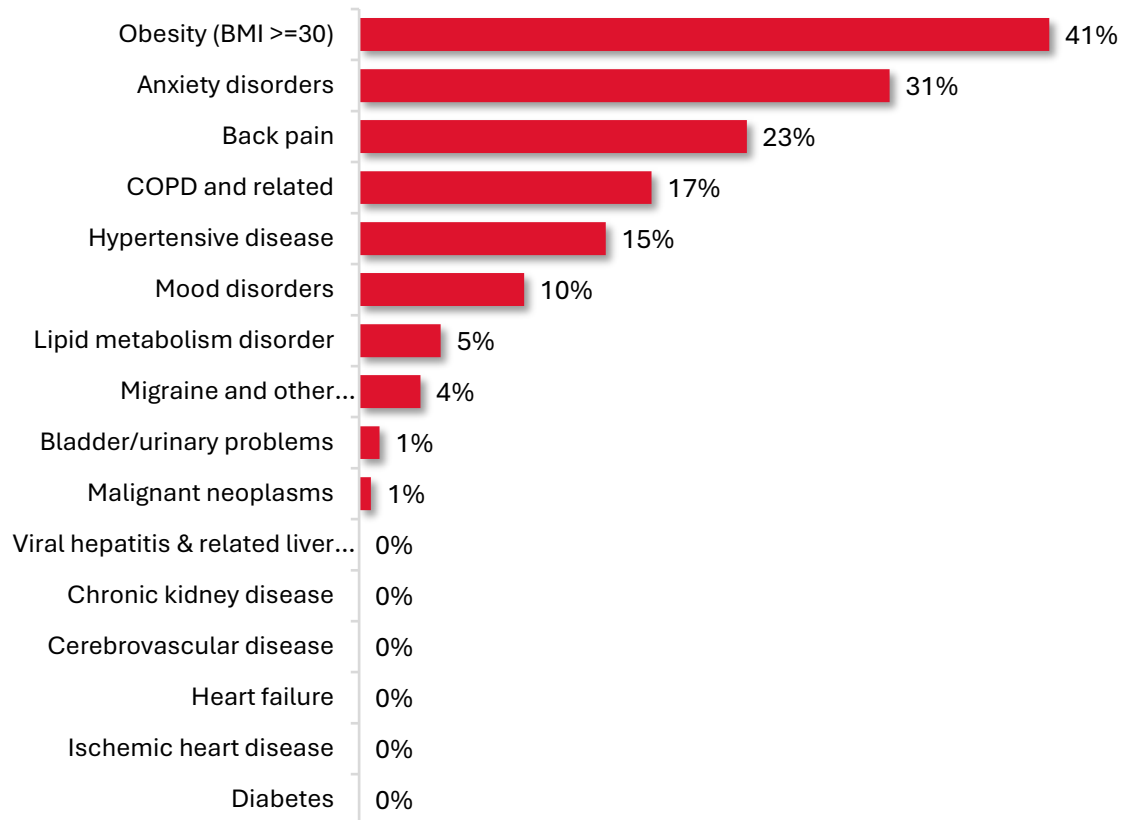


Figure 2c

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. BMI = body mass index; BMI data comes from the 2022 dataset only as question was not administered in 2021. COPD = chronic obstructive pulmonary disease. Conditions displayed as "0%" have a small prevalence that rounds down to zero.

Psoriasis

Prevalence of other conditions among employees with psoriasis

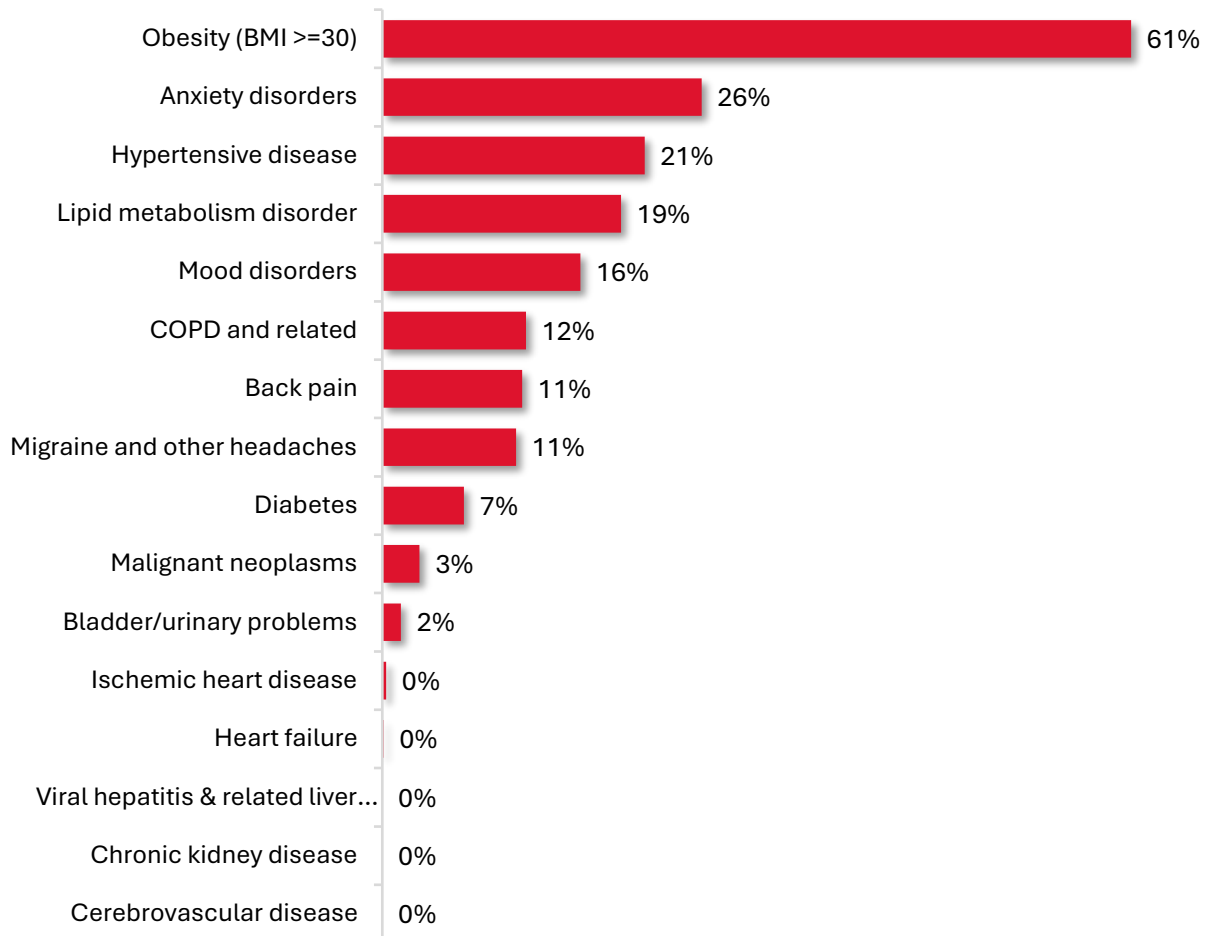


Figure 2d

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. BMI = body mass index; BMI data comes from the 2022 dataset only as question was not administered in 2021. COPD = chronic obstructive pulmonary disease. Conditions displayed as "0%" have a small prevalence that rounds down to zero.

Thyroid Autoimmune Disorders

Prevalence of other conditions among employees with thyroid autoimmune disorders

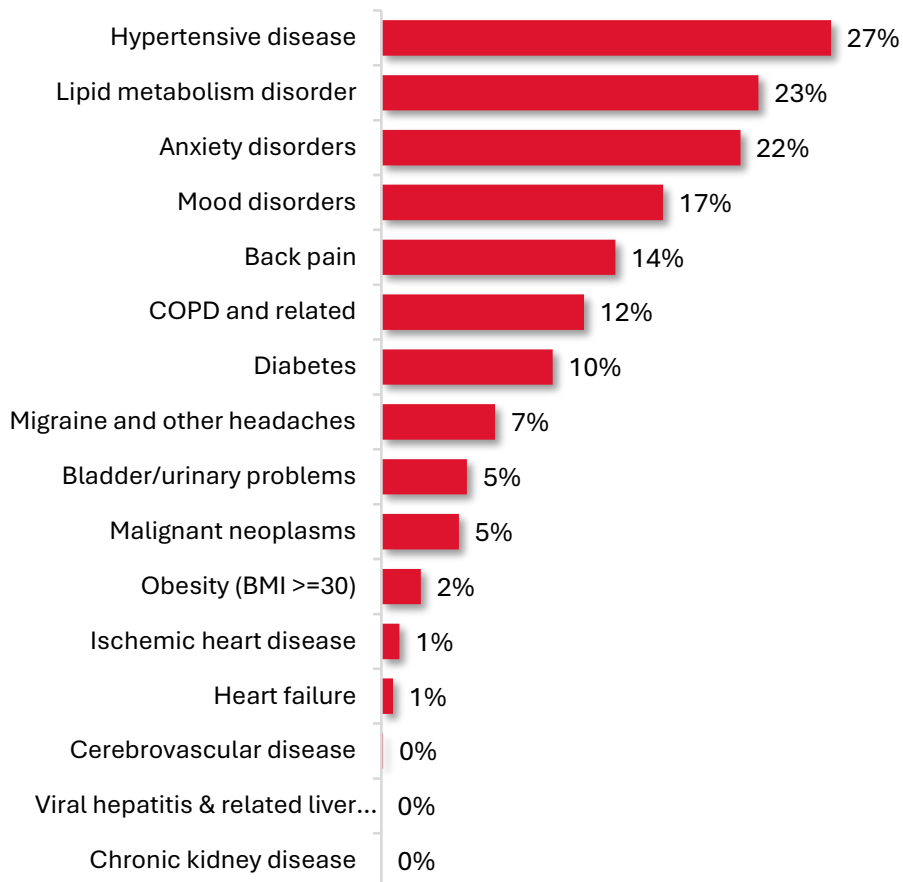


Figure 2e

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. BMI = body mass index; BMI data comes from the 2022 dataset only as question was not administered in 2021. COPD = chronic obstructive pulmonary disease. Conditions displayed as "0%" have a small prevalence that rounds down to zero.

Treatment Costs

HOW MUCH ARE MEDICAL/RX TREATMENT COSTS FOR EMPLOYEES WITH AUTOIMMUNE CONDITIONS?

Excess costs represent the average costs for individuals with the specified condition that exceed the average costs for those without the condition. Excess medical and pharmacy treatment costs for employees with the five highlighted autoimmune conditions range from **\$2,200** to **\$33,500** per year. On average across all five conditions this is over **two times** as expensive as an average employee, but can be as great as **six times**.

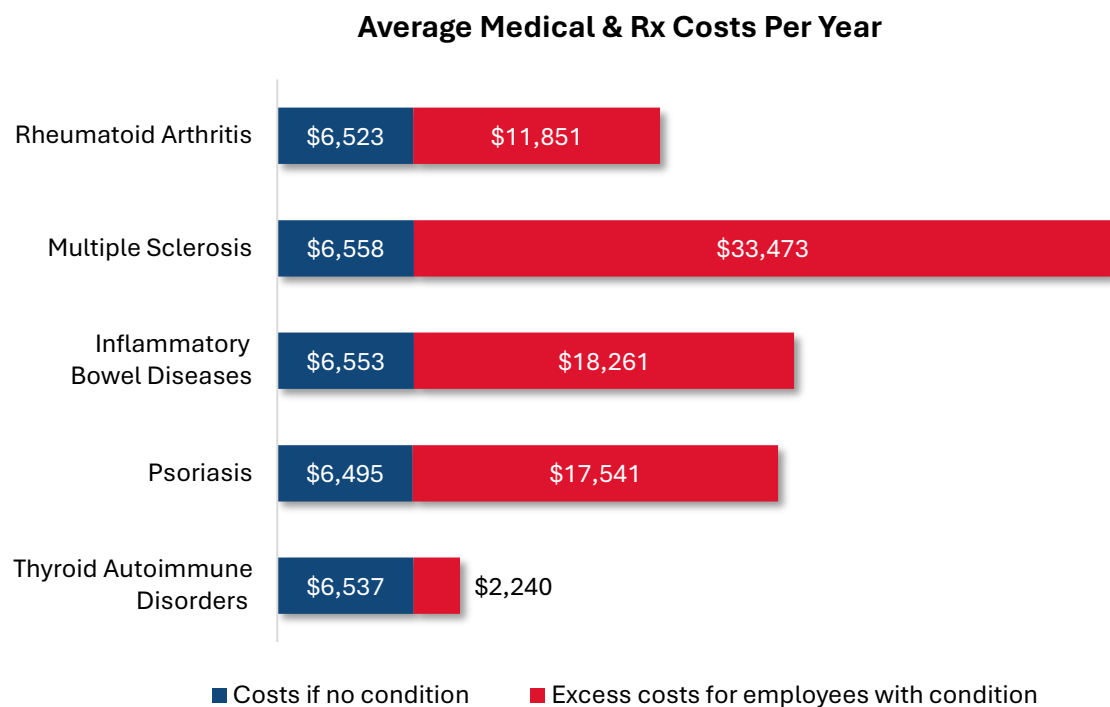


Figure 3a

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. Costs include expenses for all medical and pharmacy treatment, regardless of reason. Costs are estimated from multivariate regression models controlling for other comorbid chronic conditions. See the appendix for details on the model.

For some autoimmune conditions, the cost of prescription medications, especially high-cost specialty drugs, can be up to **16 times** higher than for those without the condition.

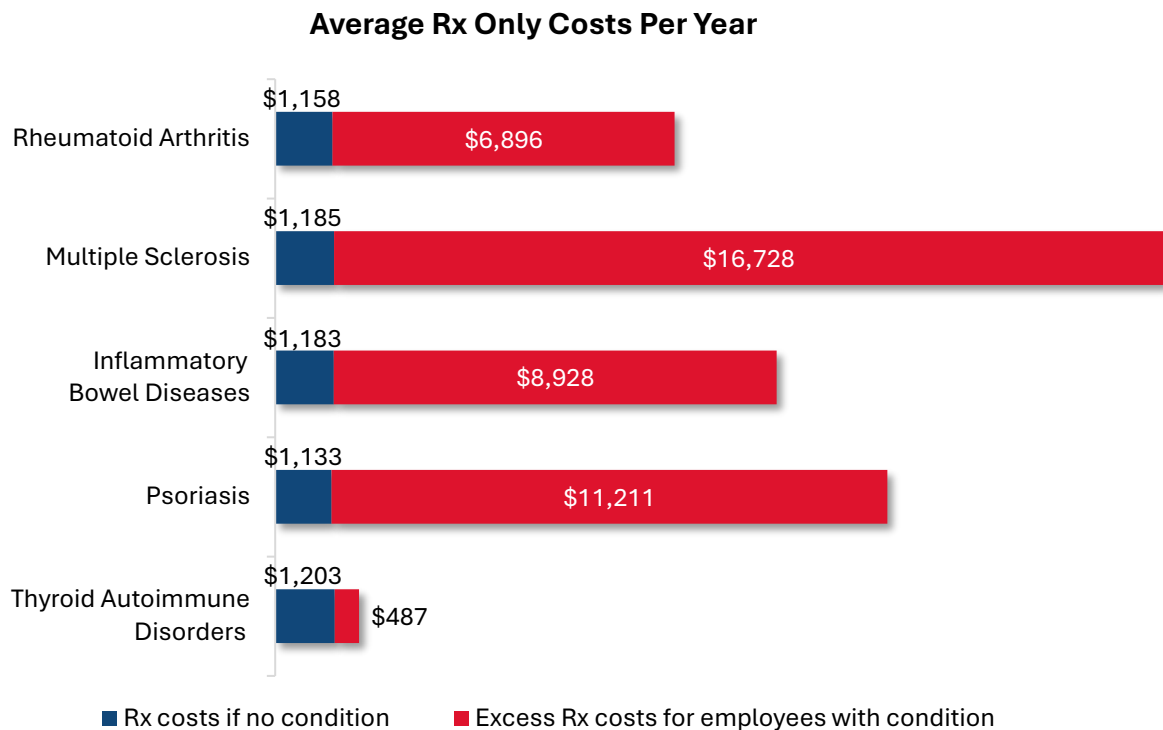


Figure 3b

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. Costs include expenses for all medical and pharmacy treatment, regardless of reason. Costs are estimated from multivariate regression models controlling for other comorbid chronic conditions. See the appendix for details on the model.

Illness Absences (Sick Days)

HOW OFTEN ARE EMPLOYEES WITH AUTOIMMUNE CONDITIONS ABSENT FROM WORK DUE TO ILLNESS?

Employees with some autoimmune conditions incurred an average of **1-2** excess sick days per year, **30%-60%** above the average of those without autoimmune conditions.

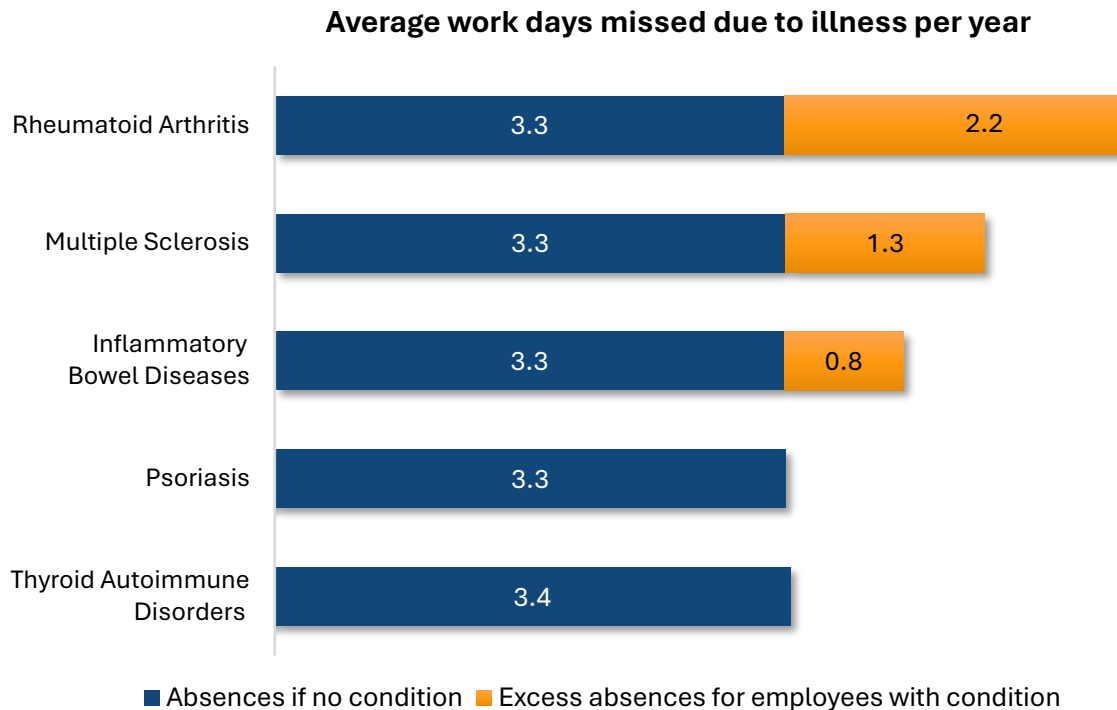


Figure 4

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022. Illness absences (i.e., number of 8-hour work days missed) are estimated from multivariate regression models controlling for other comorbid chronic conditions, age, sex, race and ethnicity. See the appendix for details on the model.

Note: Due to the relatively small sample sizes for certain conditions in this analysis, some of the results may have limited statistical significance and should be interpreted with caution.

WHAT ARE THE COSTS OF ILLNESS ABSENCES FOR EMPLOYEES WITH AUTOIMMUNE CONDITIONS?

Costs for lost annual wages and benefits due to excess sick time are estimated at up to **\$824** per employee.

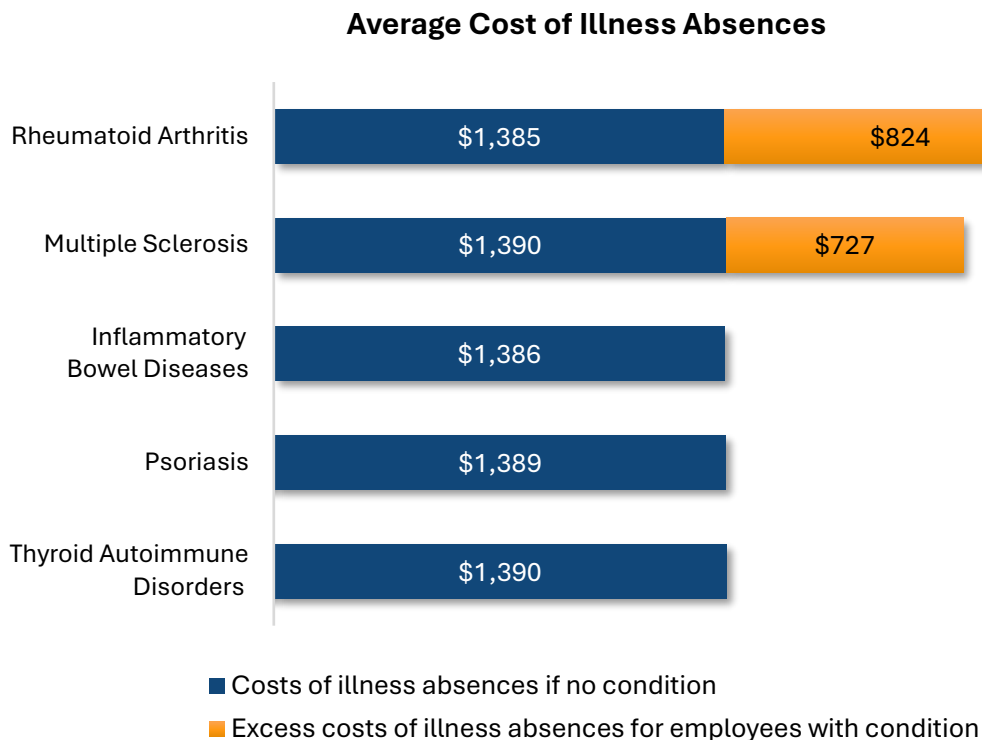


Figure 5

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021–2022 in combination with wage and benefit costs from the Bureau of Labor Statistics 2021 and 2022 Quarterly Census of Employment and Wages survey and Employer Costs for Employee Compensation data. Wages and benefits paid for illness are calculated as average daily total compensation (wages plus benefits) times average illness absences (i.e., number of 8-hour work days missed due to illness). Wages and benefits paid for illness are estimated from multivariate regression models controlling for other comorbid chronic conditions, age, sex, race and ethnicity. See the appendix for details on the model. Estimates assume that all employees are eligible for paid sick days.

Note: Due to the relatively small sample sizes for certain conditions in this analysis, some of the results may have limited statistical significance and should be interpreted with caution.

Short-Term Disability (STD) Outcomes

HOW OFTEN DO EMPLOYEES TAKE STD LEAVE FOR AUTOIMMUNE CONDITIONS?

Employers' short-term disability (STD) insurance programs experience an average of **4.5** new claims for the five highlighted autoimmune conditions per 10,000 covered lives annually.

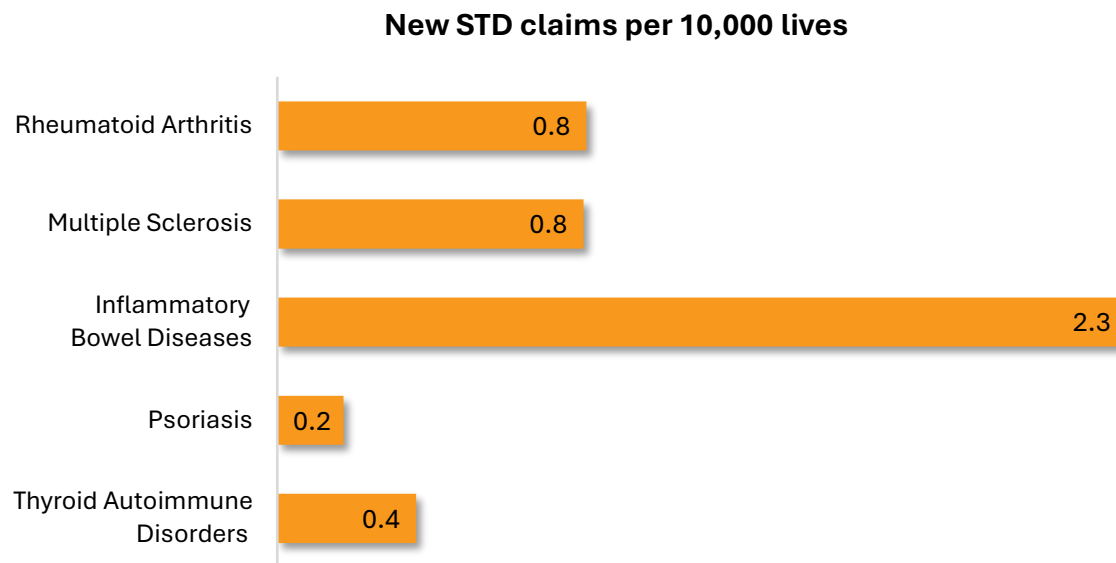


Figure 6

Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2021-2022.

HOW LONG IS THE AVERAGE STD CLAIMANT FOR AUTOIMMUNE CONDITIONS AWAY FROM WORK?

STD claims for the five highlighted autoimmune conditions incur an average of **44-73** calendar days of disability per claimant.

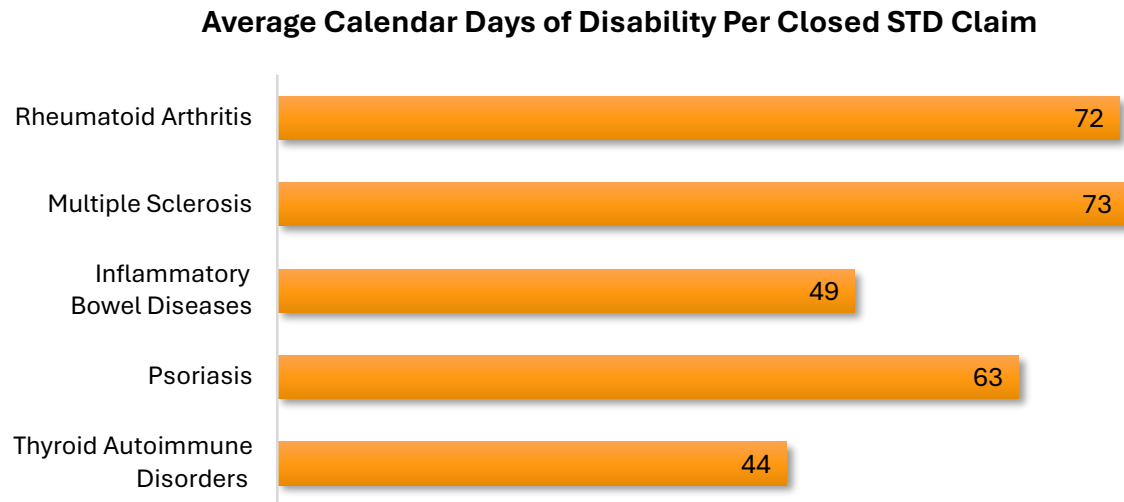


Figure 7

Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2021-2022. Lost workdays do not include any elimination period that precedes the claim.

HOW MUCH DOES THE AVERAGE STD CLAIM FOR AUTOIMMUNE CONDITIONS COST?

STD claims for the five highlighted autoimmune conditions cost from **\$16,300-\$27,200** per claim per year in economic value.

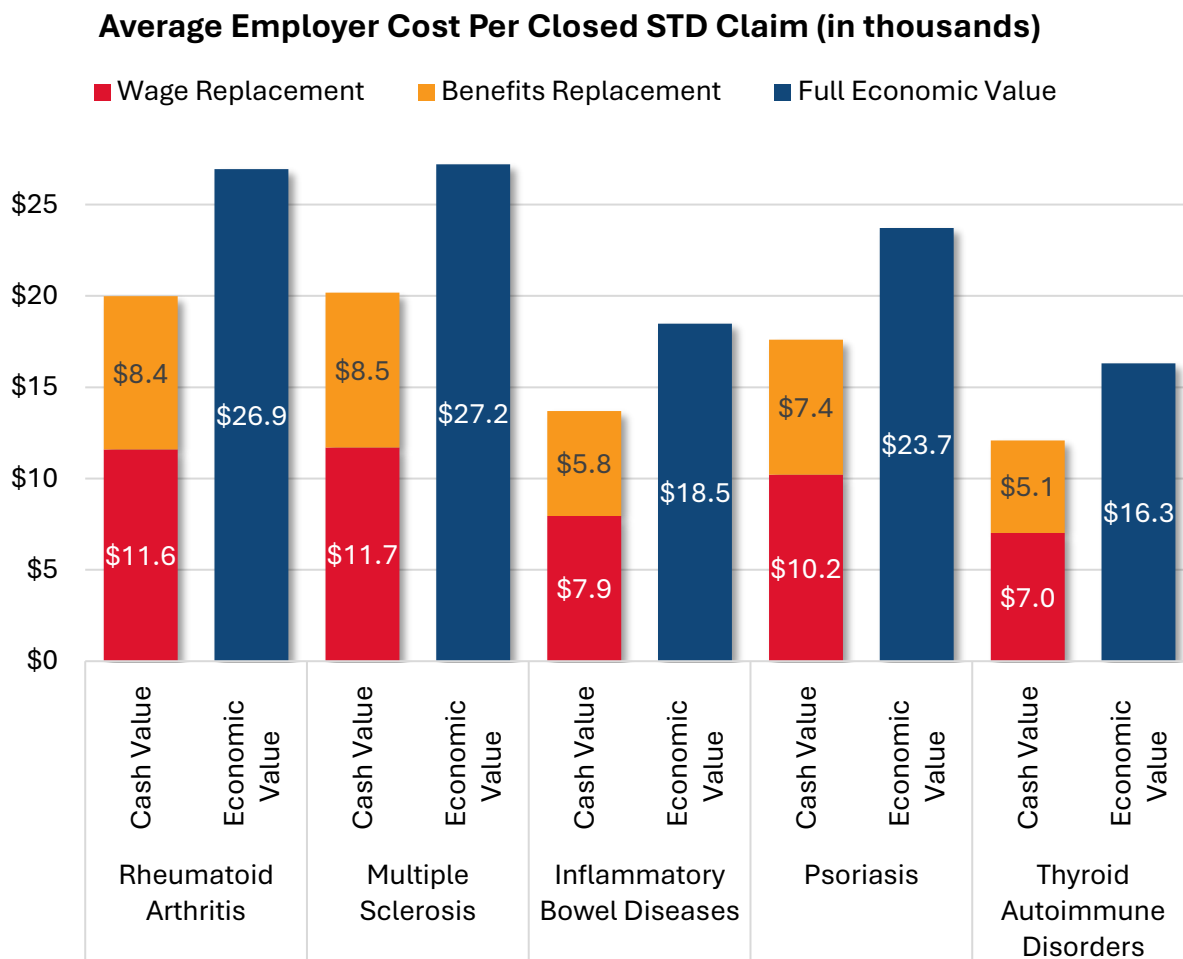


Figure 8

See Figure 7 for source and the appendix for cost estimation method. *Cash value* refers to compensation to employees on STD leave, including benefits continuation. *Economic value* refers to the marginal product of lost labor inputs, estimated by average daily wages and benefits. This encompasses not only the direct costs of lost productivity but also the broader economic impact, including potential contributions to projects, innovation, and overall organizational performance. Cash and economic value represent distinct ways of valuing lost productivity and should not be combined. See the appendix for more information.

Long-Term Disability (LTD) Outcomes

HOW MANY EMPLOYEES ARE ON LTD LEAVE FOR AUTOIMMUNE CONDITIONS OVER A GIVEN YEAR?

Employers' long-term disability (LTD) insurance programs manage an average of **2.7** active claims for the five highlighted autoimmune conditions per 10,000 covered lives annually.

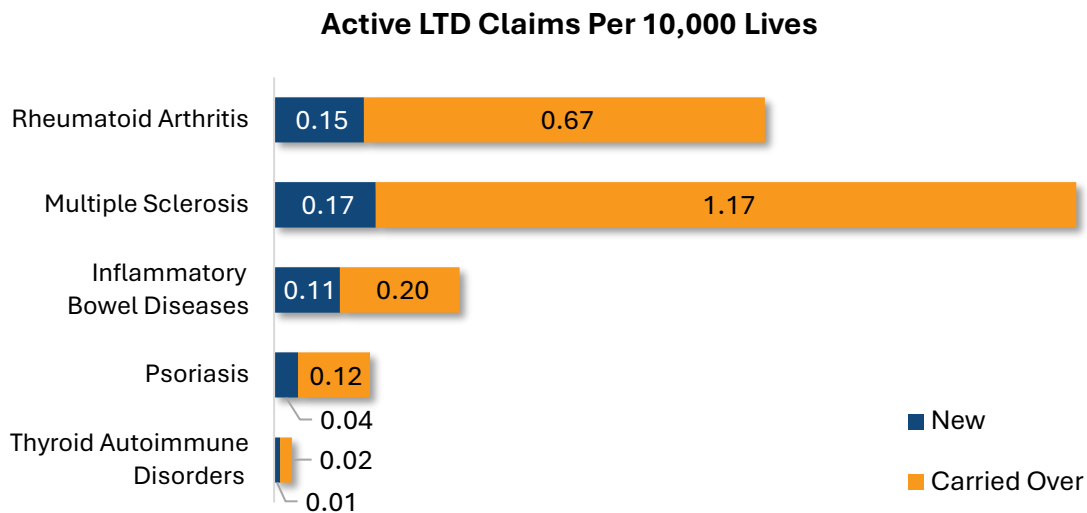


Figure 9

Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2021-2022. New claims began within an observed data year. Carried-over claims began prior to an observed data year.

HOW MANY LTD CLAIMS FOR AUTOIMMUNE CONDITIONS CLOSE WITHIN TWO YEARS?

For LTD claims across all five highlighted conditions, **67%** remain open two years after they begin, varying by condition, with thyroid autoimmune disorder claims closing most quickly and multiple sclerosis claims persisting the longest.

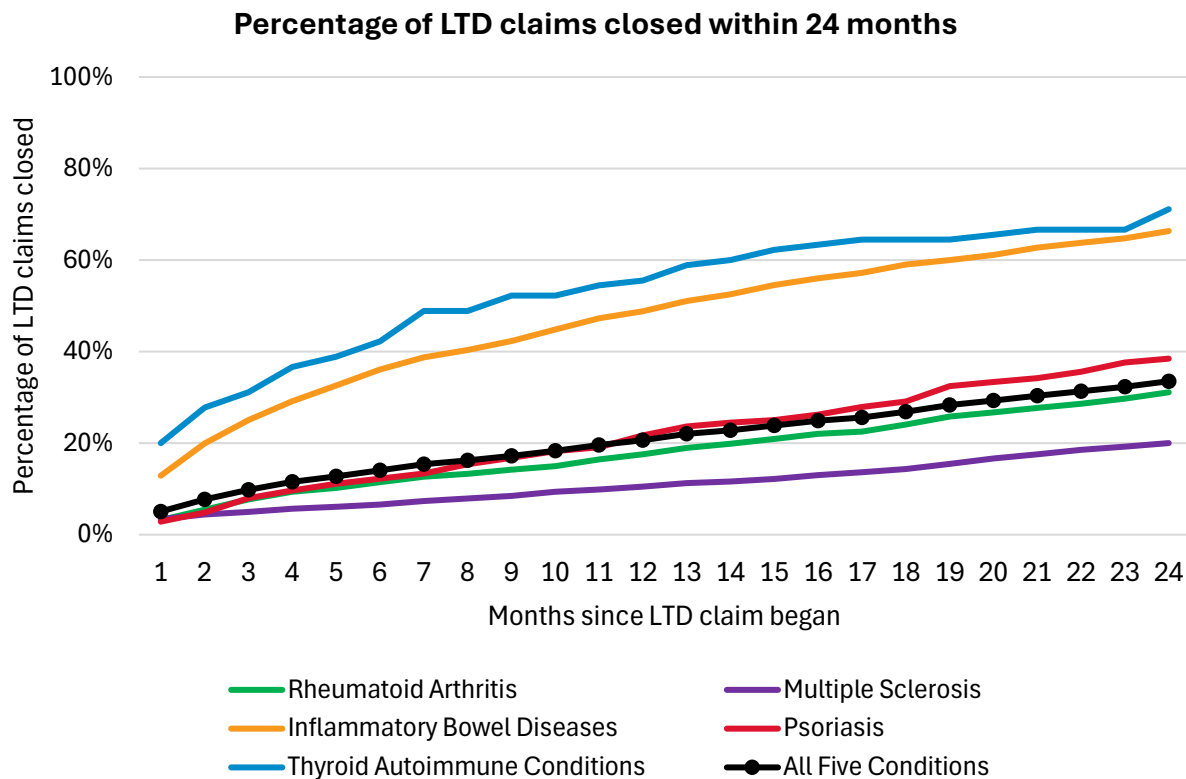


Figure 10

Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2021-2022. Please note that most LTD claims span more than two years, so an average claim length cannot be determined from only two years of data. Due to significant anomalies related to the COVID-19 pandemic, data from 2020 and earlier has been excluded from this analysis.

HOW MUCH OF EACH WORK YEAR IS LOST BY THE AVERAGE LTD CLAIMANT FOR AUTOIMMUNE CONDITIONS?

LTD claims for the five highlighted autoimmune conditions incur an average of **183-287** calendar days of disability per claimant per year (representing from **50%-79%** of a calendar year).

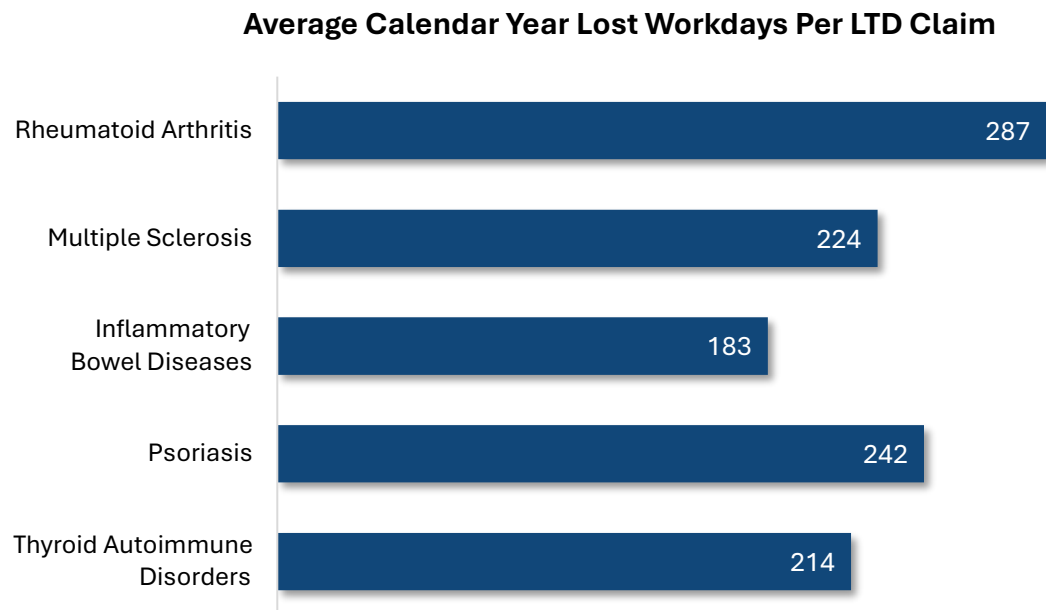


Figure 11

Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2021-2022. Days for LTD claims represent wage replacements for lost workdays occurring within 2021-2022.

HOW MUCH DOES THE AVERAGE LTD CLAIM FOR AUTOIMMUNE CONDITIONS COST EACH YEAR?

LTD claims cost **\$52,400-\$82,300** in average wage replacements and paid employee benefits per claim per year.

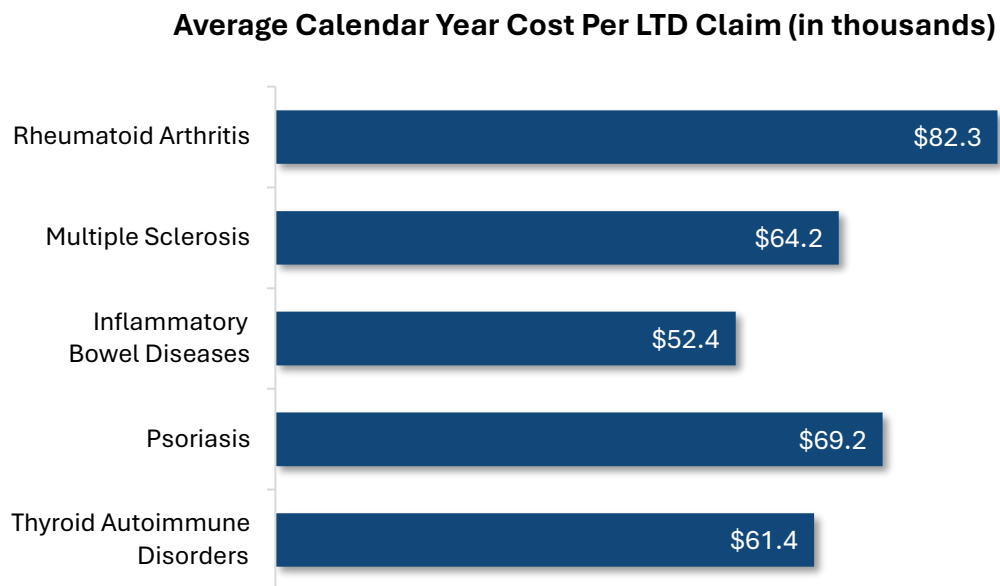


Figure 12

See Figure 11 for source and the appendix for cost estimation method.

Total Costs of Autoimmune Conditions in a Workforce

WHAT ARE THE ESTIMATED ANNUAL COSTS ASSOCIATED WITH SELECTED AUTOIMMUNE CONDITIONS IN A 1,000-PERSON WORKFORCE?

The following table summarizes the previous analyses, showing the consolidated financial impact of the highlighted autoimmune conditions on healthcare costs and absenteeism for an employer with 1,000 employees. These represent excess and potentially avoidable costs, above and beyond basic healthcare and absence costs for similar individuals without an autoimmune condition.

As discussed elsewhere in this report, the condition prevalence metrics for autoimmune conditions are likely under-reported, as many of these conditions are either undiagnosed, misdiagnosed or untreated. As such, this assessment should be considered a conservative benchmark of the total impact on a hypothetical employer. Even still, this total represents roughly **5%** of an annual healthcare budget for an organization with 1,000 employees (excluding imputed absence costs). These excess costs are comparable in magnitude to those associated with other chronic conditions, such as diabetes, which typically receive more attention from employers.

	Excess medical and Rx costs	Excess illness absences	STD claims	LTD claims	Total
Rheumatoid Arthritis	\$118.5	\$8.2	\$2.2	\$6.7	\$135.7
Multiple Sclerosis	\$66.9	\$1.5	\$2.2	\$8.6	\$79.2
Inflammatory Bowel Diseases	\$91.3	\$0	\$4.2	\$1.6	\$97.1
Psoriasis	\$157.9	\$0	\$0.4	\$1.1	\$159.4
Thyroid Autoimmune Disorders	\$107.5	\$0	\$0.6	\$0.2	\$108.3
All five selected conditions	\$542.2	\$9.7	\$9.7	\$18.3	\$579.8

Table 1: Consolidated Excess Costs (in thousands)

Sources: Agency for Healthcare Research and Quality, Medical Expenditure Panel Study, 2021-2022; Integrated Benefits Institute, Health and Productivity Benchmarking database, 2021-2022; Bureau of Labor Statistics. Treatment costs and illness absence days are calculated by the product of the prevalence of the selected condition and the average excess outcomes for employees treated for that condition (see previous charts in this section). Costs for illness absences and STD claims represent the economic value of lost labor inputs from absences. They are calculated by applying industry-average 2024 daily wage and benefits estimates from BLS to the total number of estimated lost workdays. See the appendix for more information. Costs for LTD claims represent wage replacements for lost workdays occurring within a calendar year. Costs assume that all employees are eligible for illness absence, STD benefits and LTD benefits or for other benefits that allow them to take time off from work due to their condition.

Treatment and Workplace Interventions

There is no known cure for autoimmune diseases, but treatments can help manage symptoms and reduce inflammation. These may include:

- **Medications:** Utilizing anti-inflammatory drugs, immunosuppressants, and biologics.
- **Lifestyle Changes:** Implementing diet, exercise, and stress management practices to help reduce symptoms and minimize flare-ups.
- **Physical Therapy:** Maintaining mobility and function in affected joints.

Living with an autoimmune disease can be challenging, but with proper management and support, many people lead fulfilling lives. Employers can play a crucial role by providing benefits programs and flexible work environments that enable employees to perform at their best, despite their conditions.

The invisible nature of these diseases complicates workplace interventions. Without visible signs, colleagues and employers often fail to recognize the severity of the struggle. This leads to misconceptions and underestimation, which exacerbate the emotional toll. Employees with autoimmune diseases frequently conceal their condition and suffer in silence due to stigma and fear of being misunderstood.

Moreover, as previously noted in this report, women and underrepresented populations disproportionately suffer from many autoimmune conditions. This exacerbates the challenges they may already face in feeling valued, respected, and empowered to contribute their best work.

Current Workplace Interventions

Some of the more widely adopted workplace interventions include:^{13,14, 15}

1. Flexible Work Arrangements

- **Flexible Hours:** Offering flexible work schedules to accommodate varying energy levels, medication schedules, and medical appointments
- **Remote Work:** Providing options to work from home, to reduce commuting stress, allow for better control over the environment, and provide the option to rest during breaks if needed.
- **Modified Work Schedules:** Supporting reduced hours, staggered shifts, or job sharing, if feasible.

2. Ergonomic Accommodations

- **Ergonomic Assessments:** Providing professional ergonomic evaluations of employee workstations.
- **Adjustable Workstations:** Providing ergonomic chairs, desks, and keyboards to reduce physical strain and pain, which is common with conditions like rheumatoid arthritis or lupus.

- **Lighting:** Offering adjustable lighting to minimize glare or sensitivity (common in MS).
- **Adaptive Equipment:** Providing ergonomic keyboards, trackballs, voice recognition software, specialized tools designed for limited hand function.

3. Environmental Adjustments

- **Air Quality:** Ensuring good air quality to minimize respiratory irritation (relevant for some with psoriasis or IBD).
- **Proximity to Restrooms:** Strategically placing workstations closer to restrooms for employees with IBD.
- **Noise Reduction:** Providing noise-canceling headphones or a quieter workspace to reduce stress and distractions.

4. Job and Workplace Accommodations

- **Job Modifications:** Modifying job duties to reduce physical or mental demands, such as reducing lifting requirements or providing more breaks, and providing assistive devices based on individual needs.
- **Task Reassignment:** Reassigning tasks that are physically demanding or exacerbate symptoms.
- **Parking:** Reserving parking spaces close to the entrance for those with mobility challenges.

5. Supportive Management and Coworker Education

- **Awareness Programs:** Educating managers and employees about autoimmune diseases: their impact, common challenges, and the importance of empathy and understanding.
- **Manager Training:** Equipping managers with the knowledge and resources to understand autoimmune conditions and the challenges employees may face.
- **Manager Support:** Providing managers with access to HR resources and legal guidance to ensure they are handling accommodation requests appropriately, as well as coaching and support to help managers navigate difficult conversations and address employee concerns.
- **Open Communication:** Fostering an environment where employees feel comfortable disclosing their needs and asking for accommodations.

6. Health and Wellness Programs

- **Health Insurance Benefits:** Providing comprehensive health insurance coverage that includes access to specialists (rheumatologists, dermatologists, neurologists, gastroenterologists), prescription medications, and physical therapy. Consider covering alternative and complementary therapies (e.g., acupuncture, massage).

- **Mental Health Support:** Offering mental health services or counseling, since autoimmune conditions can be associated with anxiety and depression.
- **Wellness Resources:** Providing access to programs focused on exercise, nutrition, stress management, and mindfulness.
- **Employee Assistance Programs (EAPs) and other Coaching Resources:** Providing confidential counseling and support services to help employees manage work challenges and improve resilience.

7. Workplace Policies

- **Policy Review:** Regularly reviewing existing policies to remove any bias or barriers for people with chronic conditions.
- **Diversity, Equity, and Inclusion (DEI) Initiatives:** Integrating autoimmune conditions into broader diversity initiatives to raise awareness and reduce stigma.

8. Advancements in Disability Management

- **Proactive Case Management:** Creating case management processes to support employees with autoimmune conditions and guide them through the process of getting accommodations.
- **Early Intervention Programs:** Implementing processes to identify early warning signs of a disability and providing assistance before an employee needs more support.
- **Return-to-Work Programs:** Developing structured programs to support employees returning to work after a flare-up or extended leave.

Emerging Workplace Interventions

Additional interventions are being adopted by innovative employers and are likely to become increasingly prevalent:

1. Targeted Autoimmune Care

- **Tailored Autoimmune Support Solutions:** Providing focused support and resources through a dedicated partner to help employees more effectively manage their autoimmune conditions.¹⁶
- **Telemedicine Services:** Offering convenient access to healthcare providers (e.g., rheumatologists, endocrinologists) via telehealth, reducing the need for off-site appointments.¹⁷
- **Remote Monitoring:** Utilizing wearable devices and advanced technologies to track employees' health, detect early signs of flare-ups, and facilitate proactive communication with healthcare professionals or employers.¹⁸

2. Personalized Accommodations Using AI and Data

- **Data-Driven Accommodations:** Using data analytics and AI to track employee health, predict potential challenges (e.g., periods of increased fatigue), and adjust accommodations accordingly.¹⁹
- **Smart Workspaces:** Utilizing smart building technologies (lighting, temperature, air quality) based on employee needs.²⁰
- **Adaptive Learning Platforms:** Adopting personalized learning systems for training and onboarding that can be adjusted to meet different needs and abilities of employees.²¹

3. Building Culture Change and Inclusivity

- **Peer Support Networks:** Creating opportunities for employees with autoimmune conditions to connect with each other, share experiences, and provide mutual support, as well as to potentially form advocacy groups for policy changes.²² These are sometimes referred to as **Employee Resource Groups (ERGs)**.
- **Reduce Stigma:** Promoting a culture of acceptance and understanding where employees feel comfortable disclosing their health conditions without fear of judgment or discrimination.^{23, 24}
- **Celebrate Diversity and Inclusion:** Highlighting the value of diversity and inclusion, emphasizing that employees with disabilities are an integral part of the workforce.²⁵

Appendix

DATA AND METHODS

The series uses data primarily from two sources:

Data from the Agency for Healthcare Research and Quality's (AHRQ's) *Medical Expenditure Panel Survey* (MEPS) are used for healthcare costs and illness absences.²⁶ MEPS collects annual, nationally representative information about health status, care utilization and treatment costs from components: (1) a survey of U.S. households, with information supplemented by data from household members' medical providers (the household component); and (2) a separate survey of employers about their employment-based health insurance plans (the insurance component). This report uses person-level data from the 2021-2022 household component files for information about health conditions, healthcare costs, illness absences, and demographic and occupational/ industrial characteristics.

Healthcare treatment costs in the MEPS data are reported in current dollars. We inflate all costs to 2022 dollars using the Bureau of Labor Statistics Consumer Price Index for Medical Care.²⁷

Data from IBI's *Health and Productivity Benchmarking System* (referred to simply as *Benchmarking*)²⁸ are used for short-term disability (STD) and long-term disability (LTD) outcomes. Each year, *Benchmarking* collects millions of STD and LTD claims from the books of business of 13 of the largest U.S. disability insurance carriers and third-party administrators. This report uses claims data for calendar years 2021-2022 for information on diagnoses, claims rates, durations and industry.

Due to significant anomalies in medical care and disability rates related to the COVID-19 pandemic, data from 2020 and earlier could not be used.

To estimate the costs for each lost workday, we apply industry-average daily wages in 2024 from the U.S. Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) program.²⁹ We also include an estimate of payments for employee benefits such as healthcare, retirement, and mandatory programs from the BLS's National Compensation Survey.³⁰

Our estimates assume a population of employees that is 100% eligible for paid sick days and for STD and LTD benefits. The economic value of each lost workday is the sum of average daily wages and benefits. For the cash value of disability absences, we assume that employees are paid 100% of their daily benefits, but only a portion of their wages based on an average wage replacement rate for the U.S. workforce, as a fixed percent of annual earnings. The average STD wage replacement rate used is 62.5%, and 58.2% for LTD.

REGRESSION MODELS

Attributing healthcare costs and illness absences to specific conditions poses well-known challenges. This is primarily due to the presence of comorbidities that can impact the severity of illness symptoms and the efficacy or intensity of care management. For this reason, we control for the presence of other chronic conditions for analyses of healthcare costs and illness absences in a way that permits us to compare the excess burdens for persons with a specific condition, over and above the burdens associated with their other conditions.

Our analyses of healthcare costs and illness absences using the MEPS data employ multivariate regression methods to isolate marginal effects. The basic form of the model is:

$$\hat{Y} = \alpha + \beta_1 \text{Condition} + \sum \beta_k \text{Demographics and chronic conditions} + \varepsilon$$

Equation 1

Where $\hat{Y}$ is the predicted value of the outcome, α is the constant intercept if all variables in the model equal zero, and ε is the error term. β_1 is the marginal increase or decrease in the outcome for employees with the focal chronic condition (in this case, autoimmune condition) compared to employees without the focal condition. $\sum \beta_k$ represents the marginal changes for the demographic and number of other chronic conditions (as well as chronic conditions² term to capture curvilinear effects) included in the models. The estimator is ordinary least squares regression for healthcare treatment costs. All results are weighted to reflect the U.S. workforce. To estimate either costs or absences for the baseline case (that is, for employees without the focal condition), the equation is solved at the mean for number of chronic conditions, with the value of focal condition set to zero.

DEFINITIONS OF CONDITIONS

Conditions are defined using the *International Classification of Diseases*, 9th and 10th revisions (ICD-9 and ICD-10, respectively),³¹ based on the three-digit diagnosis categories available in the MEPS data. *Benchmarking* data contains full ICD-9 diagnosis information, which is truncated to conform to the MEPS three-digit reporting. Individuals in the MEPS data are determined to have a condition based on records in the medical conditions files of the household component. *Benchmarking* disability claims record only the primary claim diagnosis.

While diagnosis codes are not a perfect method to identify all individuals with autoimmune conditions, they are the most accurate resource at our disposal. For the purposes of this report, the following diagnosis codes have been used to identify the medical and disability data for each of the selected autoimmune conditions:

Condition	ICD-9 Codes	ICD-10 Codes
Rheumatoid Arthritis	714	M05, M06, M08
Multiple Sclerosis	340	G35
Inflammatory Bowel Diseases	555, 556, 558	K50, K51, K52
Psoriasis	696	L40
Thyroid Autoimmune Disorders	245, 244.9	E03, E06

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