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The rise of a static workforce and the role HR can play in tackling the most common work-related injury



Data on how
to reduce
claims



The hidden
health crisis
already here



Why *Rehabilitation*
is the watchword
for 2023



Insights on
the strategic
role of HR

Introduction

How are your back and neck feeling? If you said sore, you're not alone.

At the height of the pandemic, 70% of employees working remotely were ending their day with increased back and neck pain¹. But over the past few years, as temporary setups at the kitchen table have become semi-permanent home offices, a new set of challenges have emerged. Employer programs, policies, and benefits plans are struggling to catch up.

Rarely has so much been asked of the HR department - a competitive labour market, growing demands for mental health supports, workplace morale challenges, return to premises strategies, and a need to contain costs. The strategic importance of HR professionals has been brought into sharp focus.

This paper presents the case for a timely conversation on the important role paramedical benefits play in this new landscape. It proposes that an increased focus on musculoskeletal conditions in the workplace, as a driver of disability, productivity, and claims, is long overdue. Most importantly, it outlines the opportunity for HR professionals to play a critical role in managing these challenges and implementing a strategy that promotes a healthy and mobile workforce.

We hope it is the beginning of a partnership conversation between extended healthcare professionals and HR managers, with a shared aim of supporting the health of Canadian workers.

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DEFINITION: Musculoskeletal (MSK):

Referring to the performance of the system comprising muscles, bones, joints, and adjacent connective tissues.

– World Health Organization

The Hidden Crisis that is Already Here: MSK Conditions in the Workplace

Musculoskeletal conditions such as back pain, headaches, arm or neck strain, and diseases of the muscle and joints are having a devastating impact on workforce participation of Canadians, at a time when labour is in high demand. MSK conditions are responsible for one-third of all lost time at work², costing the economy an estimated \$22 billion annually in the form of care, absenteeism, and lost productivity³.

According to a Conference Board of Canada report, MSK conditions are the second leading cause of both short- and long-term disability claims, with only mental health condition claims more frequent⁴. One of the most common MSK conditions is back pain. Up to 85% of workers will suffer from back pain at least once in their lifetime⁵ and often back pain will re-occur or become chronic. According to the Association of Workers' Compensation Boards of Canada, in 2019, 21% of all claims accepted were for back, spine, and spinal cord injuries⁶. In 2020, Work Safe BC estimated 535,341 days were lost in that province alone to back strain injuries⁷.

Critically, employers often underestimate the prevalence of chronic pain and chronic conditions in their workplace. In a recent survey, employers estimated that only 35 percent of their workforce had a chronic condition and/or chronic pain, but in reality, 67 percent of employees reported having at least one diagnosed chronic condition and/or chronic pain⁸. This disconnect often leads to negative impacts on employers, productivity, and a gap on how to address these conditions.

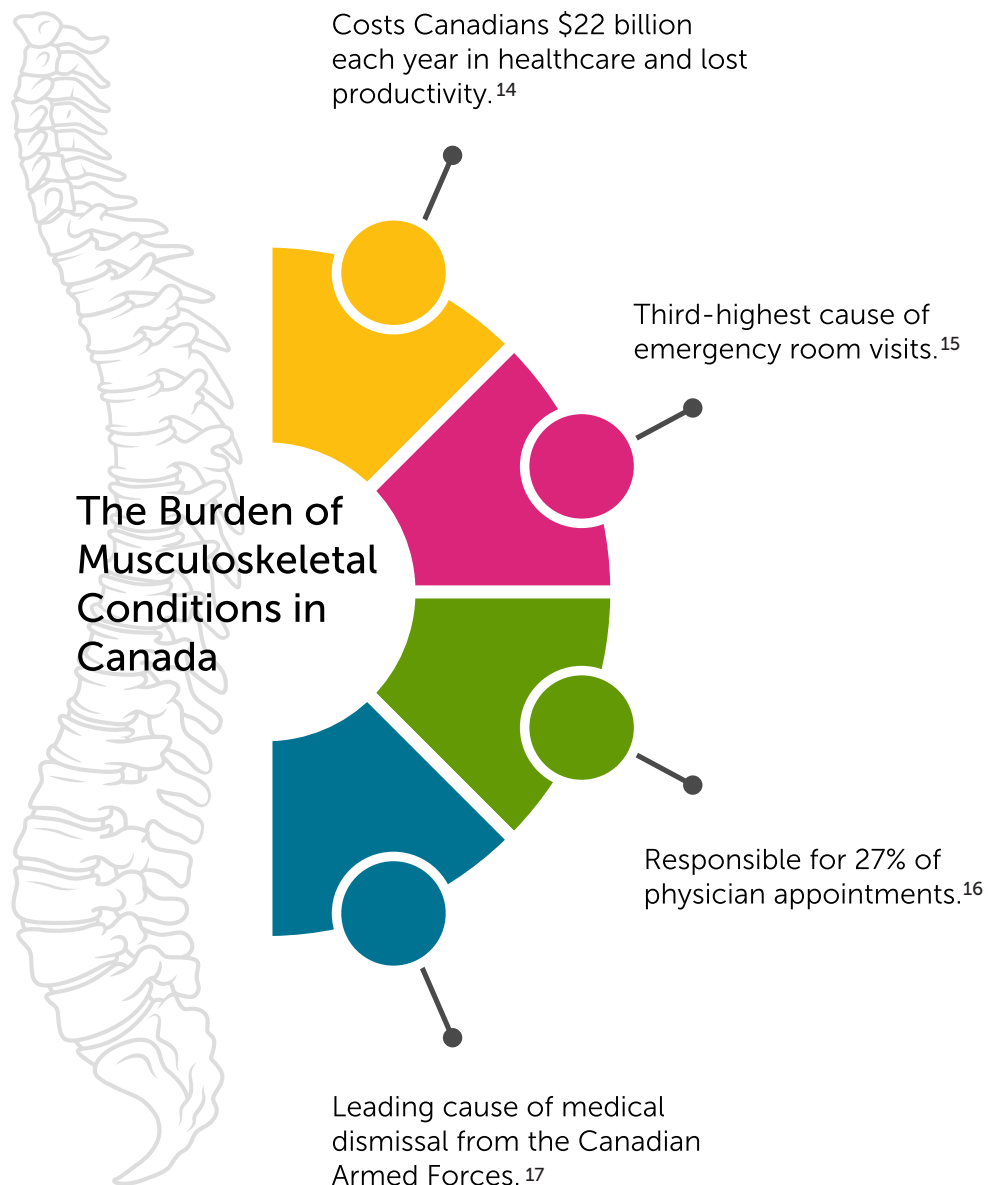
Unrecognized and untreated, MSK conditions may lead to chronic pain or develop into a much more complex and costly chronic condition.

**1/3 of all lost time at work
is caused by back pain⁹**



"As many people transition back to work and pre-pandemic routines, MSK claims are likely to begin to rise. Delayed interventions and treatment due to the pandemic could mean more serious conditions and prolonged recoveries in the future. Workplace strategies to promote MSK health will be more important than ever."

- Sun Life, Designed for Health 2022 report



The Big Picture: Impact of MSK Conditions on Canadian Society

The World Health Organization has stated that musculoskeletal conditions are the leading cause of disability around the globe. Conditions are more prevalent than cancer, stroke, heart disease, diabetes, and Alzheimer's Disease - combined.

Each year, more than 11 million Canadians suffer from musculoskeletal conditions and by 2031, Health Canada projects this number to grow to an alarming 15 million¹⁸. One in eight Canadians is diagnosed with chronic back pain,¹⁹ and pain is one of the most common reasons for Canadians to seek care, with one out of every five adults in Canada experiencing chronic pain²⁰.

The impact of rising chronic pain can be felt across Canadian society. It is acutely experienced in backlogs in the public healthcare system, in rising rates of disability claims, in a workforce struggling to adapt, and in the spiking opioid crisis.

Chronic pain is one of the most complex and difficult conditions to treat. Fortunately, the evidence is clear that for mechanical MSK conditions, like back and neck pain, conservative care, such as chiropractic, is recommended as the first line of management²¹. Yet, for many Canadians, these treatment options are not readily available due to the absence of adequate paramedical health benefits coverage.

Your Team & Your Bottom Line

There has never been a more important time to have a mobile and healthy workforce. At a point when labour demands are high, the burden of MSK conditions is acutely felt by employers through direct and indirect costs. According to Health Canada, over the next decade, the total cost of chronic pain is expected to increase by 36.2 percent and reach \$55 billion²².

An estimated 7.6 million, or one in five people (across their lifespan), lives with chronic pain, adversely affecting many daily activities²³. Almost 45 percent of Canadians reported activity limitations related to chronic back pain²⁴. As the second-leading driver for short and long-term disability, claims are having a significant impact on a company's productivity and profitability²⁵. The administrative cost, accident investigation time, and overtime costs to replace the ill or injured worker has been estimated to cost five to twenty-five times the direct costs²⁶.

In addition, work-related repetitive strain injuries (RSI) account for more than 30 percent of lost-time injuries according to Ontario's Workplace Safety & Insurance Board (WSIB). This is the single largest class of compensation claims²⁷. RSI, such as tendinitis, tenosynovitis, muscle strain, and carpal tunnel syndrome, affect the muscles, nerves, ligaments, blood vessels, and soft tissue. Common symptoms include aches, pains, burning, tingling, swelling, and loss of joint movement and strength in the affected area(s).

Many of these issues are preventable and treatable, and HR professionals and employers are encouraged to implement strategies to improve workplace musculoskeletal health as it can lower absence and disability costs and greatly improve the health, wellbeing, and productivity of employees.



"MSK issues continue to be a priority within the workplace. The pandemic brought upon a new set of challenges with employees working from home. As we continue going forward with a hybrid workforce, it's important that ongoing communication, education, and support is provided to ensure employees understand the services available to help their overall wellbeing. CAA Club Group (CCG) recognizes that by partnering with the Canadian Chiropractic Association, we can help educate our Associates on the importance of seeking treatments like chiropractic, physiotherapy, and massage, and all the things they can do for themselves, like stretching and strengthening exercises."

- Mara Notarfonzo, Vice President Total Rewards, CAA Club Group

Delivering Value – Investing in Paramedical Services

Employers and human resource professionals must address the growing problem of MSK pain in their workforce for both the business impact and wellbeing of their workforce. Paramedical services, like chiropractic, can play a key role in addressing, treating, and managing some of the economic and social impact of MSK conditions.

Reducing Drug Claims – New Data

Combatting rising benefits plan costs for pharmaceutical claims remains a leading priority for plan providers and managers. TELUS Health's 2022 Drug Trend Report identified the average eligible amount per drug claim rose eight percent²⁸. Chiropractic care may help to reduce utilization of medications and, as a result, reduce costs to insurance plans. The utilization of chiropractic treatments often reduces patient dependency on other more costly treatments. The Canadian Chiropractic Association conducted a study of Green Shield Canada (GSC) plan member claims for the past five years and found that those who utilized chiropractic treatments on average submitted 11.8% fewer pharmaceutical claims. When the average number of pharmaceutical claims in 2021 was compared, GSC plan members who utilized chiropractic services made 14.5% fewer pharmaceutical claims compared to those who did not make chiropractic claims²⁹. When appropriate, paramedical services, like chiropractic care, can divert patients away from more costly treatments or reduce pharmacological interventions. For example, evidence points to chiropractic treatment having a clear impact in reducing costs and utilization for specific drugs like Lyrica, Baclofen, and Tramadol.

Treating and preventing MSK conditions should be a priority for employers. Chiropractic treatment can treat and assist in the prevention of MSK conditions. To diminish the cost of MSK conditions, employers should ensure that there is adequate coverage for paramedical services in their health benefit plan.

Plan member drug claims for the past 5 years:

GSC plan members who did not make chiropractic claims

GSC plan members who utilized chiropractic services

11.8%



"As a global employer with locations across the country, it is important to us that we recognize and support the unique health needs of our diverse workforce. To achieve this, we invest in offering our employees flexible benefits that gives them the ability to customize the extended health benefits coverage needed to meet their unique needs. Supporting an environment that nurtures and promotes good health and employee well-being is a collective responsibility shared by our management and employees to allow us to be our best self personally and professionally".

- Nada Vuckovic, Head of Environment, Health & Safety, Siemens Canada Ltd.

Early Intervention

Evidence demonstrates the benefit of early intervention of MSK conditions, with a direct impact on lost time, absenteeism, and productivity. For example, a study looking at early intervention found that preventative treatment for MSK conditions could reduce sick leave and lost work productivity among workers with MSK by more than 50% and reduce the risk of permanent work disability and job loss by up to 50%³⁰.

Successful Treatment

As primary care specialists, Doctors of Chiropractic are trained to assess, diagnose, treat (or refer where necessary), and help prevent conditions and disorders of the spine, neck, pelvis, muscles, and joints. Chiropractors will not only recommend a course of treatment, but may utilize soft tissue therapy, therapeutic modalities, lifestyle counselling, and rehabilitation – stretches, strengthening, and proprioceptive exercises – to treat injured workers.

As the experts in MSK conditions, chiropractors can assist Canadians and the private insurance industry to manage and treat injured workers and expedite a successful return to work. Several studies point to the effectiveness of chiropractic care. According to a Spine Journal article, spinal manipulative care for both chronic and acute lower back pain was more effective and provided more short-term relief than many other types of care, including prescription drugs³¹. A study published in the Journal of Manipulative and Physiological Therapeutics found that 56% of chiropractic patients with chronic low back pain displayed greater improvement and satisfaction at the one-month assessment, compared to 13% of those treated by family physicians³².

Return to Work

Paramedical benefits allow employees to quickly consult the appropriate healthcare provider to improve their overall well-being and help them return to work sooner when they are injured. According to a study published in the Journal of Occupational Rehabilitation, workers who went to a chiropractor first for occupational back pain had a significantly shorter duration of workers compensation during the first five months, compared to those who sought a medical doctor first³³. Studies show that chiropractic care for work-related MSK conditions allows patients to return to work faster than standard medical treatment³⁴.



"When considering effectiveness and cost together, chiropractic care for low back and neck pain is highly cost-effective."

-Journal of Manipulative and Physiological Therapeutics (2010)

Following the Evidence Chain

Social:

When employees have a musculoskeletal injury, it affects almost all aspects of their lives, including work and home, resulting in a reduced quality of life and increased dependence on others. As such, injuries can make everyday activities that most of us take for granted, such as sitting at a desk, walking the dog, grocery shopping, making the bed, and lifting objects, extremely difficult. Living with chronic pain can take a tremendous toll on sleep, physical functioning, mental health, social relationships, and ability to be productive at work.

Psychological and Mental Health:

Pain, limited mobility, and isolation can cause depression and anxiety. A Statistics Canada study emphasized that both pain intensity and pain-related activity prevention play direct and indirect roles in the impact of chronic pain on mental health³⁵. Constant worry about finances from missed work can also increase cortisol in the body, raising blood pressure and even magnifying pain symptoms.

Co-Morbidities:

Patients rarely present with only one condition, and most suffer from a variety of ailments. The Benefits Canada National Health Survey illustrated the association and widespread influence of mental health and chronic pain on Canadian employees. The survey found that 61% of employees with mental health conditions experience chronic pain, and 65% of those with chronic pain also experience mental health issues, such as depression³⁶. Chronic pain can be invisible to employers, yet its psychological and social impacts can be immense.



An Angus Reid Survey found that among those living with significant chronic pain, 23 percent say they experience feelings that "life isn't worth living."⁵⁰

Canada's Opioid Crisis

Canada is the second-largest consumer of prescription opioids in the world³⁷. Canadians suffering from back and neck pain are often prescribed opioids as the first line of treatment. In fact, low back pain is one of the primary causes for over-use of prescribed opioids³⁸. A recent review suggests that 8-12 percent of people who are initiated into opioid therapy for chronic pain develop an opioid use disorder³⁹. Significant opportunities exist for employers and HR professionals to improve how employees can prevent, treat, and have access to effective non-pharmacological pain management.

Most people in Canada who access non-pharmacological pain management do so through extended healthcare coverage. To decrease opioid consumption, especially related to MSK pain and conditions, employers and human resource professionals should have adequate levels of coverage for paramedical services, like chiropractic, which has been proven to be an effective non-pharmacological pain management treatment. A study found that those with extended healthcare coverage were less likely to consume opioids for chronic low back pain than those who did not have coverage⁴⁰.

A study published last year found that in noncancer spinal pain patients, there was a 52% reduction in the prescription of opioids if they received chiropractic care, and if they received it within the first 30 days of the start of their condition, the reduction in prescription opioids increased to 71%⁴¹.

As with mental health, human resource professionals and employers should provide adequate and easily accessible paramedical coverage to ensure employees have access to and awareness of non-pharmaceutical pain management care as part of their MSK strategy.

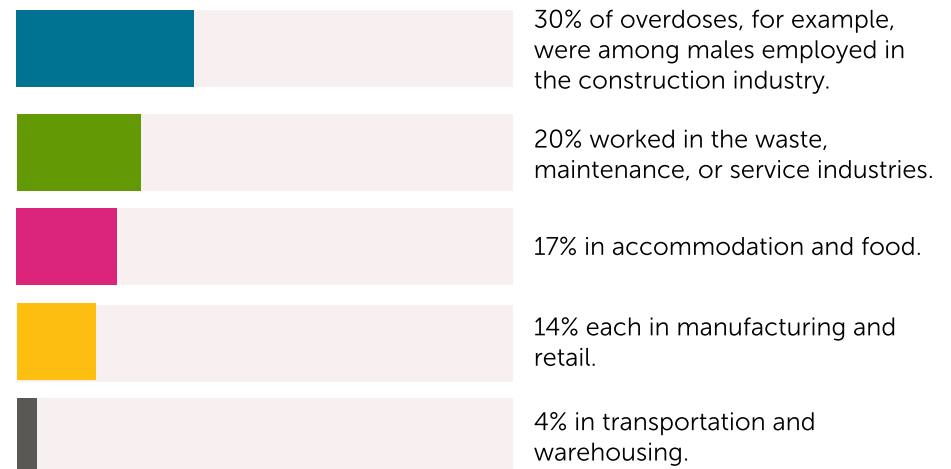
Productivity Costs



Canada is losing at least \$4.7 billion in labour productivity because of the opioid crisis.

(University of Alberta, Opioid crisis has cost Canada nearly \$5 billion in lost productivity, 2019)

Certain occupations have been hit harder by the opioid crisis than others.



52%



Trends and Threats

The Hybrid Hike

Working at two or more locations means there is often a need to transport equipment, laptops, and files between workstations. These hybrid work models can weigh heavy on the shoulders of employees.

“In my practice I’ve seen an increase in office professionals with neck and shoulder strains, especially with many companies moving to hybrid work models for employees”.

-Dr. Crystal Draper, DC



Leaders in work culture must always look to the trends and threats on the horizon facing the Canadian workplace. US market giants such as UnitedHealthcare, Cigna, and Humana have already started investing in their musculoskeletal offerings through expansion, acquisition or innovation, recognizing it as a high priority for employer clients and a cost driver⁴². While there is a collective push for return to business as usual, businesses can not have recovery without rehabilitation. A number of growing trends point the central role MSK issues will play in the physical, social, and economic post-pandemic landscape.

The Static Workforce

Even before 2020, few Canadians were getting the recommended amount of physical activity. To no one’s surprise, public health restrictions during the global COVID-19 pandemic saw a 27% reduction in physical activity. What is most concerning is that those numbers don’t seem to have picked back up. Without the need to walk to meeting rooms, between floors, or commuting, remote workers typically experience 18% less mobility⁴³. A sedentary lifestyle can increase the chance of being overweight, developing Type-2 diabetes or heart disease, and experiencing depression and anxiety.

Double Exposure

Employers have long understood the return on investing in ergonomic assessment, equipment, and training for the workplace. The benefits on productivity and reduced RSIs has been well documented. The pivot to working from home has resulted in make-shift home offices that fall below best practice standards. While some businesses offered an initial ‘technology bonus’ to assist team members with purchasing home equipment, these remote set-ups are rarely assessed by ergonomic experts. Every additional work environment exponentially increases the employee exposure to strain and injury.

Long-COVID:

The World Health Organization cited a report that up to 30% of COVID-19 patients still had persistent symptoms after nine months⁴⁴. Just like the infectious period of COVID-19, the signs and symptoms of Long COVID are on a spectrum, ranging from mild to more severe. On this spectrum, up to 65% of patients may experience musculoskeletal (MSK)-related symptoms⁴⁵, such as muscle fatigue (49.1%), myalgia or muscle pain (34.8%), and arthralgia or joint pain (33%)⁴⁶. Employers may not recognize an increase in paramedical claims as connected to post-viral rehabilitation.

Components to a successful MSK strategy:



The Strategic Role of HR

HR professionals can play a leadership role in helping organizations address the current changes in the workplace, while preparing for the challenges ahead.

Develop an MSK Workplace Strategy

Many employers have developed a mental health strategy to address and better support employees struggling with conditions. Employers also need to consider developing an MSK strategy, especially since chronic pain is often a comorbidity of mental health issues. As outlined above, MSK conditions can have far-reaching effects on the mental, physical, and emotional wellness of employees and their families. Having an MSK strategy could reduce absenteeism and presenteeism, reduce disability claims' incidence and duration, and improve productivity.

Adequate Coverage for 2023

It is important to understand the role of investing in adequate coverage for paramedical services. Low benefit maximums for paramedical services can be a barrier for employees and may discourage obtaining treatment. Employees may feel the need to avoid early treatment, fearing they will not have coverage when they need it most. Adequate coverage is necessary to ensure employees can treat their conditions without worrying about cost.

Paramedical benefit maximums across the sector have remained static for over two decades, falling far behind inflation and the cost of doing business. In the US, Medicare covers an unlimited number of medically necessary chiropractic visits⁴⁷. Like any small business, the cost of operating clinics for extended health professionals has increased. The result is that plan members access less care than they were able to five or ten years ago.

Two-thirds of Canadians who are experiencing pain stated that if they could afford to pay for more of the available treatments offered, their discomfort and quality of life would be improved⁴⁸. Ensuring adequate coverage for paramedical services is an important step towards removing financial barriers for employees accessing the care they need.

"I was experiencing pain in new places and at a level that I had never experienced before. It got to a point that I couldn't feel the lower half of my body. That's when I reached out for help. My chiropractor was able to properly diagnose my pain and get to the root of the problem. She taught me how to implement the right preventative measures to catch these issues before they escalate. It has helped tremendously. It means I can go scootering and play with my three-year-old again.

What I'm nervous about is my work benefits coverage. They are used up now, and I'm not sure what I'll do if the pain returns."

-Michelle, patient testimonial



Launch the Conversation:

Coordinated information sessions to inform employees of workplace risk factors should be an integrated part of any wellness strategy by employers and HR professionals. The communication of the role of paramedical benefits play in promoting a healthy workforce is a key part of employee onboarding as well as a successful return-to-office strategy. These conversations need to be revisited regularly and tailored to the experiences of different workforce segments.

The good news is that employees want to have this conversation. Respondents to the Benefits Canada National Health Survey found the top three things plan members wanted to do to take greater control over their health was more physical activity, eating healthier, and utilizing paramedical services⁴⁹. Twenty-three percent of employees want to take a more active role in helping manage their chronic conditions, they just need some professional assistance.

Led by Doctors of Chiropractic, the Canadian Chiropractic Association (CCA) can provide free webinars or information sessions at work to educate management and employees on the impact and costs of MSK conditions, as well as tips on how to prevent them. The CCA has a section on its website where employers can request a lunch and learn or work seminar.



Opportunities in 2023

We believe that there are compelling reasons to evaluate current paramedical coverage and consider increasing it to meet the needs of employees. Any cost of increasing paramedical MSK benefits is outweighed by the cost of sick days, lost productivity and their effect on teams coping with an increased workload because of absenteeism. This case for support is reinforced once the social, psychological, and broader cost considerations are taken into account. Most importantly, at a time when talent demands are at an all-time high, these benefits help attract and retain employees, increasing loyalty and morale.

We have provided an outline as to how this conversation can begin and we hope to be able to talk to more employers about how they can benefit from increasing chiropractic and paramedical options for their employees.



About Chiropractic in Canada

The Canadian Chiropractic Association represents more than 9,000 licensed Doctors of Chiropractic across Canada.

Canadian chiropractors are spine, muscle, and nervous system experts with eight years of dedicated training. Chiropractors are experts in the assessment, diagnosis, treatment, and preventative care of biomechanical disorders originating from the muscular, skeletal, and nervous systems.

Chiropractors treat a variety of musculoskeletal (MSK) conditions including back pain, neck pain, work and sports injuries, limited range of motion in back, shoulder, neck, limbs, strain and sprains, arthritis, injury prevention, and wellness. As experts in non-pharmacological pain management, chiropractors can lead and facilitate an inter-professional, evidence-based, and patient-centred approach to pain care.

Let's Continue the Conversation

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References

1. Amy Hackney, Bronson Du, Marcus Yung, Amin Yazdani, National Work from Home Survey, Canadian Institute Safety, Wellness and Performance, <https://cms.conestogac.on.ca/sites/www/Shared%20Documents/research/CISWP/BriefReportWFHSurvey.pdf>
2. Cleland J. Childs J. Fritz J. Emberhart S. Development of a clinical prediction rule for guiding treatment of a subgroup of patient with neck pain: use of thoracic spine manipulation, exercise, and patient education. *Physical therapy* 2007. Jan;87(1):9-23
3. Canadian Institute for Health Information. National Health Expenditure Trends, 1975 to 2013. 2013. Accessed August 7, 2014.
4. Conference Board of Canada, "Making the Business Case for Investments in Workplace Health and Wellness," June 2012 Report. <http://www.servomax.com/files/uploads/productivite/Conference%20Board.pdf>.
5. Andersson G. (1997). The epidemiology of spinal disorders. In: Frymoyer JW, ed. *The adult spine: principles and practice*, 2nd ed. Philadelphia: Lippincott-Raven, 93-141.
6. Association of Workers' Compensation Boards of Canada, National Work Injury Disease and Fatality Statistics, 2020.
7. Work Safe BC, Serving British Columbians – Statistics 2020.
8. Benefits Canada, 2022 Benefits Canada Healthcare Survey, 2022.
9. Canadian Centre for Occupational Health and Safety, OSH Answer Fact Sheet, Accessed October 18, 2022. https://www.ccohs.ca/oshanswers/ergonomics/mmh/hlth_haz.html?=&wbdisable=true
10. Sun life, Building a workplace musculoskeletal (MSK) - Back Health Strategy, 2020 Sun Life Canada Claims Data. <https://www.sunlife.ca/workplace/en/group-benefits/health-and-wellnesssolutions/musculoskeletal-health-strategy-toolkit/>.
11. Craig Sebastiano, "Employee Absences Costly for Employers," Benefits Canada, March 13, 2007
12. Walker, B. F. The Prevalence of Low Back Pain: A Systematic Review of the Literature from 1966 to 1998. *Journal of Spinal Disorders*. 2000;13, 205-217.
13. Canadian Pain Society, "Pain in Canada Fact Sheet," June 2014. https://backontrak.ca/cms/wpcontent/uploads/2017/11/chronic_pain.pdf
14. Canadian Institute for Health Information. National Health Expenditure Trends, 1975 to 2013. 2013. Accessed August 7, 2014.
15. Canadian Institute for Health Information. National Health Expenditure Trends, 1975 to 2013. 2013. Accessed August 7, 2014.
16. Ontario Chiropractic Association, Impact of MSK Conditions on Ontario's Health System, http://www.chiropractic.on.ca/wp-content/uploads/Impact-of-MSK-Conditions-on-Ontario-HealthSystem_2015-10.pdf.
17. Lynne Serre, A Comparative Analysis of Medically Released Men and Women from the Canadian Armed Forces.
18. Canadian Orthopaedic Care Strategy Group. (2010). Backgrounder Report: Building a Collective Policy, Agenda for Musculoskeletal Health and Mobility.
19. Robin McGee, "Fit for Work? Musculoskeletal Disorders and the Canadian Labour Market," The Work Foundation, May 2009.
20. Canadian Institute for Health Information, Opioid Prescribing in Canada How Are Practices Changing?, 2019.
21. Christina Korownyk, et al. (March 2022). PEER simplified chronic pain guideline. *Canadian Family Physician*, Vol 68
22. Canadian Pain Task Force, An Action Plan for Canada, Health Canada, May 2021. <https://www.canada.ca/en/health-canada/corporate/about-health-canada/public-engagement/externaladvisory-bodies/canadian-pain-task-force/report-2021.html>
23. Health Canada, An Action Plan for Pain in Canada, May 2021.
24. Statistics Canada, Canadian Community Health Survey, 2009. Prevalence of selected chronic conditions, women and men with activity limitations aged 15 and over, Canada, 2009.
25. Louise Chénier, Crystal Hoganson, and Karla Thorpe, "Making the Business Case for Investments in Workplace Health and Wellness," Conference Board of Canada, 2011. <http://www.servomax.com/files/uploads/productivite/Conference%20Board.pdf>.
26. Tim Windsor, "Assessing the Economic Impact of Proactive Injury/Illness & Health Management," IAPA Conference.
27. Public Service Health and Safety Association, Repetitive Strain Injury (RSI) Awareness Day!, February 28, 2022. <https://www.pshsa.ca/blog/happy-repetitive-strain-injury-rsi-awarenessday#home-pshsa-logo>
28. Kelsey Rolfe, (2022). Combatting rising benefits plan costs with digital pharmacies, drug plan optimization. Benefits Canada.
29. CCA/GSC Study, (unpublished).
30. Stephen Bevan, "Back to Work: Exploring the Benefits of Early Interventions which help people with Chronic Illness Remain in Work," Fit for Work Europe, April 29, 2015.
31. Bronfort G, Haas M, Evans R, Bouter L. Efficacy of Spinal Manipulation and Mobilization for Low Back Pain and Neck Pain: A Systematic Review and Best Evidence Synthesis, *Spine Journal*, 2004
32. Nyiendo et al (2000), Patient characteristics, practice activities, and one-month outcomes for chronic, recurrent low-back pain treated by chiropractors and family medicine physicians: A practice-based feasibility study, *Journal of Manipulative and Physiological Therapeutics*, Volume 23, Issue 4, May 2000, Pages 239-245.
33. Marc-André Blanchette, Michèle Rivard, Clermont E. Dionne, Sheilah Hogg-Johnson & Ivan Steenstra, Association Between the Type of First Healthcare Provider and the Duration of Financial Compensation for Occupational Back Pain, *Journal of Occupational Rehabilitation* volume 27, pages382-392 (2017).
34. Nyiendo J. Disabling Low Back Oregon Workers' Compensation Claims Part II: Time Loss. *JMPT*, 1991, 14(4): 231-239. And WSIB. Program of Care for Acute Low Back Injuries One-Year Evaluation Report. 2004.
35. Heather Gilmour, Chronic pain, activity restriction and flourishing mental health, Statistics Canada, Catalogue no. 82-003-X, Health Reports, Vol. 26, no. 1, pp. 15-22, January 2015. <https://www150.statcan.gc.ca/n1/pub/82-003-x/2015001/article/14130-eng.pdf>
36. Benefits Canada, 2021 Benefits Canada Healthcare Survey, 2021.
37. Lisa Belzak, Jessica Halverson. The opioid crisis in Canada: a national perspective. *Health Promotion and Chronic Disease Prevention in Canada*, Vol 38, No 6, June 2018.
38. Bhamb B, Brown D, Hariharan J, Anderson J, Balousek S, Fleming MF. Survey of select practice behaviors by primary care physicians on the use of opioids for chronic pain. *Current medical research and opinion*. 2006;22(9):1859-1865.
39. Vowles KE, McEntee ML, Julnes PS, Frohe T, Ney JP, van der Goes DN. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015 Apr;156(4):569-76.16
40. Safo A, Holder S. Low back pain and physical function among different ethnicities. San Antonio: UT Health Science Centre, 2017.
41. Peter C. Emary, Amy L. Brown, Mark Oremus, et. al., Association of Chiropractic Care With Receiving an Opioid Prescription for Noncancer Spinal Pain Within a Canadian Community Health Center: A Mixed Methods Analysis, *Journal of Manipulative and Physiological Therapeutics*, May 2022. <https://www.jmptonline.org/action/showPdf?pii=S0161-4754%2822%2900086-0>
42. Paige Minemyer. UnitedHealthcare rolls out new virtual physical therapy program. *Fierce Healthcare*.
43. Jenny Watt and Rachel C. Colley, Youth—but not adults—reported less physical activity during the COVID-19 pandemic, *Statistics Canada*
44. World Health Organization, Post COVID-19 Condition (Long COVID). October 16, 2021 <https://www.who.int/srilanka/news/detail/16-10-2021-post-covid-19-condition>.
45. Khoja, O., et al. Clinical characteristics and mechanisms of musculoskeletal pain in long COVID. *J Pain Res*. 2022 Jun; 15:1729-48.
46. Tharani, SA., and Borkar, P. Prevalence of musculoskeletal disorders in post-COVID-19 patients – a systematic review. *Int J Health Sci Res*. 2022 Mar; 12(3):374-80.
47. United Health Care, Does Medicare cover a chiropractor? <https://www.uhc.com/news-articles/medicare-articles/does-medicare-cover-a-chiropractor>.
48. Angus Reid, One-in-five report living with significant chronic pain, most say they'd be better off if care more affordable, July 12, 2019.
49. Benefits Canada, 2022 Benefits Canada Healthcare Survey, 2022
50. Angus Reid, One-in-five report living with significant chronic pain, most say they'd be better off if care more affordable, July 12, 2019.