



2023 ANNUAL ERGONOMICS REPORT



OTTAWA POLICE SERVICE
SERVICE DE POLICE D'OTTAWA

A Trusted Partner in Community Safety
Un partenaire fiable de la sécurité communautaire

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1.0 Executive Summary

The report contains summary and analysis of 72 ergonomic assessments that were facilitated by the Wellness & Safety Branch (W&S) in 2023.

- The 72 ergonomic assessments completed in 2023 represented a 22% increase compared to the 59 ergonomic assessments completed in 2022;
- Key points from the 72 assessments completed in 2023 include:
 - 72 assessments contained recommendations related to work practices;
 - 72 assessments contained recommendations related to furniture;
 - 46 assessments contained recommendations related to computer equipment;
 - 15 assessments contained recommendations related to headsets;
 - 57 of the assessments contained other types of recommendations.
- Reducing ergonomic risk factors helps the Ottawa Police Service (OPS) in significant ways, including:
 - Proactively reducing injury frequency and severity rates; and
 - Reactively helping members return to work following injuries.

W&S recommends that the OPS reduce ergonomics risks and reduce resulting operational costs by increasing the extent to which ergonomic principles are considered in workplace design and equipment procurement activities.

2.0 Introduction

Ergonomics is an applied science that is concerned with design and arrangement of workplace equipment and processes in a manner that optimizes efficiency and safety.

Applying ergonomic principles to the workplace can reduce fatalities, injuries, and health disorders, as well as improve productivity and quality of work.

People respond to ergonomic risk factors in individual ways. Some tasks can injure one worker, while others performing the same tasks may not have any symptoms or injuries. Ergonomic risk factors should be identified and reduced to lower the risk of injury for all.

Musculoskeletal disorders (MSDs), most often caused by ergonomic risk factors, are the number one type of lost-time work injury reported to the Workplace Safety and Insurance Board in Ontario.

They cause pain and suffering for thousands of workers every year and cost Ontario's workplaces hundreds of millions of dollars due to worker absence and lost productivity.

Employers can also face indirect costs when a worker has suffered from a MSD, including:

- overtime or replacement wages
- workstation and equipment modifications
- administration
- training costs for replacement workers
- lost productivity
- reduced quality of work

Individuals working on computers for prolonged periods are at increased risk of developing several ergonomically caused health problems. These include:

- headaches
- upper and/or lower back pain
- upper limb MSDs (for example, carpal tunnel syndrome)
- visual fatigue (for example, eyes become irritated and uncomfortable, headaches, blurred vision)

The risk of computer-related health problems can be reduced by:

- proper lighting
- good task design
- appropriate workstation design (for example, suitable desks and adjustable chairs)
- the use of suitable equipment (for example, keyboards, mouse, and monitors)

2.1 How Do Ergonomic Assessments Benefit Our Organization?

Investing in ergonomic assessments benefits our members by improving their workplace environment and ensuring they have workstations that minimize stress on their bodies. It benefits the organization by:

- **Improving productivity:** Good posture and less exertion and stress will make it easier for our members to perform tasks, helping them to become more efficient.
- **Improving member engagement:** People notice when the organization invests in them. Taking steps to improve health and safety and caring about member working conditions will improve the culture. If a member does not experience fatigue and discomfort during their workday, it can reduce turnover, decrease absenteeism, improve morale, and increase member involvement.
- **Reducing operations costs:** By improving ergonomics, the organization will reduce sick days, workplace injuries, and help to maintain a healthier workforce.

The 2023 WSIB-reportable injury and illness data showed that the OPS reported 55 musculoskeletal injuries. This was the most frequent injury and illness category identified in 2023. Causes of these types of events can include lifting, pushing, pulling, awkward postures, overexertion, and repetitive movements. Resulting injuries include sprains, strains, soft tissue injuries, and repetitive strain injuries.

Direct costs for WSIB are incurred as the result of workplace injuries and illnesses. Overall WSIB costs, including those resulting from ergonomic injuries, in 2023 were \$15,871,172. These costs were approximately 15% higher than costs for 2022. The OPS invests in ergonomics, both in vehicles and in our offices, to protect our members and reduce their risks of workplace injuries and illnesses.

By investing in ergonomics, the Service promotes a safer workplace and establishes a culture of safety.

2.2 Ergonomic Assessments

Ergonomists are professional experts who specialize in the field of ergonomics. Upon request by OPS members, W&S facilitates the completion of workplace ergonomic assessments by third party ergonomists.

Following the assessments, ergonomists provide reports containing recommendations for optimizing efficiency and safety by mitigating ergonomic risk factors. W&S facilitates implementation of corrective actions by following up with key stakeholders. These parties include affected members, supervisors, and other OPS support sections such as Police Facilities and ITS.

This report contains a summary analysis of recommendations that were provided as the result of ergonomics assessments that were completed in 2023. Relevant information is summarized,

tabulated, and graphed. Data collected from 2023 will be compared against data collected from the previous four years (2019-2022).

3.0 Summary of Ergonomic Assessments and Recommendations

3.1 Ergonomic Assessments

Over the past five years, 384 ergonomic assessments have been completed for members of the Ottawa Police Service. Generally, the number of assessments has been increasing each year as members become aware of this service. Starting in 2020, a decrease in the number of ergonomic assessments was seen due to the COVID-19 pandemic and the transition to a flexible work arrangement. OPS' third-party ergonomist was also not able to provide in-person ergonomic assessments because of the provincial wide lockdowns during parts of 2021. In 2023, as OPS members continued to return to the office, the number of ergonomic assessments increased compared to past years. Members who primarily work from home were able to receive some ergonomic equipment at home through the equipment loaning process established in September 2020.

The following table and graph summarize the types of recommendations that were provided following the 72 ergonomic assessments that were completed in 2023, as well as since 2019.

Figure 1: Five-Year Review of Total Number of Ergonomics Assessments (2018-2023)

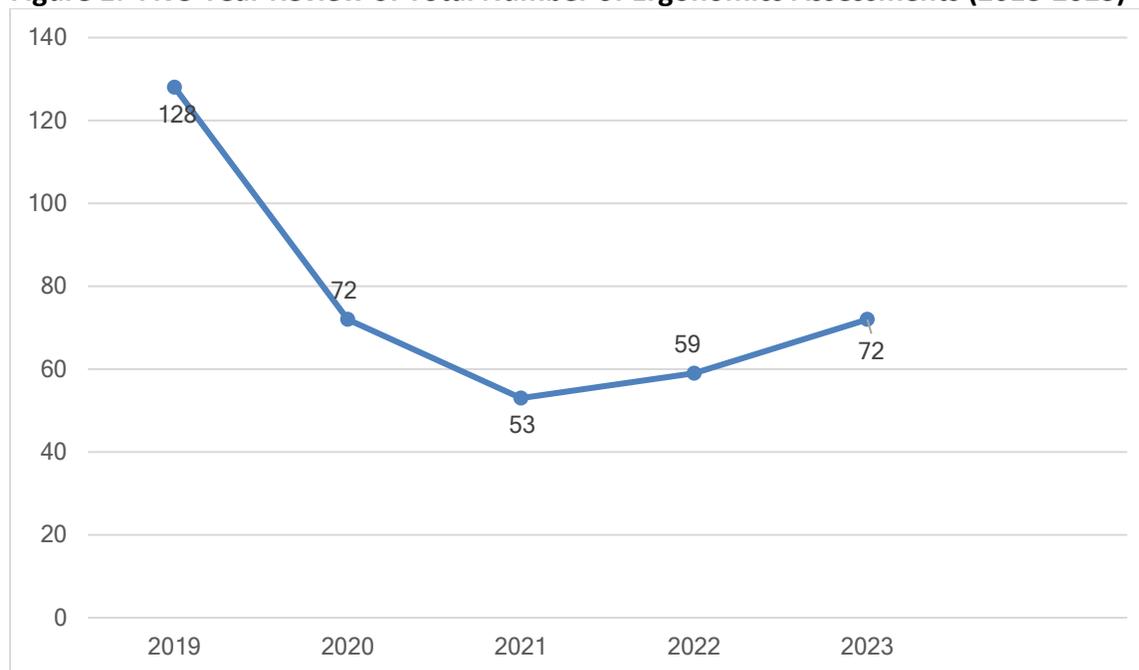


Table 1: Five-Year Review of Categories of Recommendations from Ergonomics Assessments.

Recommendation Category	Description
Work Practices	Recommendations related to how a member performs tasks at work. May include advice about repositioning equipment, adjusting equipment settings, and changing the way tasks are completed.
Furniture	Recommendation to purchase new office furniture or adjust existing office furniture.
Computer Equipment	Recommendation to purchase new computer equipment or adjust existing equipment.
Headsets	Recommendation to purchase a headset.
Other Miscellaneous Recommendations	Recommendations for miscellaneous office supplies such as monitor risers, footrests, document holders, and wrist rests.

All ergonomic assessments completed in 2023 contained multiple types of recommendations for reducing ergonomic risks.

3.2 Work Practices Recommendations

During all 72 ergonomic assessments completed in 2023, ergonomists identified workplace risk factors that could be mitigated through modification of work practices. Common examples of these types of recommendations included:

- Optimal adjustment of chairs, including:
 - Height of seat pan
 - Position of armrests
 - Position of lumbar support
 - Position of neck support
- Optimal adjustment of computer equipment, including:
 - Position of mouse
 - Position of keyboard
 - Position and adjustment of monitor
- Physical placement of desktop equipment, including:
 - Placement of more commonly accessed equipment within closer proximity
 - Placement of less commonly accessed equipment further away
 - Placement of more commonly accessed equipment in an optimal manner in consideration of each member's dominant-handedness
- Optimal adjustment and use of height adjustable workstations, including:
 - Duration of sitting and standing intervals
 - Appropriate working heights while standing or sitting

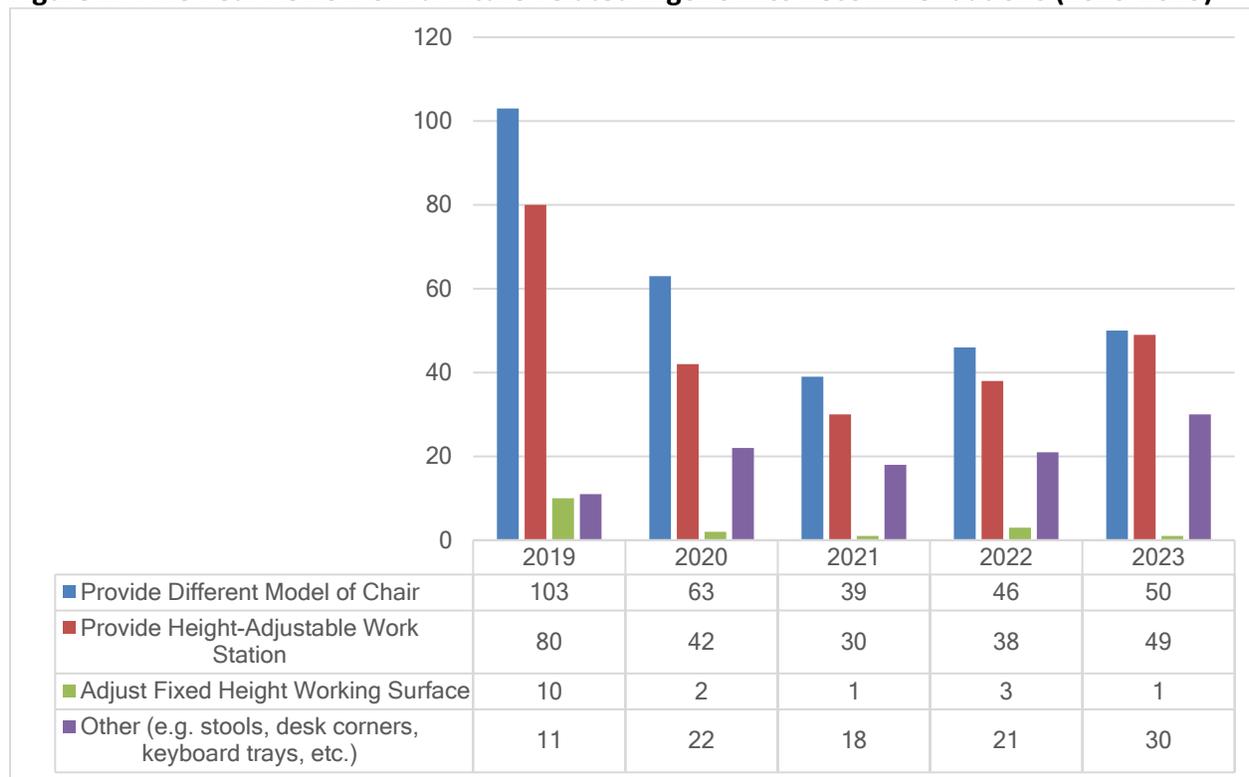
- Advice about performing specific tasks while standing or sitting
- Suggestions to perform tasks in a manner that reduces ergonomics risk by:
 - Optimizing posture
 - Reducing force exertion requirements
 - Reducing repetitive motions to the extent possible by considering task rotation
- Incorporation of basic stretches into the workday
- Incorporation of short duration breaks into the workday

Through implementation of these types of adjustments, it has often been possible to reduce ergonomic risks without incurring monetary costs.

3.3 Furniture-Related Recommendations

Figure 2 provides further breakdown of the ergonomic assessments that contained recommendations about furniture-related issues, as well as a review of furniture related ergonomic recommendations, during the period of 2019 to 2023.

Figure 2: Five Year Review of Furniture-related Ergonomics Recommendations (2019-2023)



In 2023, furniture-related recommendations were provided following 72 ergonomic assessments. Over the last five years, 301 assessments included the recommendation for a new chair. This includes 50 instances of new chair recommendations being made in 2023 when standard-issue chair models lacked the dimensions and/or adjustability to allow for optimal seated work postures by members. Armrest adjustability limitation, lumbar support deficiencies, and the lack of upper back and neck support were often identified as specific shortcomings of current corporate standard chair options.

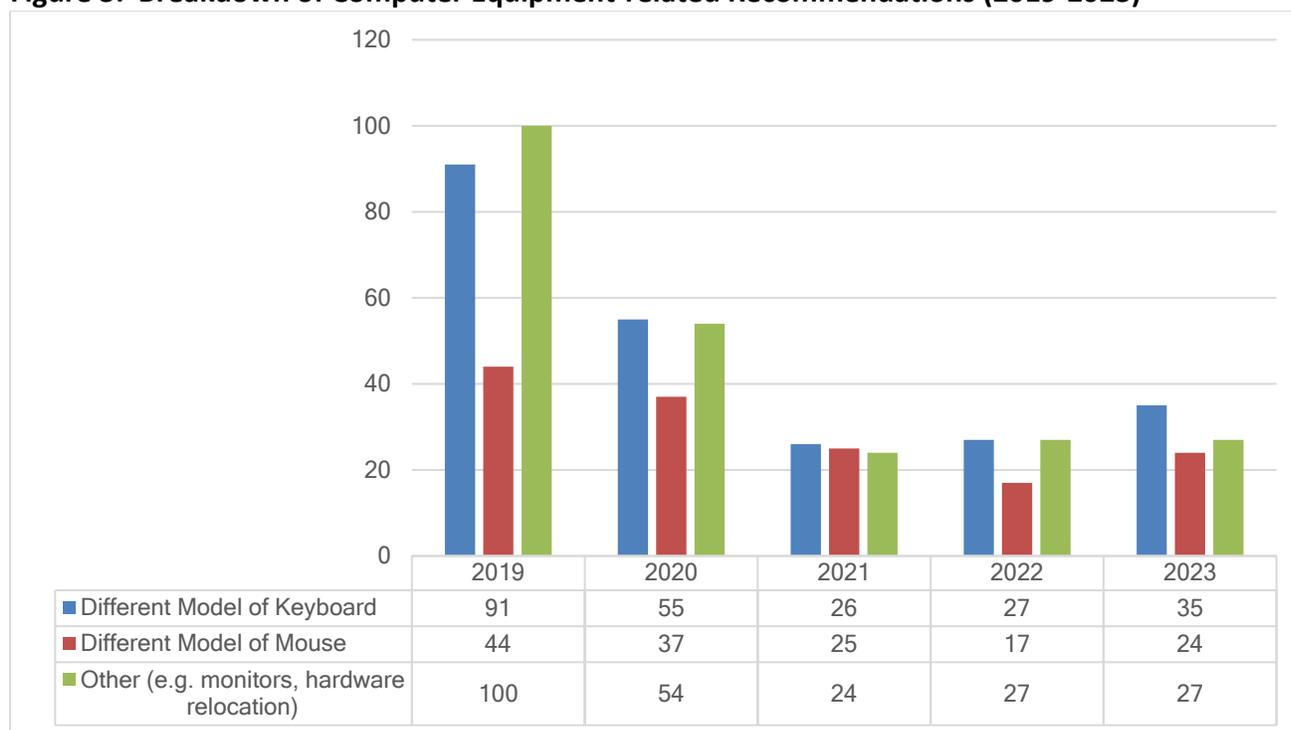
Suboptimal work surface heights have been identified in 258 assessments over the past 5 years. In 2023, suboptimal work surface heights were identified in 50 assessments. Height-adjustable workstations were recommended in 49 instances. The adjustability of these types of furniture works well in locations where multiple shifts of workers share common workspaces. Height adjustability is also beneficial for members who are required to alternate between sitting and standing. In 2023 there was one instance where fixed height work surfaces were raised or lowered to an optimal height based on individual needs. Adjustment of fixed-height work

surfaces has limited effectiveness in situations when multiple members (e.g., shift workers) take turns using the same work surface.

3.4 Computer Equipment-Related Recommendations

The following table and graph provide further breakdown of the 46 ergonomic assessments that contained recommendations about computer equipment-related issues in 2023. Data for 2019 through 2022 is included as well.

Figure 3: Breakdown of Computer Equipment-related Recommendations (2019-2023)



Computer equipment-related recommendations were provided following 44 of 72 ergonomic assessments. The most common recommendations involved:

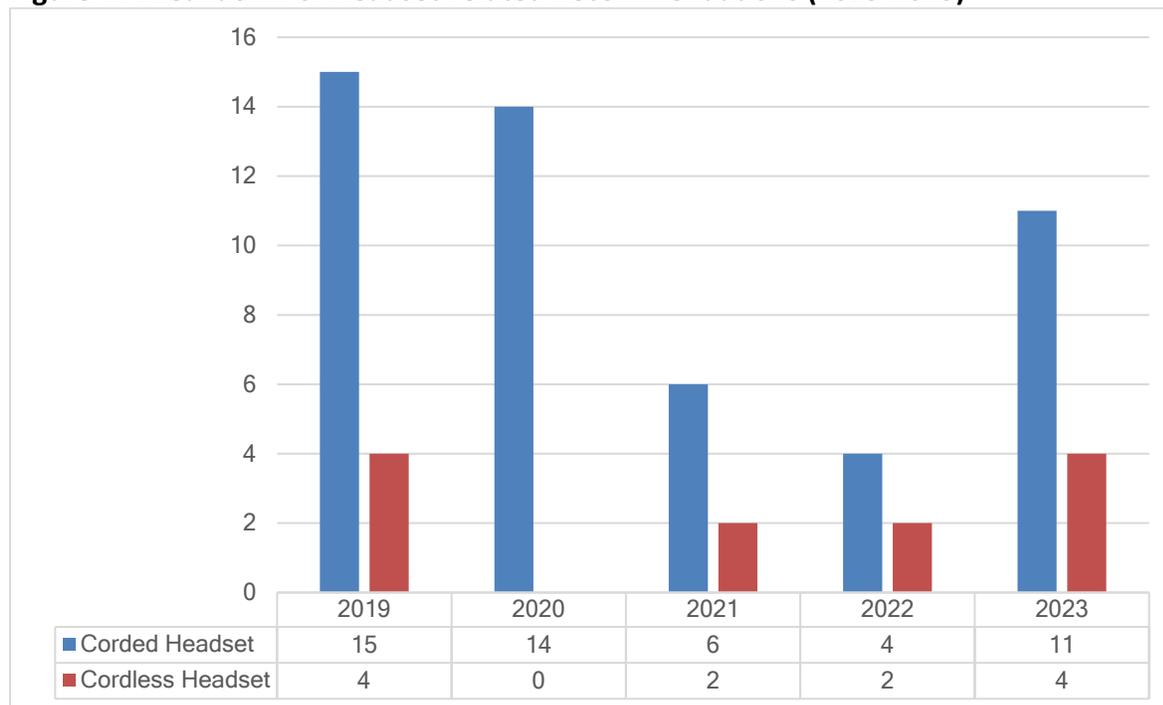
- Provision of compact keyboards
- Provision of profiled mice
- Provision of vertical mice
- Adjustment of computer monitors

In these situations, current standard-issue options did not allow for optimal mitigation of ergonomic risks. Risks were mitigated through purchase of different types of equipment.

3.5 Headset-related Recommendations

Figure 4 provides further breakdown of the 15 ergonomic assessments that contained recommendations about headset-related issues in 2023. Data is also included for the period of 2019 to 2023.

Figure 4: Breakdown of Headset-related Recommendations (2019-2023)



Headset-related recommendations were provided following 15 of 72 ergonomic assessments. Headsets were most often recommended for members who spend considerable time on the phone. Cordless headsets were recommended when corded headsets would be problematic due to types of higher-mobility operational tasks performed by members.

3.6 Other Miscellaneous Recommendations

Other miscellaneous recommendations were provided following 56 of 72 ergonomic assessments. These commonly included providing basic office supplies (e.g. monitor risers, foot rests, document holders, and wrist rests). These types of recommendations were usually addressed by the members' supervisors using the sections' operational budgets.

4.0 Discussion

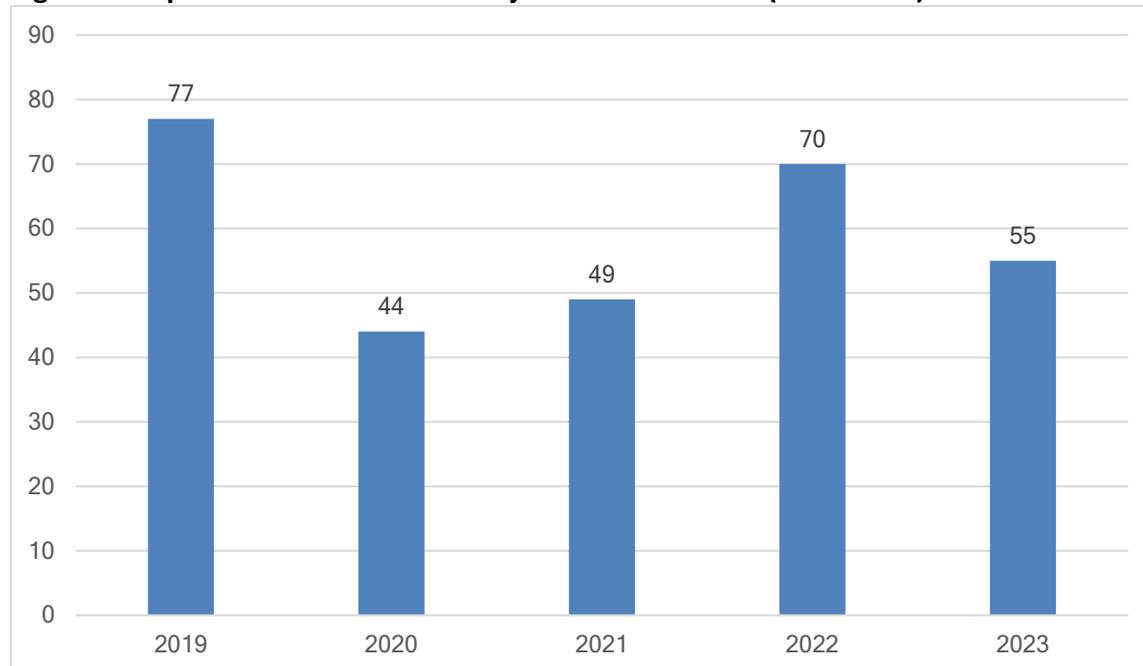
4.1 Proactive Consideration of Ergonomics to Reduce Risks of Injuries

It is advantageous to consider ergonomic design principles during workplace design. Well-designed workplaces help reduce the risks of some types of workplace injuries and illnesses. Ergonomic considerations are particularly useful in preventing musculoskeletal injuries. Musculoskeletal injuries affect body parts such as muscles, tendons, ligaments, and nerves. Examples of musculoskeletal injuries include sprains and strains, and specific conditions such as Carpal Tunnel Syndrome and Tendonitis. Musculoskeletal injuries have been the most common type of WSIB-reportable injuries at the OPS. These types of injuries contribute to WSIB direct costs, which have been rising steadily for many years.

Table 2: Direct Costs of Workplace Injuries and Illnesses for 2019 – 2023

Year	Cost
2019	\$9,104,700
2020	\$10,967,465
2021	\$13,148,291
2022	\$13,455,415
2023	\$15,871,172

Figure 5: Reported Musculoskeletal Injuries and Illnesses (2019-2023)



4.2 Reactive Consideration of Ergonomics to Mitigate Existing Risks

It can be advantageous to consider ergonomic design principles in existing workplaces. Reactive measures can be helpful in accommodating members who require special equipment to remain productive at work. Workplace modifications can also help facilitate early and safe return to work for members who may benefit by having access to equipment options above and beyond standard-issue equipment.

4.3 Demand for Ergonomic Assessments

There were 72 ergonomic assessments completed in 2023. All 72 ergonomics assessments in 2023 generated recommendations to purchase or adjust equipment. It is expected that the demand for ergonomic assessments will continue to increase as an increasing number of members are educated on the importance of workplace ergonomics. It will be advantageous for the OPS to refine its strategy for relying on conventional ergonomic principles in proactive and reactive situations.

4.4 Police Vehicle Ergonomics

In 2023 W&S received two requests for in-vehicle ergonomic assessments. These assessments mainly focus on the review of specific vehicles. Overall, concerns raised in most vehicle-related assessments are with regards to the seat of the vehicle, the ease of entry and exit, and the positioning of in-vehicle equipment. During the procurement of new vehicles, the organization should consider ergonomic design principles to mitigate concerns. W&S will continue to assist members who require in-person vehicle ergonomic assessments upon request.

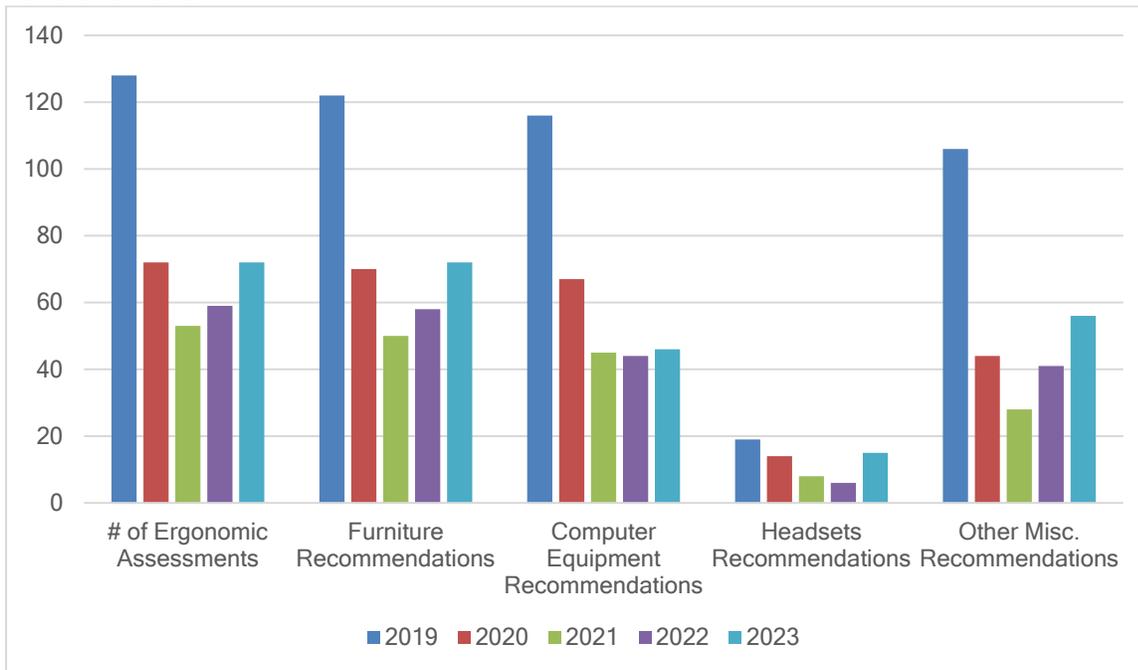
5.0 OPS Trends

The following table and figure show the number of ergonomic assessments performed by the OPS and the categories of recommendations between 2019 and 2023. The number of requests for ergonomic assessments have been steadily increasing up to 2019, with a decline observed in 2020 and 2021, and another increase observed in 2022 and 2023. However, the frequency of furniture, computer equipment, and other recommendations continue to be steadily made by the third-party ergonomist. Only headset-related recommendations have not seen a steady increase.

Table 3: Number of Ergonomic Assessments and Categories of Recommendations from 2019 to 2023

	2019	2020	2021	2022	2023
Number of Ergonomic Assessments	128	72	53	59	72
Furniture Recommendations	122	70	50	58	72
Computer Equipment Recommendations	116	67	45	44	46
Headsets Recommendations	19	14	8	6	15
Other Miscellaneous Recommendations	106	44	28	41	56

Figure 6: Number of Ergonomic Assessments and Categories of Recommendations Between 2019 and 2023



6.0 Applicable Legislation, Guidelines and Standards

The *Occupational Health and Safety Act* (OHSA) sets out the rights and duties of all parties in the workplace, as well as the procedures for dealing with workplace hazards and for enforcement as needed. Under clause 25(2)(h) of the OHSA, employers are required to take every precaution reasonable in the circumstances to protect the worker. This may include protecting workers from overexposure to MSD hazards such as force, fixed or awkward postures, or repetition.

Most significantly, in the absence of prescriptive legislation, following well-recognized guidelines and standards is a reasonable precaution to take in the interest of protecting the health and safety of workers.

The Business and Institutional Furniture Manufacturer's Association (BIFMA) G1 Guideline is an industry guideline for ergonomic computer workstations. The BIFMA G1 provides recommendations for sizing furniture to accommodate the 5th percentile female to the 95th percentile male of the North American population.

The Canadian Standard's Association has produced the guideline: *Office Ergonomics – An application standard for workplace ergonomics (CSA-Z412-17)*, last updated in 2017. These standards are process-oriented documents and provide a step-by-step outline for including and implementing ergonomics into the design and layout of office jobs, work organization, environmental conditions, and workstation design. It addresses the growing awareness about musculoskeletal injuries and the role that ergonomics plays in controlling these risks when using, for example, laptop computers, larger computer screens, and a variety of input devices. For this report, the standards for chairs were used.

A review of the current OPS corporate standard chairs, the Herman Miller Mirra 2, Herman Miller Aeron A, and the Herman Miller C was conducted. When compared to the BIFMA G2 Guideline as well as the CSA-Z412-17 standards, each chair failed to meet some of the recommended requirements, mainly when it came to backrest dimensions as well as the seat width, and arm rests.

7.0 Recommendations

W&S provides the following recommendations in response to ergonomics-related challenges that are currently faced by OPS:

Challenge	Recommendation	Responsible Party
Standard issue furniture do not meet the needs of OPS members, resulting in pain/discomfort, decreased productivity, and time away from work.	OPS should identify furniture that follows the BIFMA G1 recommendations for furniture sizing in addition to furniture that can accommodate the unique needs of uniformed members.	Facilities (office furniture)
Members occasionally experience extended delays (sometimes multiple months) obtaining ergonomist-recommended equipment, resulting in time lost from work, decreased productivity, and member pain/discomfort	OPS equipment issuers should keep inventory of furniture (ergonomic chairs and sit-stand workstations) and computer peripherals (keyboards and mice) on hand to ensure prompt issuance	Facilities (Office Furniture Inventory) ITS (Computer Peripheral Inventory)
Ergonomic assessments repeatedly identify that, despite the existence of current corporate standards, members' needs related to equipment are not being optimally met	OPS equipment procurers should review and update corporate standards to ensure compliance with applicable standards and guidelines	Facilities (Office Furniture) ITS (Computer Peripherals, Headsets) Note: W&S is available to support this review using 3 rd party ergonomists

For 2024, the Wellness & Safety Branch will continue to support members by facilitating ergonomic assessments through a third-party ergonomist. In addition, Wellness & Safety will continue to work with other supporting sections such as Police Facilities and ITS to ensure that members are provided with suitable equipment as recommended by the ergonomist. This strategy will allow the OPS to be compliant with the *Occupational Health & Safety Act* Section 25 (2)(h) which states that the OPS must take every reasonable precaution in the circumstances to protect the health and safety of all workers.

W&S is available to provide additional situation-specific recommendations upon request.

8.0 Closing Comments

Preventing injuries is less expensive than making changes and corrections after an injury has occurred.

By effectively managing ergonomics risks, the workplace:

- gains healthy workers who are free from discomfort and can perform their jobs more efficiently
- reduces:
 - WSIB lost-time injury claims and the associated costs
 - administrative costs related to claims management and investigations
- improves:
 - ability to retain experienced, knowledgeable, and skilled workers
 - employee satisfaction, morale, and well-being
 - process for bringing workers back to work after they have been injured
 - quality, productivity, and profits

Please contact the Wellness & Safety Branch with any questions related to this report.