

## Midterm Report

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[Research Project Title] “Verification of the Relationship between Near Misses, Physical Fitness, and Awareness in Reducing Falls and Back Pain, the Top Two Types of Occupational Accidents”

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### 1. Research Summary

According to data from the Ministry of Health, Labour and Welfare, falls and entrapments have decreased significantly in recent years, but slips and falls and lower back pain (due to repetitive movements) are on the rise, becoming the most common causes of workplace accidents today. These accidents are particularly prevalent in the transportation, retail, and welfare industries, and urgent measures are needed. This issue is also a key target in the 14th Labor Disaster Prevention Plan, which began in April 2023, and there is growing emphasis on prevention and countermeasures.

In fact, measures to prevent falls and back pain have been implemented for a long time. However, these measures have focused on work and environmental factors, such as protective equipment and the creation of manuals, and have not addressed individual factors such as employee physical strength, health, and bone density. In modern society, preventive measures are becoming saturated, and it is increasingly recognized that such measures alone are insufficient. Taking falls as an example, in addition to risk management (measures to prevent falls), crisis management (measures needed when a fall is imminent) must also be considered. Going forward, it is essential to address individual factors. Rather than simply rearranging objects, preventive measures must focus on enhancing individual health, physical fitness, and motor abilities. This study investigates the extent to which on-site employees possess the necessary health, physical fitness, and motor skills required to reduce workplace accidents such as falls and movement-related injuries (e.g., lower back pain) and work safely.

Furthermore, we will clarify the extent to which these physical fitness indicators are related to near misses and awareness of measures to prevent occupational accidents, and create data that can be used to promote the importance of maintaining physical fitness.

### 2. Method

#### (1) Subject

Health and physical fitness tests and surveys were conducted on a total of approximately 200 employees at two companies that had agreed to cooperate. Participation in the physical fitness tests was voluntary. Permission was obtained to use the data for analysis in a form that did not identify individual participant

(2) Measurement and survey items

Health and physical fitness assessments include body composition, bone density, leg strength (2-step test), muscle strength and endurance (30-second chair sit-to-stand test), and flexibility (seated forward bend). Additionally, the survey includes basic profile information and job details, as well as the frequency of stumbling in the past month, Visual Analog Scale (VAS) for lower back pain, presenteeism, sitting time, exercise habits, and behavioral change stages.

3. Current status

At the time of the interim report, health and physical fitness tests and questionnaire surveys were conducted on approximately 70 employees at one company. These data are currently being entered, and analysis has not yet been conducted. We are currently making final adjustments to conduct the survey at a second company. We plan to analyze the data from both companies together.

Overall, the research is progressing smoothly, and we will continue our research toward the final report.