

Provider	Scope of Product	Cost Information and Discounted Rates	Advantages	Concerns
MakuSafe	MakuSafe is a safety data and analytics company focused on improving workplace safety and reducing workers' compensation claims. MakuSafe gathers real-time environmental, motion, and near-miss data from connected devices, including their proprietary wearable armband technology. The data is then sent to their cloud platform, MakuSmart, which uses machine learning and AI to identify high-risk trends in a facility and generate alerts to safety leaders. The portal auto-records near-misses, proactively targets resources to specific conditions and occurrences, and streamlines compliance reporting.	This product is sold in sets of 20. The cost is \$5,220 for each set. They do not offer any discounted rates at this time.	<ul style="list-style-type: none"> Intuitive analytics and reporting dashboards are easy to understand and provide actionable intelligence Alerts to high-impact trends with suggested action steps at the moment of need Real-time automatic collection of leading indicators to potential hazards and risk Monitoring of environmental conditions and harmful human motion, including slips and trips, with location identification Easy voice reporting of near-misses and observations from the wearable device 	MakuSafe does not have any validated research for this product when asked. They offer select case studies for a few successful clients that were willing to invest serious time and financial commitments. In addition, there is no traceability to the National Institute of Standards and Technology (NIST) for the IH (Noise/IAQ) capabilities of this product. The thresholds for sound, light, and heat index are those published or recommended by OSHA.
DorsaVi (myViSafe)	The myViSafe product focuses on movement only and does not involve EMG (muscle activity analysis) at this stage. The ViSafe consulting product is more labor intensive as the vendor needs to come on site, spend 1-5 days assessing workers, then upload the data for their data science techs to sync data, segment data, and analyze into risk categories (usually over 2-3 weeks). With this product, the vendor can capture both neck and low back movement data and muscle activity data. The vendor can then package up this data into the interactive report and present that to the client through a solution workshop if needed. The Solution Workshop is very interactive and seeks to show risks found during the assessments and, importantly, workshop and debate as to what mitigation strategies and solutions should be implemented to reduce risk.	MyViSafe costs \$4,000 per year for your first set of 4 sensors, and you can use this product yourself with a 30-minute training session. If you take on the product over more than one site, the cost is reduced significantly. For example, if using it for 2-5 sites, the cost is \$3,000 per site, and if used across all 10+ sites over 3 years, the cost per site would come down to under \$2,200 per site. The ViSafe consulting cost will depend on how many workers are assessed and how many days the vendor assessors are on site. A one-day assessment, analysis and report is usually \$12-15k, whereas, for 3 days on site, the cost is reduced per day, as there is efficiency in scale, so a 3-day job would be \$32k and a 5-day job would be \$45k.	The myViSafe product can be delivered quickly to the client and have their safety professional or ergonomists trained up the same week online which will provide real-time feedback to workers. This wearable technology works by placing sensors on the back and shoulder of the employee observed. The sensors are then synced with the software program, and data is collected over a period of time.	This vendor has select case studies and participant survey results from clients they have worked with in a few industries. Lack of validated research. The cost of the pilot rollout is a bit higher compared to other vendors and they tend to push the ViSafe consulting piece that is intended to support the product. The ViSafe Consulting costs are a bit higher than other vendors and this could put the cost out of range for some clients.
Kinetic	Kinetic creates wearable technology, known as Reflex, that detects unsafe postures commonly occurring on the job, such as bending, overreaching, and twisting, that over time lead to injury. The Reflex device is ruggedized, drop-proof, waterproof, and loaded with other features to allow it to survive the work floor. It securely fastens to waistbands with an industrial-grade closure and spring-loaded retention clip. The vendor states that the device self-calibrates each time you wear it. You can toggle between information stored on the device ranging from high-risk postures to steps to goals set by the clients. The Reflex device easily docks for recharging and is powered by a best-in-class lithium polymer type battery for extended usage.	<ul style="list-style-type: none"> Devices – Annual Lease - \$250-350 per year Hardware – One-time cost ~\$1,000 per site Implementation & Ongoing Support – \$30k-80k per year depending on scope 10% discount on 1 yr. device cost for 100-499 devices 15% discount on 1 yr. device cost for 500-999 devices 20% discount on 1 yr. device cost for 1,000+ devices 	The Reflex device is packed with sensors that lead to biomechanics and data sets available. The vendor is constantly iterating on algorithms that allow them to characterize motions and activities in the most accurate way possible. The platform provides a dashboard of data to management in order to facilitate data-driven decisions to improve workers' safety. The device provides coaching to workers with a light vibration when in an unsafe posture. This vibration encourages new habits towards safer, ergonomic postures.	In April 2021, Perr & Knight, a top U.S. actuarial consulting firm, provided an actuarial analysis of the Kinetic wearable device and its impact on workers' compensation insurance losses. Kinetic tested the device in various industries and gathered data before and after the implementation of the wearable device. The conclusion was that the manufacturing industry's frequency of strain and sprain claims declined 49.5% from 1.08 claims per 200,000 hours worked without the Kinetic device to 0.54 claims per 200,000 hours worked with the Kinetic device. Warehouse workers reduced the incidence of frequency of strain and sprain claims by 58.8% from 2.99 claims per 200,000 hours worked without the Kinetic device to 1.23 claims per 200,000 hours worked with the Kinetic device. However, the concern is the sample size. They most likely conducted this research study with a few clients prepared to invest serious financial and time constraints to make the wearable technology work. In order for this actuarial analysis to be valid, it would need to be replicated with more industries and larger sample sizes for comparison.
Modjoul	Modjoul is an entire ecosystem of sensors, RFID, and wearable technologies powered by data analysis. API integrations allow Modjoul data to be fully integrated into the client's workflows. All of the data collected from their ecosystem of safety and environmental sensors is collected and managed using their easy-to-use dashboard. There is continuous measurement and reporting to track progress.	The cost is \$500 per device. Minimum order of 500 devices is required for full rollout. For programs with 100-1000 devices, the vendor is willing to offer a 10% discount. For programs with more than 1000 devices, they would offer a 15-20% discount depending on the device order.	Extensible, actionable data measured by Modjoul technologies provides the client with insights. Allows clients to pinpoint current or emerging risk areas. Offers curated data to measure the impact most important to the client.	The vendor has several case/success studies for hospitality, airlines, steel production and e-commerce. However, these are a few clients they have worked with that have invested time and financial commitments. There is a lack of validated research studies to support this product. The cost is a bit on the higher side for each device, and they require minimum orders for the full rollout that can bring the total cost closer to \$250k, which might be out of range for most clients.
StrongArm Technology	The vendor claims to have the world's toughest, most advanced and most comfortable IoT safety wearable, proven to reduce manual material handling risk while empowering management with actionable, real-world insights. Like most sensors, they also have haptic vibration, however, they have 256 custom auditory and haptic options. Auditory or light-based proximity alerts, Bluetooth contact tracing, 48-hour battery life + rechargeable, and interactive dock for sensor check-in/out, automated asset tracking and automatic charging and uploading. The X-Pack sensor is strapped between the shoulder blades. The data is captured with the Safe Work dashboard (the hub of their safety management system designed to reduce risk and help eliminate ergonomic injury in your facility).	The standard offering list price is \$37.50 per user per month. This vendor will offer a 20% discount, or \$30 per user per month (pilot or deployment). For a one-day activation (proof of concept) the charge would be \$5,000 which would be credited to any future deployment.	The Safe Work System incorporates real-time data collection into the employee's workday. Their wearable safety devices, Flex sensors, collect only the most essential information such as movement, noise levels, air quality, and, monitoring and recording to determine if a worker makes a dangerous movement so it can alert them.	StrongArm partners with several carriers and brokers such as Hartford, Willis Towers Watson, and Aon to mention a few. They have many clients (Costco, Toyota, Golden State Foods, 3M, Sony, FedEx, Walmart, several airlines, etc.). Some of their statements, such as preventing costly injuries before they happen by as much as 52%, consistently improving safety culture while delivering ROI of 200% or more, and 45% injury reduction in ergonomic strain /sprain injuries, are not supported by any foundational or validated research. Most of these statements are based on their own case studies.
Hero Wear	The bands stretch as your muscles extend, then recoil as your muscles contract, returning energy and assisting with every lifting motion. It doesn't require any motors or batteries. The Apex moves with the user and reduces forces on the spinal muscles and discs each time the wearer bends forward or squats down.	<ul style="list-style-type: none"> \$1199 for 1 suit for one pre-sized user \$3499 for 1 exosuit for a broad range of sizes \$5999 for 4 exosuits for a broad range of sizes The vendor is willing to provide a 10% discounted rate for our clients.	This product offers an exosuit (advanced garments that provide hands-free support to help prevent injuries for those performing physically-demanding jobs). The product works with elastic bands that stretch from a backpack down to connections on the thighs.	This product does have some validated research for EMG studies (Lamers, Yang & Zelik 2019 and Lamers et al. 2020) that supports a 20-30% reduction in muscle activity during lifting, a 30% reduction in muscle activity during leaning and a 40% reduction in muscle fatigue during leaning. However, some of these studies do not always translate to actual workplace environments especially when performed in lab settings with smaller sample sizes. Additionally, the cost associated with exosuits is significantly higher than the wearable technology sensors making it more challenging to pilot and roll out on a full scale. Other factors to consider with exosuits are that discomfort is still an issue for some employees, and the exosuit transfers stress to another body part.
Swift Motion	The product is called Swift Motion FUZE™. This is not an exosuit. This product is similar to Strong Arm Technology, however, the key to this product is how the product is worn and where the sensor is placed on the employee.	The cost for this product is based on a one-time charge of \$6500. There is also a rental model where you can rent the system for \$700 a week. The rental model can be repeated again when you need the system. The vendor will provide a 10% discount for first-time purchases.	This product is a comprehensive system for use in task analysis, risk and productivity measurements and return-to-work programs. Custom-designed vest and IoT enabled sensors for movement, analytics to model shoulder and back injuries, and full 3D joint angles for task and job analysis.	This vendor has multiple research studies to support the validation of the effectiveness of this product (Poitras, et al. 2019 and Mavor, et al. 2020). Additional research was also conducted on the validation of the Fuze IMU system for ergonomics assessments (Elizabeth Serra-Hsu and Paolo Taboga). However, the only concern with these studies is the competing interest statement. This research was partially funded by SwiftMotion. Unfortunately, when the studies are funded by the vendor, there tends to be bias in the research.
Tumeke Ergonomics	The company's platform utilizes computer vision joint tracking technology for ergonomic assessments to isolate dangerous tasks and solve a variety of safety risk factors by predicting the likelihood of injury, enabling companies to measure and automatically track the safety of their employees without stopping production.	<ul style="list-style-type: none"> \$800/month is the standard pricing for one location \$650/month for 6 locations \$450/month for 10 or more locations. 	Uses a cell phone camera to video-record jobs and makes a comparison to REBA. Identifies poor body position, etc. This iPhone app can help identify postures that lead to worker injuries from anywhere with your smartphone camera. Helps to automate assessments so the client can focus on implementing solutions.	This product offers the client an alternative to some of the wearable technology vendors and costs. However, the only drawback is the time and investment to learn how to use the application. This would require working with the vendor and that would result in additional costs.
Velocity EHS (formerly Kinetica Labs)	Some of their highlights include: High-fidelity risk assessment, easier to use, takes videos, enter forces, automated analysis, simple outputs, risk mapping, and hot spot. Helps to quantify risk (low, moderate, high, severe). Identifies areas of need based on the latest science and can detect and quantify incremental improvements.	\$6,000 - \$8,000 per year (annual pricing)	Similar to Tumeke Ergonomics.	Same as above. This product also offers the client an alternative to some of the wearable technology vendors and costs. However, the only drawback is the time and investment to learn how to use the application. This would require working with the vendor and that would result in additional costs.

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