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## ANALYSIS OF POSSIBLE WATER CONTAMINATION RISK, POTENTIAL THREATS TO USERS' HEALTH

Water consumption and supply play an integral role in our modern daily lives. Water pollution can pose a serious threat to human health and the environment. A detailed analysis of potential water contamination risks is crucial for ensuring the safety and quality of water for consumers.

Identification of Pollution Sources: a thorough examination of pollution sources, such as industrial wastewater, agricultural discharges, municipal waste, and other factors that could negatively impact water quality.

Evaluation of Chemical and Bacteriological Indicators: determining the concentrations of chemical substances and studying bacteriological indicators in water to identify potential hazards to user health.

Analysis of Contamination Pathways: studying possible pathways through which contamination may enter the water supply system and identifying vulnerability points in this process.

Development of Monitoring Systems and Preventive Measures: implementing effective monitoring systems for timely detection of changes in water quality and devising strategies to prevent contamination.

Establishment of Quality Parameters: setting parameters that serve as indicators of water quality and determine its safety for consumers. This may include chemical, physical, and bacteriological indicators.

Adoption of Modern Monitoring Technologies: identifying and implementing modern monitoring technologies, such as sensors, IoT solutions, and automated data collection systems, to obtain real-time and accurate information about water quality.

Creation of a Centralized Monitoring System: developing a centralized system that ensures reliable data collection and analysis from various monitoring sources. This may include sensor networks, laboratory measurements, and data from consumers.

Development of Algorithms and Software for Anomaly Detection: creating algorithms and software for detecting anomalies and unusual changes in water quality, enabling prompt responses to potential threats.

Implementation of Alarm Systems and Rapid Response: developing an alarm system that automatically notifies relevant authorities in case of critical anomalies and ensuring swift responses to water contamination.

Analysis of Monitoring Results for Prevention Strategies: analyzing monitoring results to develop strategies for preventing water contamination. This may involve optimizing purification processes, regular maintenance of infrastructure, and effective risk management.

Involvement of the Public and Consumers: engaging the public and consumers in the monitoring system through informational campaigns, providing access to results, and promoting awareness of the importance of preserving water quality.

Regular Updates and Improvement of Monitoring Systems: continuously updating and enhancing monitoring systems and prevention strategies based on collected data and advancements in technology.

Conclusion. Research into potential water contamination risks highlights the critical role of thorough analysis and monitoring in ensuring water supply safety and user health. Implementation of effective preventive measures and responses helps preserve water as a vital resource and ensures water consumption safety.

It is recommended to further advance monitoring technologies, introduce innovative water purification methods, and enhance education on the importance of responsible water resource preservation and usage [1,2,3].

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## DEFORMATION OF PALMAR HAND MEASUREMENTS IN A POWER GRIP BY WRIST ULNAR/RADIAL DEVIATION

An ergonomic power-grip handle designed by considering hand measurements, grip postures, and task characteristics can enhance productivity and usability in power-grip work. Power grips are widely used in various contexts, including manufacturing (e.g., hammering and drilling), vehicle operations (e.g., flight stick maneuvering), and daily living product uses (e.g., cooking and vacuum cleaning). The design of a grip that considers users' preferred grip postures, hand measurements, task characteristics, and usage environments can enhance fit, comfort, satisfaction, and motion efficiency. Additionally, it can increase productivity by inducing proper use of force and reducing physical workload on the upper extremity.

Several studies have investigated the optimal size of power grip for various cylindrical shapes and non-cylindrical shapes of grips by applying hand measurements, such as finger length ratios, and grip postures. Proposed a grip design for a vaginal ultrasound probe by applying finger length ratios to grip circumferences of designated grip sections and reported that the newly proposed grip design improved subjective satisfaction by 13.3%, wrist movement convenience by 2.5%–13.5%, and reduced muscular load by 0.4%–1.3%, compared to the existing grip design. Furthermore, suggested the optimal circumference of a pistol grip by analyzing hand dimensions and contact length and identified that the grip design based on contact length analysis increased usability in terms of perceived comfort and force distribution compared to the existing grip design. Next, measured grip force and contact area of cylindrical handle grips with various diameters (38–83 mm) and proposed an optimal handle diameter design equation based on finger segment length to maximize grip force. Lastly, developed an anatomically shaped power grip handle using discrete cylindrical handle grip postures and hand shapes applied with optimal handle diameter design equations by finger and reported that the newly developed