**Assessing Drinking Water Quality: Key Parameters, Contaminants, and Health Implications**

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| **Abstract** Drinking water is essential for human health, with access to clean water significantly impacting quality of life. However, water pollution and mismanagement threaten drinking water quality worldwide. The World Health Organization (WHO) estimates that millions suffer annually from waterborne diseases due to contaminated drinking water. This review explores the key factors influencing drinking water quality, common contaminants in water sources, and their health implications.Assessing drinking water quality involves evaluating physical, chemical, and biological parameters. Physical parameters include color, turbidity, taste, and odor, while chemical parameters focus on the concentration of minerals and chemicals. Biological parameters detect microorganisms that may pose health risks. Contaminated drinking water can cause various health issues, particularly for vulnerable populations like children and individuals with weakened immune systems.The study presents criteria for evaluating drinking water quality, based on established standards. Important parameters include pH, total hardness, nitrate, ammonium, chlorine, and coliform bacteria presence. These criteria are classified into good, moderate, and poor quality levels, aiding in determining water safety.Furthermore, the review examines strategies and technologies to enhance drinking water quality. Solutions such as water purification systems, safeguarding water sources, and increasing public awareness about water quality are vital for improving safety. Ongoing research in water management and quality is crucial for sustainable water resource development. This review aims to raise awareness about the significance of drinking water quality improvement and contribute valuable insights to the literature, fostering effective strategies for enhancing public health through safe drinking water access.**References:** [1] World Health Organization. (2017). Guidelines for drinking-water quality: Fourth edition incorporating the first addendum. https://www.who.int/publications/i/item/9789241549950[2] U.S. Environmental Protection Agency. (n.d.). National primary drinking water regulations. https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations [3] Centers for Disease Control and Prevention. (n.d.). Water quality: Drinking water quality and your health. https://www.cdc.gov/drinking-water/about/water-quality-and-your-health.html |

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