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Health Risks of Recreational Tropical Swimming Pools: Microbial Infection and Vulnerability of Specific Populations

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Water exercise offers a low-impact, accessible form of fitness for various individuals, especially those with physical limitations. However, exercising in recreational pools, particularly in tropical climates, presents health risks due to potential bacterial exposure, particularly for those with weakened immune systems. Tropical swimming pools, even with regular maintenance, harbor diverse bacteria due to warm temperatures and high swimmer density. This poses a significant risk to vulnerable populations like children, pregnant women, individuals with HIV/AIDS, weakened immune systems, and the elderly.

Common bacterial infections contracted from pools include skin rashes and ear infections from *Pseudomonas aeruginosa*, pneumonia from *Legionella pneumophila*, and abscesses and sepsis from *Staphylococcus aureus*. While chlorine and pH regulation are essential for pool sanitation, they do not eliminate all bacteria. Factors like swimmer load, personal hygiene, pool size, microbial diversity, and water temperature contribute to bacterial survival and transmission.

Therefore, individuals with weakened immune systems should exercise with caution when using recreational pools in tropical climates.