United States private well systems are not federally regulated, leaving homeowners responsible for ensuring their own water quality. However, many homeowners do not manage their well and septic systems in a manner sufficient for preventing and detecting contamination. To identify knowledge gaps and misconceptions that inhibit proper well and septic system maintenance and operation, we conducted structured interviews with private well owners from Wake County, North Carolina. We found that testing is inhibited by well owner lack of awareness about recommended testing guidelines, overreliance on sensory information, and poor understanding of exposure pathways. Inadequate testing is exacerbated by poor understanding of links between private septic systems, well water contamination, and health, therefore hindering proper septic maintenance. Additionally, we found that cost and control are key decision-making factors. Our findings should be used to direct communications to improve homeowner practices and reduce health risks associated with private drinking water systems.

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