

Urine collection methods for non-toilet trained children in environmental exposure assessment

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Background: Because of the increased vulnerability of young children to environmental stressors it is important to obtain appropriate urine samples for exposure assessment. However, collecting urine from non-toilet trained children has been shown to be methodologically and practically challenging.

Objective: Evaluation of urine collection methods for non-toilet trained children which could be applied in a non-clinical setting.

Methods: Selected urine collection methods include a disposable polyacrylate diaper, a urine bag, a hygroscopic polymer collection pad and the 'clean catch' method. These approaches were evaluated for their success rate and the user appreciation.

Results: In total, 24 samples were obtained for each of the urine collection methods. The success rates were 67%, 21%, 17% and 4% for the diaper, urine bag, collection pad and clean catch, respectively. The user ratings were 9.0, 4.7, 7.3 and 2.5, respectively. The diaper is the most suitable urine collection method for non-toilet trained children. This method will be further evaluated for xenobiotic substances, including clinical parameters.