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Toileting

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Abstract:	Most typically developing children will be successfully toilet trained regardless of method. Nevertheless, the time and effort associated with toileting training is substantial and child resistance can be daunting enough for some caregivers to seek professional assistance. We provide a common groundwork of toilet training procedures and offer evidenced based suggestions for children who are refractory to common toilet training methods. We recommend fluid loading to promote practice trials and positive reinforcement for sitting and voiding in the toilet. Differential consequences for identifying being dry versus being wet during pants checks is equally helpful. In addition, we suggest addressing child compliance issues prior to toilet training. Finally, we view stimulus control as a significant factor in toilet training. Stimulus control and reinforcement history allocate toileting obstacles to external environmental factors rather than to factors within the child.

Toileting

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For Review Only

Abstract

Most typically developing children will be successfully toilet trained regardless of method. Nevertheless, the time and effort associated with toileting training is substantial and child resistance can be daunting enough for some caregivers to seek professional assistance. We provide a common groundwork of toilet training procedures and offer evidenced based suggestions for children who are refractory to common toilet training methods. We recommend fluid loading to promote practice trials and positive reinforcement for sitting and voiding in the toilet. Differential consequences for identifying being dry versus being wet during pants checks is equally helpful. In addition, we suggest addressing child compliance issues prior to toilet training. Finally, we view stimulus control as a significant factor in toilet training. Stimulus control and reinforcement history allocate toileting obstacles to external environmental factors rather than to factors within the child.

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Scope of Chapter

“Toileting” refers to a variety of elimination competencies that are typically acquired in childhood. Learning to reliably eliminate in the toilet or an otherwise appropriate receptacle is commonly referred to as “toilet training” and is typically achieved between two and three years of age, subject to various social, familial, and cultural variables (Bloom, Seeley, Ritchey & McGuire, 1993; Schum et al., 2001). In Western cultures, toilet training typically is not initiated until the child is at least 18 months old (deVries & deVries, 1977; Schmitt, 2004) and is commonly completed by 36 months old. Learning to be continent throughout the day and night are two additional competencies that typically occur within the same general time frame as basic toilet training or somewhat later, over the ensuing year or two (Schmitt, 2004). This chapter will address the earliest attained and most primary of these developmental tasks, namely, toilet training itself. We would note that defecation at any age requires a full rectum and does not lend itself to repeated training trials; whereas, bladder training can be readily facilitated by supplying the child with fluids, thereby creating more learning opportunities. Given that, toilet training, as commonly conceived, usually refers to bladder training (Schmitt, 2004).

Initial Assessment

The vast majority of typically developing children toilet train without the assistance of professionals beyond common anticipatory guidance. Individuals who have developmental delays are often trained later in life, sometimes in adulthood, but these individuals are no less susceptible to structured training protocols and can achieve continence skills with training (e.g., Cicero, 2012; Cicero & Pfadt, 2002; Foxx & Azrin, 1973). Children who experience difficulty in toilet training and seek the assistance of professionals are, statistically speaking, in the vast

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minority and should be screened to rule out potential medical complications (e.g., urinary obstruction, UTIs, constipation) that may impede effective toileting. Comprehensive medical (Robson, 2009) and psychiatric (von Gontard, Baeyens, Van Hoecke, Warzak, & Bachman, 2011) evaluations have been proposed for children with elimination disorders. Social contexts also may affect child resistance to toilet training and contribute to bladder and bowel dysfunction (Garcia, Crocker & Wyman, 2005; Luxem & Christophersen, 1994; von Gontard et al, 2011; Warzak, 1993).

Toilet Training Readiness

The ideal time to initiate toilet training is by no means agreed upon and there is great variability in training windows depending upon the readiness signs selected by the trainer (Kaerts, Van Hal, Vermandel, & Wyndaele, 2012; Schum et al., 2002). Kaerts et al. (2012) provide an example of 21 directly observed readiness signs (e.g., “children understand potty words,” “pull clothes up and down,” “can sit still unassisted on the potty for 5-10 min”) but their individual predictive power relative to successful toilet training has not been evaluated (Blum, Taubman, & Nemeth, 2003). Toilet training typically developing children presumes a child can lower and raise pants independently, can sit unassisted on a toilet or potty training seat, know the name of basic body parts, etc. These skills are easily assessed within the context of a caregiver interview often including a caregiver completed developmental screener such as the Ages and Stages Questionnaire (ASQ II) (Squires & Bricker, 2009) or a professionally administered developmental screener such as the Denver Developmental Screening Test (Frankenburg, Dodds, Archer, Shapiro, & Bresnick, 1992).

Furthermore, as it is very difficult to train a disruptive, aggressive, or even a simply noncompliant child. These problem behaviors should be assessed prior to training through direct

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compliance assessment or through any of a variety of caregiver completed behavior screening measures (e.g., Child Behavior Checklist, Achenbach & Rescorla, 2000; Eyberg Child Behavior Inventory, Eyberg, Boggs, & Reynolds, 1980). Problem behaviors should be addressed before the onset of toilet training. Children who meet criteria for training but are unsuccessful may benefit from a training respite of 3-6 months to allow for further development of toileting readiness skills.

Toilet Training Procedures

A variety of toilet training procedures have demonstrated effectiveness, and given sufficient time, most typically developing children will be successfully trained regardless of method. Over the past 50 years, the predominant toilet training methods have varied between Azrin and Foxx's (1971) caregiver-directed, intensive, 18-step toilet training approach, described for caregivers in *Toilet Training in Less than a Day* (Azrin & Foxx, 1974) and a child-directed approach (Brazelton, 1962; Schmitt, 2004; Spock, 1946) which emphasizes a child's voluntary cooperation and readiness for toilet training. Both approaches have empirical support (Kiddoo et al., 2006). The child-directed method, because it curtails training if child negativity is encountered, often extends training over many months; whereas, the Azrin & Foxx method is intense, sustained, and geared to 24 – 48 hours of training. Unlike the child-directed approach, the Azrin and Foxx procedure often includes punishment (i.e., positive practice) for toileting failures, aversive to children and caregivers alike (Warzak, Forcino, Sanberg, & Gross, 2016).

Despite its success, intensive toilet training (ITT) is not widely disseminated by physicians, who favor child-directed approaches to toilet training, which may take months to complete (Polaha, Warzak, & Dittmer-Mcmahon, 2002; Simon & Thompson, 2006). It is not difficult to understand why the latter procedure is preferred over the 18-step Foxx and Azrin

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procedure. However, there are abbreviated variations to the latter procedure that make it an appealing alternative to a child-oriented approach and feasible within a typical pediatric practice.

Our preferred training procedure targets typically developing children free of significant medical issues that complicate toilet training, such as lower urinary tract dysfunction. It is comprised of empirically supported components of the Azrin and Foxx method (Table 2) and provides a toilet training procedure likely to result in briefer time to train than a passive child-directed approach (Warzak et al., 2016). Fluid loading and structured practice sits provide multiple toileting opportunities throughout the day and comprise the core of the procedure. We also recommend frequent dry pants checks with differential consequences for being dry versus being wet, and for voiding in the toilet versus voiding elsewhere. Punitive consequences for wetting episodes are of dubious value, are often omitted in current toilet training packages (Doan & Toussaint, 2016; Warzak et al., 2016), and are not recommended here.

Regardless of parental training preferences, childcare arrangements may provide considerable influence in the timing of training as well as the method by which training is undertaken. Day care and school staff may initiate training practices that are inconsistent with parent preferences (Kaerts et al., 2014). Indeed, day care centers and pre-schools are unlikely to have staff ratios available to implement intensive toilet training procedures. Needless to say, many daycare centers and preschool settings require children to be toilet trained before they can be enrolled (Berk & Friman, 1990).

Monitoring Progress

Monitoring progress requires ascertaining the integrity with which a protocol is implemented (e.g., Gresham, Gansle, & Noell, 1993; Peterson, Homer, & Wonderlich, 1982); dependent measures that capture change in the behavior of interest; and, the reliability of those

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measures across observers (Cooper, Heron, & Heward, 2007; Johnston & Pennypacker, 2009). There are a variety of procedural and dependent measures that inform toileting progress.

Procedural integrity. Procedural integrity is important to successful implementation of any intervention. The abbreviated Azrin and Foxx procedure has been reduced to a small number of components, namely, fluid loading, differential response to dry/wet pants checks, frequent prompted practice trials, fading prompts, and thinning the schedule of reinforcement for dry pants and voids in the toilet (Warzak et al., 2016; Warzak, Kennedy, & Bond, 2017).

Dependent measures. To monitor progress is to observe and measure behavior change relevant to operationally defined goals. This requires dependent measures that change as a function of treatment recorded over time. Among the most common are a) voids in vs. out of the toilet; and, b) toilet training completion, a more arbitrary measure. Research protocols require a consensus across two or more observers for a portion of toileting trials. For non-research purposes, caregiver report provides sufficient information regarding the occurrence of “accidents”.

In- vs. out-of-toilet voids. The use of the terms *successes* and *accidents* to refer to in- and out-of-toilet voids, has become commonplace. To be truly toilet trained children need to self-initiate toileting episodes, either by independently toileting themselves or signaling caregivers with a toileting request. Children with limited communication skills may be accommodated via environmental supports such as American Sign Language for the deaf (ASL) or the exchange of a communication card for nonverbal children (e.g., PECS; Bondy & Frost, 1994). Out-of-toilet voids are typically detected after voiding has occurred and a pattern of wetness is clearly visible (Simon & Thompson, 2006). Pampers and Huggies are among major diaper manufacturers whose all diaper products change colors as a function of wetness and increase the ease of

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detection.

Toilet training completion. To be toilet trained is not necessarily to be toileting independent. While children must initiate toileting to be considered toilet trained, it is unlikely that a newly trained 2- or 3-year-old also is hygiene independent; and, it is likely that many children dry during the day still wet the bed at night (Foxy, 1986; Schum et al., 2002; von Gontard, Heron, & Joinson, 2011). Furthermore, as noted by Warzak et al. (2017) there is no agreed upon definition of “toilet trained”. A criterion of 100% of voiding episodes occurring in the toilet is too high a standard because many young children intermittently wet their pants and numerous adults void under conditions where toilets are not available (e.g., camping, swimming, golf courses). What percentage of voids can be out of the toilet and still consider the child in training as “toilet trained”? This is a function of culture and community variables, in addition to developmental and behavioral issues. Additional dimensions that have been assessed as part of the definition of “toilet trained” include correspondence of both urine and fecal accidents per month (Blum et al., 2003), or the percentage of out-of-toilet voids that occur post training (LeBlanc, Carr, Crossett, Bennett, & Detweiler, 2005).

Other researchers have recommended criteria that did not include independent initiation, usually within the context of training children with developmental delays (e.g., Didden, Sikkema, Bosman, Duker, & Curfs, 2001; Kroeger & Sorensen, 2010). For example, clock training has been an effective means of diurnal training of children with developmental delays who learn to void upon perceiving external stimulus cues rather than internal bladder cues. These children may not self-initiate voiding in the toilet but may learn to reliably void in the toilet with environmental prompts, even if not hygiene independent.

Trouble Shooting

Toilet training is a commonplace life experience and is typically accomplished without difficulty. Nevertheless, given the number of variables that can affect toilet training progress, a percentage of children experience complications and may benefit from professional assistance. These complications can affect a child's acquisition of toileting skills as well as the performance of those skills. Complications also may affect caregiver ability to implement a training protocol effectively. We address common complications and offer suggestions for their remediation.

Addressing familial stressors. Toilet training both imposes familial stress and is affected by it. The time and effort associated with training is substantial, the ongoing expense of diapers is considerable, and the practical obstacles, such as child resistance and maintaining procedural consistency, are daunting. Incidental wetting events ("accidents") in which the child voids outside of the toilet are an ongoing frustration for caregivers and child alike (Macias, Roberts, Saylor, & Fusseell, 2006). These events may be accompanied by negative psychosocial consequences for the child as well as for other family members (Palmer et al., 2012; Warzak, 1993). Caregivers may interpret accidents as reflecting poorly upon their skills or, conversely, believe their child wets intentionally, perhaps to anger them, or to obtain their attention. They may punish a child who wets in an attempt to discourage accidents but punitive tactics typically are ineffective and may serve to evoke aggressive or disruptive escape and avoidance behavior rather than promote increased performance of acceptable toileting behavior (Polaha, et al, 2002; Warzak et al., 2016).

That ITT is a demanding, highly structured endeavor, underscores the importance of focusing training days to toilet training. If transient stressful events are anticipated during the training period (e.g., visits from family or friends, a sibling's birthday, etc.) it is advisable to

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initiate toilet training at a time when these distractions can be avoided. In addition, caregivers will be best served if they have access to professional guidance while they are conducting toilet training. We would recommend scheduled phone contact with clinic staff throughout training to support caregivers and assist with troubleshooting.

Allocating sufficient time and resources. An intensive approach to toilet training requires a focused training commitment by caregivers. Between fluid loading, structured sits, regular pants checks, and maintaining a rich incentivized training environment, we recommend a weekend be allocated to toilet training and little else. Maintaining a training environment rich in motivational consequences for the child also represents considerable effort. It cannot be overestimated how important it is for trainers to maintain an adequate supply of readily available reinforcing consequences (e.g., edible treats, access to favorite and novel toys, caregiver praise). Initial toileting trials may be fun for many children, but as the day wears on, children often require extrinsic motivation to remain on task. We recommend two levels of reinforcing consequences; one level for sitting on the toilet and another level for eliminating in the toilet.

Training the noncompliant child. The essence of intensive toilet training is to provide numerous learning opportunities in a short period of time. These opportunities arise because of fluid loading and frequent prompted toileting trials (e.g., Azrin & Foxx, 1973; Matson & Ollendick 1977; Warzak et al, 2016). Children must be under instructional control to participate in toileting trials efficiently and successfully, yet this is often neglected when assessing a child's suitability for toilet training (Polaha et al., 2002). Children who are noncompliant may benefit from structured compliance training prior to toilet training. Structured compliance assessment may be conducted within the clinic. An alternative assessment might be derived from the Child Behavior Checklist (CBCL) (Achenbach & Rescorla, 2000) and the Eyberg Child Behavior

Inventory (Eyberg et al., 1980). These instruments exemplify broadband (CBCL) and narrow band (Eyberg) evaluations of problem behaviors in young children that might suggest deferring toilet training until acceptable levels of compliance have been achieved.

Establishing stimulus control of the toilet. One of the most perplexing challenges to caregivers occurs when their child will not void in the toilet during structured sits but reliably voids in their diaper shortly after leaving the toilet, suggesting they are aware of bladder cues and have sphincter control. This makes perfect sense from a stimulus control point of view. A child who is not toilet trained always voids (and defecates) in their diaper. The diaper, their posture, typically not sitting, and sometimes a particular location, come to be associated with elimination and any deviation from that is uncomfortable and an impediment to elimination. This is no different from adults who find themselves in circumstances where toileting is necessary but toilets are unavailable. It is uncomfortable. We have found that young children will imitate a simple two or three component relaxation protocol (e.g., shake hands out, hands down, deep breath in and out) modeled by their caregivers. If the caregiver prompts this sequence while the child is sitting on the toilet, voiding often follows and subsequent reinforced trials establish the toilet as the appropriate stimulus for elimination.

Conclusion

Most caregivers train their children without professional assistance, procedural structure, measurement, or data collection. Nevertheless, for children who need assistance, professional help is available. We recommend fluid loading to promote practice trials. Positive reinforcement for sitting on the toilet and for voids in the toilet is crucial and differential consequences for identifying being wet versus being dry during pants checks is equally helpful. In addition, we suggest addressing child compliance issues prior to toilet training. This may be the most

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important prerequisite skill because effective training requires compliance with practice sits. Training a noncompliant child presents a significant challenge to caregivers and a significant obstacle to toilet training success. Finally, we view stimulus control as a significant factor in toilet training. Stimulus control and reinforcement history allocate toileting obstacles to external environmental factors rather than to factors within the child. In our view, obstacles to toilet training are not internal to the child. They are factors of the external environment.

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Table 1

Suggested Materials for Toilet Training

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- 5-10 pairs of cotton briefs or training pants
 - Potty chair or toilet with foot stool and ring insert for regular toilet
 - Variety of preferred fluids and foods with a large water content (e.g., watermelon, popsicles), as well as salty snacks to encourage drinking
 - Rewards (e.g., tangible rewards, games, calls to family members, etc.)
 - Timer for prompting toilet sits
 - Cleaning supplies for accidents
 - Toilet training protocol
 - Data sheet
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Note. Adapted from Azrin and Foxx (1974), Foxx and Azrin (1973), and Schaefer (1979).

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Table 2

Modified Intensive Toilet Training

Components	Implementation
Cotton briefs/training pants	Place child in cotton briefs or training pants for training. Loose fitting underpants will be easier to raise and lower.
Fluid Loading	Have a variety of preferred drinks on hand. Offer drinks frequently. Praise drink consumption. Offer salty snacks and model drinking to promote fluid intake.
Dry Pants Training	Have the child feel their pants and label them as dry or wet every 15 min. Reinforce accurate dry pants with praise and a preferred item. For wet pants, say, "You have wet pants," and change their pants while providing minimal attention. Continue until the child is able to accurately label wet and dry pants.
Toilet Sits	Prompt the child to sit on the toilet every 30 minutes with a verbal prompt and physical guidance if necessary. Reduce prompting as self-initiation begins.
Rewards	Prepare a rewards that are highly preferred by the child (e.g., edible treats, stickers, favorite games, stories) and easily administered during toileting sits. Voiding in the toilet should result in the most preferred reward, whereas a moderately valued reward is appropriate for complying with a toilet sit. Fade rewards as self-initiation begins, but continue to praise dry pants and in-toilet voids.
Responding to Wet Pants	Provide a neutral response for accidents (e.g., "Let's clean up"). Keep other talk to a minimum. Remind the child to keep pants dry and void in the toilet.

Note. Adapted from Warzak et al. (2016).

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