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The 4-3-2 Method for Kegel Exercises

Bruce Bridgeman, PhD,1 and Steven G. Roberts, MD2

Abstract
Performing Kegel exercises following prostatectomy is helpful in restoring continence, but requires concentration to accomplish the required contractions consistently. Confusion and effort with executing the procedure can reduce compliance. A new method subdivides the exercises into segments that can be executed without counting. The patient performs four sets of contractions daily, each set consisting of three contractions lasting two natural breaths, separated by two natural breaths. Because each number is below the limit that can be apprehended by subitizing without counting, cognitive effort is minimized.

Keywords
prostate cancer, Kegel exercises, prostatectomy, pelvic floor exercises

Pelvic floor (Kegel) exercises (Kegel, 1951) are beneficial to achieve and maintain urinary continence following radical prostatectomy, as demonstrated by prospective, random assignment clinical trials (Parekh et al., 2003; van Kempen et al., 2000), but they require concentration and persistence by patients for success. The normal standard is 12 contractions per day, 10 s apart, each lasting 10 s. Thus, the prostatectomy patient must count the number of contractions, the number of seconds in each contraction, and the intercontraction interval to perform the required exercise. The counting efforts require conscious concentration and can lead to reduced compliance. The memory requirements may become more problematic as patients age.

Furthermore, 12 contractions and 10 s both exceed the numbers that humans can apprehend directly. Numbers of objects or events greater than three or four must be counted to be evaluated accurately. At or below those numbers, however, people can subitize, directly apprehending a number without counting (Revkin, Piazza, Izard, Cohen, & Dehaene, 2008). Presented with up to four objects on a tray, for instance, most people can effortlessly report the number of objects without counting and without error. Reaction times are short and do not depend on the number of objects. Above that number, however, people must either count the objects individually or divide the array into groups of five or fewer objects, subitize each, and sum the result. Errors become more frequent. A similar phenomenon occurs in the temporal domain, as when counting hours from the striking of church bells. Up to three or four strikes can be apprehended even retrospectively, but errors appear for larger numbers.

The goal of the 4-3-2 method is to package the daily Kegel routine into easily subitized groups, maintaining the number and duration of contractions in a low-effort and error-free format. The method begins with four sets of exercises. These can be performed all at once, or can be further subdivided into two sets of two. It is best to execute each set during an activity that is performed routinely every day, such as two sets before getting out of bed in the morning and two after getting into bed in the evening, or two at breakfast and two at dinner. These alternatives eliminate the need to subitize a number greater than three at any time.

A set consists of three contractions, each lasting 10 s, with a 10-s break between contractions. Counting or measuring the duration of contractions and breaks is accomplished without effort by taking advantage of the duration of normal breaths. As most men take about 10 breaths per minute, each breath can be used as a 6-s timing device. Two breaths can time the duration of one contraction with a suitable margin for timing error. Thus, the patient contracts for two breaths, relaxes for two breaths, and repeats the sequence two more times for one set. Then the next set can follow after a pause of any duration (Table 1). By breaking the daily routine into four sets, the amount of timing between contractions is minimized.
Because each set requires only 1 min, the procedure is not perceived as onerous.

The method can be taught preoperatively, so that the patient is ready to begin the 4-3-2 procedure immediately after prostatectomy, minimizing the period of postoperative incontinence. It can be taught along with instruction on the more difficult challenge of how to identify and contract the pelvic floor muscles; no separate patient appointment is required.

The 4-3-2 method has been tested by patients who underwent prostatectomy for prostate cancer in June 2007. It was found to be easy to learn and execute, and no problems with understanding the method arose. One patient who had originally used the standard instructions commented that “it is indeed simple and easy to do in almost any location, such as standing in line at the grocery store.” This comments suggests that use of the 4-3-2 method can make Kegel exercises more convenient for patients, as well as making them easier to perform. The authors welcome physicians’ reports of further clinical experience with the technique.

Variations on the 4-3-2 method are also possible. One alternative is to count the intercontraction relaxations rather than the contractions themselves. Thus, a set becomes two relaxations, surrounded by contractions. It isn’t necessary to think about or count the contractions themselves. If a set is interrupted by another activity, such as a telephone call, it can be resumed because the existing component is also subitized without the need to intentionally memorize it. The technique is easy to learn and remember. The number of sets or contractions can be adjusted by the physician as needed.

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### References


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