

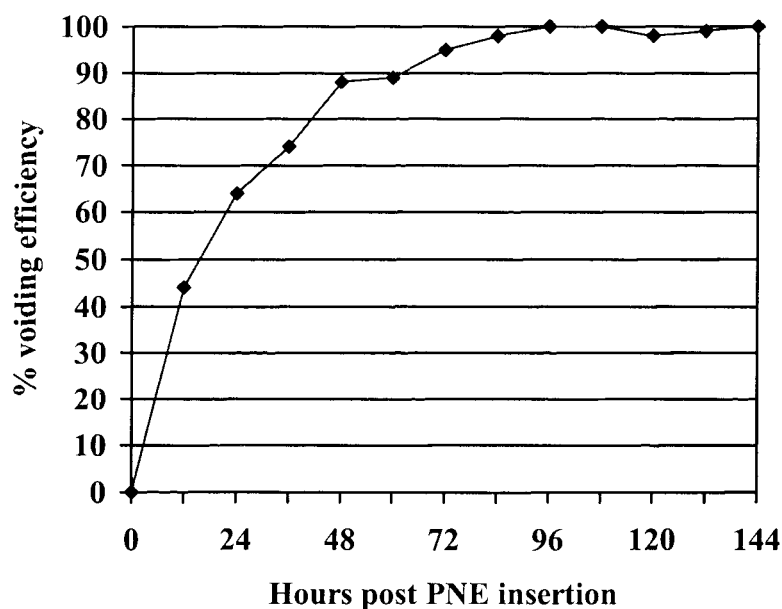
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Title (type in CAPITAL LETTERS, leave one blank line before the text)
THE EFFECT OF, AND TIMING OF THE RESPONSE TO SACRAL NEUROMODULATION IN WOMEN WITH URINARY RETENTION <u>Aims of Study</u> Sacral neuromodulation has been shown to be effective in treating patients with a variety of voiding disorders, including urinary retention (1,2). In order to determine if permanent sacral neuromodulation may result in normal voiding in these patients, their response to a percutaneous nerve evaluation test (PNE) is first determined. How sacral neuromodulation affects voiding function in these patients is unknown, but its effect may not be immediate. We have analysed the response of fifteen patients to sacral neuromodulation in order to determine after what time the maximum benefit is reached, and to try to gain further insights into its possible method of action. <u>Methods</u> The voiding diaries of fifteen patients who underwent a PNE test in our department were analysed. All had been in complete urinary retention, and all experienced return towards normal voiding with PNE. The voiding diaries they kept before and during the PNE were analysed with respect to the volumes of urine passed spontaneously or with a catheter, and the sensation of bladder filling the patient experienced prior to voiding or passing a catheter was also noted. The voiding efficiency (volume of urine passed spontaneously/volume of urine passed by intermittent self catheterisation plus volume of urine passed spontaneously) of each patient was calculated for each twelve hour period following PNE insertion. <u>Results</u> The recovery of micturition occurred within twelve hours in ten of the patients (66%), and five patients no longer needed to catheterise by 24 hours. The mean voiding efficiency of the patients increased, and by 72 hours all but one patient had a voiding efficiency greater than 85%. The peak of the effect was seen at 96 hours (Graph 1). Fourteen of the fifteen patients reported an increase in perception of bladder filling during the PNE, while in one there was no reported change.

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Conclusions

The mechanism of action of sacral neuromodulation in patients with urinary retention remains to be discovered, but studies to elucidate it should concentrate on changes between baseline and 96 hours. We propose that the onset of the return of sensation of bladder filling associated with the ability to micturate suggests that neuromodulation works via a mechanism that involves the afferent innervation. That the maximal effect is delayed indicates that it is mediated by modulating effects with a relatively slow time course. The duration of PNE in most centres is between 3 and 5 days (2,3,4), but our findings suggest that the minimum duration of PNE should be increased to four days, with a maximum of, perhaps, seven days for the assessment of the response of patients with retention.

Graph 1: Voiding Efficiency following PNE insertion.



References.

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