

- [11] Carro-Juarez M, Cruz SL, Rodriguez-Manzo G. Evidence for the involvement of a spinal pattern generator in the control of the genital motor pattern of ejaculation. *Brain Res* 2003;975:222–8.
- [12] Paxinos G, Watson C. *The Rat Brain in Stereotaxic Coordinates*. San Diego: Academic Press; 1986.
- [13] Bohlhalter S, Mohler H, Fritschy JM. Inhibitory neurotransmission in rat spinal cord: co-localization of glycine- and GABA<sub>A</sub>-receptors at GABAergic synaptic contacts demonstrated by triple immunofluorescence staining. *Brain Res* 1994;642:59–69.
- [14] Mody I, Pearce RA. Diversity of inhibitory neurotransmission through GABA(A) receptors. *Trends Neurosci* 2004;27:569–75.
- [15] Brumley MR, Hentall ID, Pinzon A, et al. Serotonin concentrations in the lumbosacral spinal cord of the adult rat following microinjection or dorsal surface application. *J Neurophysiol* 2007;144:0–50.
- [16] Wailb H. Zur topographie der Medulla Spinalis der albinoratte (*Rattus Norvegicus*). *Adv Anat Embryol Cell Biol* 1973. p. 47.
- [17] Elzanaty S, Richthoff J, Malm J, Giwercman A. The impact of epididymal and accessory sex gland function on sperm motility. *Hum Reprod* 2002;17:2904–11.
- [18] Truitt WA, Shipley MT, Veening JG, Coolen LM. Activation of a subset of lumbar spinothalamic neurons after copulatory behavior in male but not female rats. *J Neurosci* 2003;23:325–31.
- [19] Kiehn O. Locomotor circuits in the mammalian spinal cord. *Annu Rev Neurosci* 2006;29:279–306.
- [20] Giuliano F, Clement P. Neuroanatomy and physiology of ejaculation. *Annu Rev Sex Res* 2005;16:190–216.
- [21] McMahon CG, Abdo C, Incrocci L, et al. Disorders of orgasm and ejaculation in men. *J Sex Med* 2004;1:58–65.
- [22] Papaharitou S, Athanasiadis L, Nakopoulou E, et al. Erectile dysfunction and premature ejaculation are the most frequently self-reported sexual concerns: profiles of 9,536 men calling a helpline. *Eur Urol* 2006;49:557–63.
- [23] McKillop C. Interview with Dr François Giuliano. New avenues in the pharmacological treatment of premature ejaculation. *Eur Urol* 2007;52:1254–7.
- [24] McCreery D, Pikov V, Lossinsky A, Bullara L, Agnew W. Arrays for chronic functional microstimulation of the lumbosacral spinal cord. *IEEE Trans Neural Syst Rehabil Eng* 2004;12:195–207.
- [25] Newman HF, Reiss H, Northup JD. Physical basis of emission, ejaculation, and orgasm in the male. *Urology* 1982;19:341–50.
- [26] Kafetsoulis A, Brackett NL, Ibrahim E, Attia GR, Lynne CM. Current trends in the treatment of infertility in men with spinal cord injury. *Fertil Steril* 2006;86:781–9.
- [27] Colpi G, Weidner W, Jungwirth A, et al.EAU guidelines on ejaculatory dysfunction. *Eur Urol* 2004;46:555–8.
- [28] Soler JM, Previnaire GJ, Plante P, Denys P, Chartier-Kastler E. Midodrine improves ejaculation in spinal cord injured men. *J Urol* 2007;178:2082–6.
- [29] Kafetsoulis A, Ibrahim E, Aballa TC, Goetz LL, Lynne CM, Brackett NL. Abdominal electrical stimulation rescues failures to penile vibratory stimulation in men with spinal cord injury: a report of two cases. *Urology* 2006; 68:204–11.
- [30] Winston RM, Hardy K. Are we ignoring potential dangers of in vitro fertilization and related treatments? *Nat Cell Biol* 2002;4(Suppl):s14–8.

### Editorial Comment on: Ejaculation Elicited by Microstimulation of Lumbar Spinothalamic Neurons

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Premature ejaculation: Is that all, folks? The recent literature has dedicated a lot of attention to this problem, which is considered the male sexual dysfunction with the highest prevalence worldwide [1,2]. A huge amount of data have been written with specific emphasis on prevalence and new, potential therapeutic compounds [1–4]. But is premature ejaculation so specialised among the ejaculatory disorders? Certainly not! In this context, François Giuliano and coauthors have probably the most robust and excellent know-how to comprehensively debate on both the physiology and the pathophysiology of the whole ejaculatory phenomenon including anejaculation, which dra-

matically collides with fertility and the fatherhood dreams of men with spinal cord injury (SCI).

The authors' original, in-animal study elegantly showed that a specific electrical microstimulation in the lumbar spinothalamic neurons area may evoke the expulsion of semen in the analyzed rats, with motile spermatozoa retrieved in more than 50% of the same animals [5]. The authors concluded that those neurons can actually be the spinal center for the coordination of the peripheral events leading to ejaculation, including both the emission and the expulsion phases.

Given the comparable spinal organization for ejaculation in rats and humans, this finding has primary interest for the field of reproductive medicine. The highlighted area might be a potential therapeutic target in infertile SCI patients as well as for patients with different spinal cord impairments. As the authors detailed throughout their discussion, penile vibrostimulation and subsequent electroejaculation and surgery are the recommended treatments for sperm retrieval in SCI men; however, (1) all these modalities do not

allow an almost “natural” intravaginal ejaculation, and (2) there is clear evidence that in real-life clinical practice, roughly 20% of the physicians do not retrieve sperm from ejaculates of SCI patients and rely instead on retrieval from reproductive tissues [6]. What are the reasons for not offering either penile vibratory stimulation or electroejaculation? Lack of familiarity, training, or equipment! Up to 34% of the surveyed physicians do not offer intrauterine insemination in treating infertility in SCI men [6]. What a conceptual pity in 2008!

The authors reasonably highlight that an intraspinal microstimulation could facilitate the intravaginal ejaculation during sexual intercourse, thereby helping fertility in a more physiological manner [5]. I greatly appreciated the courage behind this study. It is fearless because it looks at a problem that is hardly of significant economic interest but is of great importance to patients. Also, publishing such a hyperspecialised theme within a journal without a main vocation for human reproduction shows great courage. This study might be a cornerstone publication for the field of reproductive medicine in the pages of *European Urology*!

## References

- [1] Papaharitou S, Athanasiadis L, Nakopoulou E, et al. Erectile dysfunction and premature ejaculation are the most frequently self-reported sexual concerns: profiles of 9,536 men calling a helpline. *Eur Urol* 2006;49:557–63.
- [2] Porst H, Montorsi F, Rosen RC, Gaynor L, Grupe S, Alexander J. The Premature Ejaculation Prevalence and Attitudes (PEPA) survey: prevalence, comorbidities, and professional help-seeking. *Eur Urol* 2007;51:816–24.
- [3] Chen J, Keren-Paz G, Bar-Yosef Y, Matzkin H. The role of phosphodiesterase type 5 inhibitors in the management of premature ejaculation: a critical analysis of basic science and clinical data. *Eur Urol* 2007;52:1331–9.
- [4] Clément P, Bernabé J, Gengo P, et al. Supraspinal site of action for the inhibition of ejaculatory reflex by dapoxetine. *Eur Urol* 2007;51:825–32.
- [5] Borgdorff AJ, Bernabé J, Denys P, Alexandre L, Giuliano F. Ejaculation elicited by microstimulation of lumbar spinothalamic neurons. *Eur Urol* 2008;54:449–56.
- [6] Kafetsoulis A, Brackett NL, Ibrahim E, Attia GR, Lynne CM. Current trends in the treatment of infertility in men with spinal cord injury. *Fertil Steril* 2006;86:781–9.

DOI: [10.1016/j.eururo.2008.03.044](https://doi.org/10.1016/j.eururo.2008.03.044)

DOI of original article: [10.1016/j.eururo.2008.03.043](https://doi.org/10.1016/j.eururo.2008.03.043)