

## RETRACTED: The Mobile Phone Decreases Fructose But Not Citrate in Rabbit Semen: A Longitudinal Study

Nader Salama, Tomoteru Kishimoto, Hiro-omi Kanayama & Susumu Kagawa

**To cite this article:** Nader Salama, Tomoteru Kishimoto, Hiro-omi Kanayama & Susumu Kagawa (2009) RETRACTED: The Mobile Phone Decreases Fructose But Not Citrate in Rabbit Semen: A Longitudinal Study, *Systems Biology in Reproductive Medicine*, 55:5-6, 181-187, DOI: [10.3109/19396360903013126](https://doi.org/10.3109/19396360903013126)

**To link to this article:** <https://doi.org/10.3109/19396360903013126>



Published online: 25 Nov 2009.



Submit your article to this journal [↗](#)



Article views: 259



View related articles [↗](#)



Citing articles: 1 View citing articles [↗](#)

# Research Communication

## The Mobile Phone Decreases Fructose But Not Citrate in Rabbit Semen: A Longitudinal Study

**Nader Salama,  
Tomoteru Kishimoto,  
Hiro-omi Kanayama, and  
Susumu Kagawa**

Department of Urology, The  
University of Tokushima School  
of Medicine, Tokushima City,  
Japan

The negative impact of mobile phones on sperm motility has been previously described. Both fructose and citrate are important components in semen that facilitate sperm motility. To date, no studies have investigated the effect of exposure to electromagnetic radiation emitted from the mobile phone on their levels. Therefore, a longitudinal study using the adult rabbit as a model was undertaken. A total of 30 adult male rabbits were randomly divided into three groups. The first (phone) group was placed in specially designed cages, and exposed to radio frequency emitted from a mobile phone (900 MHz) kept in standby mode and positioned adjacent to the genitalia for 8 h daily for 12 weeks. The other two groups served as controls; the stress group which was housed in the same kind of cages to evaluate any cage-induced anxiety, and the control group which was housed in the conventional roomy cages. Semen samples were retrieved weekly. Sperm motility and viability, semen fructose and citrate, and serum testosterone were measured. Histological sections from the prostatic complex, ampulla, and vesicular gland were evaluated. A significant drop in both fructose levels ( $257 \pm 11.6$  vs.  $489 \pm 8.4$  mg %, the baseline level) and number of motile sperms (50 vs. 72%) was observed in the phone group at the 10th week. However, no correlation was found between the two values. The stress control animals showed a similar but significantly less decline in motility. No significant changes in citrate levels or other study parameters were seen in the three animal groups throughout the study. In conclusion, the pulsed radio frequency emitted by the mobile phone kept in the standby position longitudinally affected sperm motility and fructose but not citrate levels in rabbit semen.

Abbreviations: MPs: mobile phones; MP: mobile phone; EMR: electromagnetic radiation; +FP: forward progression; SAR: specific absorption rate.

Received 12 February 2009; accepted 09 April 2009.

Address correspondence to Nader Salama, Department of Urology, Faculty of Medicine, Alexandria University, Alexandria, Egypt. E-mail: nadersalama58@yahoo.com

**KEYWORDS** citrate, fructose, mobile phone, rabbit, semen

### INTRODUCTION

Mobile phones (MPs) are widely used on a daily basis for communication. Currently, MP users are exposed to MP-emitted electromagnetic radiation (EMR). Furthermore, the use of MPs is steadily increasing. MPs