

Influence of two commercially available lubricants on sperm motility and kinematics



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Introduction

Infertility affects about 15 % of all couples at some point in their lives which necessitates the use of assisted reproductive technology.

Lubricants are occasionally demanded during semen collection in clinical settings and also during intercourse. This might pose a problem because several lubricants have been reported to decrease sperm functional parameters, especially in regard to sperm motility.

Sperm motility is the most important marker of a successful transport of the spermatozoa through the female reproductive tract.

Material & Methods

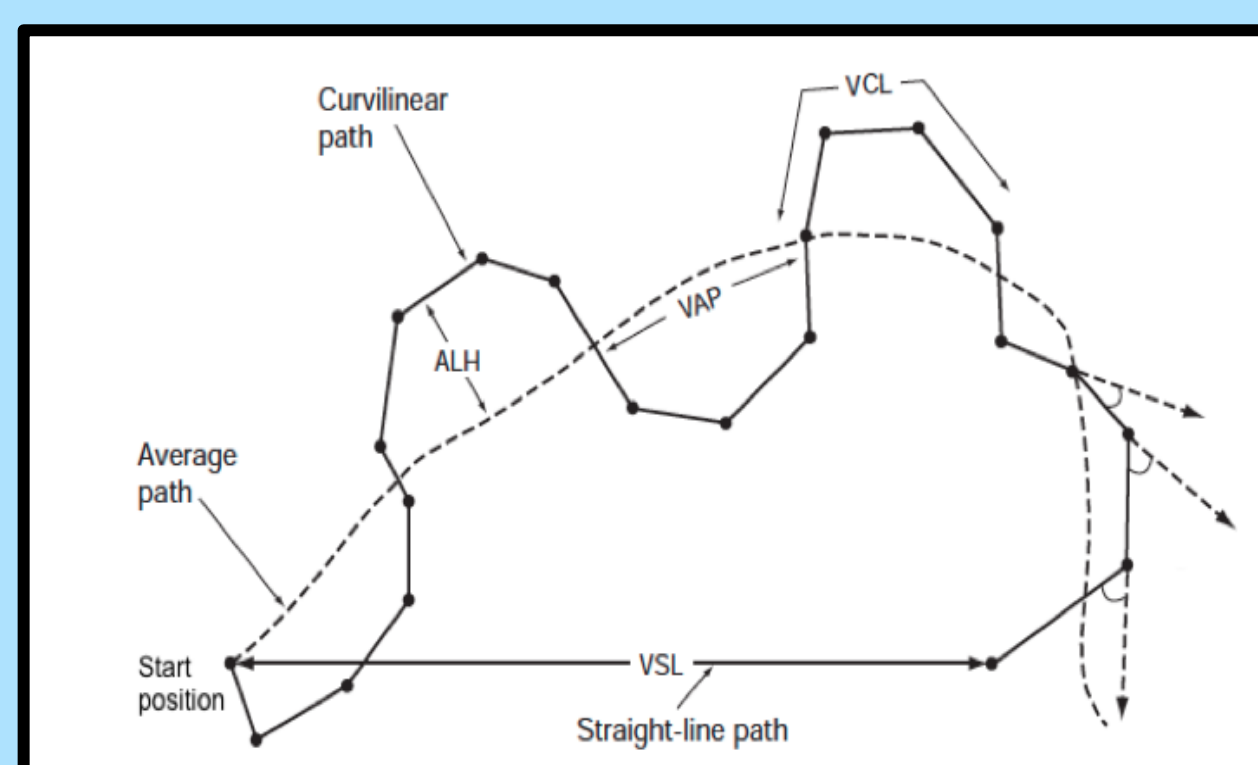
The lubricants examined in this study are available on the Danish market and no previous study had assessed their influence on sperm motility.

- Semen samples were acquired from 9 healthy donors by ejaculation and separately divided into three equal parts and added to the below test and control groups:

- Test group 1: Medium* + 10 % Silicone based lubricant (Klick Silk Glid)
- Test group 2: Medium* + 10 % water-based lubricant (Apotekets Glid)
- Control group: Medium*

* Sperm Preparation Medium (ORIGIO A/S, Denmark)

- A detailed analysis of motility and different kinematic parameters was performed using the Sperm Class Analyzer[®], SCA[®], (Microptic S. L., Spain) computer-aided sperm analysis system at 0, 0.5, 1, and 3 hours on the control and test groups.
- Two-way repeated measures ANOVA was used to statistically assess the motility data of kinematic parameters assessed by the SCA[®] system.
- Figure 1. Illustration of kinematic parameters assessed by the SCA[®] system



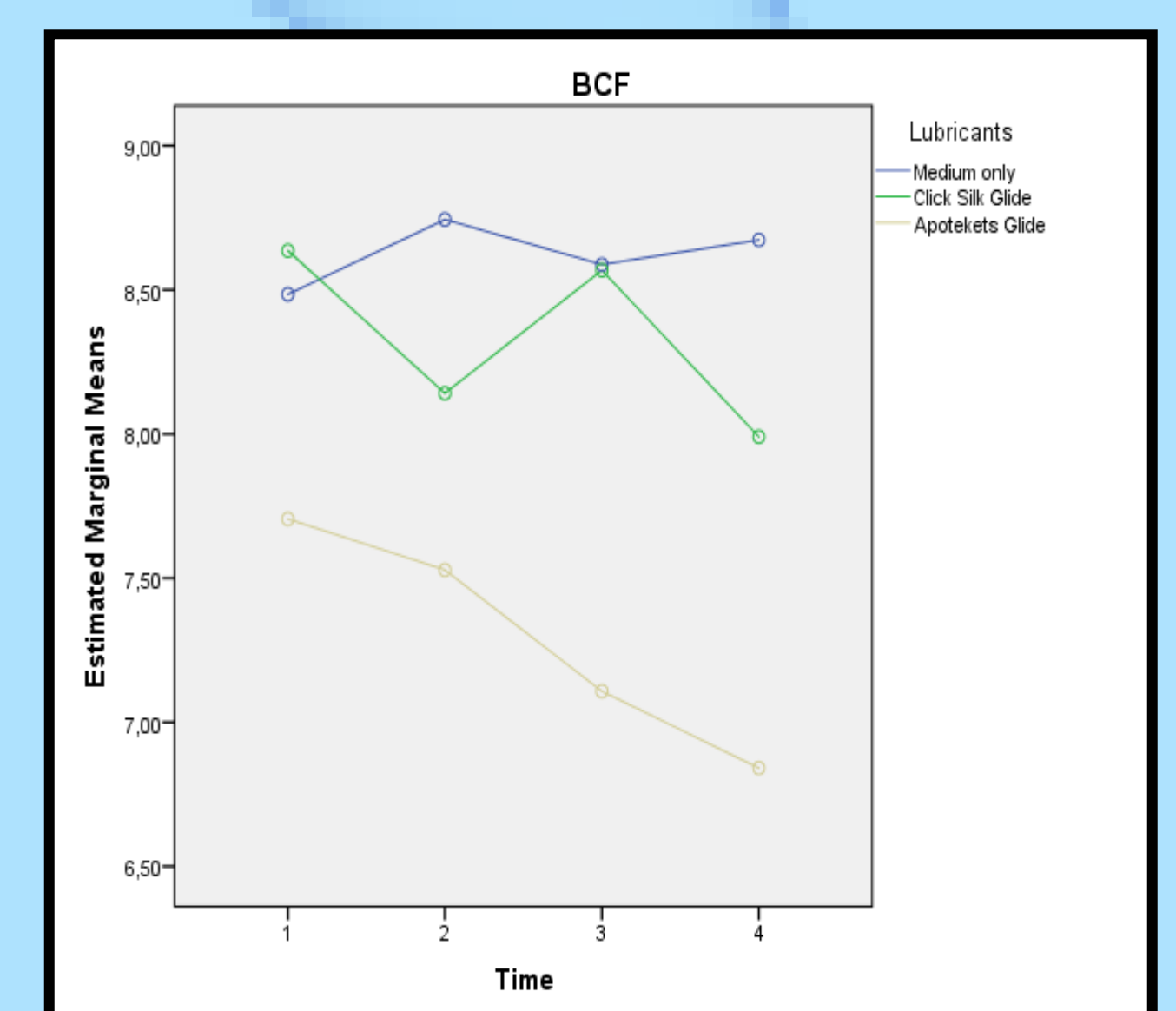
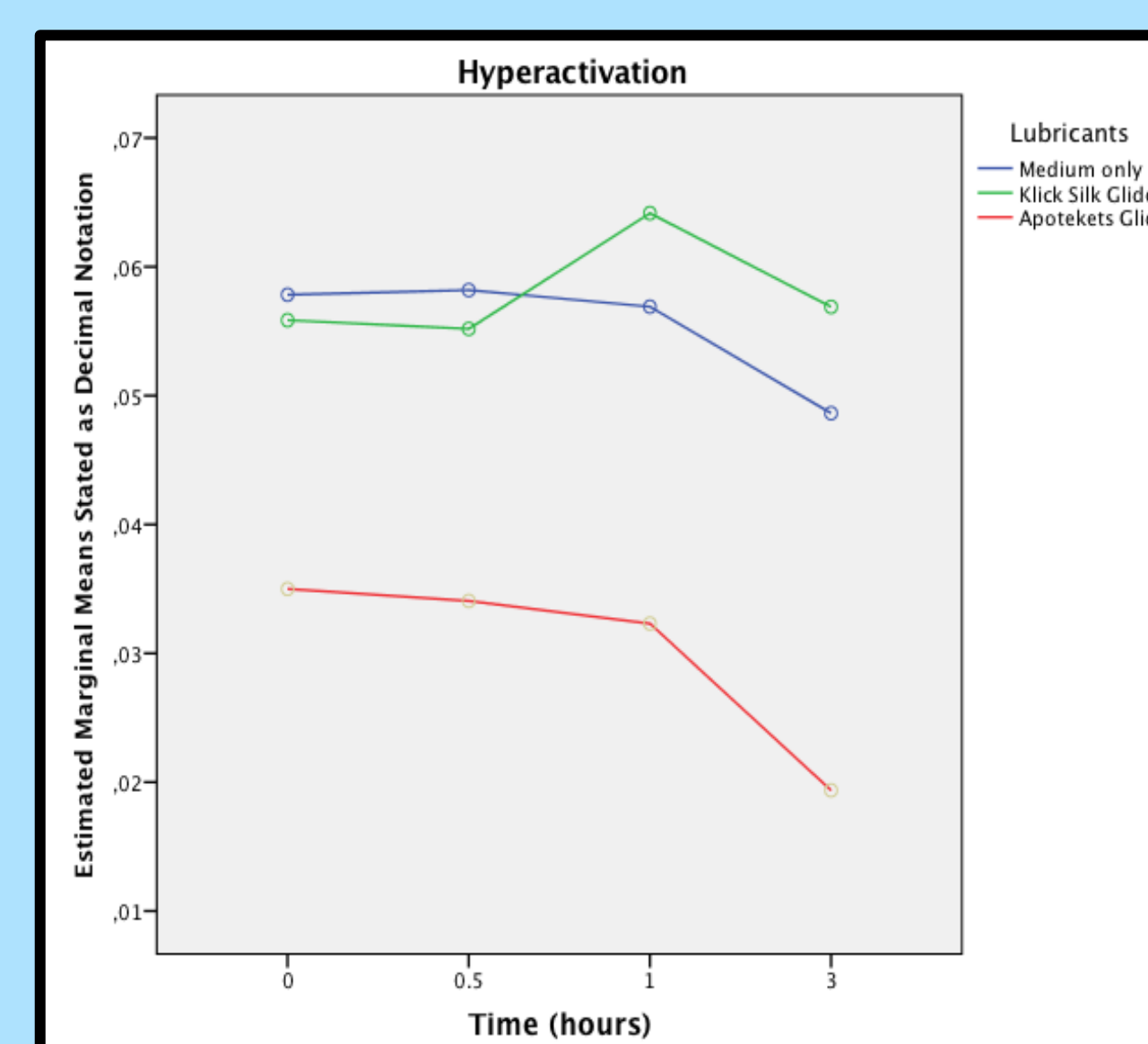
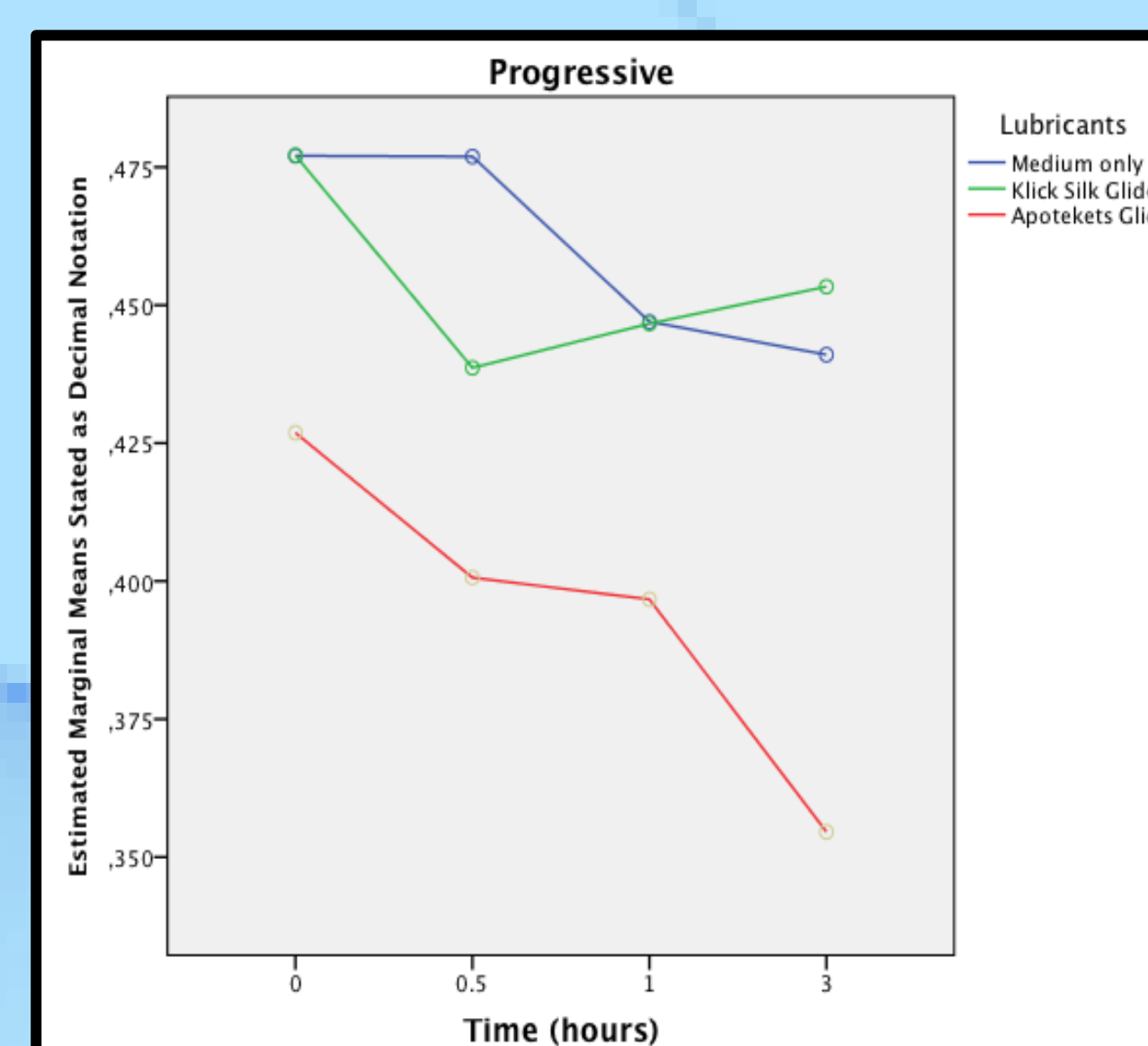
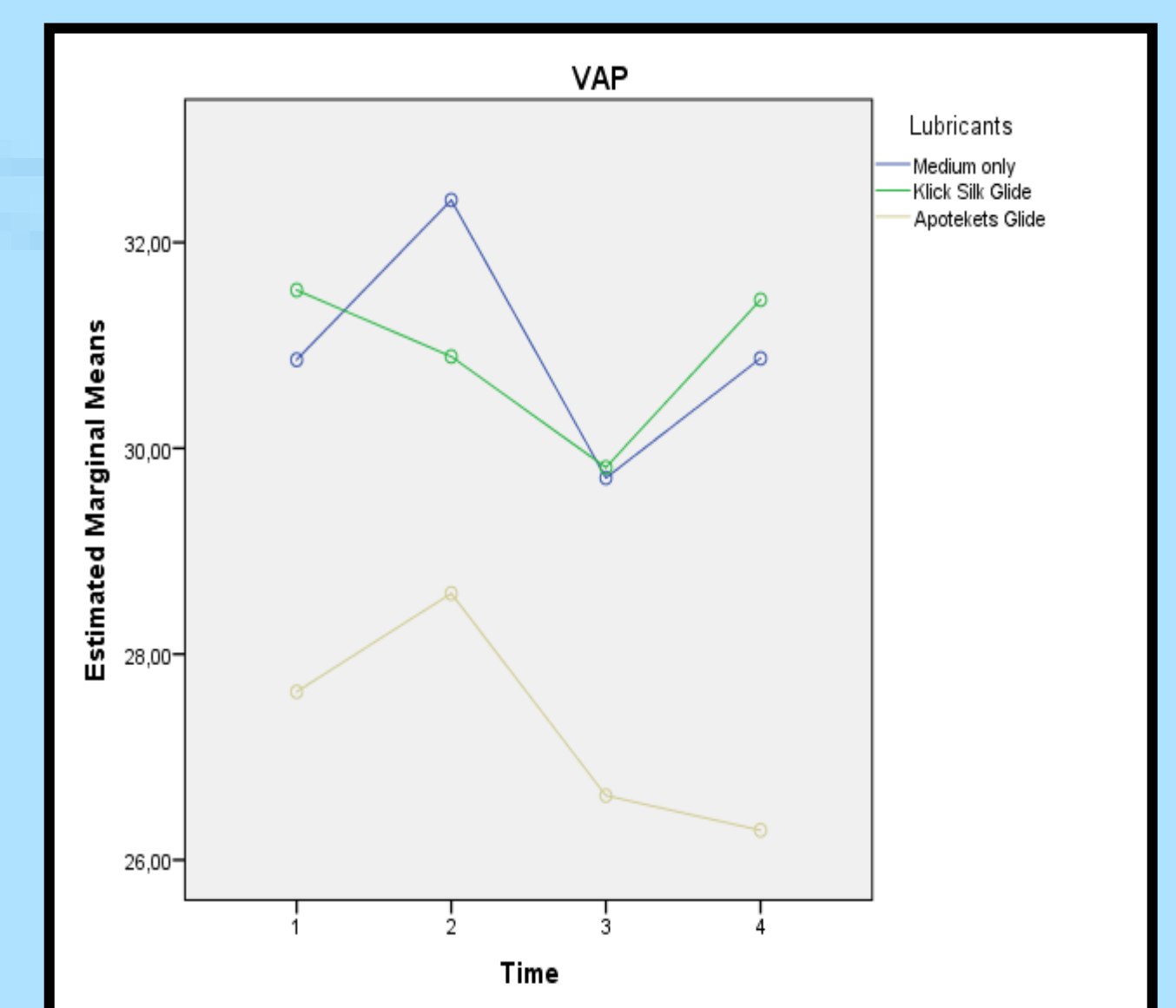
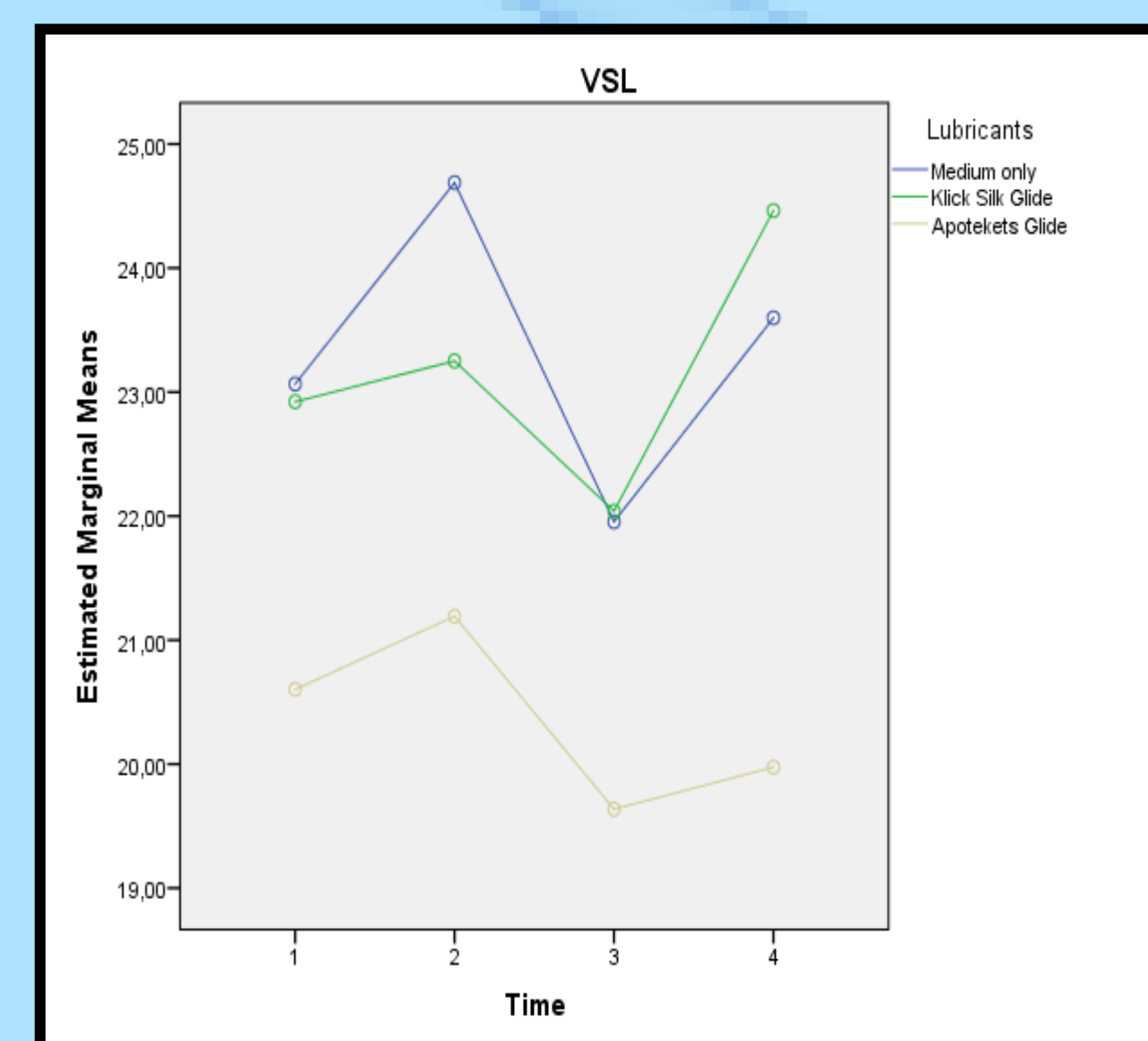
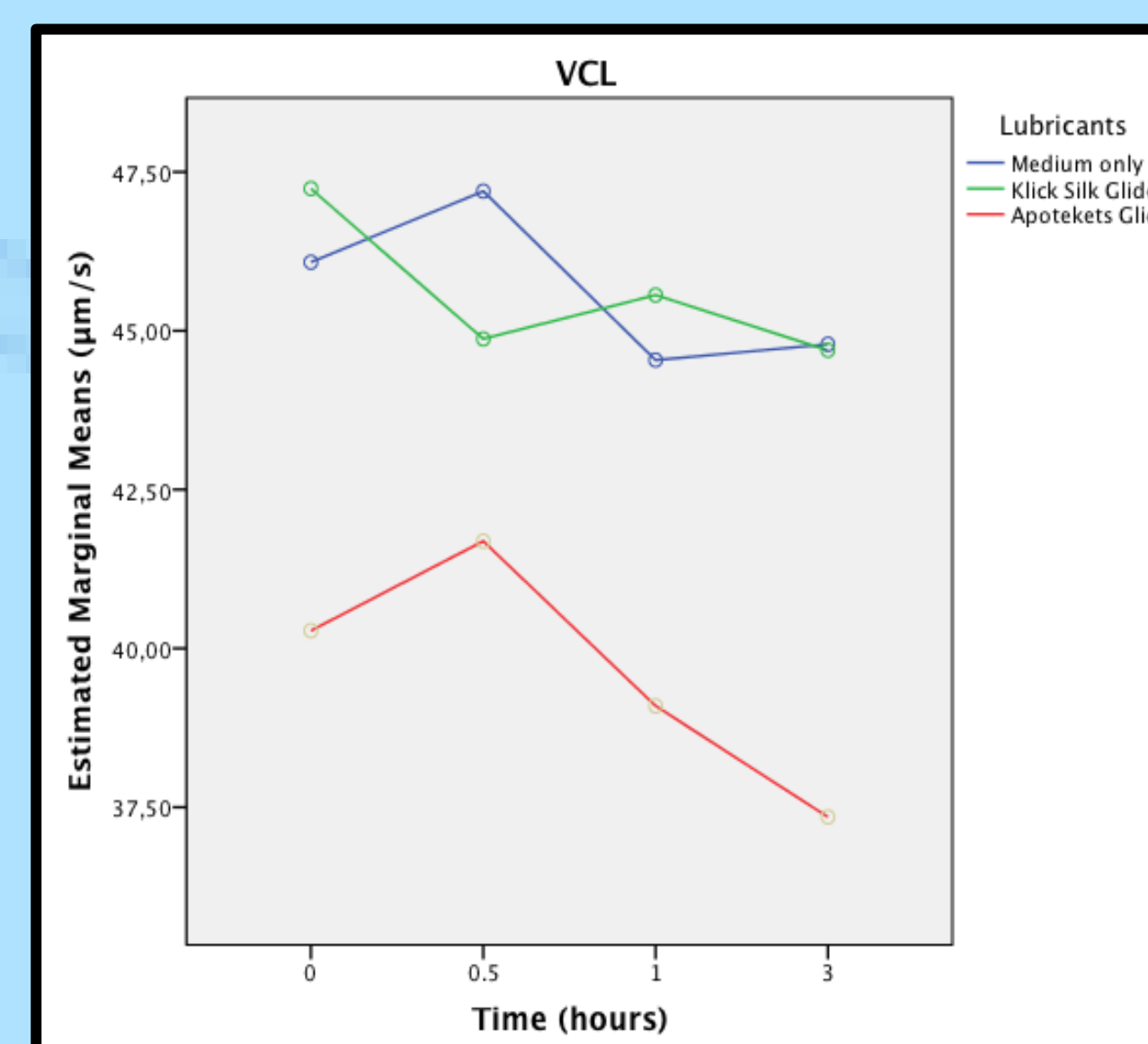
Aim of study

The aim of this study is to examine the influence of two commercially available personal lubricants, a water-based (Apotekets Glid) and a silicone-based (Klick Silk Glide), on human sperm motility and detailed kinematic parameters.

Results

The silicone-based lubricant demonstrated no significant difference compared to the control group throughout the study.

The water-based lubricant, however, had significantly lower fast progressive motility, curvilinear velocity (VCL), straight line velocity (VSL), average path velocity (VAP) and beat cross frequency (BCF) compared to the control group after 4 hours. The percentage of hyperactive sperm in the water-based lubricant was significantly lower than the silicone-based group after 4 hours.



Discussion

The results of this study indicate that the Klick Silk Glide silicone-based lubricant is less detrimental for sperm in terms of motility and kinematic parameters which have been related to pregnancy rates.

Therefore, it can be suggested that when trying to conceive, both naturally or when collecting semen samples with the use of the lubricant, the silicon based Klick Silk Glide lubricant could have lower adverse effects on the sperm motility parameters compared to the water-based Apotekets Glid lubricant suggesting its safe use in fertility patients as required during sperm collection.

References:

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