



## The hCG Timing Myth in Insemination Cycles: The Surprising Truth About Pregnancy Rates



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### Introduction

Intrauterine insemination (IUI) is a widely used assisted reproductive technique, appreciated for its simplicity, affordability, and accessibility. However, its success rates remain modest, with clinical pregnancy rates ranging from 10% to 15% per cycle. Several randomized trials have shown that moderate variation in insemination timing does not significantly affect pregnancy outcomes whether IUI is performed at 24, 34, 36, or 40 hours post-hCG.<sup>1,2,3</sup> Yet most prior studies were limited by small sample sizes and restrictive inclusion criteria. In clinical practice, logistical constraints such as weekend closures or limited staff availability often require flexible scheduling. This study aims to assess the impact of insemination timing on pregnancy rates in a large real-world cohort, and to identify clinical factors that may guide more personalized and pragmatic IUI scheduling.

### Materials & Methods

This retrospective observational study was conducted at Ovo Clinic, a university-affiliated private fertility center in Montreal, Canada. All intrauterine insemination (IUI) cycles involving ovulation induction and hCG triggering performed between May and September 2024 were screened for inclusion. Cycles were categorized into three groups according to the timing of insemination relative to hCG administration: D0 (same day as HCG trigger), D1 (the following day), and D2 (two days after). The timing of the insemination was chosen to avoid weekends and to spread out the clinic's activity throughout the week. For each cycle, the following variables were collected: maternal age, dominant follicle size at the time of trigger, endometrial thickness, and post-wash total motile sperm count. The primary outcome was the pregnancy rate, defined by a positive urinary hCG test 14 days post-insemination. Statistical significance was set at  $p < 0.05$ .

### Conclusion

Same-day insemination may be a viable option when clinical conditions are optimal. These results support a more flexible, patient-centered approach to IUI scheduling, especially in real-world settings where organizational constraints must be considered.

<sup>1</sup> Claman et al., *Fertil Steril* 2004  
<sup>2</sup> AboulGheit et al., *MEFSJ* 2010  
<sup>3</sup> Rahman et al., *Arch Gynecol Obstet* 2011

Pregnancy rate, % (n)	D0 (n=58)	D1 (n=488)	D2 (n=1068)	p
Total	15,5 (9)	9,8 (48)	12,6 (135)	NS

Follicle size (mm)				
< 17	0 (0)	0 (0)	11,8 (2)	NS
17-19	25 (2)	11,8 (19)	12,4 (87)	NS
19-22	19,4 (6)	11,8 (26)	13,5 (46)	NS
> 22	1 (5,9)	3 (3)	0 (0)	NS

Endometrium (mm)				
< 7	7,7 (1)	10,2 (13)	12,9 (61)	NS
7-10	18,4 (7)	10,1 (28)	13 (63)	NS
10-13	16,7 (1)	8,1 (6)	11,2 (11)	NS
> 13	0 (0)	12,5 (1)	0 (0)	NS

Sperm count (10 <sup>6</sup> /mL)				
< 10	0 (0)	0 (0)	6,5 (3)	NS
10-50	6,7 (1)	7,3 (9)	11 (26)	NS
> 50	19,5 (8)	11,3 (39)	13,5 (106)	NS

### Discussion

This study confirms that pregnancy outcomes are not significantly impacted by moderate variation in IUI timing relative to hCG administration. Exploratory subgroup analyses suggest that same-day insemination (D0) may offer a potential advantage when favorable biological conditions are met. However, the retrospective nature of the study and the limited number of cycles in the D0 group reduce the ability to draw definitive conclusions. Moreover, the analysis was based on biochemical pregnancy rates, and further research including live birth data is needed.