



AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE  
2024 SCIENTIFIC CONGRESS & EXPO

**ETIOLOGY OF THIN ENDOMETRIUM AND PREGNANCY OUTCOMES IN SINGLE EUPLOID EMBRYO TRANSFER (SEET) CYCLES**

Emily Clarke, Carlos Hernandez Nieto, Jiwoo Park, Saher Siddiqui, Shawn Kripalani, Morgan Baird, Joseph Lee, Alan B Copperman, Erkan Buyuk

1. Reproductive Medicine Associates of New York, New York, NY
2. Icahn School of Medicine at Mount Sinai, New York, NY

**OBJECTIVE:**

Thin endometrial lining (<7mm) is associated with poor embryo transfer outcomes (1). Endometrial instrumentation is a well-documented etiology of thin linings (2). Few studies have explored SEET outcomes in patients with thin endometrial lining of various etiologies. This study evaluates SEET outcomes in patients with constitutionally thin endometrial lining compared to those with prior uterine surgery.

**MATERIALS AND METHODS:**

This single-center study included all SEET cycles with endometrial lining <7mm from September 2016 to September 2023. Endometrial lining measurement occurred prior to progesterone initiation. Patients were grouped by constitutionally thin lining (CONST) or history of uterine surgery (SURG) including dilation and curettage, operative hysteroscopy, myomectomy, or other intracavitary surgery. Primary outcome was live birth rate (LBR). Secondary outcomes included biochemical pregnancy rate, implantation rate (IR), and clinical pregnancy loss rate (CLR). Study cohorts were compared with age-matched reference groups of patients with thick endometrial linings ( $\geq 7$ mm), with or without prior uterine surgery. Subgroup analysis was performed comparing SURG patients with history of lysis of adhesions for Asherman Syndrome to CONST patients. Wilcoxon rank, Student's t-test, and chi-square were used to compare groups. Logistic regression fitted with generalized estimating equation (GEE) was used to calculate odds ratios and adjust for confounders, with  $p < 0.05$  considered significant.

**RESULTS:**

57 cycles of CONST patients and 74 cycles of SURG patients were included. LBR was similar (25.7% SURG vs 31.6% CONST,  $p = 0.46$ ), albeit significantly lower compared to the thick lining reference groups (50.5% thick surgery,  $n = 222$ ; 45.0% thick no surgery,  $n = 171$ ; vs thin lining groups  $p < 0.01$ ). In univariate analysis, the SURG group had lower IR (36.5% vs 49.1%,  $p = 0.15$ )



and CLR (10.8% vs 17.5%,  $p=0.27$ ) compared to the CONST group. After adjusting for confounders, a history of uterine surgery was not associated with lower odds of live birth (aOR 1.3, 95% CI 0.5-3.4), implantation (aOR 0.9, 95% CI 0.4-2.2), or higher odds of clinical pregnancy loss (aOR 0.5, 95% CI 0.2-1.8) after SEET, compared to patients with constitutionally thin lining. SURG patients with history of Ashermans had significantly lower odds of biochemical pregnancy compared to CONST patients (aOR 0.2, 95% CI 0.1-0.7), but no other significant differences in transfer outcomes.

### **CONCLUSIONS:**

Patients with thin endometrial lining undergoing SEET demonstrate comparable pregnancy outcomes regardless of whether they had constitutionally thin lining or prior endometrial instrumentation. However, SURG patients with history of Asherman syndrome may have lower biochemical pregnancy rates compared to CONST patients. Patients with thin linings had consistently poorer transfer outcomes compared to those with normal or thick linings.

### **IMPACT STATEMENT:**

Patients with constitutionally thin lining appear to have similar SEET outcomes to patients with thin lining and a history of endometrial instrumentation, except for patients with Asherman syndrome, who appear to have the lowest biochemical pregnancy rates.

### **REFERENCES:**

1. Mahutte N, et al. Optimal endometrial thickness in fresh and frozen-thaw IVF cycles: an analysis of LBRs from 96,000 autologous embryo transfers. *Fertil Steril.* 2022;117(4):792-800.
2. Azumaguchi A, et al. Role of D&C performed for spontaneous or induced abortion in the etiology of endometrial thinning. *J Obstet Gynaecol Res.* 2017;43(3):523-9.