

# Vitamin D Deficiency Does Not Influence Reproductive Outcomes of IVF–ICSI: A Study of Oocyte Donors and Recipients

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## ABSTRACT

**Background:** Vitamin D and its active metabolite, 1,25-dihydroxy vitamin D (1,25-(OH)<sub>2</sub>D<sub>3</sub>), play a significant role in reproduction. **Aim:** To assess the effect of serum 25-hydroxy vitamin D level on oocyte quality and endometrial receptivity by studying oocyte donors and their recipients. **Materials and Methods:** This prospective study consisted of two groups: Group A (recipient group) and Group B (donor group). All the participants of Groups A1 and B1 as well as Groups A2 and B2 were subcategorized into vitamin D-deficient (<20 ng/mL) and vitamin D replete-insufficient (20 to ≥30 ng/mL), respectively. **Results:** In the recipient group, out of the 192 participants, 123 were in A1 group, and 69 were in A2 group. In donor group, out of the 99 participants, 54 were in B1 group, and 45 in B2 group. In the recipient group, Group A2 had a higher clinical pregnancy rate, implantation rate and ongoing pregnancy rate, and a lower abortion rate as compared to that of A1, but these are statistically insignificant. The difference in endometrial thickness and number of embryos transferred between both groups was insignificant. In the donor group, the total number of days of controlled ovarian hyperstimulation, the dose of gonadotropins, the number of oocytes retrieved, the percentage of mature oocytes, and the percentage of usable embryos were higher in Group B2 than those in Group B1, but these are statistically insignificant. The fertilization rate was statistically insignificant between Groups B1 and B2. **Conclusion:** Vitamin D deficiency leads to lower reproductive outcomes, though not statistically significant and, thereby, does not have a negative influence on *in-vitro* fertilization–intracytoplasmic sperm injection outcomes.

**KEYWORDS:** *Deficiency, in-vitro fertilization, infertility, reproduction, vitamin D*