# Bed rest following embryo transfer – Freedom of choice doesn't impair pregnancy rates

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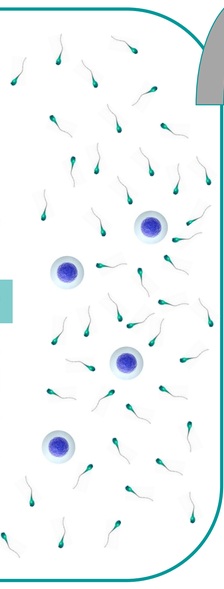
## Background

Bed rest following embryo transfer (ET) has always been controversially discussed. While it has been recommended as a way to prevent embryo expulsion by gravity, implantation rates were found to be reduced in patients choosing bed rest. However, a recent meta-analysis showed no benefit to improve clinical pregnancy and live birth rates (1). The big heterogeneity in different study designs makes a general consensus very complex. Hence, we wanted to add further knowledge about the necessity and influence of bed rest after embryo transfer considering fresh versus frozen cycles.



## Objective

The aim of this study was to investigate the influence of bedrest on

**life birth rates in patients with fresh or frozen embryo transfer.**


## Methods and study design

The study was designed and conducted at the Kinderwunsch Institut Schenk GmbH (Dobl, Austria) between February 2017 and September 2018.
1000 embryos from 552 patients undergoing IVF (*in vitro* fertilization) and ICSI (intracytoplasmic sperm injection) treatment were included and retrospectively analyzed. 535 times (53.5%) a fresh embryo transfer was performed, while 465 embryos (46.5%) were frozen and transferred in a subsequent cycle. Patients who decided to have bed rest following embryo transfer stayed in bed for approximately 15 minutes.

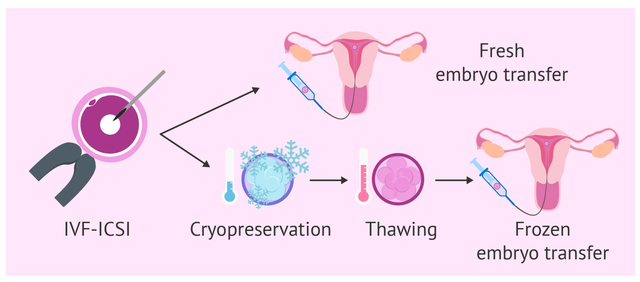



**Fig. 1: Fresh versus frozen embryo transfer.** After fertilization with IVF or ICSI embryos were either fresh transferred or cryopreserved. (figure kindly provided by *https://www.invitra.com*)

Embryos from women (aged 18 - 41) with good embryo quality, according to the Istanbul consensus criteria (2), cultured in time-lapse system were included in the study while embryos from patients with known genetic predispositions were excluded. Cryopreservation was performed using GAVI vitrification system (Merck). Embryo transfer was performed on day 3 or day 5 taking into consideration the number of fertilized oocytes, patient age and embryo quality in previous attempts (if any).

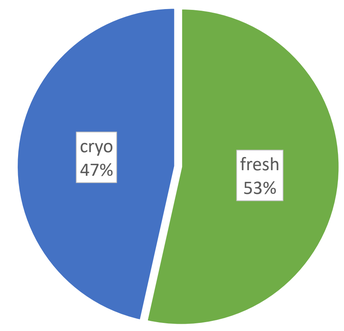



**Fig. 2: Embryo transfer.** Distribution of cryo (47%) and fresh (53%) transfers. 1000 embryos/transfers were included in the study.

## Results

Overall, embryo transfers (fresh and frozen) resulted in a life birth rate of 29.9% in patients with subsequent bed rest (n=165) and 30.1% (n=135) in patients who were immediately discharged after transfer. Pregnancy termination after positive beta-hCG was equal in both groups (n=60 [10.87%] versus n=49 [10.94%] respectively) (Fig 3). In addition, the distribution between fresh and frozen embryo transfer in regards of bed rest and ambulation was equal (Fig. 4).

In detail, patients with bed rest achieved life birth with fresh transfer in 30.1% of all cases, while 29.7% achieved pregnancy with frozen transfer (Fig. 5). Without bed rest pregnancy with fresh transfer was achieved in 28.9% of all cases while 31.6% achieved pregnancy in the cryo transfer group (Fig. 6). Overall, there were no statistical differences in the above-mentioned parameters between the groups.

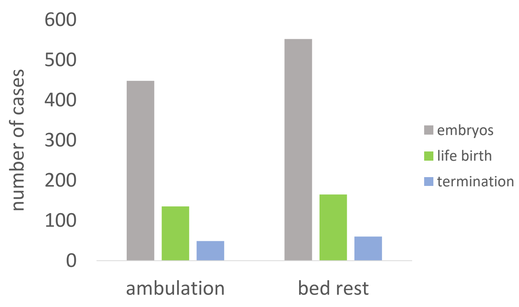



**Fig. 3: Overall outcome of life birth and termination of IVF/ICSI fresh and cryo ETs divided in patients with immediate ambulation and bed rest**. Numbers of life birth (ambulation: n=135; bed rest: n=165) and termination (ambulation: n=49; bed rest: n=60) did not significantly differ between the groups.

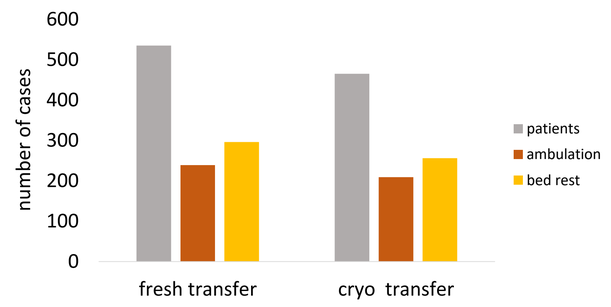



**Fig. 4: Distribution of fresh and cryo embryo transfers divided into bed rest and immediate ambulation of IVF/ICSI fresh and cryo ETs.** Numbers of patients with immediate ambulation (fresh ET: n=239; cryo ET: n=209) and bed rest (fresh ET: n=296; cryo ET: n=256) were not significantly different between groups.

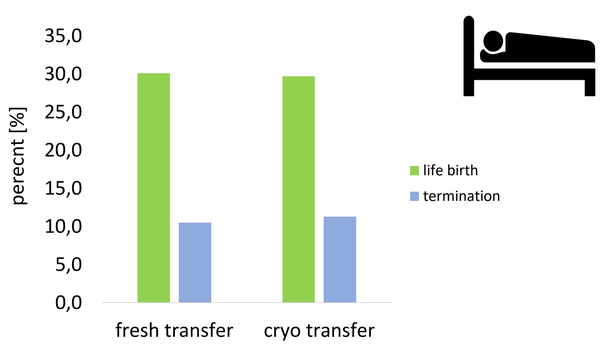



**Fig. 5: <u>Bed rest</u>: Distribution of life births and pregnancy terminations in fresh/frozen cycles.** Bed rest did not exhibit any effect on life birth rates (fresh: 30.1%; cryo: 29.7%) and number of pregnancy terminations (fresh: 10.5%; cryo: 11.3%).

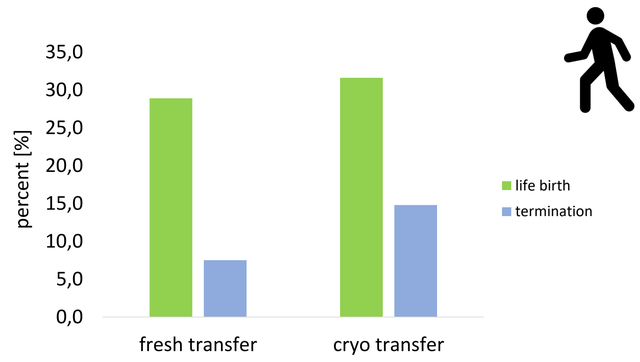



**Fig. 6: <u>Ambulation</u>: Distribution of life births and pregnancy terminations in fresh/frozen cycles.** Immediate ambulation after embryo transfer had no influence on life birth rates (fresh: 28.9%; cryo: 31.6%) and pregnancy terminations (fresh: 7.5%; cryo: 14.8%).

## Conclusion

In conclusion the data show no difference in life birth rates with or without bed rest following embryo transfer, independent from fresh or frozen cycles. It is tempting to speculate that the empowerment of the patients to decide about their post-transfer routine is the best advice for a successful treatment outcome.

## Take home message

<u>Bed rest</u>

- does not influence IVF/ICSI outcome
- should be self-determined by the patient

**References:**
(1) Alpha Scientists in Reproductive Medicine and ESHRE Special Interest Group of Embryology. The Istanbul consensus workshop on embryo assessment: proceedings of an expert meeting. Hum Reprod Oxf Engl. 2011 Jun;26(6):1270–83.
(2) Craciunas L, Tsampras N. Bed rest following embryo transfer might negatively affect the outcome of IVF/ICSI: a systematic review and meta-analysis. Hum Fertil Camb Engl. 2016 Apr;19(1):16–22.

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