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## High in vitro fertilization discontinuation rate in France

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**Key words:** in vitro fertilization; drop-out; France

**Synopsis:** In the French context where couples may have 4 in vitro fertilization attempts free of charge, the drop-out rate is very high.

The effectiveness of in vitro fertilization (IVF) treatment has been widely investigated during the last thirty years. Most research has assessed the results of this technique by considering birth rates after a single IVF attempt, but very few examined success rates over the entire IVF program (which may include several attempts) [1, 2]. These success rates may greatly depend on the proportion of couples who leave the center before achieving a pregnancy. In several countries, such as the UK and the US, the drop-out rate is probably elevated because of the high cost of treatment [3, 4]. On the contrary, in France, the first four IVF attempts are fully reimbursed by the national health insurance system. This provides a unique opportunity to investigate discontinuation of IVF treatment in a context where cost is not a factor.

We analyzed data from 3,037 couples beginning IVF treatment in two French IVF centers between 1998 and 2002. The two centers were chosen to illustrate highly contrasting situations. One is in Paris (n=1,584 couples), a city with numerous IVF centers. The other is in Clermont-Ferrand (n=1,453 couples), a medium-sized city in a region of central France where no other IVF facility is available.

Success and discontinuation rates are given in Table 1 and Table 2. After the first attempt, 21 to 22% of couples achieved a live birth, while 25% (Clermont) and 38% (Paris) discontinued IVF treatment. Regarding cumulative probabilities, 46% (Clermont) and 58% (Paris) discontinued IVF before the fourth attempt whereas 33% (Paris) and 40% (Clermont) achieved a live birth during the first 4 attempts.

Our results show that, in the French context where couples may have 4 IVF attempts free of charge, the drop-out rate is very high. This rate was higher in the Paris center where couples could easily continue with their treatment in another center. But, even

when the IVF center is geographically isolated (limiting the possibility of obtaining an appointment with another center), at least 1 of 4 couples discontinue treatment after the first failed attempt. The decision to discontinue treatment could be linked to psychological stress [4]. It is now important to take these numerous discontinuations into account when estimating success rates, so that IVF performance can be better assessed and also so that couples starting an IVF program can be better informed of their real chances of leaving the IVF center with a baby.

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**Table 1. Birth rates among 3,037 couples undergoing IVF in two French IVF centers**

Rank of IVF attempts	Paris center			Clermont center		
	Number of couples	Rate by attempt rank % (95% CI)	Cumulative rate <sup>(a)</sup> % (95% CI)	Number of couples	Rate by attempt rank % (95% CI)	Cumulative rate <sup>(a)</sup> % (95% CI)
1	1584	22 (20-24)	22 (20-24)	1453	21 (19-23)	21 (19-23)
2	770	18 (15-21)	30 (28-33)	854	19 (17-22)	32 (30-35)
3	341	9 (6-12)	32 (30-35)	472	17 (13-20)	38 (35-40)
4	158	9 (5-14)	33 (31-36)	239	16 (11-21)	40 (38-43)

(a) Cumulative number of births among couples undergoing IVF treatment (1584 in Paris and 1453 in Clermont)

**Table 2. Discontinuation rates among 3,037 couples undergoing IVF in two French IVF centers**

Rank of IVF attempts	Paris center			Clermont center		
	Number of couples	Rate by attempt rank among unsuccessful couples % (95% CI)	Cumulative rate <sup>(a)</sup> % (95% CI)	Number of couples	Rate by attempt rank among unsuccessful couples % (95% CI)	Cumulative rate <sup>(a)</sup> % (95% CI)
1	1584	38 (35-41)		1453	25 (23-28)	
2	770	46 (42-50)	30 (27-32)	854	31 (28-35)	20 (18-22)
3	341	49 (43-55)	48 (46-50)	472	39 (35-44)	35 (33-37)
4	158	66 (59-74)	58 (55-60)	239	69 (62-75)	46 (43-48)

(a) Cumulative number of couples who discontinued treatment (without a birth and without a second, third or fourth IVF attempt) among couples who began IVF treatment (1584 in Paris and 1453 in Clermont).