

# Fecundity in women with multiple sclerosis: an observational retrospective mono-centric study

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## Introduction

Multiple sclerosis (MS) is a potentially disabling neurological disease mostly affecting women of childbearing age.

Several studies have addressed MS treatment strategy during pregnancy, perinatal outcomes, as well as the risk of MS in children from MS mothers.

The rates of miscarriage, low birth-weight, prematurity, neonatal death and malformations seem to be similar to the general population.

However, evidence is lacking concerning the impact of MS and of disease modifying treatments (DMT) on the time to pregnancy, number of pregnancies and number of children in MS patients.

The aim of this study was to assess fecundity, in a French cohort of MS women.

## Methods

Observational retrospective mono-centric study

- 115 female patients with MS
- In the Pitié-Salpêtrière MS clinic

### Self-questionnaire

- completed during the outpatient appointment
- including the following items

- Number of children
- Number of adoptions
- Number of spontaneous pregnancies before and after disease onset
- Time to pregnancy (from contraception stop to conception)
- Number of spontaneous miscarriages before and after disease onset
- Resort to assisted reproduction

Age at disease onset, disease phenotype, disease modifying treatments given before, during, and after those events were collected from the medical files.

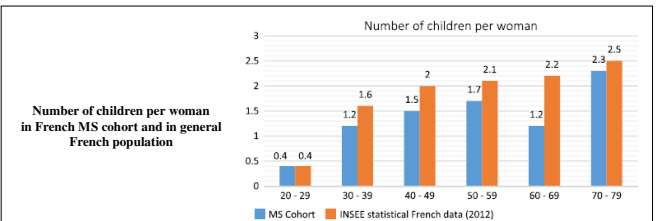
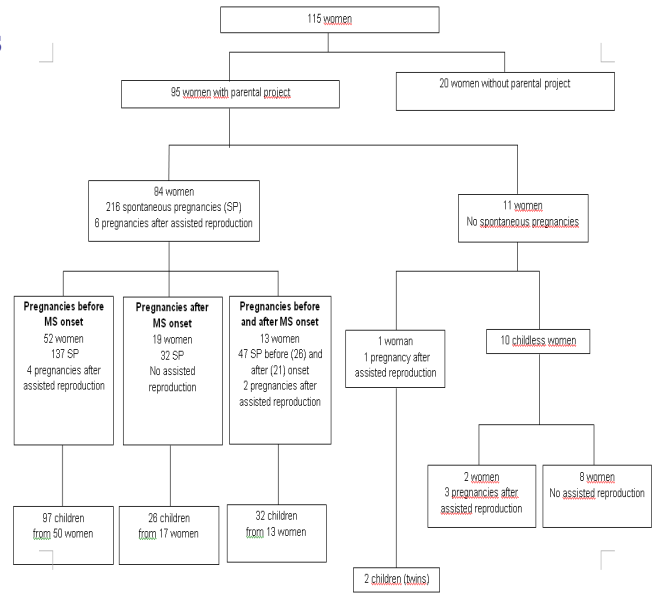
Disability Score (EDSS) and Multiple Sclerosis Severity Score (MSSS) were performed at inclusion.

## Results

115 female patients	
Mean Age	45.39 [21 ; 78]
MS phenotype	56.5 % relapsing remitting
	34.8 % secondary progressive
	8.7 % primary progressive
Mean disease duration (years)	11.97
Mean EDSS	4.18
Average MSSS (at the time of study)	5.05
Disease modifying treatments received during disease course	Interferon and Glatiramer acetate: 69.6 %
	Natalizumab : 32.2 %
	Monthly IV Methylprednisolone : 30.43 %
	Mitoxantrone : 5.2 %
	Cyclophosphamide : 13.9 %
Fingolimod : 7.8 %	
At least 2 lines of treatment (except IV Methylprednisolone)	51 patients = 44.3 %

	Before MS onset	After MS onset	Whole group (115 patients)	P
Number of spontaneous pregnancies	163	53	216 1.88 per women	
Time to conception	8.57 months (SD=18.22)	7.53 months (SD=10.45)		0.69
Number of children	107	50	157 1.37 per women	
Spontaneous miscarriages rate	20.25% (n=33)	15.09% (n=8)	18.98% (n=41)	0.34
Mean age at miscarriage (years)	28.7 (21-36)	32.3 (23-41)		0.1

	In our study	General population
Mean time to spontaneous pregnancy (months)	8.57 (SD= 18.22) before onset	7 <sup>1</sup>
	7.53 (SD= 10.45) after onset	
Number of children by woman	1.37	1.99 <sup>2</sup>



	PARENTAL PROJECT		CHILDREN		SPONTANEOUS PREGNANCIES	
	Women who have never had a parental project	Women who have had a parental project	Women who have had at least one child	Women who have never had a child	Women who have been spontaneously pregnant	Women who have never been spontaneously pregnant
	(n=20)	(n=95)	(n=80)	(n=34)	(n=84)	(n=31)
Age at inclusion	38.9 (21-52)	43.6 (21-78)	48 (29-78)	39.1 (21-67)	46.3 (29-78)	38 (21-67)
Age at MS onset	27.9 (10-58)	31.9 (14-69)	34.75* (14-69)	28.58* (10-58)	31.5 (14-69)	27.8 (10-58)
Disease duration	10.9 (1-33)	11.7 (1-37)	13.32 (1-37)	10.55 (1-33)	14.8 (1-37)	10.2 (1-33)
EDSS at inclusion	4 (1-6.5)	4.3 (0-7)	4.15 (0-7)	4.29 (1-7)	4.5 (0-7)	4.2 (1-7)
MSSS	5.21 (1.04-9.08)	5.32 (0.24-9.08)	4.87 (0.24-9.08)	5.49 (1.04-9.08)	5.03 (0.24-9.08)	5.44 (1.04-9.08)
>2 lines of treatment	55%	41%	40.7%	50%	42.86%	45.7%

\* p < 0.01

## Conclusion

This study reveals that time to pregnancy is similar before and after MS onset, and not different from the French general population.

There is no direct impact of MS on fecundity, but the number of children per woman with MS is lower than in the general French population.

The authors have no conflict of interest

<sup>1</sup>INED 2010  
<sup>2</sup>INSEE 2013  
<sup>3</sup>Bruce AC Cree (2013) Update on reproductive safety of current and emerging disease-modifying therapies for multiple sclerosis. Multiple Sclerosis Journal 19(7) 835-843  
<sup>4</sup>Disease-modifying drugs for multiple sclerosis in pregnancy: a systematic review. 2013 Charles JA, Tremlett H, Lu E, et al. Neurology 80(11):1068-9.