

Women Who Have Had an IUD No More Likely to Become Pregnant with Multiples

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Key Findings:

- Women with a history of an intrauterine device (IUD) placement have a similar likelihood of having multiples (1.79%) compared to those with no history of birth control use (1.84%). Little difference was observed among those with copper or hormonal IUDs.

Some anecdotal reports suggest that women who have had an intrauterine device (IUD), a form of birth control placed in the uterus, have higher rates of multiple gestation pregnancies. While prior research has examined whether IUD use affects fertility,^{1,2} less is known about whether prior IUD use affects the rate of becoming pregnant with multiples.

We studied 115,838 pregnancies in women with prior IUD use and 463,332 pregnancies in women without any documented history of birth control. We matched the two populations based on the mother's age at conception, race, ethnicity, prior history of multiple births, height, and BMI.

We found no meaningful difference in the rate of multiple gestation pregnancies between women with prior IUD use (1.79%) and those with no history of birth control use (1.84%), as seen in Figure 1. This finding held true for both hormonal and copper, or non-hormonal, IUDs.

Multiple Gestation Pregnancy Rates by IUD Use

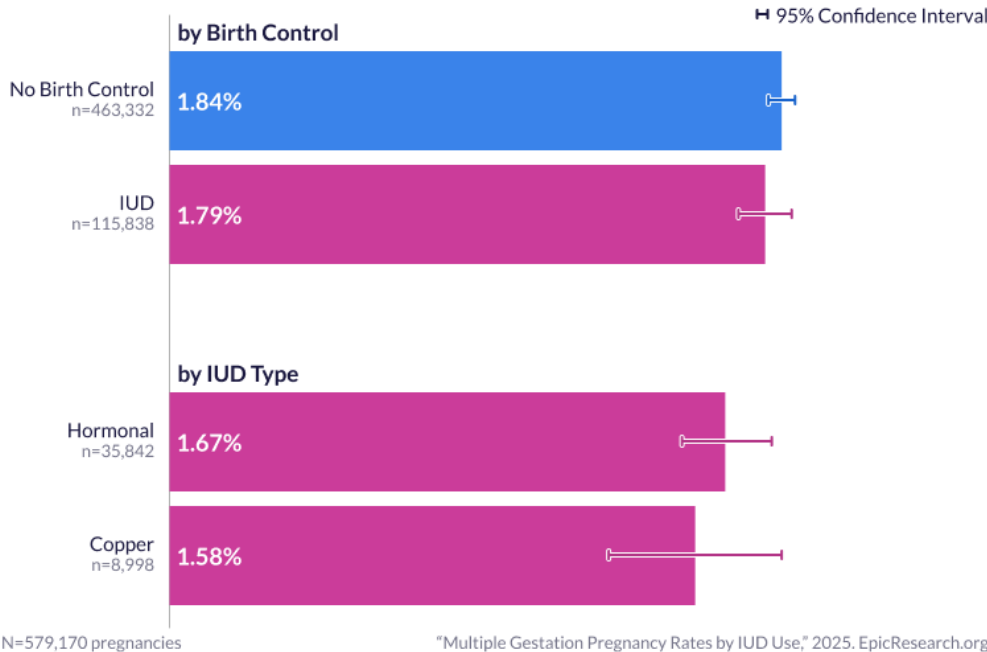


Figure 1. The rate of multiple gestation pregnancies by history of IUD use.

A sensitivity analysis adjusting for the matching features in a logistic regression had similar results.

These data come from Cosmos, a dataset created in collaboration with a community of Epic health systems representing more than 295 million patient records from 1,600 hospitals and more than 37,000 clinics from all 50 states, Lebanon, and Saudi Arabia. This study was completed by two teams that worked independently, each composed of a clinician and research scientists. The two teams came to similar conclusions. Graphics by Brian Olson.

References

1. Stoddard AM, Xu H, Madden T, Allsworth JE, Peipert JF. Fertility after intrauterine device removal: a pilot study. *Eur J Contracept Reprod Health Care*. 2015;20(3):223-230. doi:10.3109/13625187.2015.1010639
2. Gayatri M, Utomo B, Budiharsana M, Dasvarma G. Pregnancy resumption following contraceptive discontinuation: Hazard survival analysis of the Indonesia Demographic and Health Survey Data 2007, 2012 and 2017. *PLoS One*. 2022;17(2):e0264318. Published 2022 Feb 23. doi:10.1371/journal.pone.0264318

Data Definitions

Term	Definition
Study period	1/1/2017- 09/1/2024
Study population - inclusion	Pregnancies with a start date during the study period, a known number of fetuses, and at least two outpatient face-to-face encounters in a two-year period before conception
Study population - exclusion	Evidence of fertility treatment before pregnancy
Exposures	No birth control, IUD, copper IUD, and hormonal IUD
Matching	Age at conception <ul style="list-style-type: none"> • <18 • 18-24 • 25-34 • 35+ History of multiple gestation pregnancy <ul style="list-style-type: none"> • Previous pregnancy with fetal count >1 • This pregnancy's prior live birth count exceeds the documented para count • A diagnosis before this pregnancy with ICD-10-CM code Z37* or O30* BMI >= 30 Height >=65 inches Race and ethnicity
Outpatient face-to-face encounters	An encounter with a type of Emergency, Office Visit, Well Child, Follow-Up, Telemedicine, Urgent Care, Walk-In, Routine Prenatal, Postpartum Visit, or Fetal Care Consult
Fertility treatment	IUI: CPT code 58321 or 58322 IVF: CPT code 58974 or 89280 or HCPCS code S4011 or S4015 or ICD-10-CM code Z31.83 Clomiphene citrate: RxNorm code 2596 Letrozole: RxNorm code 72965
No birth control	Patients with no history of IUD or other birth control use
IUD	A procedure with CPT code 58300 or 58301, a diagnosis with ICD-10-CM code Z30.430, Z30.431, Z30.432, or Z30.433, a medication order with a

	simple generic name of “intra-uterine device (IUD),” a flowsheet response including “I.U.D.” prior to the pregnancy start, a copper IUD , or hormonal IUD
Copper IUD	Medication with a simple generic name of “copper” or “copper/silver” and route of intrauterine
Hormonal IUD	Medication with a simple generic name of “levonorgestrel” or “progesterone” and route of intrauterine
Race and ethnicity	Patients were classified by self-reported race and ethnicity. Patients were flagged as yes/no for each of the following: non-Hispanic Black (Black), Hispanic (any race), non-Hispanic White (White), or non-Hispanic Asian.
Other birth control	Medication with a therapeutic class of CONTRACEPTIVES <ul style="list-style-type: none"> Except for the following pharmaceutical classes: “INTRA-UTERINE DEVICES (IUDS),” “CONDOMS,” “DIAPHRAGMS/CERVICAL CAP,” “CONTRACEPTIVES,IMPLANTABLE,” and those with a simple generic name of levonorgestrel Or a flowsheet response before the start of the pregnancy of any of the following: “Patch,” “Progestin-only Pill,” “NuvaRing,” “Depo Provera,” “Injection,” “Ring,” “Combined Oral Contraceptive Pill,” “Spermicide,” “Emergency Contraception,” “Essure,” “Implant,” or “Pill - Unspecified”

Table 1: Multiple Gestation Pregnancy Rates by IUD Use

Birth Control Type	Multiples Count	Total Count	Multiples Percentage	Lower Confidence Interval	Upper Confidence Interval
IUD (All types)	2,072	115,838	1.79%	1.71%	1.87%
None	8,507	463,332	1.84%	1.80%	1.88%
Copper IUD	142	8,998	1.58%	1.32%	1.84%
Hormonal IUD	600	35,842	1.67%	1.54%	1.81%