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## Changing Patterns of Contraceptive Use and the Decline in Rates of Pregnancy and Birth Among U.S. Adolescents, 2007–2014



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#### ABSTRACT

**Purpose:** To investigate the influence of sexual activity and contraceptive use on the decline in adolescent birth rates and pregnancy rates since 2007.

**Methods:** We estimated trends in pregnancy risk from 2007 to 2014 using national data on behaviors of women aged 15–19.

**Results:** In 2007–2014, increases occurred in use of one or more contraceptive methods at last sex (78%-88%), dual method use (24%-33%), long-acting reversible contraception including intrauterine device and implant (1%-7%), withdrawal (15%-26%), and withdrawal in combination with other methods (7%-17%). Pill use rose and then fell over time. Level of sexual activity did not change over time. The decline in pregnancy risk among women aged 15-19 was entirely attributable to improvements in contraceptive use.

**Conclusions:** Improvements in contraceptive use—including increases in use of long-acting reversible contraception and withdrawal in combination with another method—appear to be driving recent declines in adolescent birth and pregnancy rates.

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### IMPLICATIONS AND CONTRIBUTION

This study and previous work support the important contribution of contraceptive use to declines in U.S. adolescent fertility since 1991. Improving adolescent access to contraceptive methods is essential. Likewise, classroom and digital education efforts are needed to equip adolescents with critical resources to achieve their reproductive goals.

Adolescent birth rates declined dramatically between 2007 and 2016 in the United States (U.S.), following long-term declines in 1957–1986 and 1991–2005; since 1991 adolescent pregnancy rates have also fallen [1,2]. To understand the behavioral drivers of these declines, we developed the pregnancy risk index (PRI), which attributes changes in adolescent pregnancy rates to changes in sexual activity and contraceptive use, the key proximal determinants of fertility [3–5]. The PRI has been validated by demonstrating that changes over time in the PRI track relatively closely with changes over time in adolescent pregnancy and birth rates.

**Conflicts of Interest:** The authors have no conflicts of interest to disclose.

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Our published research using the National Survey of Family Growth (NSFG) and the Youth Risk Behavior Survey found that declines in adolescent women's rates of pregnancy and birth after 1991 were influenced primarily by increases in contraceptive use, and, to a lesser degree, declines in sexual activity; we found considerable increases in condom use and declines in contraceptive nonuse in the 1990s and 2000s [4,5]. In our most recent study of NSFG data, we documented increases in 2007–2012 in hormonal methods among women aged 15–19, as well as declines in contraceptive nonuse, but no change in sexual activity [3].

This brief report updates our last study by using the most recent NSFG data to extend the study period to 2015. Both adolescent sexual activity and contraceptive use continue to be the focus of policy debates. Understanding their relative roles in recent declines in rates of birth and pregnancy among adolescents can inform policies and programs designed to help young people achieve their reproductive goals.

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Table 1 Sexual activity among all women aged 15-19, and contraceptive method use among sexually-active women aged 15-19, by NSFG survey year, 2007-2014

	Survey year									
	2007		2009		2012		2014		Test for change over time	
	%	95% CI	p value (Linear term <sup>a</sup> )	p value (Quadratic termª)						
All women 15–19 years	(N = 1,085)		(N = 1,199)		(N = 1,037)		(N = 1,010)			_
Sexually active in last 3 months	31	(27, 35)	33	(30, 37)	30	(25, 35)	31	(27, 36)	.737	.768
Sexually active women 15–19 years	(N = 366)		(N = 403)		(N = 320)		(N = 308)			
Number of methods used at last sex										
No method	22	(17, 28)	13	(9, 19)	14	(9, 20)	12	(8, 18)	.012	.262
One or more methods	78	(72, 83)	87	(81, 91)	86	(80, 91)	88	(82, 92)	.012	.262
Two or more methods	24	(18, 30)	30	(23, 38)	34	(26, 43)	33	(26, 41)	.040	.301
Method type										
IUD and implant	1	(0.5, 4)	4	(2, 9)	3	(1, 9)	7	(4, 13)	.023	.718
Injectable	6	(4, 10)	10	(7, 14)	7	(4, 11)	8	(5, 13)	.815	.405
Pill	26	(21, 32)	33	(27, 40)	35	(27, 43)	27	(20, 34)	.775	.023
Patch and ring	5	(3, 9)	4	(2, 7)	1	(0.2, 2)	3	(0.7, 15)	.478	.402
Condom	49	(42, 56)	50	(43, 58)	55	(48, 63)	55	(45, 64)	.212	.881
Alone	29	(24, 34)	25	(19, 32)	30	(22, 38)	30	(21, 39)	.667	.493
With another method <sup>b</sup>	19	(14, 26)	26	(20, 33)	25	(18, 34)	24	(18, 32)	.299	.288
Withdrawal	15	(10, 22)	18	(13, 25)	20	(14, 28)	26	(20, 33)	.020	.775
Alone	8	(5, 12)	9	(5, 15)	8	(5, 13)	9	(5, 14)	.912	.841
With another method <sup>c</sup>	7	(4, 11)	9	(5, 15)	12	(6, 21)	17	(12, 25)	.004	.813

IUD = intrauterine devices; NSFG = National Survey of Family Growth.

a Centered to the mean of survey year.
 b Includes condom use in combination with any of the following methods: IUD, injectable, implant, pill, patch, ring, and withdrawal.
 c Includes withdrawal use in combination with any of the following methods: IUD, injectable, implant, pill, patch, ring, and condom.

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