What Does Science Tell Us About Sex Ed?

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School's back! To celebrate, FiveThirtyEight's science crew figured it was time to talk about sex. Sex ed, that is. Over the next few days, we'll be discussing why sex education is such a flashpoint and what role science can play in figuring out what kind of sex ed kids should get.

Debates over how (and even whether) sex ed should be taught in schools have raged for more than a century, with no end in sight. Those debates are fought on both scientific and cultural grounds — they're about what works to prevent

teen pregnancies and STDs *and* what's appropriate for American kids to be taught in school, and at what age they should learn it.

The latter questions are important — and also outside the scope of science. They're rooted in values, not evidence. We can answer the more concrete questions, though. What do we know works about sex ed? And what does it mean for something to "work" in the first place?

Hundreds of studies on sex ed and teen pregnancy prevention programs have been conducted, and what they show is that teaching kids about sex doesn't make them start breeding like rabbits. Instead, it may prod them to delay having sex. Comprehensive sex education programs that include information about contraception have also been shown to reduce rates of teen pregnancy and sexually transmitted diseases and to increase the use of condoms and other contraceptives.

Those are the broad lessons. Where it gets messy is when you try to tease out which programs work best. Much of the research focuses on three common objectives: delaying the onset and frequency of sexual activity; preventing sexually transmitted diseases; and avoiding teen pregnancy. "I wish I could tell you that there was a study that showed that this program taught in this school is going to help kids throughout the United States fulfill all the outcomes that people want to fulfill, but there isn't such a study," said Cora Collette Breuner, chair of the American Academy of Pediatrics's committee on adolescence. Bruener is the lead author on an AAP clinical report on sexuality education for children and adolescents that advocates "developmentally appropriate and evidence-based education about human sexuality and sexual reproduction." She said the challenge is that "there are so many variables that go into when and how someone is going to have sex" — such as social norms among peer groups — and these variables can differ among various populations and communities.

So too can the way that sex ed is presented and received. "The schools are different, the teachers who teach the stuff are different, the parents are

different, the students are different, the access to a clinic is different," Breuner said. Studies have shown that a program that, say, reduces teen pregnancies in one setting may not have the same effects in another.

So it's clear that there's no one-size-fits-all way to deliver sex ed. But researchers are closing in on some of the essential components.

In 2007, renowned sex education researcher Douglas Kirby and two colleagues published a seminal review of 83 studies from across the globe measuring how sex education and HIV education programs influenced sexual behavior among people younger than 25. Their analysis concluded that these programs "do not hasten or increase sexual behavior" and that some of them could "delay or decrease sexual behaviors or increase condom or contraceptive use." In all, two-thirds of the programs included in the review showed benefits like those, and Kirby's team identified 17 characteristics shared by the effective programs.

Those characteristics were varied, but they fell into three categories: the process used to develop a curriculum, the curriculum's contents and its implementation. For example, effective programs assessed the needs and assets of the target group and included pilot testing, and they focused on clear goals like preventing STDs and creating safe spaces for youth to take part. About 90 percent of the beneficial programs in the Kirby analysis included at least two interactive activities to help participants engage with the lessons via acting out scenarios or other exercises.

"At the end of the day, what young people need is the interpersonal skills to negotiate and communicate and to refuse. And to teach that, you're going to spend an awful lot of time role-playing and not a lot of time labeling body parts," said Leslie Kantor, chair of the Department of Urban-Global Public Health at the Rutgers School of Public Health. Nearly all of the effective programs in the Kirby review discussed specific sexual and protective behaviors. Usually this included encouraging abstinence as well as the use of condoms or other contraception if and when a person chose to become

sexually active. Finally, 90 percent of these programs provided training to the educators who delivered the curriculum.

Kirby's 17 characteristics were identified more than a decade ago, and since then, some of the most robust research on sex education has come from studies of federally funded programs. Researchers have a list of programs (not all of them school-based) that have been shown to have a positive effect on at least one of the following things: frequency of sexual activity, the number of sexual partners, use of contraception, rates of sexually transmitted diseases and pregnancies. There are currently 48 programs that have met these criteria for effectiveness.

What's striking about the list is how varied the programs are. One showing results on multiple measures is delivered over the course of only one day, while another is administered over time periods spanning seven years. Some offer condom demonstrations, some don't. The list itself was created with the intention of collating evidence on different program models. "Now we're trying to unpack what makes a program effective," said Meredith Kelsey, a researcher at Abt Associates who has worked on a U.S. Department of Health and Human Services contract to analyze the evidence on agency-funded teen pregnancy prevention programs.

While researchers seek to identify the things that make programs effective, studies of federally funded programs have identified some programs that don't seem to produce their intended results. A government-sponsored analysis of four federally funded abstinence-only programs found that youth who were given abstinence-only sex ed were no more likely to remain abstinent than those who didn't, nor were abstinence programs more likely to raise the age at first intercourse or lower the number of sexual partners or rates of unprotected sex.

At the same time, there wasn't any evidence that youth from abstinence programs were any more likely to have unprotected sex than those who didn't attend such programs, which was a concern among some critics of

abstinence-only education.

So where does all of this leave us? Without definitive answers to the question of what's the best way to teach sex ed — because "best" may have different definitions to different communities and parents. The HHS Office of Adolescent Health has amassed a list of programs shown to have achieved at least one objective like a reduction in pregnancy and STDs, but most of the effects are fairly modest, and they don't always replicate from one program to the next. How to take this evidence and use it to find the best program for any given school is a decision that can't be made with science alone, but requires value judgments too, which means that the studies probably won't stop the squabbling.

Nearly two-thirds of US women use contraception, CDC reports

*(CNN)*The most common methods for preventing pregnancy, according to a new government report are female sterilization, oral contraception, long-acting reversible contraception such as IUDs and implants, and male condoms.

To help understand fertility patterns across demographics, researchers combed through the latest data from the National Survey of Family Growth to study contraceptive use among women.
The results, published Wednesday by the US Centers for Disease Control and Prevention's National Center for Health Statistics, found that of the more than 5,500 respondents from 2015 to 2017, nearly 65% of women ages 15 to 49 reported using some sort of contraception in the month they were interviewed.
That's a slight increase since the previous report, which found that 61.6% of those surveyed used contraception from 2011 to 2015.

Female sterilization

The most common contraceptive method reported was female sterilization, or tubal ligation, a surgical procedure in which the fallopian tubes are closed to prevent pregnancy. Of those surveyed, 18.6% said they've done so.

That's an increase from 14.3% of women from 2011 to 2015.

But that number is very much tied to age. Nearly 2 in 5 women ages 40 to 49, or more than 39%, relied on their sterilization for contraception. For women 30 to 39, the figure was about 1 in 5, or more than 21.5%. And for women 20 to 29, only 1 in 20, or about 4%, had had a tubal ligation.

"Sterilization has been a common form of contraception both due to its permanence and ability to have it done after delivery of a child when someone is already getting health care," Dr. Kristyn Brandi, an obstetrician-gynecologist and board member for the advocacy group Physicians for Reproductive Health, wrote in an email. "Many poor women may not have access to contraception outside of a childbirth (where emergency insurance is often obtainable) so may want something convenient and long lasting."

The pill

The second most common contraceptive method was the birth control pill. About 12.6% of women reported relying on the pill as contraception.

That's a decrease from 15.9% from 2011 to 2015.

The new report found that the pill, as it's known, was most popular among women 20 to 29 (19.5%), followed by those 15 to 19 (16.6%) and then 30 to 39 (11%), followed by only slightly more than 5% of women 40 to 49.

"The pill and permanent sterilization for women have been the most common method of contraception since 1982, according to the Guttmacher institute," wrote Dr. Lillian Schapiro, an Atlanta gynecologist in private practice, in an email.

Long-acting contraception

Long-acting reversible contraceptives, including intrauterine devices and contraceptive implants, were used by 10.3% of respondents, making them the third most common method.

This is an increase from 2011 to 2015, when they were used by 8% of those surveyed.

The new report found use was highest for women ages 20 to 29 (13.1%), followed by those 30 to 39 (11.7%). More than 8% of respondents 15 to 19 used these methods, while less than 7% of women 40 to 49 did.

"LARC's are very safe now and becoming much more accepted," Schapiro wrote. "For women not ready to permanently prevent pregnancy they are a great option since they don't require remembering a pill every day and keeping up to date on a prescription."

Male condoms

Male condoms were the fourth most common method, used by 8.7% of those surveyed.

That's a decline from 9.2% of respondents reporting use from 2011 to 2015.

Now, women 20 to 29 and 30 to 39 used condoms the most: 11.6% and 10.6%, respectively. Just more than 5% of respondents 15 to 19 and 40 to 49 relied on condoms for contraception.

Other methods

Male sterilization, or vasectomies, was relied on by 5.9% of women. That's an increase from 4.5% of those surveyed from 2011 to 2015.

Depo-Provera (a birth control shot), the contraceptive ring or the patch accounted for 3.2% of used methods. And all other methods were used with 5.6% of women.

"The pill and sterilization are our oldest forms of birth control and women are more familiar with them, so many women use what they are familiar with. However, as newer devices come unto the market and

become popular, that may change," Brandi said.

The new report found that contraceptive use went up with age, with 37.2% of women 15 to 19, 61.9% of those 20 to 29, 72% of women 30 to 39 and 73.7% of women 40 to 49 using contraception.

Contraceptive pill use was highest among non-Hispanic white women (14.9%); 9.2% of Hispanic women and 8.3% of non-Hispanic black women reported relying on the pill.

Condom use and long-acting reversible contraceptive use, across racial backgrounds, did not differ with any significance.

Education levels also made a difference in what methods women used. The higher the level of education, the less likely a woman was to rely on sterilization. Of women who were sterilized, 41.9% had no high school diploma or GED, 32.1% had a high school diploma or GED, 23.7% had some college education, and 11.3% had a bachelor's degree or more.

Conversely, use of the pill went up according to education levels. Of those who relied on contraceptive pills, 4.9% had no high school degree or GED, 7% had a high school degree or GED, 10.1% had some college, and 16.3% had a bachelor's degree or more.

"It is important to understand what certain demographics are using so we understand their preferences and make sure that everyone has access to all forms of contraception," Brandi noted.

The 35% of women who were not using contraception when they were interviewed were either not sexually active (17%), were pregnant, were postpartum or were looking to get pregnant (7.5%), nonusers of contraception who'd been sexually active (7.9%) or nonusers for other reasons, like nonsurgical sterility (2.7%).