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Jonathan D. Klein and the Committee on Adolescence  
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## CLINICAL REPORT

Guidance for the Clinician in Rendering Pediatric Care

Jonathan D. Klein, MD, MPH, and the Committee on Adolescence

### Adolescent Pregnancy: Current Trends and Issues

**ABSTRACT.** The prevention of unintended adolescent pregnancy is an important goal of the American Academy of Pediatrics and our society. Although adolescent pregnancy and birth rates have been steadily decreasing, many adolescents still become pregnant. Since the last statement on adolescent pregnancy was issued by the Academy in 1998, efforts to prevent adolescent pregnancy have increased, and new observations, technologies, and prevention effectiveness data have emerged. The purpose of this clinical report is to review current trends and issues related to adolescent pregnancy, update practitioners on this topic, and review legal and policy implications of concern to pediatricians. *Pediatrics* 2005; 116:281–286; pregnancy, contraceptives, childbearing, adolescent parents.

ABBREVIATIONS. AAP, American Academy of Pediatrics; STD, sexually transmitted disease.

#### INTRODUCTION

Adolescent pregnancy in the United States is a complex issue affecting families, health care professionals, educators, government officials, and youths themselves.<sup>1,2</sup> Since 1998, when the last statement on this topic was issued by the American Academy of Pediatrics<sup>3</sup> (AAP), efforts to prevent adolescent pregnancy have increased,<sup>1</sup> and new observations, technologies, and prevention effectiveness data have emerged. The purpose of this clinical report is to provide pediatricians with recent data on adolescent sexuality, contraceptive use, and childbearing as well as information about preventing adolescent pregnancy in their communities and in clinical practice. This report does not address diagnosis of pregnancy or management of the transition to prenatal care. Information about counseling pregnant youth is provided in the AAP policy statement "Counseling the Adolescent About Pregnancy Options,"<sup>4</sup> and from the Alan Guttmacher Institute,<sup>5</sup> and information about early prenatal care is available from the American College of Obstetricians and Gynecologists ([www.acog.org](http://www.acog.org)).

The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.  
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#### SEXUAL ACTIVITY

The proportion of American adolescents who are sexually active has decreased in recent years; however, rates are still high enough to warrant concern.<sup>6–9</sup> Currently, more than 45% of high school females and 48% of high school males have had sexual intercourse.<sup>6</sup> The average age of first intercourse is 17 years for girls and 16 years for boys.<sup>10</sup> However, approximately one fourth of all youth report having had intercourse by 15 years of age.<sup>11,12</sup> Younger teenagers are especially vulnerable to coercive and nonconsensual sex. Involuntary sexual activity has been reported by 74% of sexually active girls younger than 14 years and 60% of those younger than 15 years.<sup>10,11</sup> Sexually active youth, similar to older unmarried adults, usually have monogamous, short-lived relationships with successive partners. Current surveys indicate that 11% of high school females and 17% of high school males report having had 4 or more sexual partners.<sup>7</sup> In addition to intercourse, many adolescents report having had oral sex or engaging in kissing, touching, or other mutual stimulation; however, data on these other behaviors are reported rarely.<sup>13</sup>

There are several predictors of sexual intercourse during the early adolescent years, including early pubertal development, a history of sexual abuse, poverty, lack of attentive and nurturing parents, cultural and family patterns of early sexual experience, lack of school or career goals, substance abuse, and poor school performance or dropping out of school.<sup>1,2,6,11,12,14</sup> Factors associated with a delay in the initiation of sexual intercourse include living with both parents in a stable family environment, regular attendance at places of worship, and higher family income.<sup>11,12,15,16</sup> Recently, parental supervision, setting expectations, and parent/child "connectedness" have been recognized as clearly associated with decreasing risky sexual behavior and other risky behaviors among adolescents.<sup>14,16</sup>

#### CONTRACEPTIVE USE

Despite increasing use of contraception by adolescents at the time of first intercourse,<sup>10–12,17,18</sup> 50% of adolescent pregnancies occur within the first 6 months of initial sexual intercourse.<sup>11</sup> The human immunodeficiency virus (HIV) epidemic and public health education efforts have led more adolescents to use barrier contraceptives; nonetheless, in 2003, among high school students who reported that they

had ever had sexual intercourse, only 63% reported having used a condom the last time they had intercourse.<sup>6</sup> Despite HIV prevention guidelines, initiation of prescription contraceptives is often accompanied by decreased condom use, especially among adolescents who do not perceive themselves to be at risk of sexually transmitted diseases (STDs).<sup>19</sup> Many adolescents who currently report using prescription contraceptives delayed seeing a clinician for a contraceptive prescription until they had been sexually active for 1 year or more.<sup>10</sup> Adolescent women, similar to adult women, have changed contraceptive methods in recent years, with decreases in pill use and increases in injectable contraceptive use.<sup>20</sup> Factors associated with more consistent contraceptive use among sexually active youth include academic success in school, anticipation of a satisfying future, and being involved in a stable relationship with a sexual partner.<sup>21</sup> The Centers for Disease Control and Prevention unambiguously recommends both abstinence and the use of barrier contraceptives for individuals who choose to be sexually active.<sup>22</sup> However, some groups continue to question the effectiveness of condoms.<sup>23</sup> Youth who participated in programs that provided information about abstinence, condoms, and/or contraception; who were engaged in one-on-one discussions about their own behavior; who were given clear messages about sex and condom or contraceptive use; and who were provided condoms or contraceptives have been found to increase consistent condom and contraception use without increasing sexual activity.<sup>1</sup>

#### TRENDS IN ADOLESCENT CHILDBEARING

Each year, approximately 900 000 teenagers become pregnant in the United States,<sup>1</sup> and despite decreasing rates, more than 4 in 10 adolescent girls have been pregnant at least once before 20 years of age.<sup>1</sup> Most of these pregnancies are among older teenagers (ie, those 18 or 19 years of age).<sup>1,24</sup> Approximately 51% of adolescent pregnancies end in live births, 35% end in induced abortion, and 14% result in miscarriage or stillbirth.<sup>1,2,11,15,24</sup> Historically, the highest adolescent birth rates in the United States were during the 1950s and 1960s, before the legalization of abortion and the development of many of the current forms of contraception.<sup>20</sup> After the legalization of abortion in 1973, birth rates for US females 15 to 19 years of age decreased sharply until 1986. Rates increased steadily until 1991; since then, the birth rate among teenagers has decreased every year since 1991.<sup>1,24,25</sup> Since 1991, the rate has decreased 35% for 15- to 17-year-olds and 20% for 18- to 19-year-olds.<sup>23</sup> Rates for 10- to 14-year-olds were 1.4 per 1000 in 1992 and have gradually decreased to 0.7 per 1000 in 2002.<sup>26</sup>

Although birth rates have been decreasing steadily for white and black teenagers in recent years, 1996 is the first year that birth rates decreased for Hispanic teenagers; Hispanic adolescents also have had the highest overall birth rates and smallest decreases in recent years.<sup>25,27</sup>

Once a teenager has had 1 infant, she is at in-

creased risk of having another. Approximately 25% of adolescent births are not first births.<sup>1,2,9,28</sup>

#### ADOLESCENT PARENTS AND THEIR PARTNERS

Adolescent childbearing is usually inconsistent with mainstream societal demands for attaining adulthood through education, work experience, and financial stability. Poverty is correlated significantly with adolescent pregnancy in the United States. Although 38% of adolescents live in poor or low-income families, as many as 83% of adolescents who give birth and 61% who have abortions are from poor or low-income families. At least one third of parenting adolescents (both males and females) are themselves products of adolescent pregnancy. Although it is difficult to establish causal links between childhood maltreatment and subsequent adolescent pregnancy, in some studies as many as 50% to 60% of those who become pregnant in early or midadolescence have a history of childhood sexual or physical abuse.<sup>10,11</sup>

The problem of adolescent pregnancy is often assumed to be both an adolescent and an adult problem, because many partners of childbearing youth are adults. The percentage of adolescent pregnancies in which the father is an adult is unclear; studies report a range from 7% to 67%.<sup>29-33</sup> Adult men having sexual relationships with adolescents is problematic, because many of these relationships may be abusive or coercive. Adolescents who have sex with older men are also more likely to contract HIV infection or other STDs.<sup>30,31,33,34</sup> Although more than two thirds of adolescent girls' sexual partners are the same age or within a few years older and the sexual activity is consensual in nature, some partners are more than 4 years older.<sup>35</sup> Sexual relationships between adults and minors may be coercive or exploitative, with detrimental consequences for the health of both the teenager and her children.<sup>30,36</sup> Although some states and local jurisdictions have changed statutory rape laws and their enforcement, mandated reporting of all sexual activity as statutory rape or as child abuse has not been effective at changing behavior, does not allow for clinical judgment, and has the effect of deterring some of the adolescents most in need from seeking health care.<sup>36,37</sup>

Adolescent fathers are similar to adolescent mothers; they are more likely than their peers who are not fathers to have poor academic performance, higher school drop-out rates, limited financial resources, and decreased income potential.<sup>37-39</sup> Some fathers disappear from the lives of their adolescent partners and children,<sup>40</sup> but many others attempt to stay involved, and many young fathers struggle to be involved in their children's lives.<sup>40,41</sup> Current programs in adolescent pregnancy and parenting are exploring ways to reach and engage young fathers in the lives of their children.

#### RATES OF UNMARRIED CHILDBEARING

The birth rate to unmarried female adolescents has been increasing steadily for most of the last 30 years. In 2001, 78.9% of all births to adolescents occurred outside of marriage.<sup>24</sup> The increasing birth rate of

unmarried adolescents is primarily attributable to higher rates of births to unmarried white adolescents. However, adolescents account for a smaller percentage of total out-of-wedlock births now (26% in 2001) than they did in 1970 (50%).<sup>24</sup> Births to unmarried teenagers reflect a larger societal trend toward single parenthood, because birth rates for unmarried adults have also increased.<sup>25,42,43</sup> Although some reports have suggested that rates of marriage among childbearing teenagers are increasing, few teenagers or young adults who become pregnant are married before their infant is born.<sup>44</sup>

#### UNINTENDED VERSUS INTENDED PREGNANCY

More than 90% of 15- to 19-year-olds (and half of all adults) describe their pregnancies as being unintended. More than half of unintended adolescent pregnancies end in induced or spontaneous abortion,<sup>43,44</sup> compared with 35% of adolescent pregnancies overall.<sup>21</sup> On the other hand, some adolescent pregnancies are intended, and some young women are motivated to become pregnant and have children. Similar to adults, adolescents give many reasons for wanting to have children; the reason that some adolescents are motivated to be mothers at an early age is unclear.<sup>1</sup> Recent data suggest that many young women are ambivalent about becoming pregnant, and this is associated with less consistent and less effective contraceptive use.<sup>45</sup>

#### COMPARISON WITH INTERNATIONAL STATISTICS

Even with recent decreases, the United States has the highest adolescent birth rate among comparable industrialized countries despite sexual activity rates that are similar or higher among Western European teenagers than among teenagers in the United States.<sup>5,17,21,25,46</sup> For every 1000 females 15 to 19 years of age in 1992, 4 in Japan gave birth, 8 in the Netherlands gave birth, 33 in the United Kingdom gave birth, 41 in Canada gave birth, and 61 in the United States gave birth.<sup>21</sup> The higher birth rate for American adolescents compared with their peers in other countries is not attributable solely to high birth rates among American minority groups; non-Hispanic white adolescents in the United States also have a higher birth rate than do teenagers observed in any other developed country.<sup>5,10,47</sup> The reasons for this contrast are unclear, but European teenagers may have greater access to and acceptance of contraception. The contrast also may be related to universal sexuality education that exists in some European countries. Welfare benefits tend to be more generous in Europe than in the United States; thus, it is unlikely that the current welfare system motivates or explains American teenagers' decisions to have children.

#### MEDICAL RISKS OF ADOLESCENT PREGNANCY

Pregnant adolescents younger than 17 years have a higher incidence of medical complications involving mother and child than do adult women, although these risks may be greatest for the youngest teenagers.<sup>17,48</sup> The incidence of having a low birth weight

infant (<2500 g) among adolescents is more than double the rate for adults, and the neonatal death rate (within 28 days of birth) is almost 3 times higher.<sup>49</sup> The mortality rate for the mother, although low, is twice that for adult pregnant women.<sup>15,17</sup>

Adolescent pregnancy has been associated with other medical problems including poor maternal weight gain, prematurity (birth at <37 weeks' gestation), pregnancy-induced hypertension, anemia, and STDs. Approximately 14% of infants born to adolescents 17 years or younger are preterm versus 6% for women 25 to 29 years of age.<sup>49</sup> Young adolescent mothers (14 years and younger) are more likely than other age groups to give birth to underweight infants, and this is more pronounced in black adolescents.<sup>1,50-53</sup>

Biological factors that have been associated consistently with negative pregnancy outcomes are poor nutritional status, low prepregnancy weight and height, parity, and poor pregnancy weight gain.<sup>51,52</sup> Many social factors have also been associated with poor birth outcomes, including poverty, unmarried status, low educational levels, smoking, drug use, and inadequate prenatal care.<sup>54</sup> Both biological and social factors may contribute to poor outcomes in adolescents. Adolescents also have high rates of STDs, substance use, and poor nutritional intake, all of which contribute to the risk of preterm delivery.<sup>52</sup> Interventions, such as prenatal intake of folic acid as a strategy for prevention of spina bifida, can be effective at decreasing observed disparities between adolescents and older women.<sup>55</sup>

#### PSYCHOSOCIAL COMPLICATIONS OF ADOLESCENT PREGNANCY

The psychosocial problems of adolescent pregnancy include school interruption, persistent poverty, limited vocational opportunities, separation from the child's father, divorce, and repeat pregnancy. When pregnancy does interrupt an adolescent's education, a history of poor academic performance usually exists.<sup>56</sup> Having repeat births before 18 years of age has a negative effect on high school completion. Factors associated with increased high school completion for pregnant teenagers include race (black teenagers fare better than do white teenagers), being raised in a smaller family, presence of reading materials in the home, employment of the teenager's mother, and having parents with higher educational levels.<sup>54,56,57</sup>

Research suggests that long-term negative social outcomes are not inevitable. Several long-term follow-up studies indicate that 2 decades after giving birth, most former adolescent mothers are not welfare-dependent; many have completed high school, have secured regular employment, and do not have large families.<sup>51,57</sup> Comprehensive adolescent pregnancy programs seem to contribute to good outcomes, as do home-visitation programs designed to promote good child health outcomes.<sup>51,58</sup>

#### CHILDREN OF ADOLESCENT PARENTS

Research during the past decade confirms the common belief that children of adolescent mothers do

not fare as well as those of adult mothers. These children have increased risks of developmental delay, academic difficulties, behavioral disorders, substance abuse, early sexual activity, depression, and becoming adolescent parents themselves.<sup>57,59</sup>

Adolescent mothers may not possess the same level of maternal skills as do adults. There is debate in the literature regarding the association of maternal age and child abuse. Some studies indicate that young maternal age is a risk factor for abuse, including fatalities, and others indicate the presence of reporting biases that may confound the findings.<sup>60-63</sup>

Although the current political climate tends to require that adolescent mothers live at home with their own families to qualify for government assistance, there is evidence that intensive involvement of families in rearing children of older adolescents may not be beneficial for either the adolescent or her child.<sup>54,64</sup> Many adolescent parenting programs are exploring ways to involve the families of the parenting adolescent in child care activities that are helpful.

### ADOLESCENT PREGNANCY PREVENTION

Many models of adolescent pregnancy-prevention programs exist.<sup>65-68</sup> Most successful programs include multiple and varied approaches to the problem and include abstinence promotion and contraception information, contraceptive availability, sexuality education, school-completion strategies, and job training. Primary-prevention (first pregnancy) and secondary-prevention (repeat pregnancy) programs are both needed, with particular attention to adolescents who are at highest risk of becoming pregnant and innovative programs that include males.<sup>69-72</sup> Parents, schools, religious institutions, physicians, social and government agencies, and adolescents all have roles in successful prevention programs.

Efforts to prevent adolescent pregnancy at both the national and local levels have increased in recent years, and there has been increasing evidence that several different kinds of programs may help decrease sexual risk taking and pregnancy among teenagers. Recent studies have found that some sexuality- and HIV-education programs have sustained positive effects on behavior, and at least 1 program that combines sexuality education and youth development has been shown to decrease pregnancy rates for as long as 3 years.<sup>1</sup> Additionally, both community learning programs and sexuality- and HIV-education programs have been found to decrease sexual risk taking and/or pregnancy, and short clinic-based interventions involving educational materials coupled with counseling also may increase contraceptive use.<sup>1</sup>

Despite encouraging trends, efforts to prevent pregnancy must be constantly renewed as children enter into adolescence. By 2010, the population of adolescent girls 15 to 19 years of age is expected to increase by 10%; thus, decreasing pregnancy rates may not mean fewer pregnancies or births. Nonetheless, condom use has increased slightly, and adolescent contraceptive users have increasingly adopted long-acting hormonal methods, which have the low-

est failure rates; thus, overall contraceptive effectiveness among teenagers has been improving.<sup>73</sup>

Current research indicates that encouraging abstinence and urging better use of contraception are compatible goals. Evidence shows that sexuality education that discusses contraception does not increase sexual activity, and programs that emphasize abstinence as the safest and best approach, while also teaching about contraceptives for sexually active youth, do not decrease contraceptive use. Some program models have resulted in better protective and preventive health behaviors.

### CLINICAL CONSIDERATIONS FOR THE PEDIATRICIAN

1. Encourage adolescents to postpone early sexual activity and encourage parents to educate their children and adolescents about sexual development, responsible sexuality, decision-making, and values.
2. Be sensitive to issues relating to adolescent sexuality and be prepared to obtain a developmentally appropriate confidential sexual history from all adolescent patients. Because medical complications are possible, offer confidential screenings for sexual activity and pregnancy risk as well as for STD risk and abuse as a routine part of all adolescent care encounters.
3. Help ensure that all adolescents have knowledge of and access to contraception including barrier methods and emergency contraception supplies. As stated in the AAP policy statement "Folic Acid for the Prevention of Neural Tube Defects,"<sup>74</sup> recommend folic acid supplementation for all women of childbearing age who are capable of becoming pregnant, especially sexually active women who do not plan to use effective contraception or abstain from sexual intercourse.
4. Encourage and participate in community efforts to delay onset of sexual activity and to prevent first and subsequent adolescent pregnancies and advocate for implementation and investments in evidence-based programs that provide comprehensive information and services to youth. These efforts may vary widely from one community to another but should be directed at the specific needs of youth in that community.
5. Be aware of options and resources for adolescents and advocate for comprehensive medical and psychosocial support for all pregnant adolescents in the community. When diagnosing pregnancy, discuss pregnancy options or refer the patient for counseling; discuss adoption, abortion, and prenatal care; and provide follow-up. Tailor prenatal care to the medical, social, nutritional, and educational needs of the adolescent and include child care and contraceptive information.
6. Assess the adolescent mother's abilities to care for her children and have resources available for referral and assistance before neonatal discharge.
7. Advocate for the inclusion of the adolescent mother's partner and/or father of her child in pregnancy and parenting programs when appropriate.

These programs should provide access to education and vocational training, parenting skills classes, and contraceptive education.

- Serve as a resource for the pregnant teenager and her infant, the teenager's family, and the father of the infant to ensure that optimal health care is obtained and appropriate support is provided.

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