

# **Percentage of preterm births is associated with year of mothers' age in African-American (AA) adolescent pregnancies**

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# Introduction

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- Seeking biological explanation for lack of fitness in infants of adolescents is "unwarranted" (Geronimus 1986)

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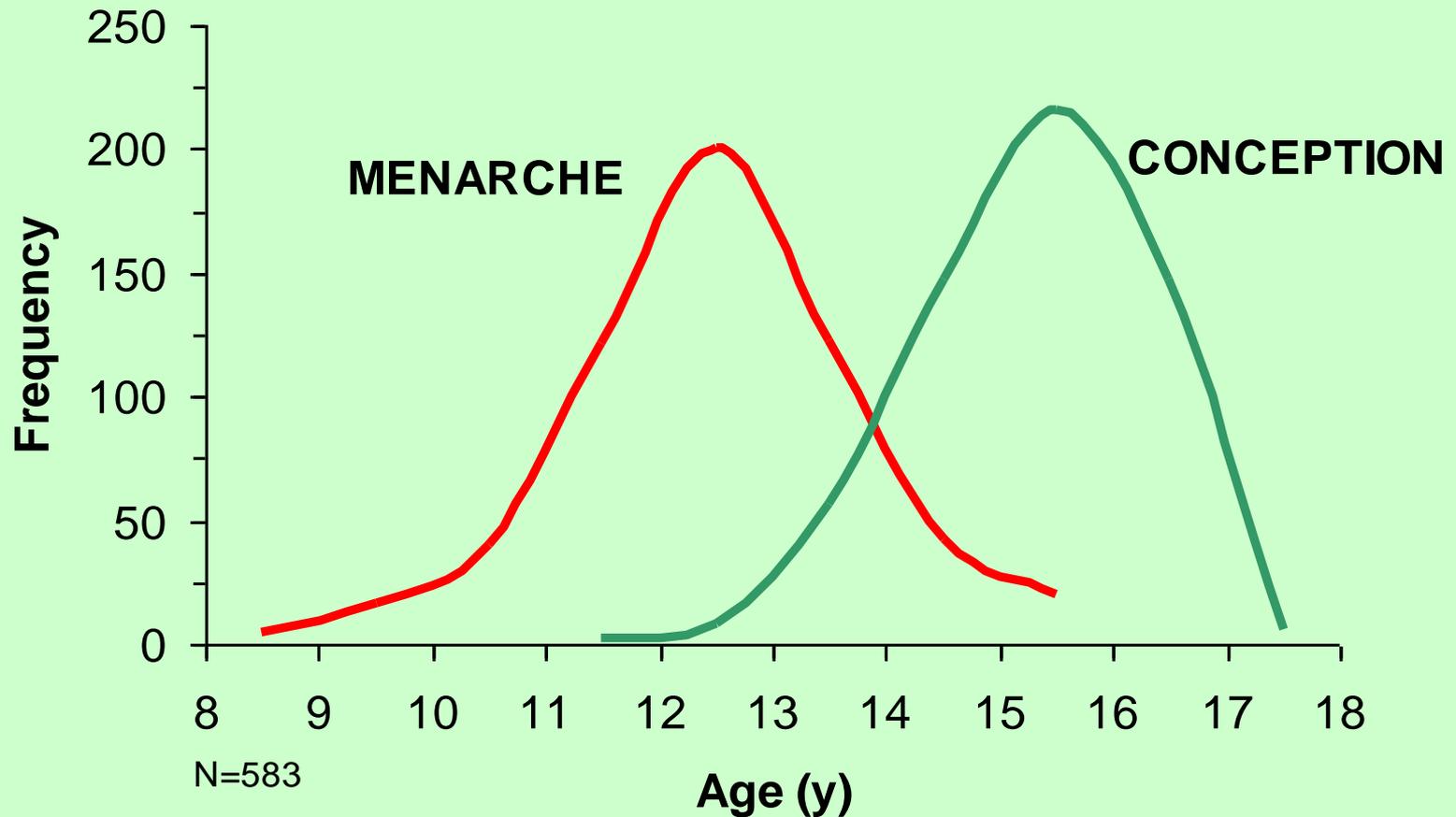
- Seeking biological explanation for lack of fitness in infants of adolescents is "unwarranted" (Geronimus 1986)
- Life History Theory predicts decreased fitness in infants of youngest mothers

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- Seeking biological explanation for lack of fitness in infants of adolescents is "unwarranted" (Geronimus 1986)
- Life History Theory predicts decreased fitness in infants of youngest mothers
- Clinical and demographic studies in small populations demonstrate AA adolescent mothers likely to bear pre-term infants (Martin et al., (CDC) 2003, Olausson et al., 1999, Hediger et al., 1997, Garn & Petzold 1983)

# Menarcheal age and age at conception of a typical group of AA adolescents



# Objective

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- Evaluate influence of mothers' age on prevalence of preterm births to adolescents

# Methods

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- National Center for Health Statistics Linked Birth/Infant Death Data Sets – 1997-99

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- Percentage of infants born at <37 wk gestation to mothers, at each year of age
- Analyzed those with  $\geq 100$  cases per y, and gestational age or prenatal care category

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- All US births linked to corresponding birth certificates
- 1,757,793 singleton live births to AA mothers 10-54 y
- Percentage of infants born at <37 wk gestation to mothers, at each year of age
- Results stratified by initiation of prenatal care, representing socioeconomic status/engagement with the health care system

# Population

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Total births to AA (1997-99)	1,757,793	100.0%
Preterm births	279,809	15.9%
Preterms excluded (<100 cases/ y age)	129	0.05%
Reporting on prenatal care / preterm birth	265,584	100.0%
initiated during 1 <sup>st</sup> trimester*	180,094	67.8%
2 <sup>nd</sup> trimester*	58,484	22.0%
3 <sup>rd</sup> trimester*	11,841	4.5%
no prenatal care*	15,165	5.7%

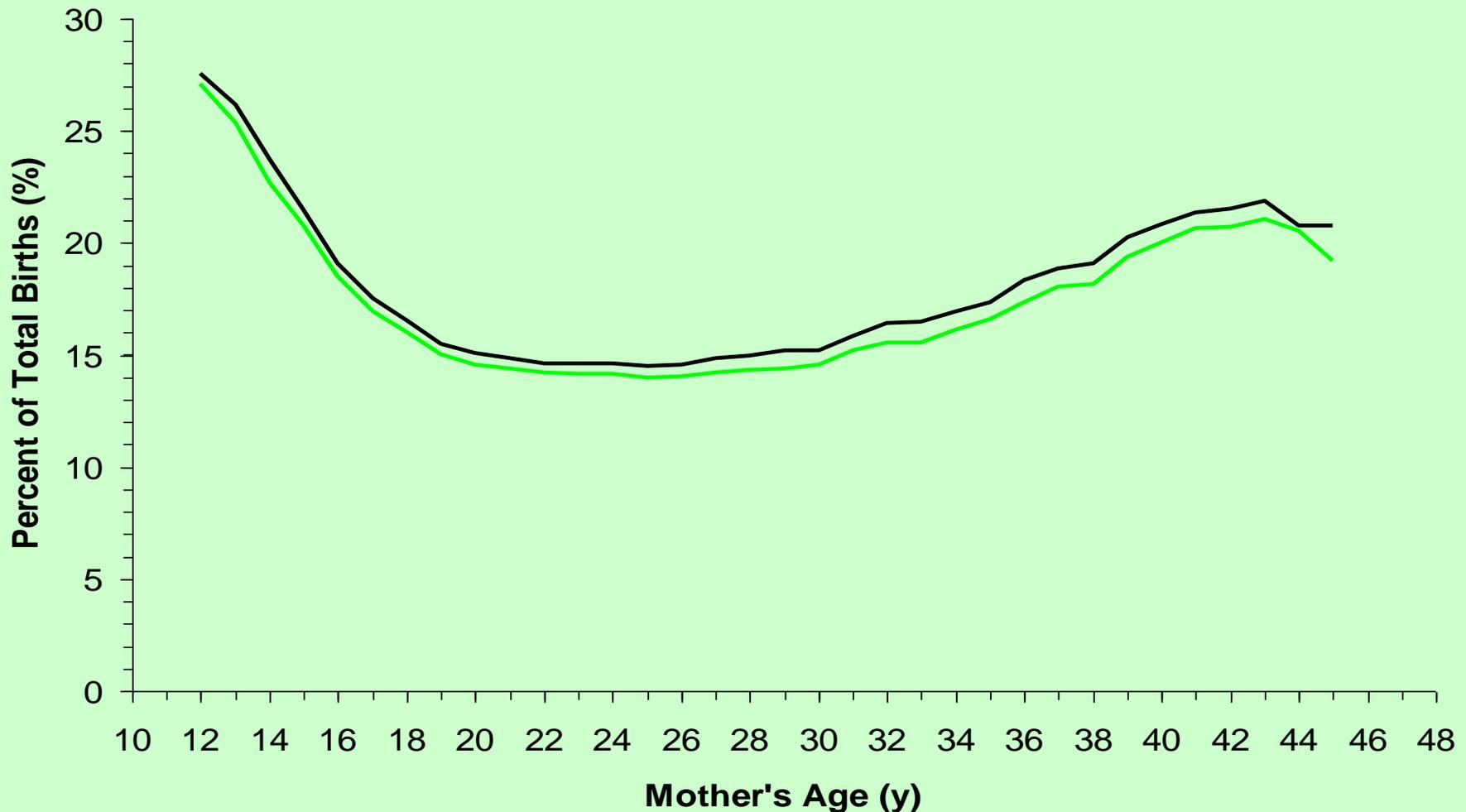
\*Exclusions (<100 in cases/ y age)

# Results

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- Shown as plots of percent of preterm births versus mother's age

# Percent preterm births (<37 wks) by prenatal care: US 1997-99 AA singleton live births

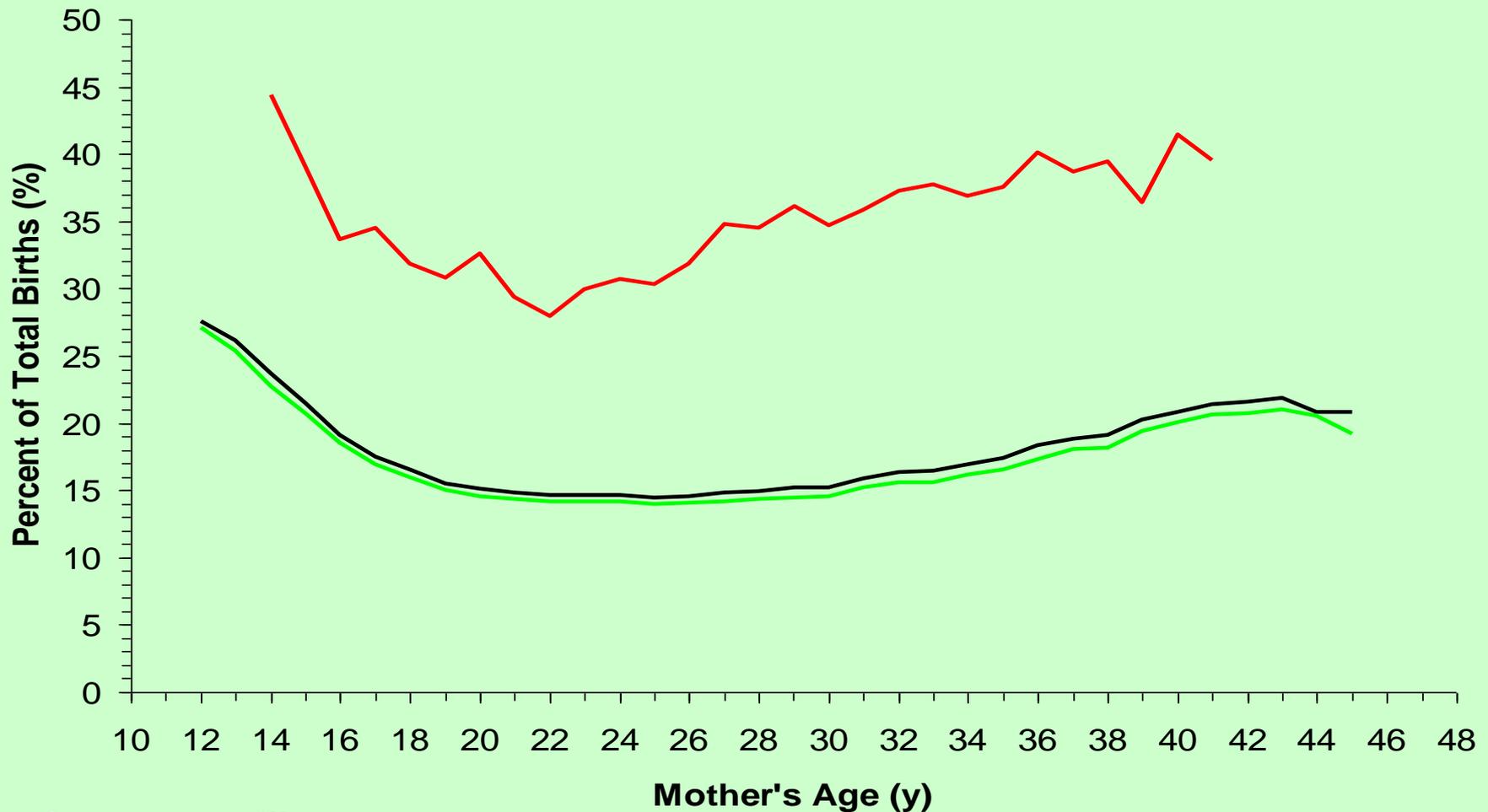


N>100 for each data point plotted

— Total Pre-term (N=279,680)

— Pre-term with Prenatal Care (N=250,311)

# Percent preterm births (<37 wks) with and without prenatal care: US 1997-99 AA singleton live births



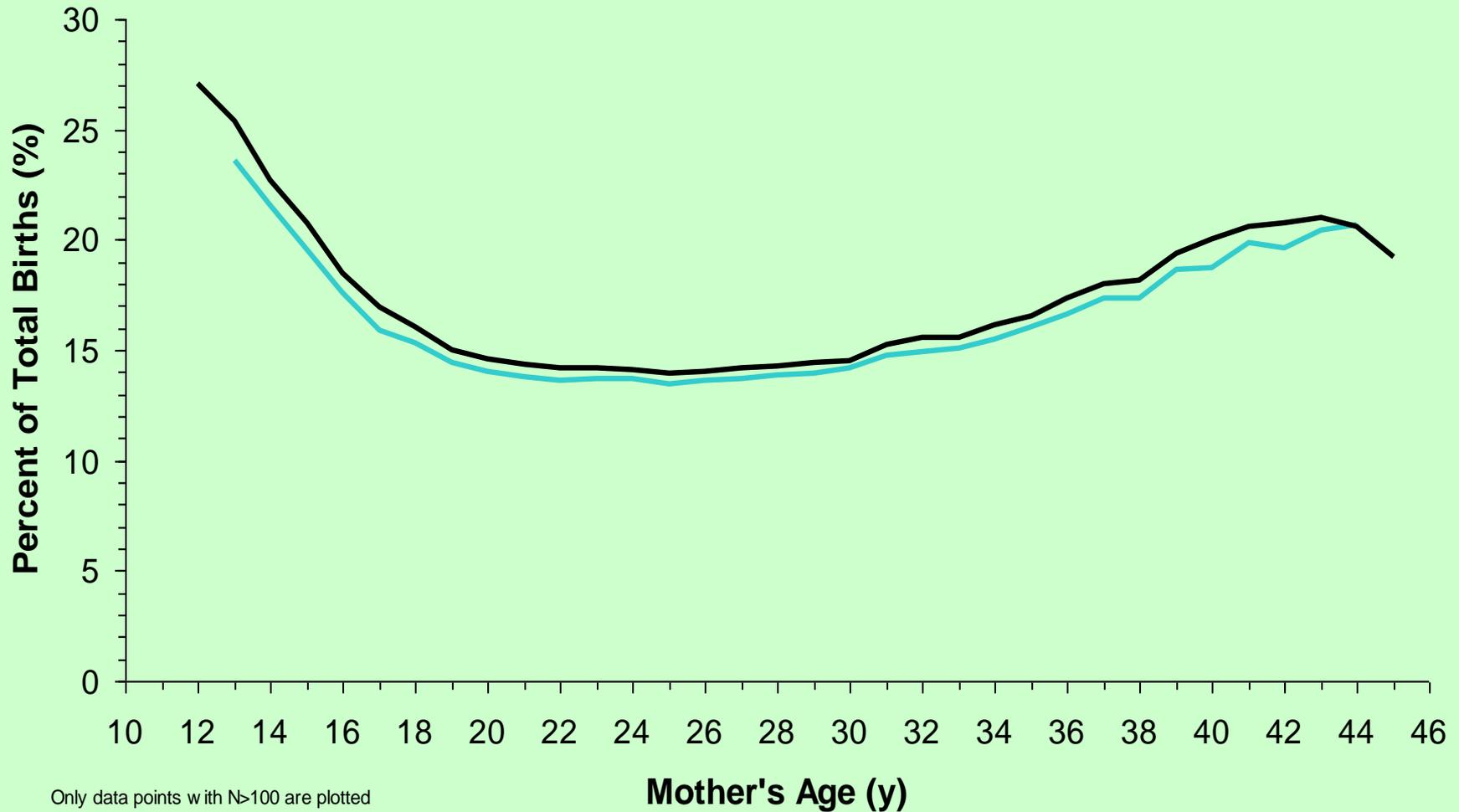
Only data points with N>100 are plotted

— Total Pre-term (N=279,680)

— Pre-term with Prenatal Care (N=250,311)

— Pre-term without Prenatal Care (N=14,967)

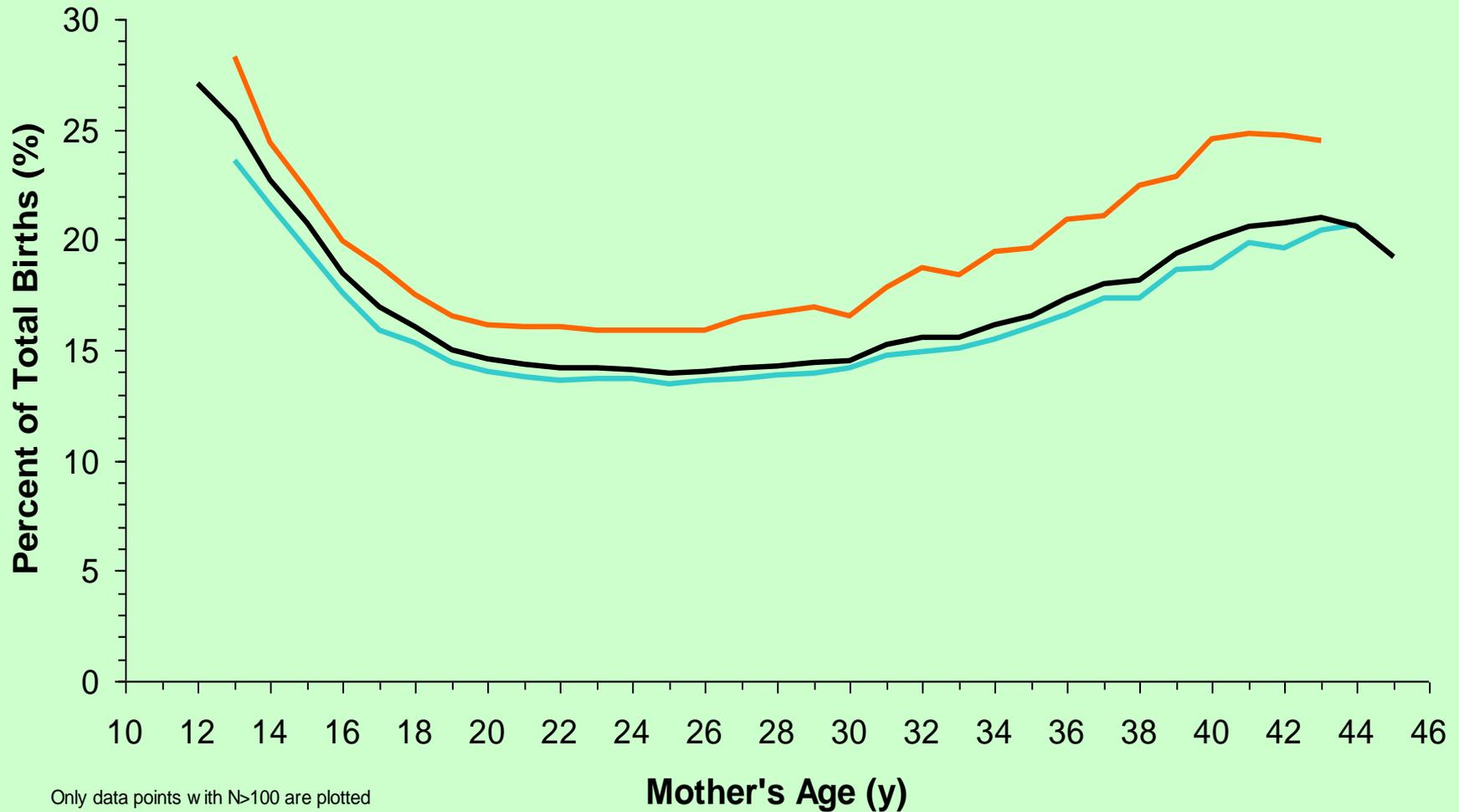
# Percent preterm births (<37 wks) with prenatal care: US 1997-99 AA singleton live births



Pre-term: 1st -3rd month start PNC (N=179,720)

Pre-term with Prenatal Care (N=250,311)

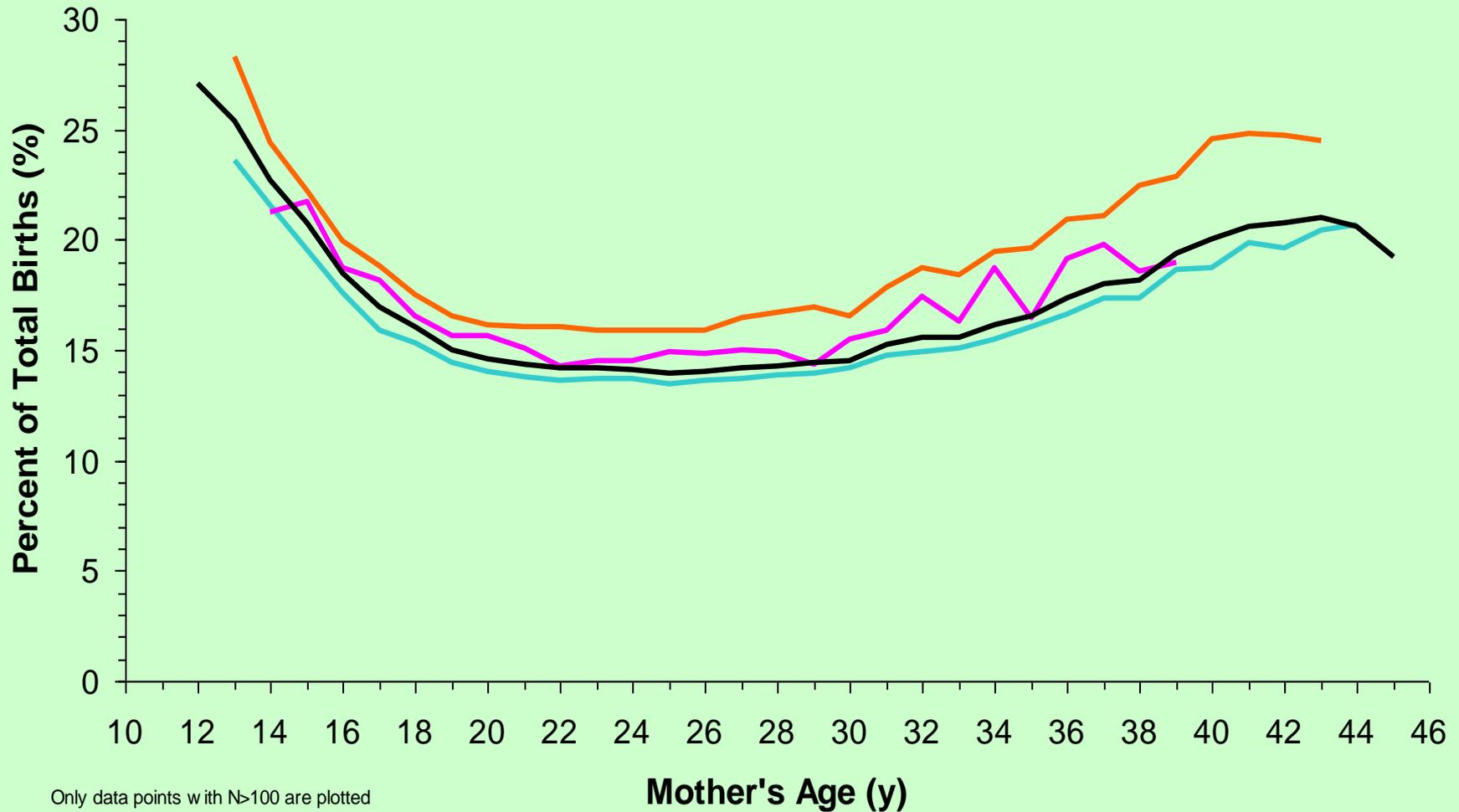
# Percent preterm births (<37 wks) with prenatal care: US 1997-99 AA singleton live births



Only data points with N>100 are plotted

— Pre-term: 1st -3rd month start PNC (N=179,720)    — Pre-term: 4th -6th month start PNC (N=58,324)  
— Pre-term with Prenatal Care (N=250,311)

# Percent preterm births (<37 wks) with prenatal care: US 1997-99 AA singleton live births



Pre-term: 1st -3rd month start PNC (N=179,720)

Pre-term: 4th -6th month start PNC (N=58,324)

Pre-term: 7th -9th month start PNC (N=11,519)

Pre-term with Prenatal Care (N=250,311)

# Conclusion

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- Young age, representing lack of physical maturation, is a strongly associated with preterm birth among AA gravidas decreasing fitness as predicted by Life History Theory.

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- Young age, representing lack of physical maturation, is a strongly associated with preterm birth among AA gravidas decreasing fitness as predicted by Life History Theory
- Socioeconomic status, represented by trimester of initiation of prenatal care, does not negate this relationship
- While this association may be responsible for a relatively small difference in overall preterm rate, it should be of interest to human biologists

# Odds ratios for term vs. preterm: U.S. 1997-1999 AA singleton first live births

