

PRECONCEPTION HEALTH A Life Course Perspective

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Western MCH Nutrition Leadership Network Meeting

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- Preconception Health at the California Department of Public Health, Maternal, Child and Adolescent Health Division is funded by Title V federal block grant
- CDPH Preconception Health Team
 - Flojaune Griffin, PhD, MPH, Preconception Health Coordinator
 - Sangi Rajbhandari, MPH
 - Michael Curtis, PhD
 - Jennifer Troyan, MPH
- The Preconception Health Council of California and the many organizations of which it is comprised for providing leadership on Preconception Health promotion in California

- What is Preconception Health and why is it important?
 - Explain the reason for expanding the prenatal prevention focus to include an emphasis on preconception health
- What clinical measures and health behaviors are important before pregnancy?
 - Link major threats to women's health with major threats to pregnancy outcomes and examine health indicators
- What statewide programmatic efforts are in place to improve the health of women of reproductive age?
 - Highlight the CDC preconception health recommendations and California resources in place in to address them
 - Discuss the rationale for integrating preconception and inter-conception into family planning services.
 - Identify strategies for implementing preconception and inter-conception care

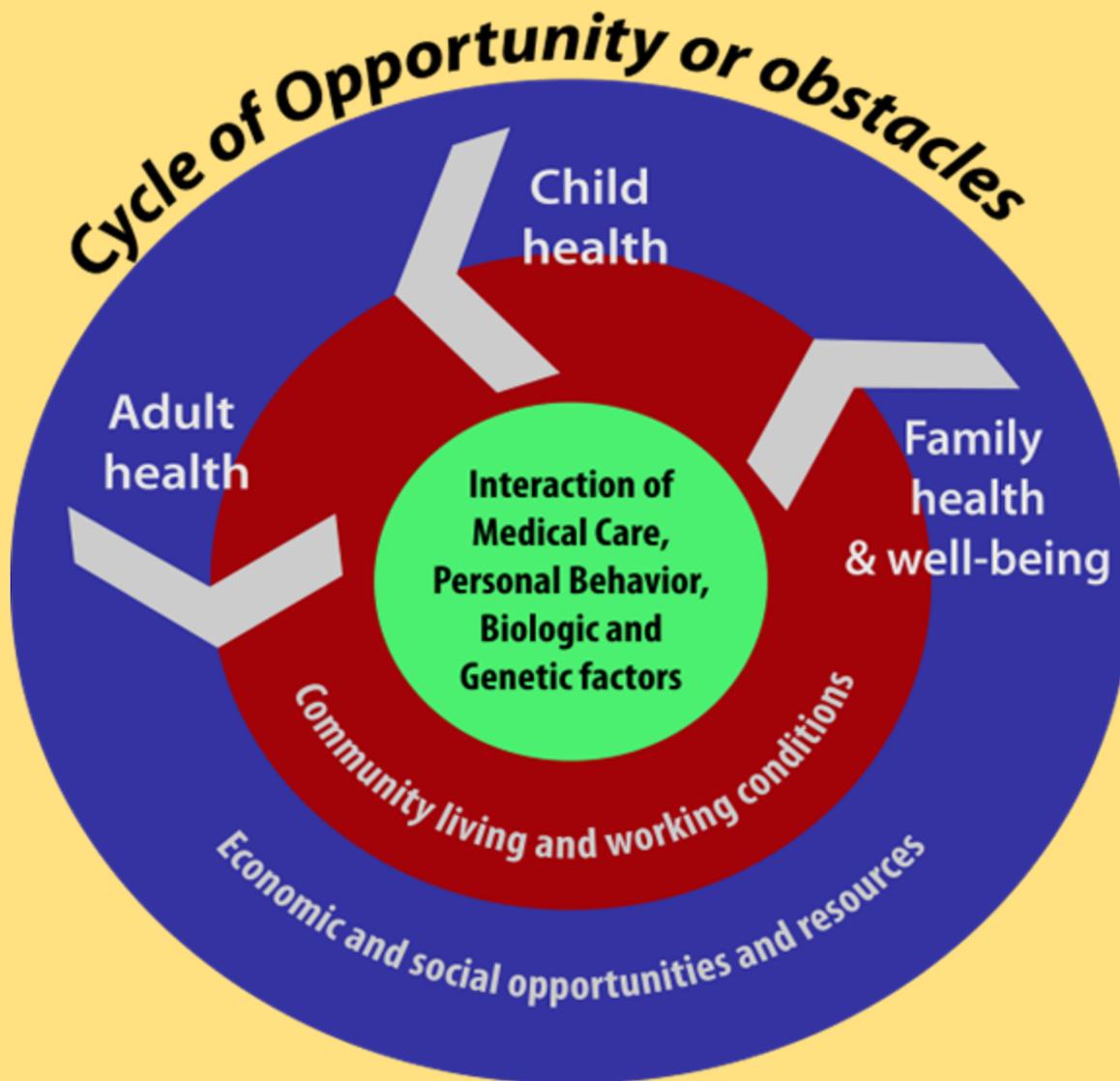


WHAT IS PRECONCEPTION HEALTH?

- Preconception health refers to a woman's health before pregnancy
- Goal: promote wellness and prevent or treat conditions and risk behaviors, so that **IF** she becomes pregnant, her own health and the health of her children will be optimized
- A holistic approach to women's health
- Not limited to health care providers
- Promoting conditions that make it possible for a person to reach his or her true potential

- **Preconception**
 - Health status and risks before first pregnancy; health status shortly before any pregnancy
- **Interconception**
 - Period between pregnancies
 - Interconception health refers to a woman's health during the non-pregnant interval between two pregnancies

Taking a Life Course Perspective

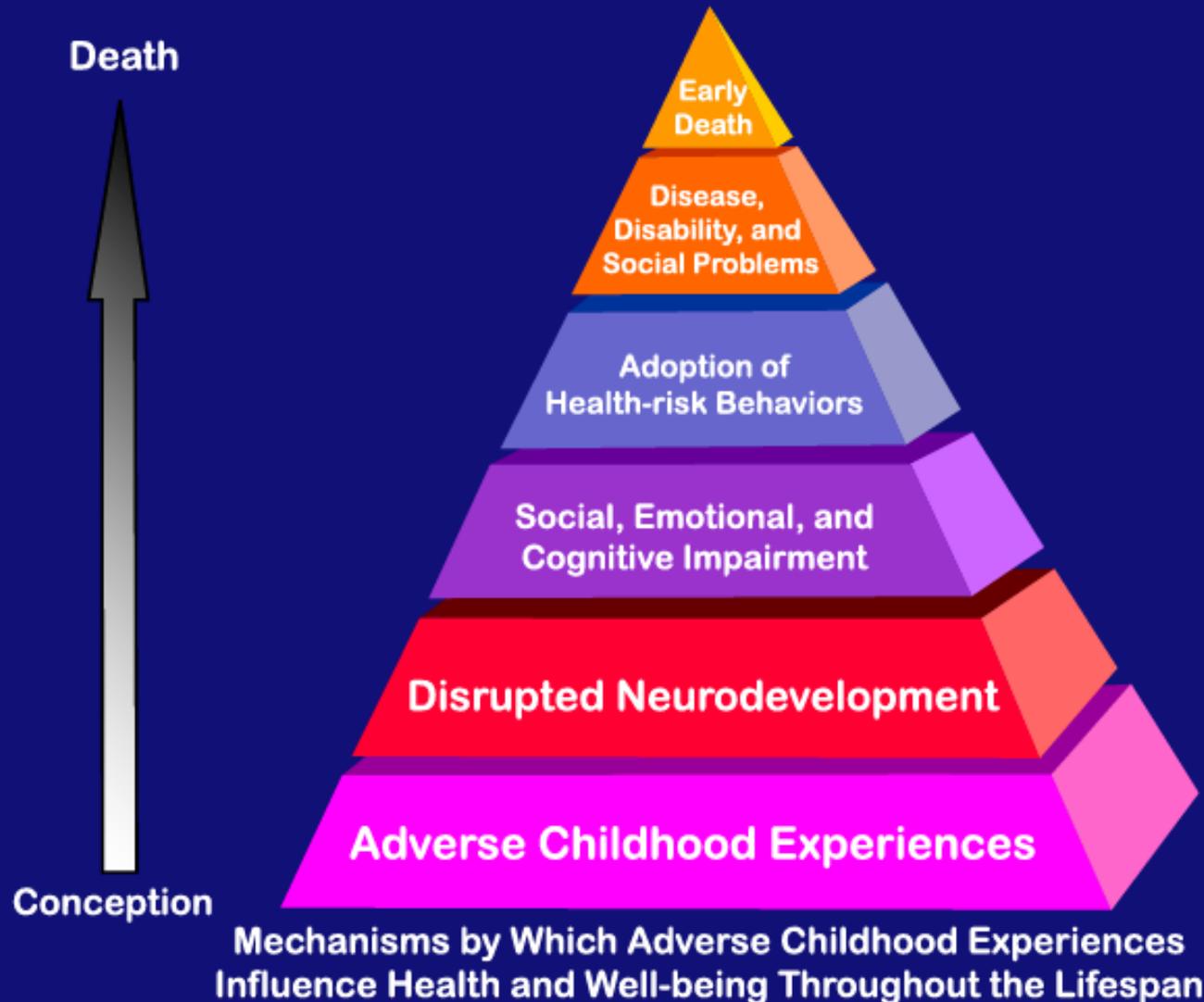


Health is shaped by social advantages and disadvantages across lifetimes and generations

Adverse Childhood Experiences

ACE Category		Women	Men	Total
Abuse				
	Recurrent humiliation	13.1%	7.6%	10.6%
	Physical	27.0%	29.9%	28.3%
	Sexual	24.7%	16.0%	20.7%
Neglect				
	Emotional	16.7%	12.4%	14.8%
	Physical	9.2%	10.7%	9.9%
Household dysfunction				
	IPV vs. mother	13.7%	11.5%	12.7%
	Substance abuse	29.5%	23.8%	26.9%
	Mental illness	23.3%	14.8%	19.4%
	Parental separation/ divorce/ death	24.5%	21.8%	23.3%
	Incarcerated	5.2%	4.1%	4.7%

Adverse Childhood Experiences Study



1. Behavioral pathway

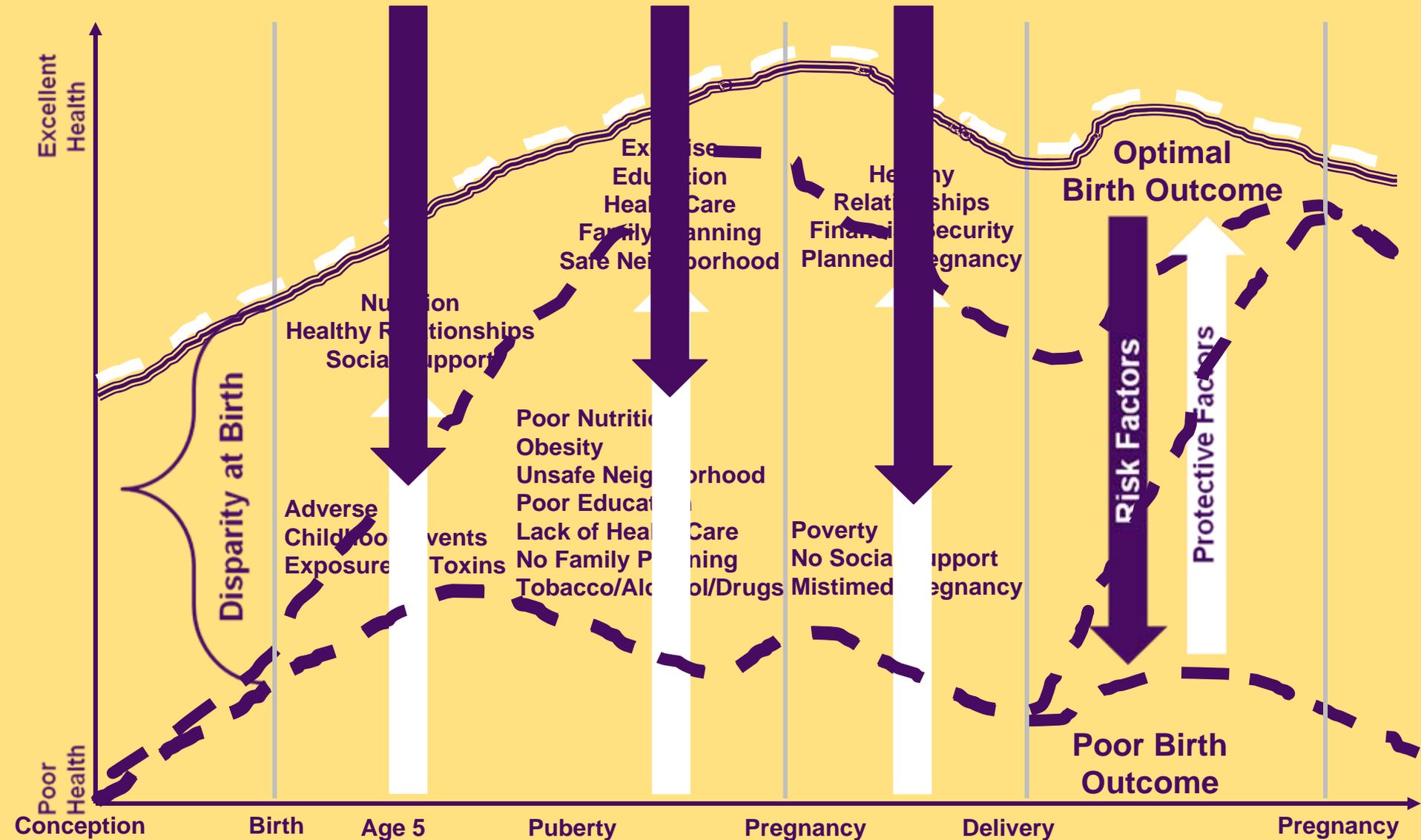
- Smoking
- Substance abuse
- Suicide attempts & ideation
- Obesity & eating disorders
- High-risk sexual behavior
- Sleeping difficulties

2. Social pathway

- Relationship dysfunction
- Revictimization
- Delinquency, adult criminality, & violent behavior
- Homelessness

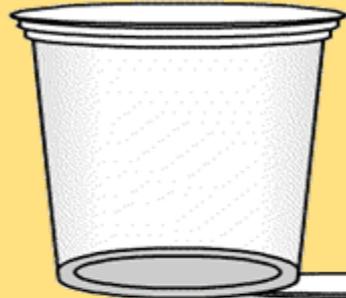
3. Cognitive pathways –beliefs and attitudes that shape a person’s day-to-day existence
 - Internal working model: chronic perception of helplessness, powerlessness, & danger → high levels of anxiety, paranoia & hostility
 - Health perception: a potent predictor of both illness and mortality
4. Emotional pathways
 - Depression
 - Post-traumatic stress disorder (PTSD): hyper vigilance, intrusive thoughts, sudden flashbacks of abuse experience

Preconception Health and the Life Course Perspective

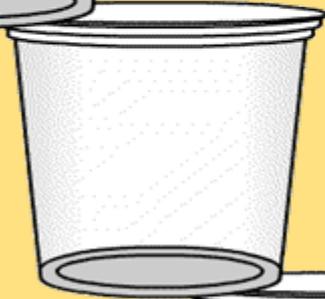




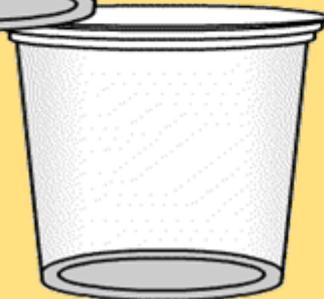
“Trickle Down” Theory of Preconception Health



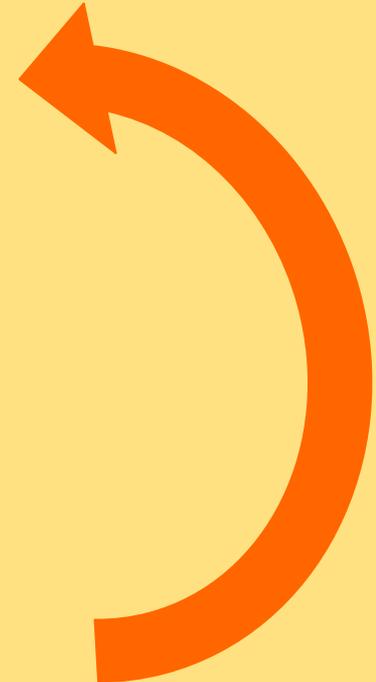
The health status of
girls and women prior to pregnancy



The health status of
pregnant women



The health status of
newborns and infants





**WHY IS
PRECONCEPTION
HEALTH IMPORTANT?**

- **Many outcomes or their determinants are present before an obstetrician ever meets a patient**
- Important Examples:
 - Pregnancy Intention
 - Timing of entry into prenatal care
 - Interpregnancy interval
 - Maternal age
 - Spontaneous abortion
 - Abnormal placentation
 - Chronic disease control
 - Congenital anomalies



- The most critical periods of fetal development occur in the first 5-8 weeks following conception
- Prenatal care typically begins around week 12 – too late to prevent many adverse maternal and infant health outcomes
- The preconception health status of women of reproductive age is not optimal:
 - Overweight and Obesity
 - Diabetes
 - Smoking and Alcohol
 - Folic Acid Consumption
 - Domestic Violence
 - Mental Health Concerns

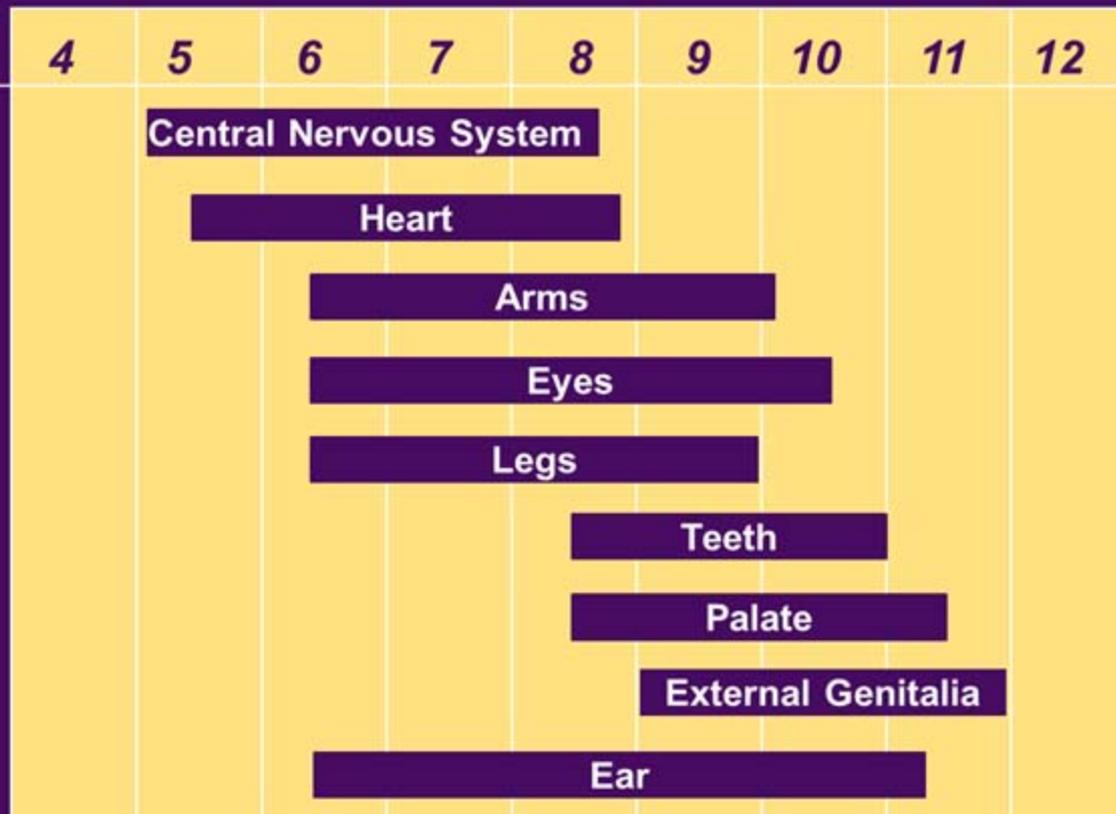


We Currently Intervene Too Late

Critical Periods of Development

Weeks gestation from LMP

Most susceptible time for major malformation

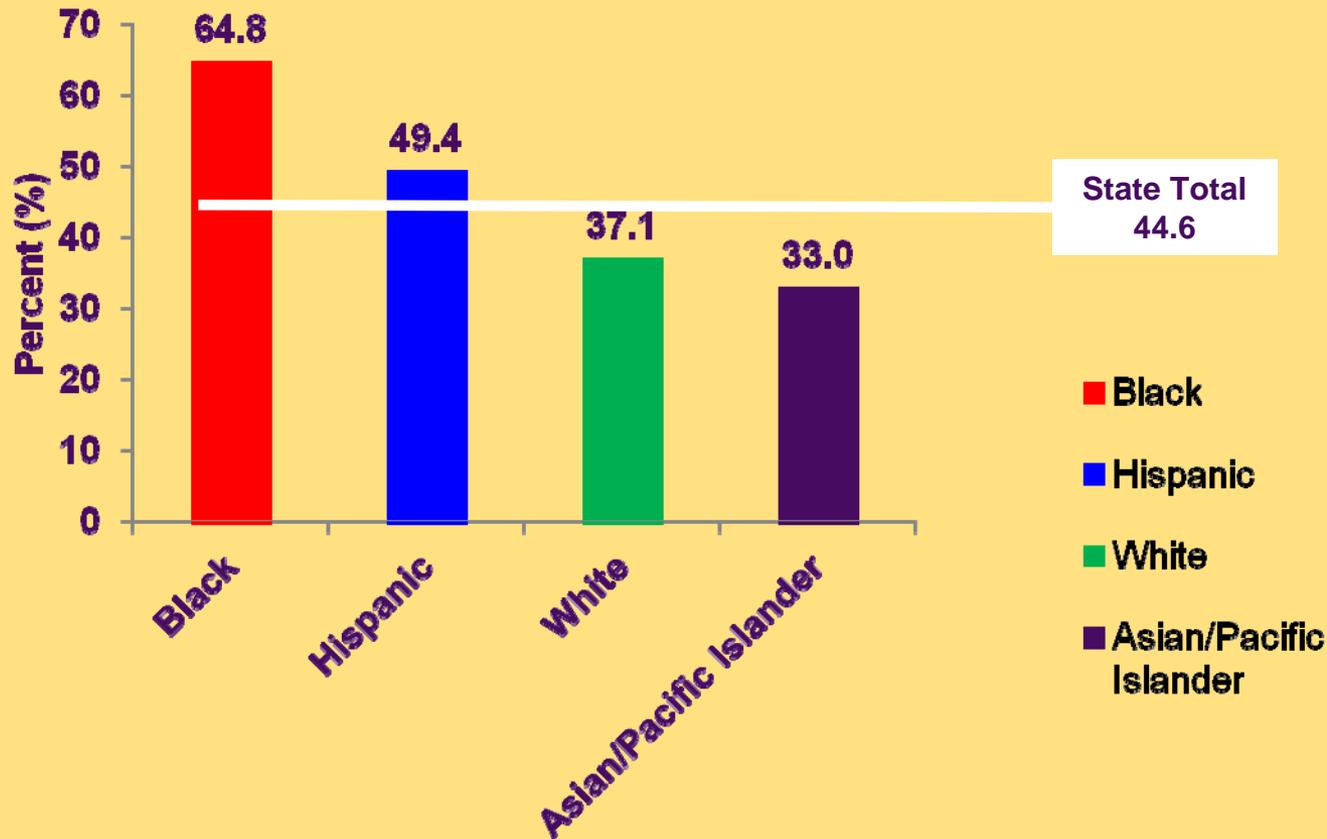


↑
Missed Period

↑
Mean Entry into Prenatal Care

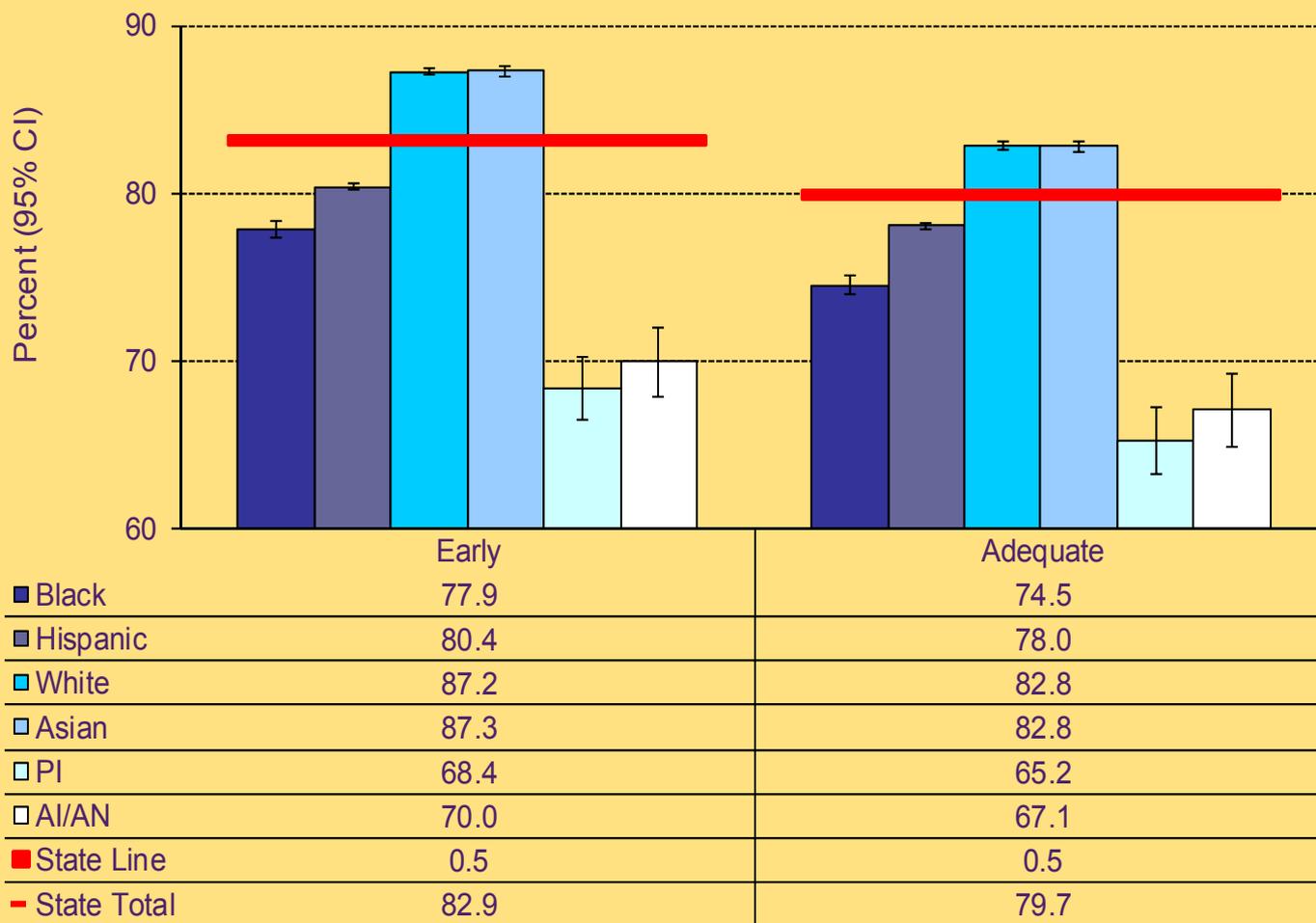
- **Rising prevalence of chronic conditions such as obesity and diabetes**
 - Overweight/obesity before or during pregnancy has been associated with gestational diabetes, maternal hypertension, increased C-section rates, preterm birth and birth defects
 - The risk of congenital malformations in the general population is 2-3% compared to 3-8% to 6-12% among women with pre-gestational diabetes.*
- **It is estimated that 45% of live births in California each year result from unintended pregnancies**
 - Missed opportunity to attain optimal pre-pregnancy health particularly in high-risk populations
 - Risk of early pregnancy exposure to alcohol and teratogenic medications

Almost half of live births in California result from unintended pregnancies



Percent of mothers in California with a recent live birth by race/ethnicity, 2007
 Data Source: Maternal and Infant Health Assessment Survey

Early and Adequate Prenatal Care



Data Source: California Birth Statistical Master File, 2009.

Notes: Excludes non-California residents;

Early PNC excludes births with unknown PNC initiation; Adequate PNC excludes births with missing Kotelchuck index;

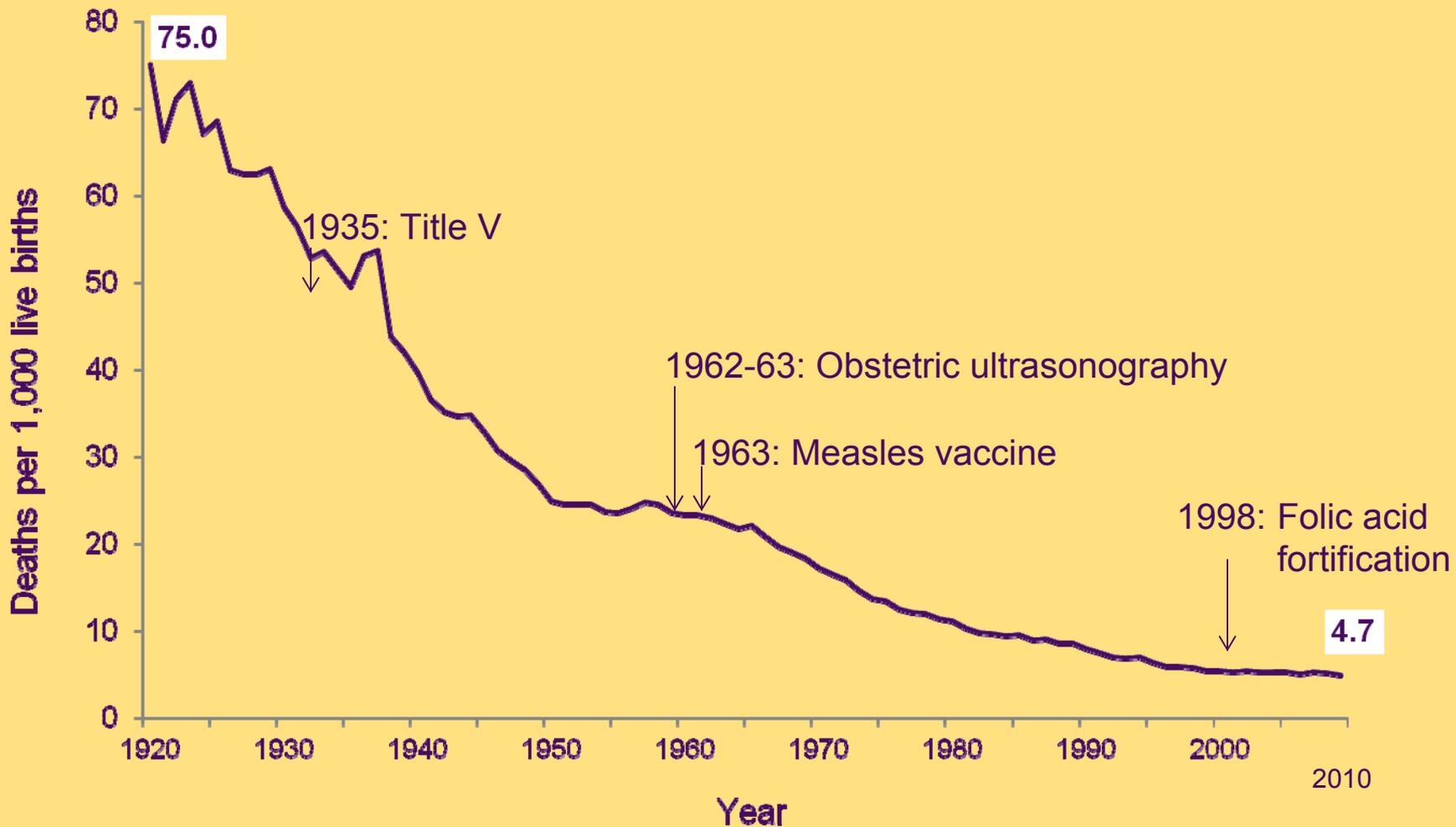
PI = Pacific Islander; AI/AN = American Indian/Alaska Native.

Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program



PRECONCEPTION CARE CAN DECREASE REPRODUCTIVE HEALTH DISPARITIES

California Infant Mortality Trend

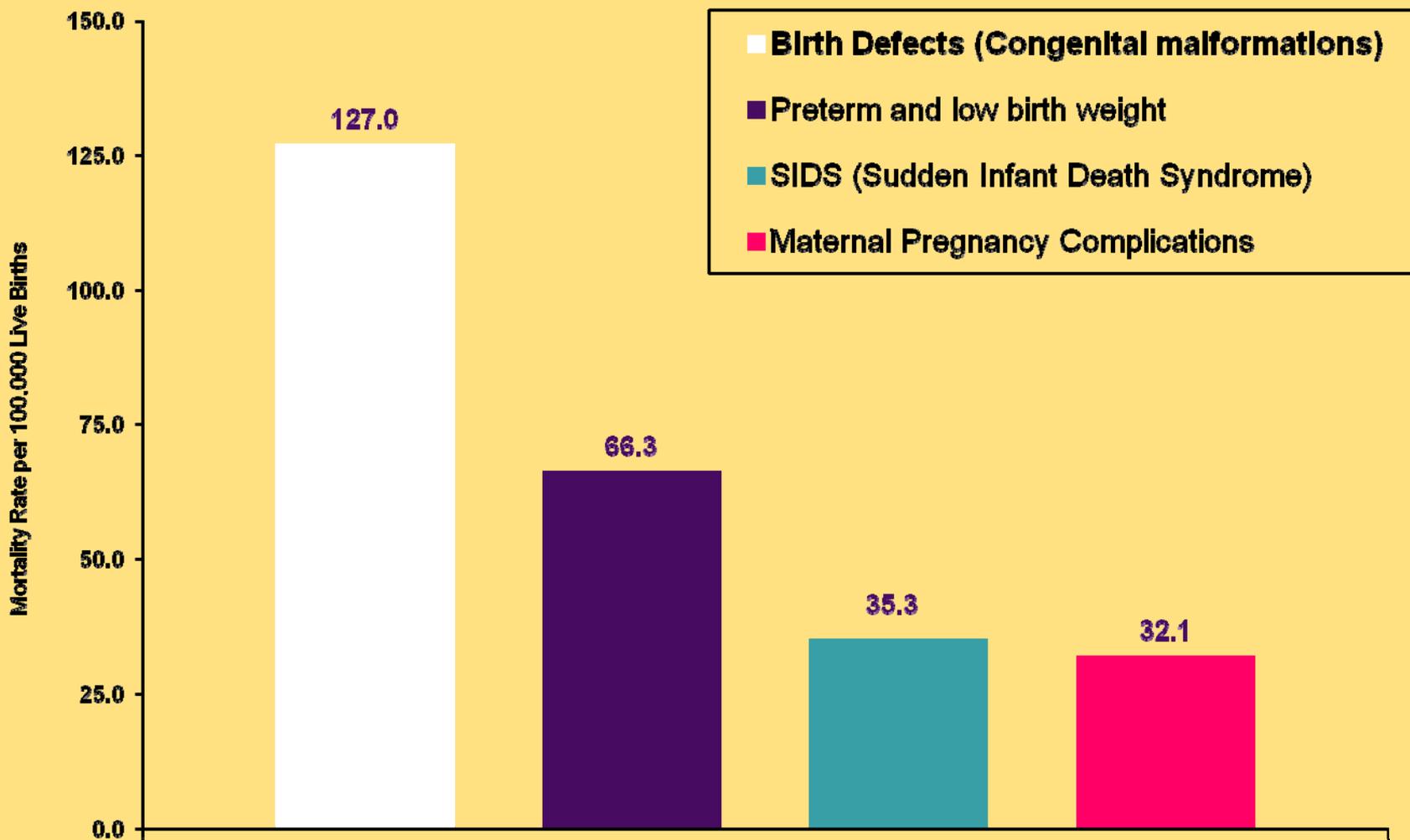


Notes: by place of occurrence 1920-1944; by place of residence 1945-2009.

Data Sources: California Birth and Death Statistical Master Files, 1920-2009. Used Center for Health Statistics, Vital Statistics Query System for 2003-2009 data.

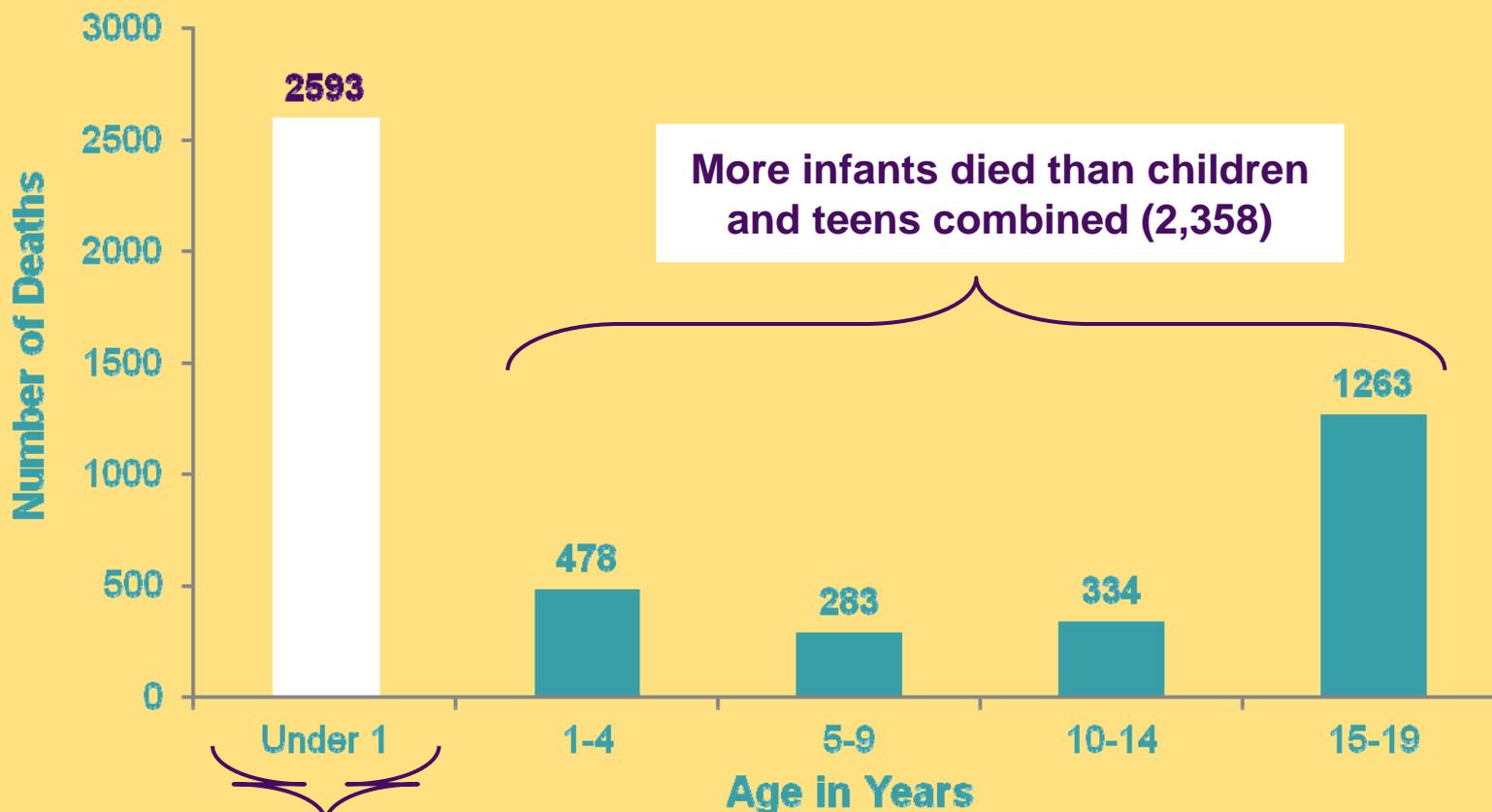
Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program

Leading Causes of Infant Death in California, 1999-2009



Data Sources: Birth and Death Statistical Master Files, 1999-2009. Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program. The causes shown were the leading five causes of infant death from 2004-2009, and in 2002. The other years shown differed slightly in the leading five causes: 1999: Respiratory distress of newborn (ranked 4th), effect of maternal complications of pregnancy (7th); 2000: Respiratory distress of newborn (4th), complications of placenta, cord and membrane (6th); 2001: Respiratory distress of newborn (tied for 4th), effect of maternal complications of pregnancy (6th); 2003: Neonatal hemorrhage (5th), complications of placenta, cord and membrane (7th).

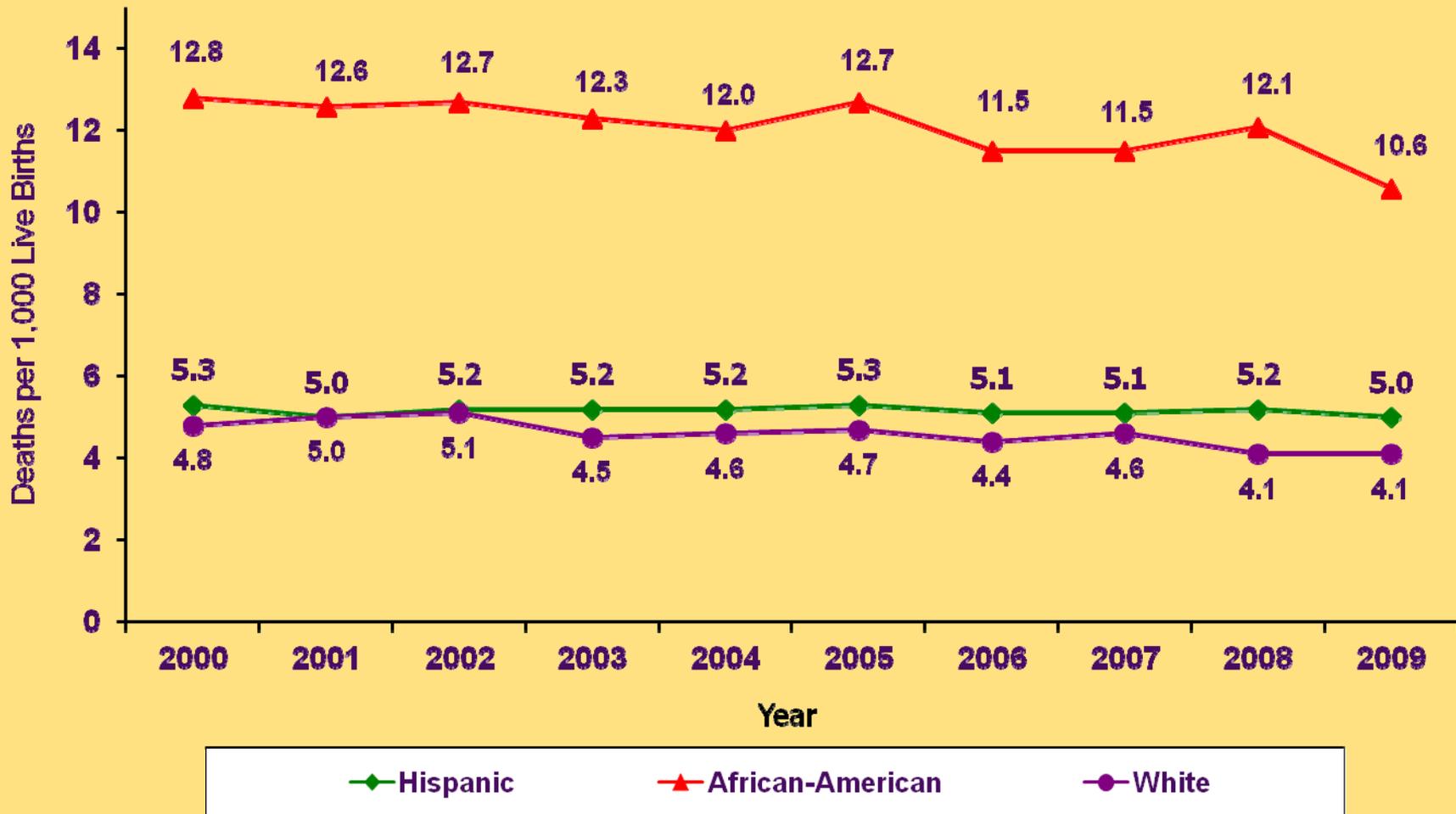
Infant Deaths vs. Child/Teen Deaths California, 2009



Infants accounted for **84%** of deaths of children under age five and **52%** of all deaths under age 19

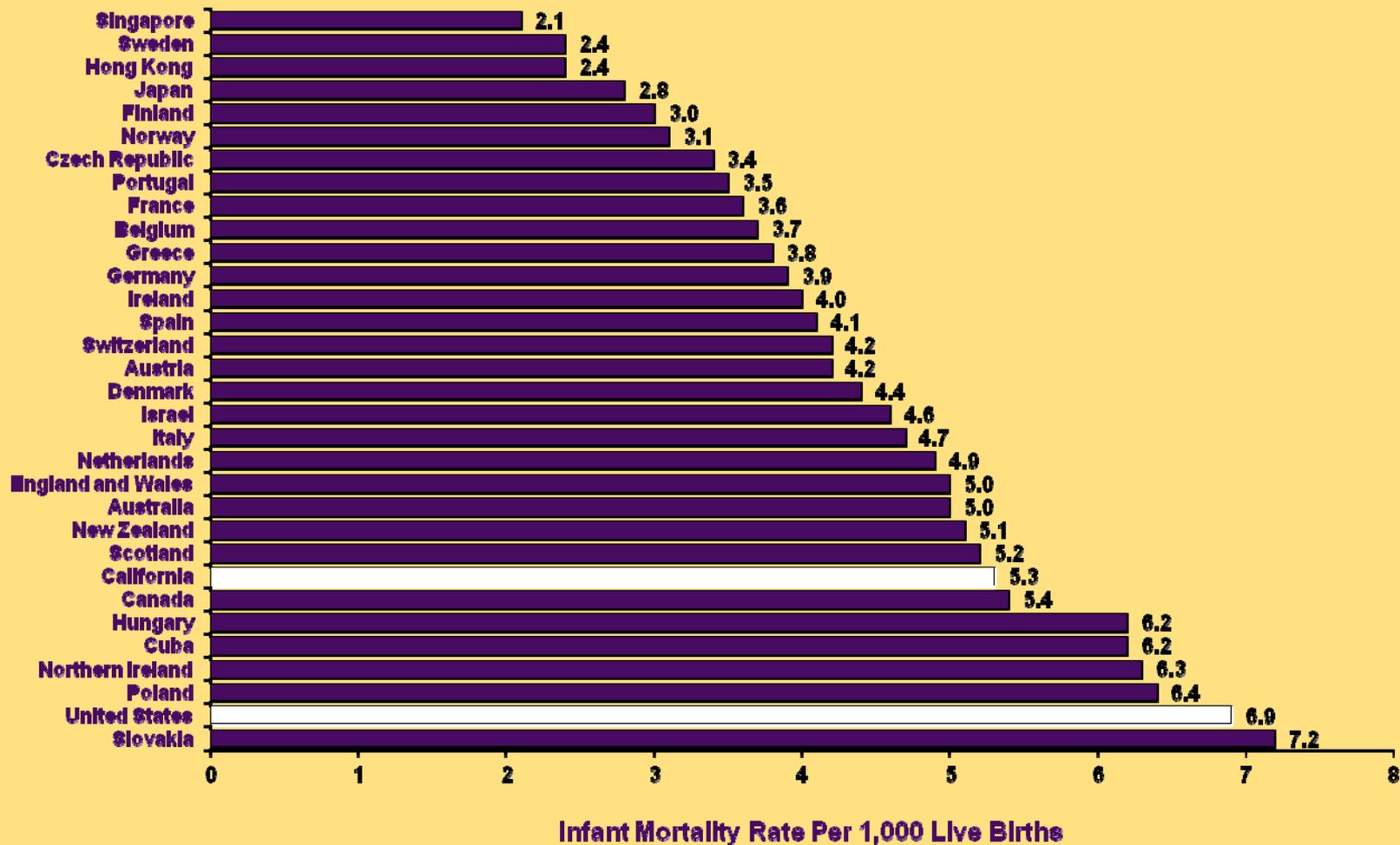
Infant Death Disparities

The decrease in infant mortality was notable among African Americans in 2009



Infant Mortality World Comparison

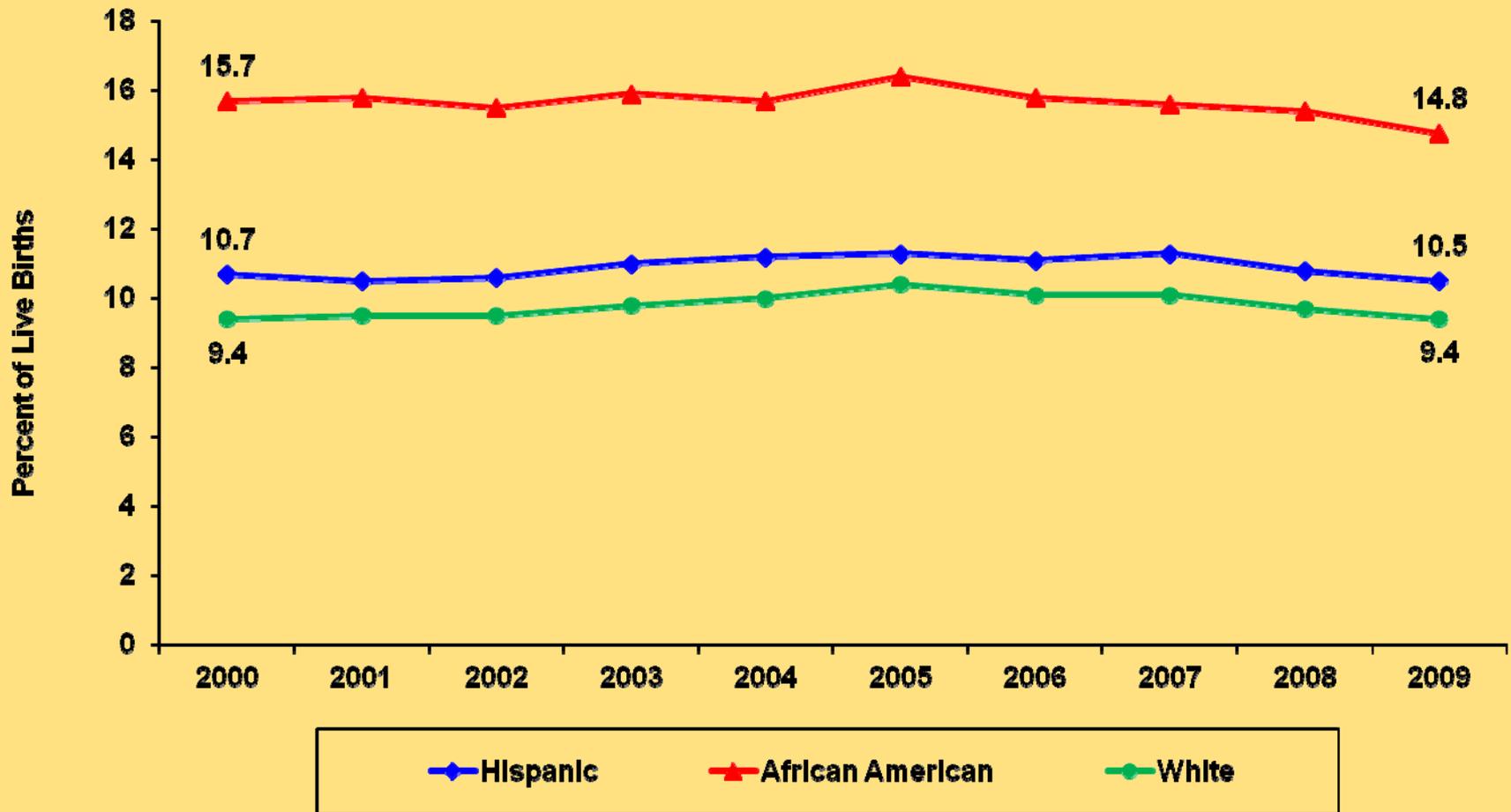
If California were an independent nation, it would have ranked 25th in infant mortality in the world— The U.S. ranked 30th (2005 data).



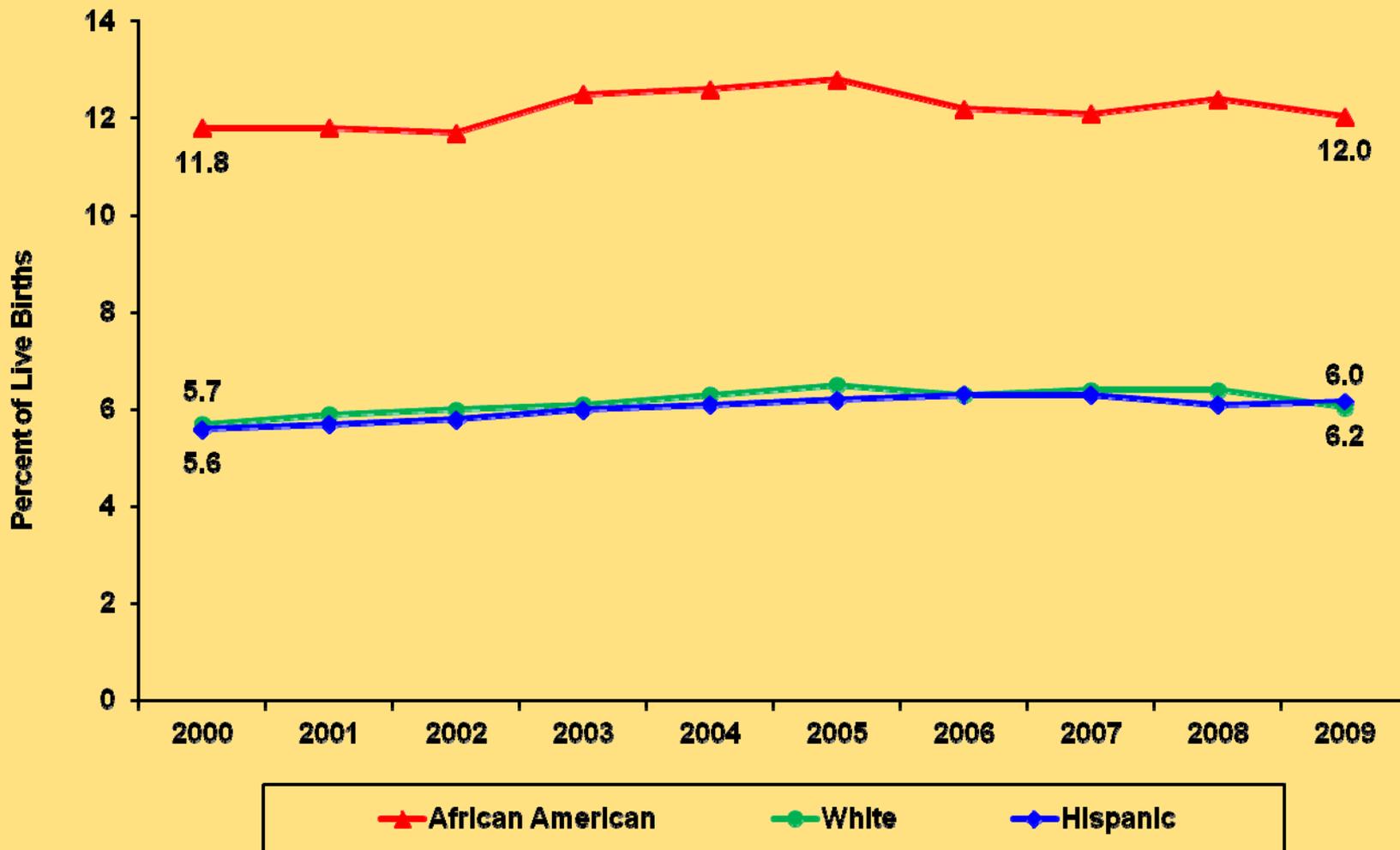
Data Sources: National Center for Health Statistics Data Brief, Number 23, November 2009, *Behind International Rankings of Infant Mortality: How the United States Compares with Europe*. Note: Data is from 2005.

Prepared by the Epidemiology, Assessment and Program Development Branch, MCAH Program

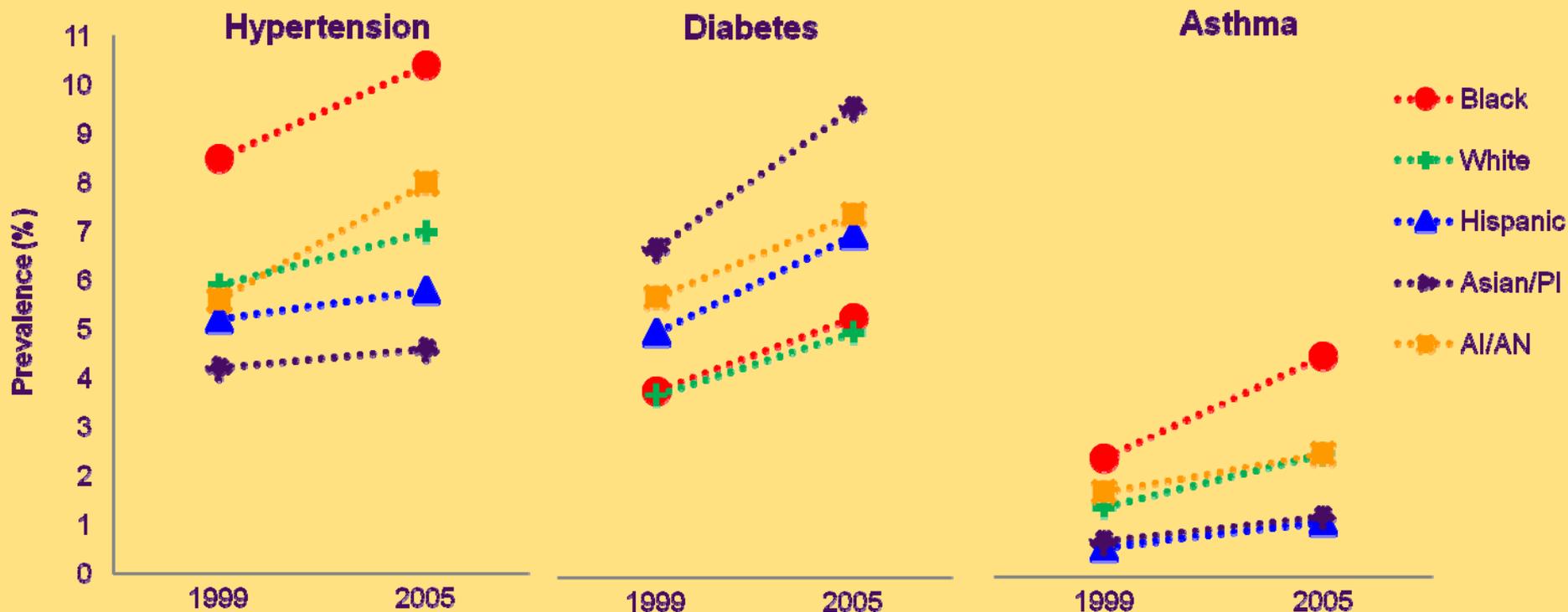
Percent Preterm* Births by Race/Ethnicity, 2000-2009



Percent Low Birth Weight Births by Race/Ethnicity, 2000-2009



Rise in Select Maternal Morbidities by Racial-Ethnic Group 1999 - 2005



SOURCE: Office of Statewide Health Planning and Development (OSHPD) Patient Discharge Data N=1,551,017

NOTES: Adjusted Trends in Maternal Morbidities in All Hospital Deliveries in California in 1999, 2002 and 2005. March 2010. Prepared under contract with the University of California, Los Angeles by the Maternal Quality Indicators Project.

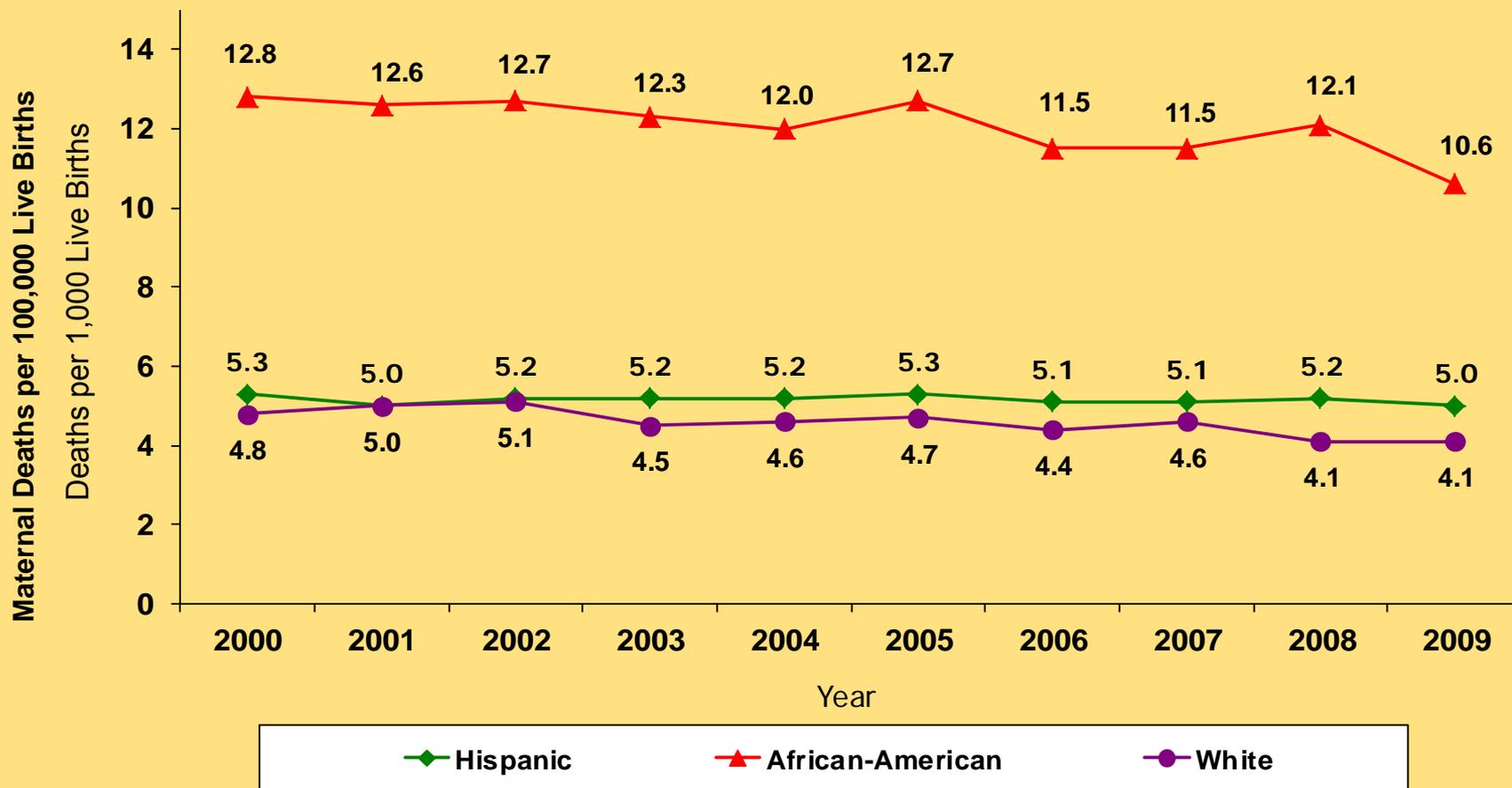
ICD-9 Diagnosis 401, 402, 403, 404, 405, 642 (hypertension), 648.0, 648.8, 250 (diabetes), 493 (asthma)

PI = Pacific Islander; AI/AN = American Indian/Alaska Native. For all percent change estimates $P < 0.001$; exception asthma among AI/AN $p = 0.06$

Data are from 1999 and 2005. The dotted lines illustrate the increase between the two points, but do not indicate a linear trend for the intervening period.

California Maternal Deaths

Moving Average of Maternal Mortality Rates California Residents, 1999-2009

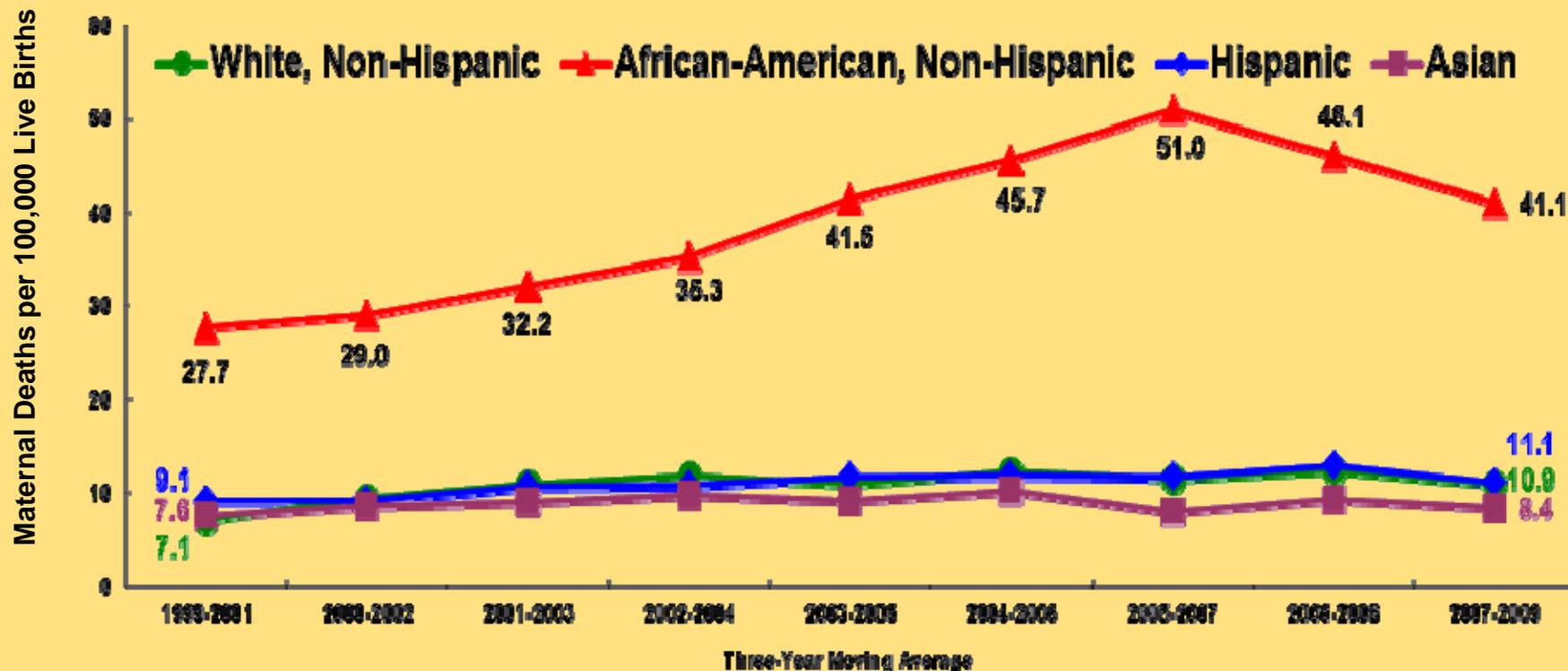


SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1999-2009.

NOTES: Maternal mortality for California (deaths \leq 42 days postpartum) was calculated using ICD-10 cause of death classification (codes A34, O00-O95, O98-O99) for 1999-2008. On average, the mortality rate increased by 4% each year [(95% CI: 1.2%, 6.1%) $p=0.003$ Poisson regression] for a statistically significant increasing trend from 1999-2009 ($p=0.001$ one-sided Cochran-Armitage). Produced by California Department of Public Health, Maternal, Child and Adolescent Health Division, October, 2011.

Disparities in CA Maternal Deaths

Maternal Mortality Rates by Race/Ethnicity, California, 1999-2009



SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1999-2000.

NOTES: Maternal mortality for California (deaths ≤ 42 days postpartum) calculated beginning 1999 using ICD-10 cause of death codes A34, O00-O95, O98-O99. Maternal single race code used 1990-1999; multirace code used beginning 2000. Produced by California Department of Public Health; Maternal, Child and Adolescent Health Program, October, 2011.

Preconception Health Goals

- To improve the knowledge, attitudes, and behaviors of men and women related to preconception health.
- To guarantee that all California women of childbearing age receive preconception care services that will allow them to be at their best before pregnancy
- To reduce risks indicated by a prior adverse pregnancy outcome through interventions in the interconception period



WHAT IS PRECONCEPTION HEALTH CONTENT?

What are the domains of influence and important indicators of preconception health?

The Key Components of Preconception Health

Healthy Body

- Folic Acid
- Healthy Weight
- Physical Activity
- Healthy Eating
- Vaccines
- Drugs
(Prescription/OTC/narcotics)
- Alcohol
- Smoking
- Oral Health
- Sexually Transmitted Diseases
- Medical Conditions
- Genetic Conditions

Healthy Mind

- Healthy Relationships
- Mental Wellness

Healthy Community

- Hazardous Materials
- Healthy Community
- Financial Stability
- Food Safety

1. Make a Plan and Take Action
2. Prevent STDs
3. Stop Smoking, “Street” Drugs, and Binge Drinking
4. Be Careful About Toxic Substances
5. Prevent Infertility
6. Reach and Maintain a Healthy Weight
7. Learn Your Family History
8. Get Help for Violence
9. Get Mentally Healthy
10. Support your partner



WHAT IS THE STATUS PRECONCEPTION HEALTH IN CALIFORNIA?

What is the link between women's health and preconception health and what data exist to help understand preconception health and target efforts?

- Neural tube defects
 - 50-70% can be prevented if a woman has adequate levels of folic acid during earliest weeks of organ development
- Birth Defects related to poor glycemic control of mother (including sacral agenesis, cardiac defects and neural tube defects)
 - Can be reduced from 10% to 2-3% through glycemic control of the mother before organ development
- Interference with normal organ development
 - Reduce maternal exposure to toxins from prescriptions, environmental exposures, and alcohol

- **Impact of low folate levels on women's health:**

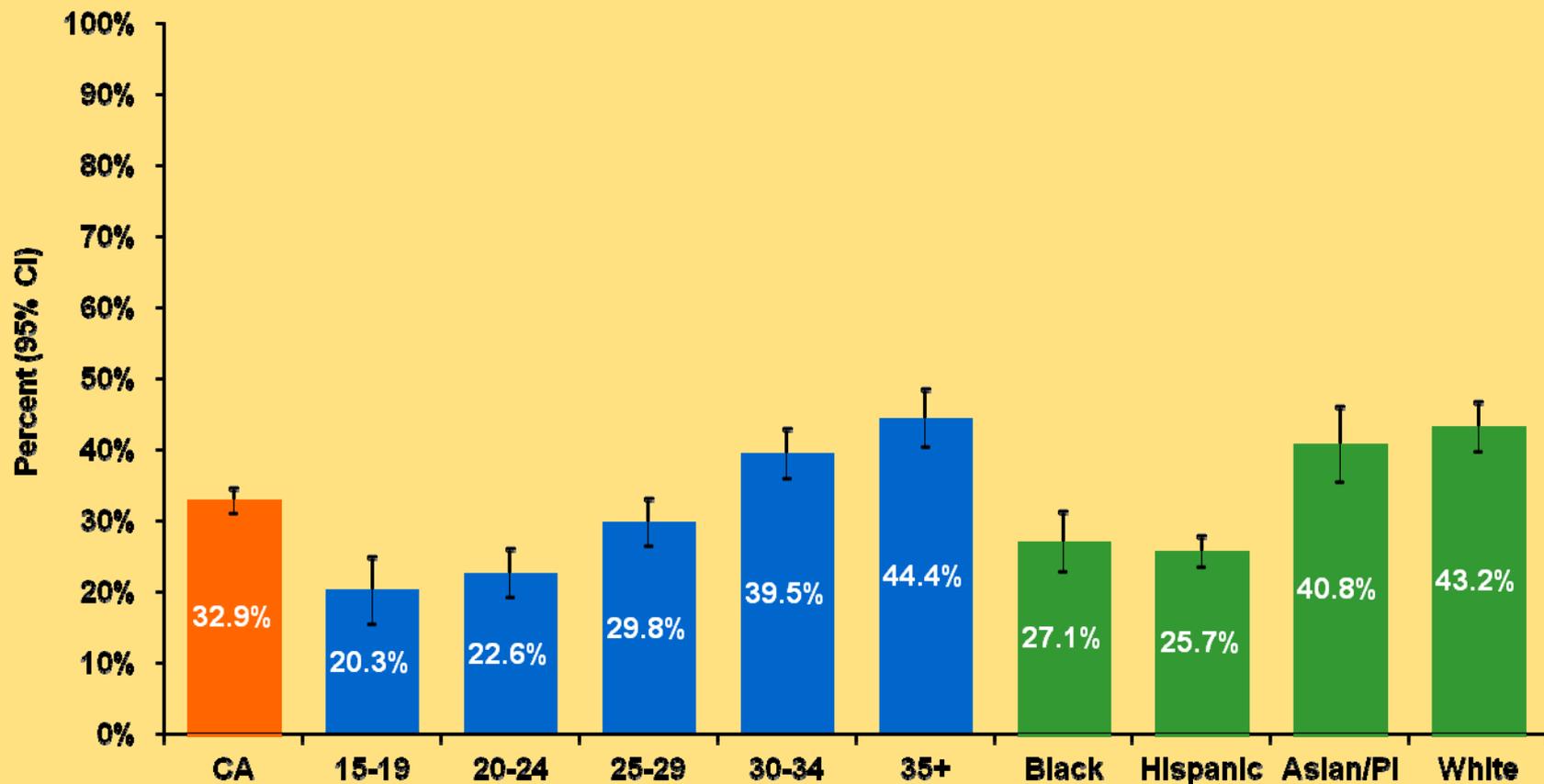
- Increased heart disease
- *Evidence growing about increases in:
 - Colon cancer
 - Breast cancer
 - Some forms of dementia

- **Impact of low folate on reproductive outcomes:**

- Increased incidence of neural tube defects
- Increased incidence of other birth defects
- Some anemia—mother and infant
- *Evidence growing about:
 - Low birth weight
 - Autism

Folic Acid Consumption

Daily folic acid use during the month before pregnancy, 2009



Source: California Department of Public Health, Maternal, Child and Adolescent Health Program, Maternal and Infant Health Assessment
 Data are weighted to reflect the population of women delivering a live birth in the survey year.

- **Impact of diabetes on women's health:**

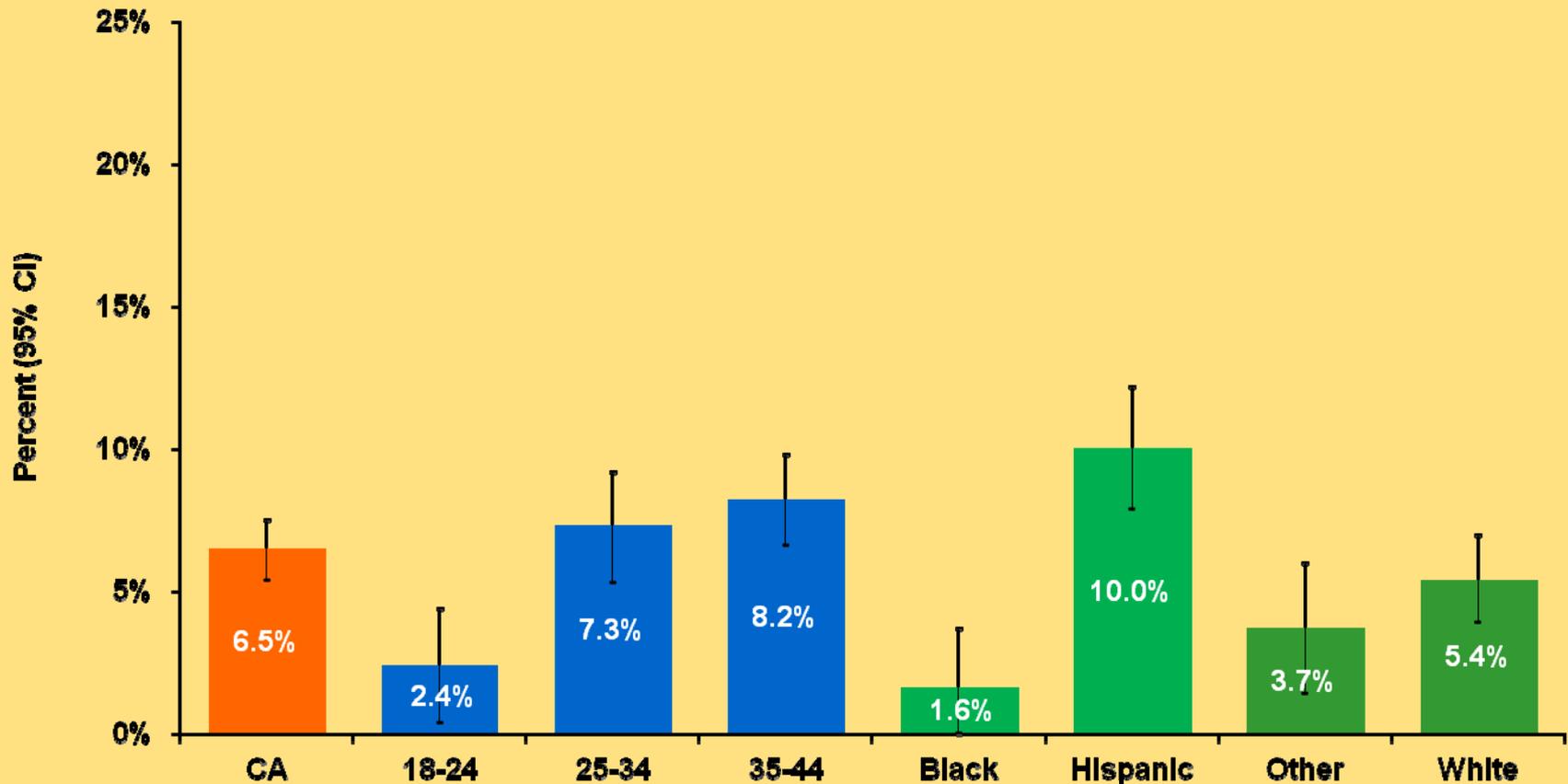
- Low Blood sugar
- High Blood sugar
- High Blood Pressure
- Heart Attack
- Kidney Failure
- Amputation
- Loss of Sight
- Death

- **Impact of diabetes on reproductive outcomes:**

- Pregnancy Loss
- Excess Amniotic Fluid
- Preeclampsia
- High Birthweight
- Cesarean Delivery
- Preterm Birth
- Kidney Infection
- Increased risk of Diabetes for Baby

Diabetes

Diabetes among non-pregnant California women 18-44 years in 2010



Source: 2010 Behavioral Risk Factor Surveillance System
Results restricted to women ages 18-44 years
Data are weighted to reflect the population of women in California

- 1 in 25 prescriptions written for women ages 18-45 is for a potential teratogen
 - » Ann Int Med 2007; 147:370-376
- In a survey of KP members in 2001, 17% of women ages 18-45 had filled a prescription for a Class D or X medication.
 - Less than 40% were using contraception
- Examples:
 - Tretinoins
 - ACE inhibitors
 - Statins
 - Seizure medications
 - Coumadin
 - Paxil/certain antidepressants

- **Impact of alcohol use on women's health:**
 - Risk for motor vehicle and other accidents
 - Risk for unintended pregnancy
 - Risk for addiction
 - Risk for nutritional depletions and inadequacies
 - Risk of kidney and liver dysfunction
- **Impact of alcohol use on reproductive outcomes**
 - Delayed conception
 - Increased miscarriage
 - Fetal alcohol spectrum disorders (full fetal alcohol syndrome can only occur with fetal exposure between days 17-56 of gestation)

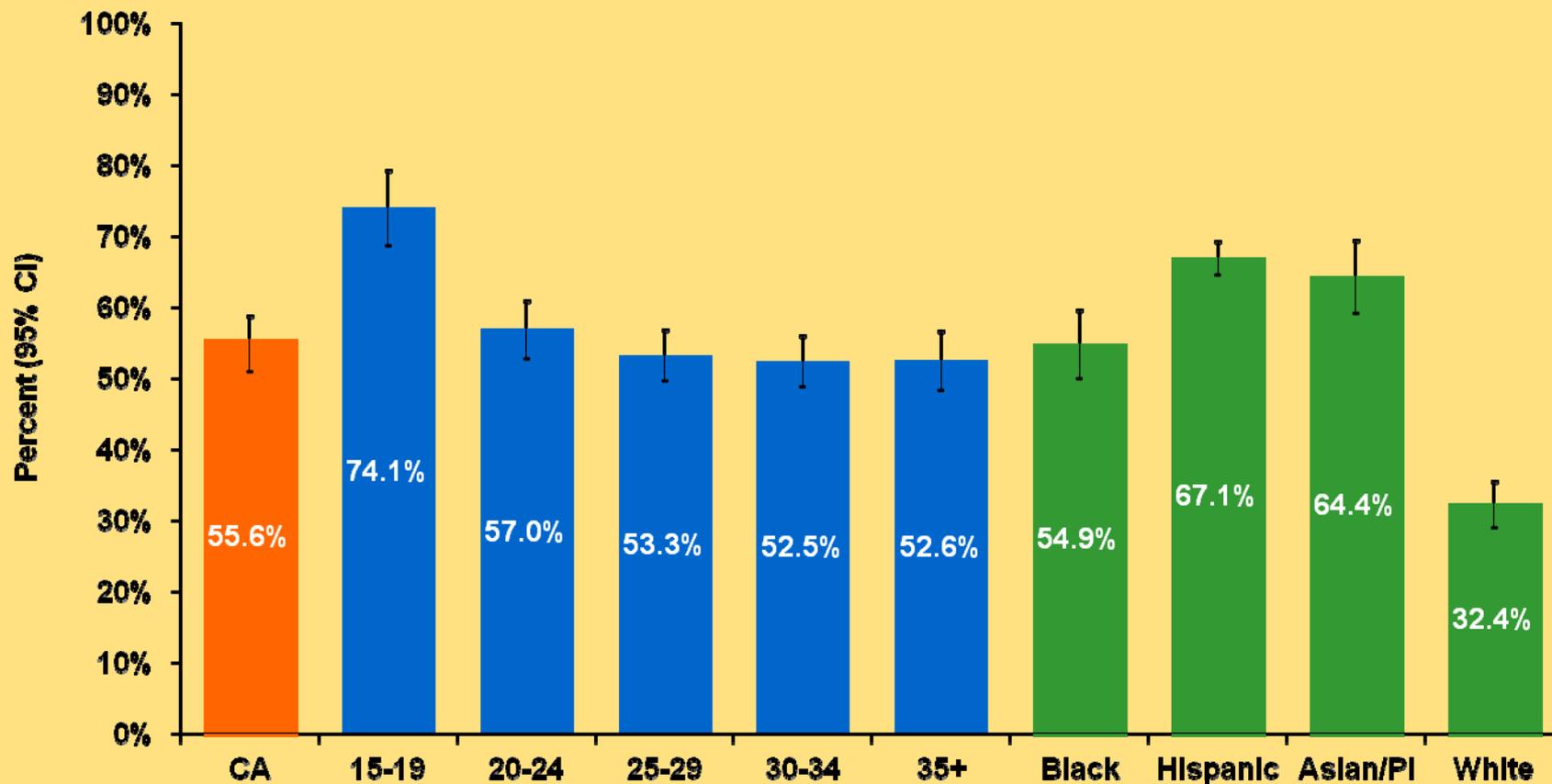
Alcohol is the leading known cause of birth defects and mental retardation in the United States

Source: 2009 California Health Interview Survey www.CHIS.ucla.edu

Results restricted to women ages 18-44 years and compared by Any mention of American Indian/Alaska Native (self-reported)

Data are weighted to reflect the population of women in California

Did not drink alcohol during the three months before pregnancy, 2009



Source: California Department of Public Health, Maternal, Child and Adolescent Health Program, Maternal and Infant Health Assessment
 Data are weighted to reflect the population of women delivering a live birth in the survey year.

- **Impact of tobacco use on women's health:**

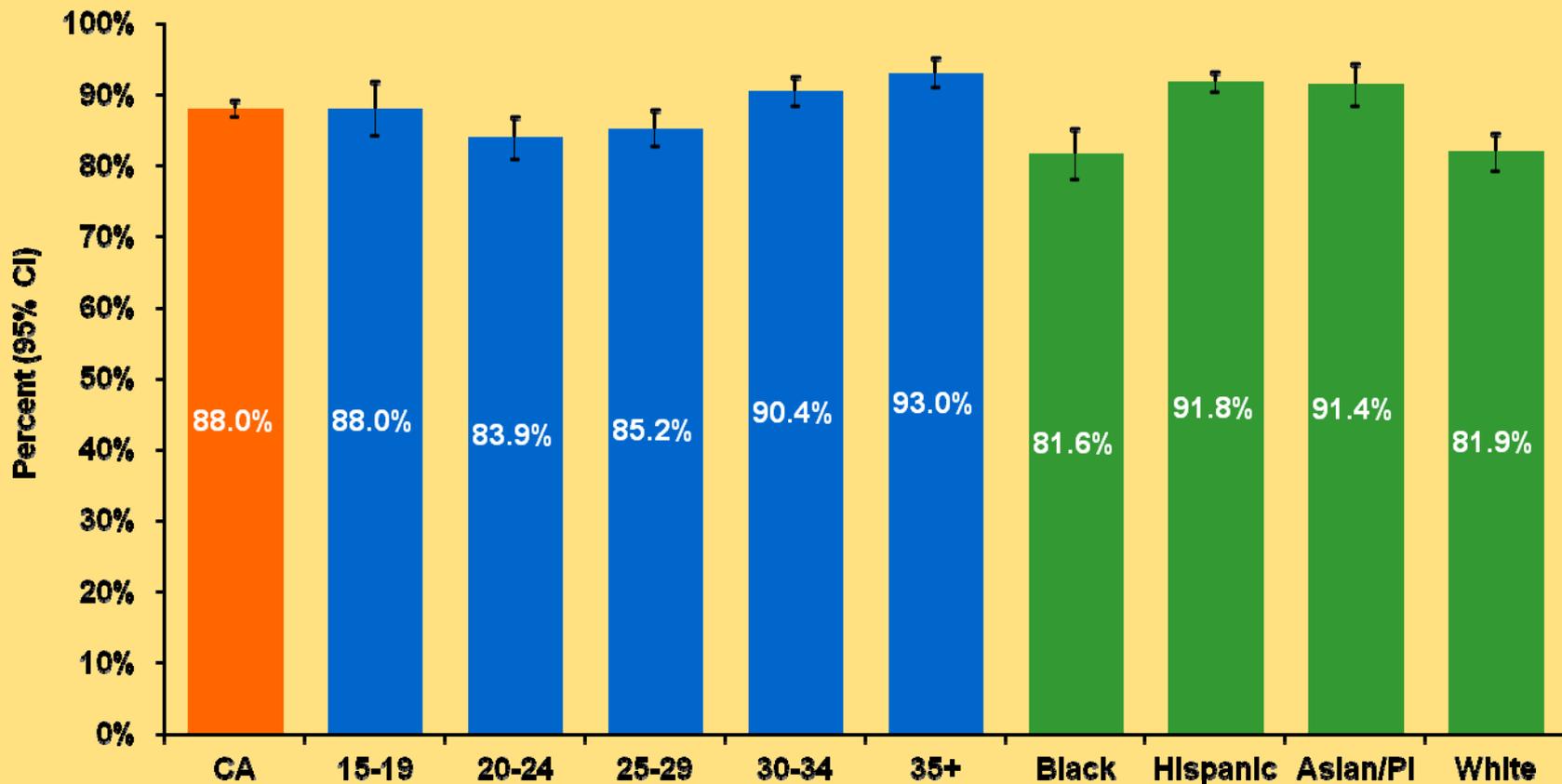
- Increases risk for leading causes of death for women:
 - Heart disease (#1)
 - Stroke (#2)
 - Lung cancer (#3)
 - Lung disease (#4)

- **Impact of tobacco use on reproductive outcomes:**

- Leading preventable cause of infant mortality
- Preventable cause of low birth weight and prematurity
- Associated with placental abnormalities
- Childhood asthma

Tobacco Abstinence Data

Women who did not smoke during the three months before pregnancy, 2009



Source: California Department of Public Health, Maternal, Child and Adolescent Health Program, Maternal and Infant Health Assessment Data are weighted to reflect the population of women delivering a live birth in the survey year.

- **Impact of domestic violence on women's health:**

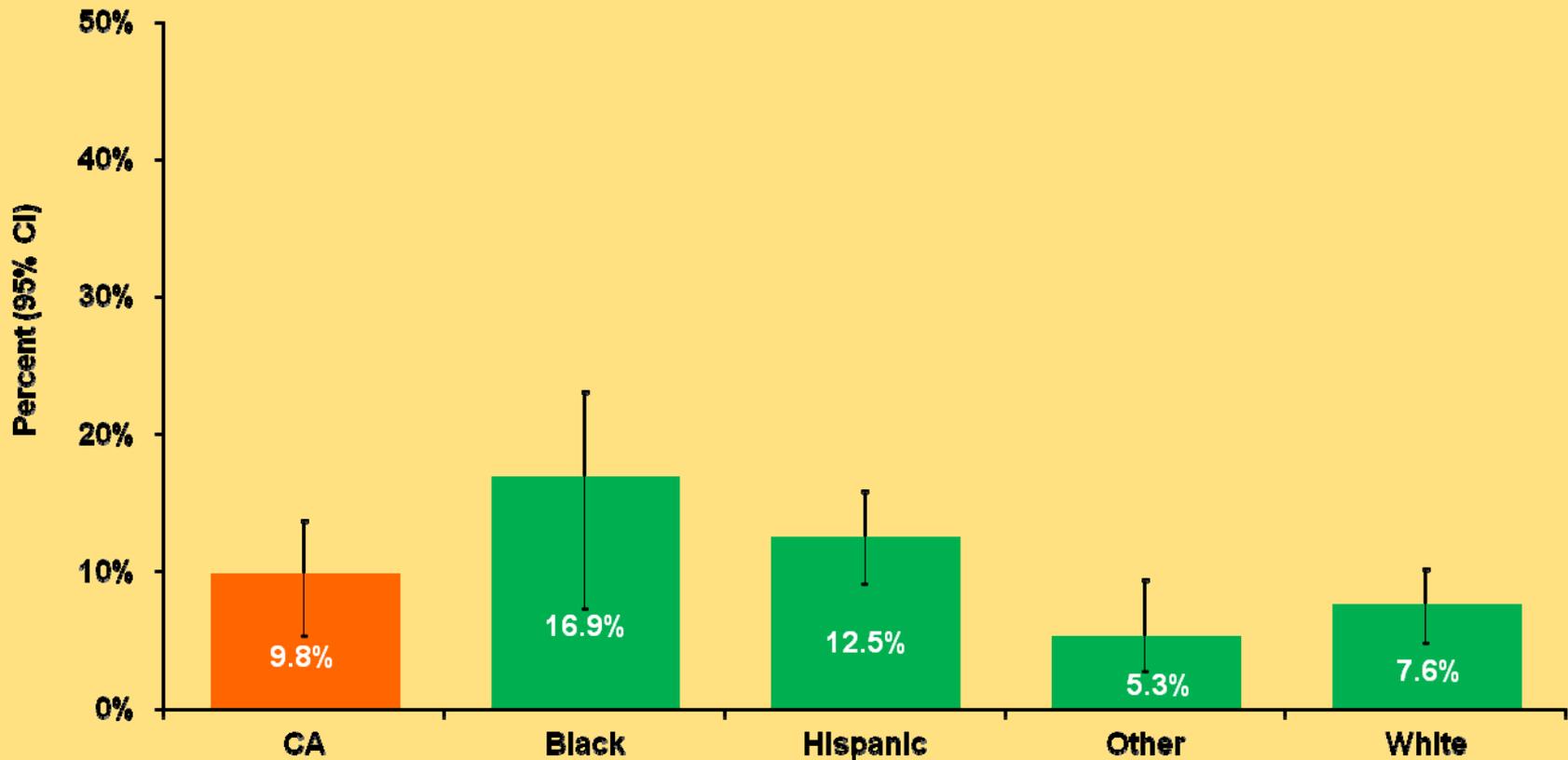
- More likely to:
 - Smoke
 - Use Drugs
 - Depression
 - High Stress
 - Low Self-esteem
 - Attempt Suicide
 - Unintended Pregnancy

- **Impact of domestic violence on reproductive outcomes:**

- Low Weight gain during Pregnancy
- Low Birthweight
- Preterm Birth
- Postpartum Depression
- Lower Breastfeeding initiation and duration

Physical or sexual violence by intimate partner in past year

Domestic Violence among non-pregnant California women 18-44 years



Source: 2007 and 2009 California Health Interview Survey www.CHIS.ucla.edu

Results restricted to women ages 18-44 years and compared by Any mention of American Indian/Alaska Native (self-reported)

Data are weighted to reflect the population of women in California

- **Impact of obesity on women's health:**

- Diabetes
- Hypertension
- Cardiovascular disease
- Disabilities

- **Impact of being underweight on women's health:**

- Risk of osteoporosis in later life
- Fragile health status

- **Impact of maternal obesity on reproductive outcomes:**

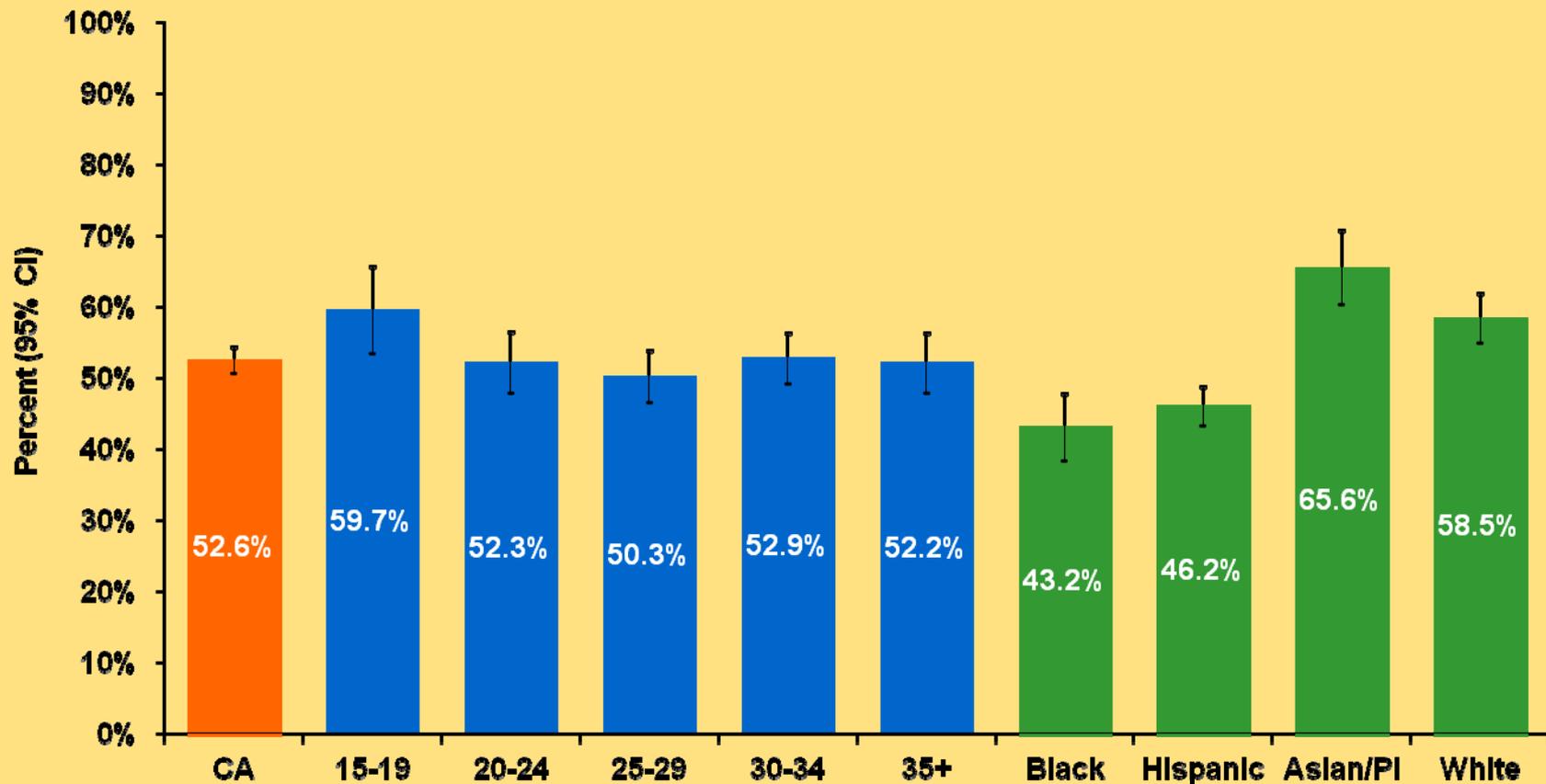
- Gestational Diabetes
- Pregnancy induced hypertension
- Infertility
- Birth defects
- Prematurity
- Cesarean Delivery

- **Impact of being underweight on reproductive outcomes:**

- Infertility
- Low birth weight
- IUGR
- Prematurity

Healthy Weight

Women with a healthy weight just before pregnancy (BMI 18.5-24.9 kg/m²), 2009



Source: California Department of Public Health, Maternal, Child and Adolescent Health Program, Maternal and Infant Health Assessment
Data are weighted to reflect the population of women delivering a live birth in the survey year.

- In 1985 Dr. Felitti established *Positive Choice* program to help obese patients lose weight. He discovered that patients most likely to drop out of the program were those who were successfully losing weight! Why?
 - In a study of 286 such patients, he found that many were using obesity as:
 - A shield against unwanted sexual attention
 - A form of defense against physical attack

- Physical abuse and verbal abuse were most strongly associated with obesity.
 - Physical abuse had a 1.4 (1.2-1.6) RR of BMI \geq 30
 - Verbal abuse had a 1.9 RR of BMI \geq 40
 - Obesity risk increased with number and severity of each type of abuse.
 - Population attributable fraction for any mention of abuse (67%) was 8% for BMI \geq 30 and 17.3% for BMI \geq 40



REPRODUCTIVE LIFE PLANNING

- A set of personal goals about having (or not having) children and a plan to achieve them based on personal values and resources
- Planning helps a woman think about how she wants to live her life and achieve her goals. Making a reproductive life plan can help ensure that women are healthy and ready if they choose to get pregnant.



- Key Messages
 - Over 85% of women in the US have at least one child
 - Having a baby is a significant event in one's life—talking about it and planning for it is a good idea!
 - Reproductive health at all ages is directly affected by a person's overall health and well-being
 - Many poor pregnancy outcomes can be averted if a person attains optimal health prior to conception
 - Planning should start with youth, using terms and concepts that are culturally and age-appropriate
- Key Interventions
 - Reproductive life planning tools
 - Goal setting activities
 - Information about and access to contraception (Counseling)
 - Frank and positive discussion

- Consider desire, readiness, and timing in making contraceptive/family planning decisions
 - Do you want to have children? If so, when?
 - How many children do you want to have?
 - What are your plans about birth control until you are ready?
- Factors to Consider
 - School/Career/ Life Goals
 - Personal Development
 - Emotional Wellness
 - Personal Habits
 - Healthy Relationships
 - Personal Safety
 - Community/Environment
 - Insurance/Financial Stability
 - Existing Health Status and Conditions
 - Medications
- Avoid Prescription: Not a Checklist or Benchmarks

- Family planning clients:
 - In reproductive years
 - Seeking health care services
 - Open to discussion of family planning
- Use sexual activity, medication use, contraceptive non-use/non-compliance as segues into RLP discussion
- Types of Visits to Talk About a RLP
 - All Initial and annual Family Planning Visits
 - Vaginitis and Urinary Tract infection visits
 - Contraceptive Counseling Visits
 - Pregnancy testing visits
 - Especially when negative
 - STI contact/screening
 - Well Woman Visits

- Screen for pregnancy intention (short & long term) and for pregnancy risk
- Ask/discuss reproductive life plan
- Assist with giving protection
 - Prevention and treatment
- Assist with managing conditions
 - Pre-disease and chronic conditions
- Assist with avoiding exposure
 - Substances, medications, environmental toxins

- Today's adolescents are tomorrow's workforce, leaders and parents
- Many risk behaviors and lifestyle habits can be addressed during adolescence, resulting in better quality of life for teens now, and improved outcomes for themselves and their children, if and when they become parents.
- Young people think about what it means to be a parent and are interested in the discussion

“Adults always tell us WHAT to do. You told us why. I’m more motivated to act when I know why.”

--North Carolina High School Student in an evaluation form for the March of Dimes Preconception Health Reproductive Life Planning Curriculum





CALIFORNIA'S PRECONCEPTION HEALTH AND HEALTH CARE INITIATIVE

MCAH Preconception Health Initiative Logic Model

Goal: Improve the health of non-pregnant women and enable fulfillment of their reproductive goals

INPUTS

INVESTMENTS

- Statewide outreach to women of reproductive age by MCAH programs and initiatives
- Training and Mobilization of health care providers
- Surveillance and research to understand audiences, develop interventions, and monitor progress
- Funding: Federal Title V MCAH Block Grant
- Key Entities: Family PACT, MCAH, Local health jurisdictions, Medi-Cal, OMH, Preconception Health Council of California, Affordable Care Act, CDC workgroups

OUTPUTS

ACTIVITIES

- Convene the Preconception Health Council of California, other stakeholders and partners to address preconception health infrastructure and policy
- OMH Peer Preconception Education (PPE) program implementation in colleges
- Maintenance of 5 MCAH preconception websites
- Successful collaboration with the CDC workgroups to conduct national public awareness campaign
- Provide standardized clinical tools to providers
- Train health care providers on the preconception health clinical content
- Monitor indicators of preconception health and research emerging trends

OUTCOMES

SHORT TERM

- CA businesses and government entities are aware of preconception health
- High frequency of use of the 5 MCAH preconception health websites by providers and general public
- Increased public knowledge of preconception health content
- Increased preconception monitoring and counseling in clinical settings
- High functioning PPE programs in CA colleges
- Evaluate national and state, campaigns and interventions for impact and effectiveness based on timely data
- Revised interventions and MCAH program guidelines

INTERMEDIATE

- Increase the number of women with positive preconception health behaviors (e.g. folic acid, nutrition, oral healthcare, physical activity, appropriate contraception)
- Decrease the number of women with behaviors that hinder preconception health (e.g. alcohol, smoking, drug abuse, obesity)
- Increase the number of women with health enabling factors (e.g. insurance, medical home, education, income, neighborhood characteristics, healthy environments)
- PPE programs implement school-based curricula
- Education, health care, business, and government implement policies to support preconception

LONG TERM

- Reduced maternal morbidity and mortality
- Reduced infant mortality
- Reduced birth defects
- Reduced preterm births
- Increase appropriately timed pregnancies
- Reduced Healthcare costs
- Increased healthy body weight
- Increased folic acid consumption
- Increased smoking abstinence
- Increased mental health and healthy relationships

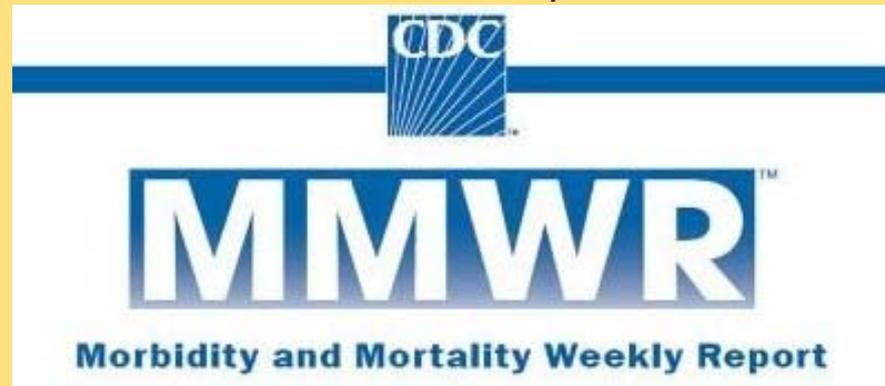
ASSUMPTIONS

Women's health prior to pregnancy will improve when knowledge is increased and policies, healthcare practices and environments support health; Improved preconception health will improve maternal and infant health; Primary prevention yields more benefits than secondary/tertiary strategies; An integrated approach addressing individual, community and policy factors addressing behavior, healthcare delivery and financing, community culture, organization, and environment is necessary to make measurable and sustainable progress

CDC Definition and Recommendations

- A set of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management, emphasizing those factors which must be acted on before conception or early in pregnancy to have maximal impact.
- 10 Recommendations to implementing the interventions

CDC's Select Panel on Preconception Care, June 2005



Recommendations to Improve Preconception Health and Health Care, U.S., *MMWR*. 2006

- CDC Recommendations
 - Increase public awareness of the importance of preconception health behaviors
 - Each woman, man and couple should be encouraged to have a reproductive life plan
- California Resources
 - www.EveryWomanCalifornia.org
 - HRSA First Time Motherhood Social Media Grant





- National Preconception Health Campaign
- Launched February, 14 2013
- Seeking Implementation Partners
- Target Audience
 - Planners: women 18–44 who are currently planning a pregnancy
 - Non-Planners: women 18–44 who are not currently planning to become pregnant
- Campaign Activities
 - Develop products (e.g., TV PSA, educational video, posters, web sites, social media pages, banner ads, badges).
 - Disseminate Campaign messages through Internet-focused promotions.
 - Develop partnerships with organizations like WIC to disseminate Campaign products directly to women

- CDC Recommendations
 - Increase public and private health insurance coverage for women with low incomes
 - Offer, as a component of maternity care, one pre-pregnancy visit for couples and persons planning a pregnancy

- California Resources
 - Affordable Care Act 2010
 - Expanded Care Access
 - Preventive Services for Women
 - Domestic Violence Screening
 - Well woman visits
 - Contraceptive Coverage
 - Family PACT (Title X)



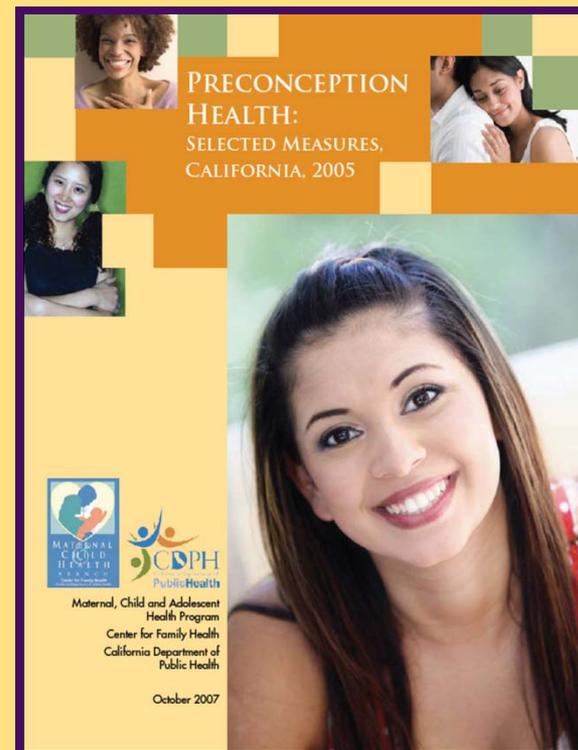
- CDC Recommendations
 - As a part of primary care visits, provide risk assessment and educational and health promotion counseling to all women
 - Increase the proportion of women who receive interventions as follow-up to preconception risk screening
 - Use the interconception period to provide additional intensive interventions to women who have had a previous adverse outcome

- California Resources
 - Interconception Care Project of California
 - Federal Home Visiting Programs
 - Family PACT preconception counseling (2015)



- CDC Recommendations
- Integrate components of preconception health into existing local public health and related programs, including emphasis on interconception interventions for women with previous adverse outcomes.
- California Resources
 - Title V Maternal, Child and Adolescent Health Block Grant
 - California Priorities 2011-2015
 - Improve maternal health by optimizing the health and well-being of girls and women across the life course.
 - Preconception Health Council of California

- CDC Recommendations
 - Increase the evidence base and promote the use of the evidence to improve preconception health.
 - Maximize public health surveillance and related research mechanisms to monitor preconception health.
- California Resources
 - MCAH Preconception Health Team
 - California Women's Health Survey
 - Maternal and Infant Health Assessment
 - Behavioral Risk Factor Surveillance System



- The Centers for Disease Control and Prevention recommends that professional guidelines for clinicians who provide the majority of primary care to women should include routine risk assessment through screening.

- Sample of Recommended Areas for Routine Preconception/Well-Woman Screening:

- 1) Reproductive history
- 2) Environmental hazards and toxins
- 3) Medications that are known teratogens
- 4) Nutrition, folic acid intake, and weight management
- 5) Genetic conditions and family history
- 6) Substance use, including tobacco and alcohol
- 7) Chronic diseases
- 8) Infectious diseases and vaccinations
- 9) Family planning
- 10) Social and mental health (e.g., depression, social support, safety, and housing)

Screening and counseling prompts
Use an "Ask, Advise, Refer" format
Contraception guidance

Sample Preconception Guidance:

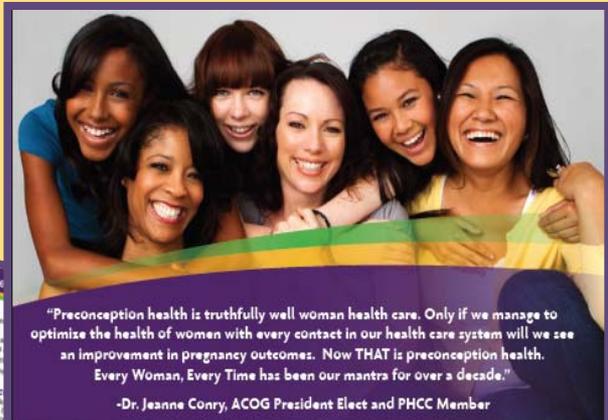
Oral Health Routine Dental Care

Ask: When was the last time you went to the dentist?

Advise: To brush teeth and floss at least twice per day.

Refer: To see dentist at least once per year.

Counsel: Poor oral health in adults is associated with cardiovascular disease, diabetes, and respiratory diseases, all of which can increase the risk of complications during pregnancy. Children of mothers with poor oral health are more likely to develop dental caries at an early age, which can lead to developmental problems, pain, problems eating and speaking, low self-esteem, and school absenteeism.



Guidelines for Preconception and Interconception Care

Every Woman....Every Time is the mantra for those caring for women of reproductive potential because promoting women's health IS promoting preconceptional wellness, irrespective of pregnancy intentions. Therefore, we need to take advantage of all health care encounters to stress prevention opportunities throughout the lifespan, just like our pediatric colleagues. By providing anticipatory guidance, we enable every woman and, if appropriate, her partner, to make informed decisions about future reproduction.

Every Woman....Every Time is opportunistic care. It takes advantage of all health care encounters to:

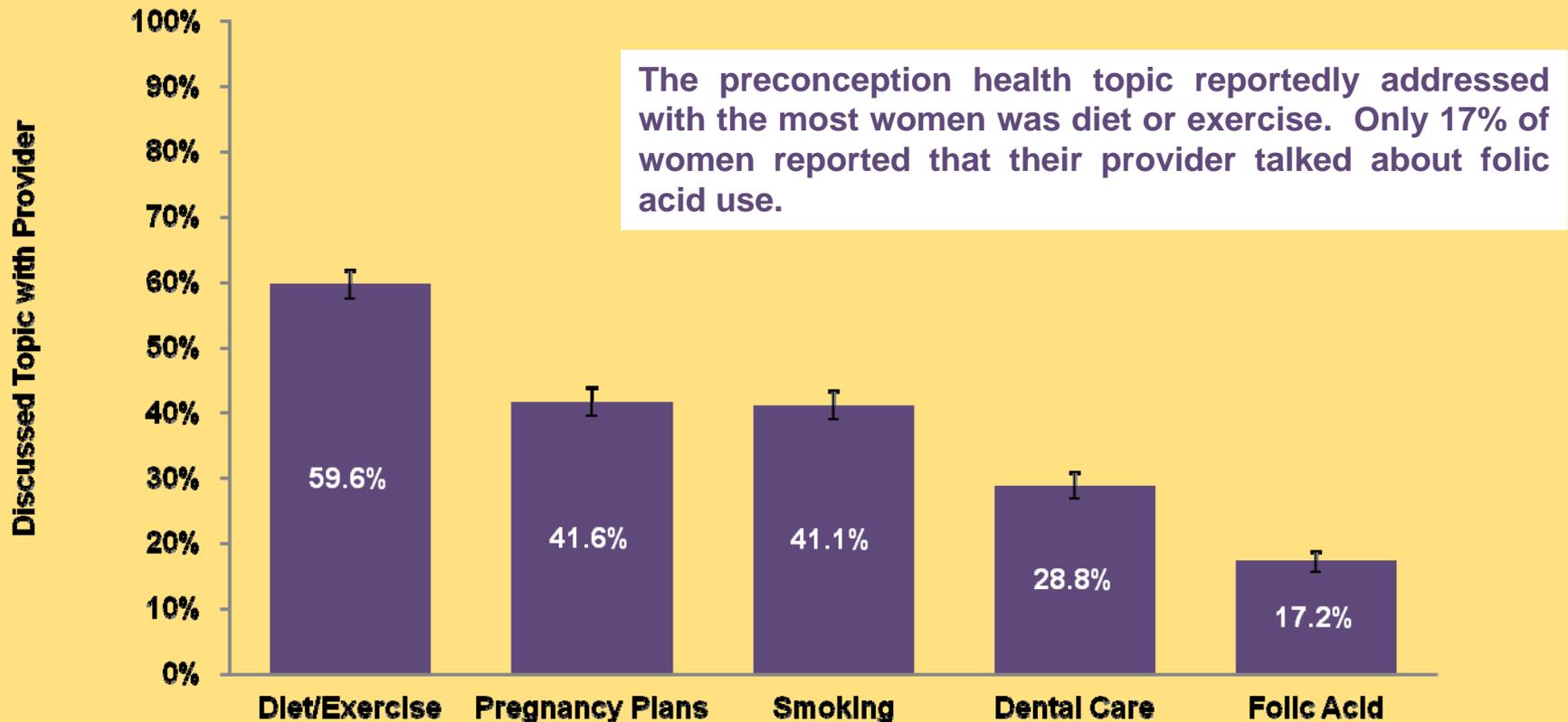
- address conception and contraception choices
- identify modifiable and nonmodifiable risk factors for poor health and poor pregnancy outcomes before conception
- suggest risk reduction strategies
- provide individualized, nonjudgmental education
- provide referrals to complementary services, such as genetic or nutritional counseling, behavior modification programs, etc.

In order to optimize pregnancy outcomes, women need to actively plan for pregnancy, enter pregnancy in good health with as few risk factors as possible, and be fully informed about their reproductive and general health. Nevertheless, more than half of all pregnancies in the United States are unplanned, and most of the fetal organs are developing before the first prenatal visit. Thus, interventions to prevent birth defects or adverse birth outcomes must happen during the preconception or interconception period.



Well Women Visits

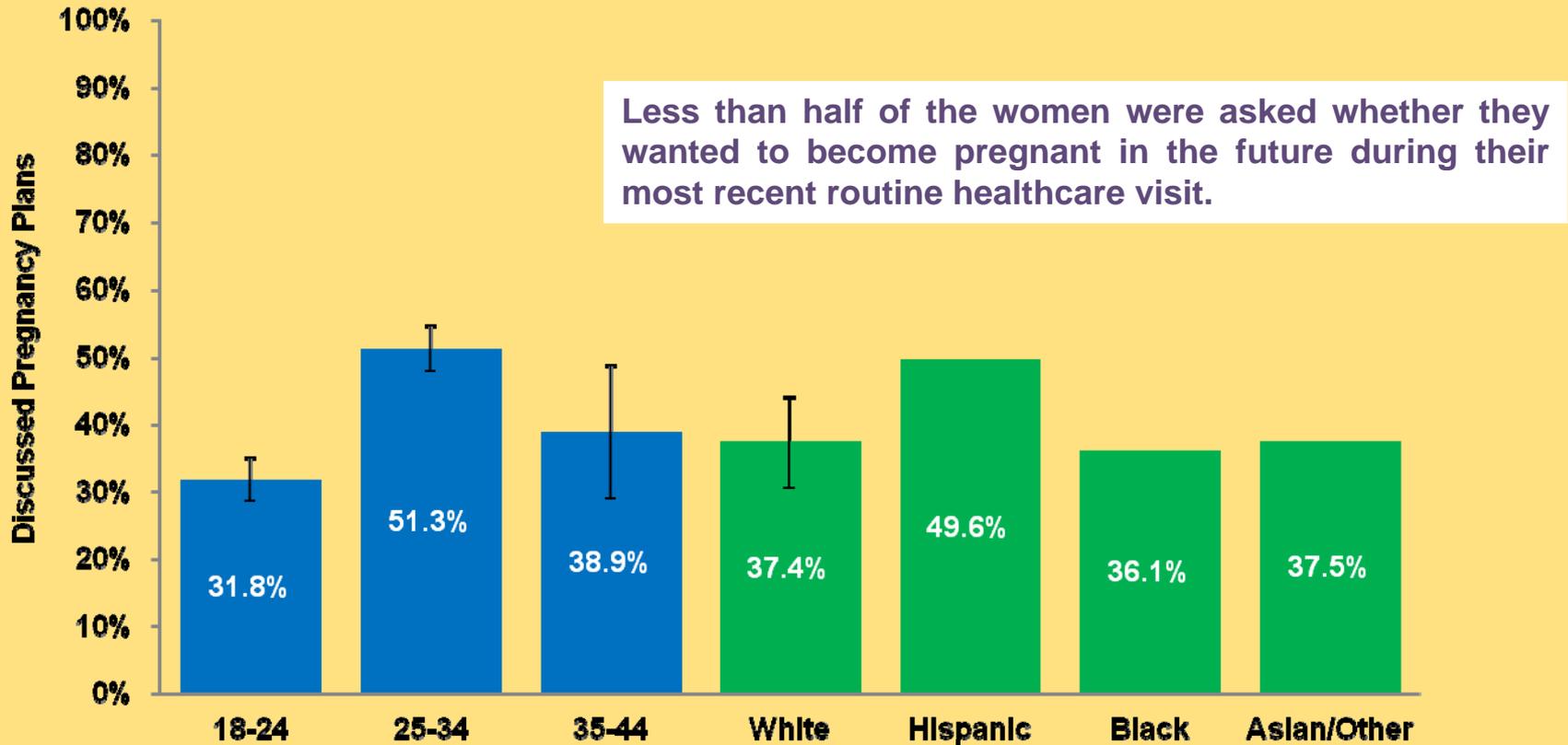
Women who reported that their health care provider talked to them about specific preconception health topics at their most recent routine visit, 2009-2010



California Women's Health Survey data from 2009-2010 were analyzed for the 2,807 non-pregnant women aged 18-44 years who reported a routine visit in the past two years, to determine whether health care providers had talked about the following preconception health topics during their most recent routine visit: diet or exercise, pregnancy plans, smoking, dental care, and folic acid use.

Preconception Health Counseling Rates are Low

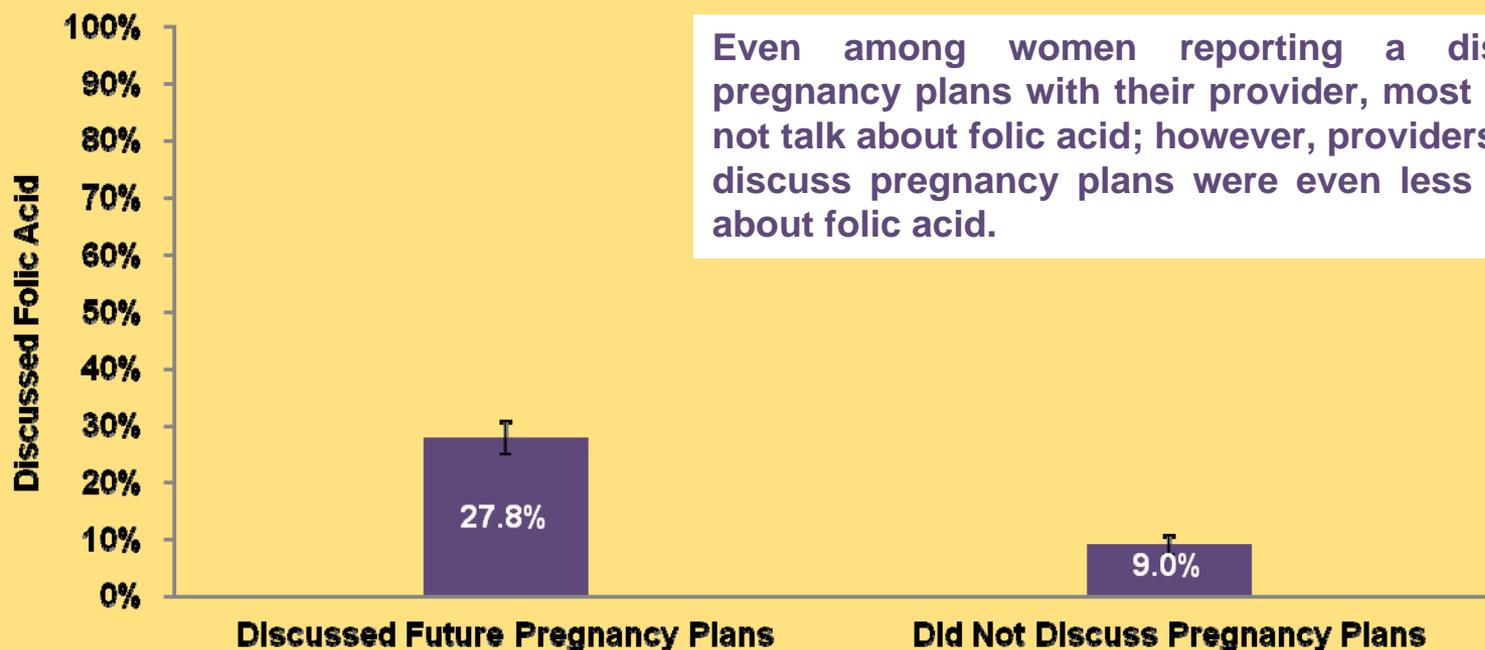
Women reporting that their provider asked about future pregnancy plans during their most recent routine healthcare visit, by race/ethnicity and age, 2009-2010



California Women's Health Survey data from 2009-2010 were analyzed for the 2,807 non-pregnant women aged 18-44 years who reported a routine visit in the past two years, to determine whether health care providers had talked about the following preconception health topics during their most recent routine visit: diet or exercise, pregnancy plans, smoking, dental care, and folic acid use.

Preconception Counseling about Folic Acid is Lacking

Women reporting discussion of folic acid during their most recent routine healthcare visit, stratified by the discussion of future pregnancy plans, 2009-2010



Even among women reporting a discussion of pregnancy plans with their provider, most said they did not talk about folic acid; however, providers who did not discuss pregnancy plans were even less likely to talk about folic acid.

California Women's Health Survey data from 2009-2010 were analyzed for the 2,807 non-pregnant women aged 18-44 years who reported a routine visit in the past two years, to determine whether health care providers had talked about the following preconception health topics during their most recent routine visit: diet or exercise, pregnancy plans, smoking, dental care, and folic acid use.



INTERCONCEPTION HEALTH MESSAGES AND THE POSTPARTUM VISIT

Women who have had a poor birth outcome in a prior pregnancy are at increased risk for having another poor birth outcome in a subsequent pregnancy

The recurrence risk varies by diagnosis, but is significant:

- **15 to 30 percent for Preterm Delivery**
- **20 to 60 percent for Pre-Eclampsia**
- **2-12 fold risk for Low Birthweight infants**

Closely spaced pregnancies (<18 months) are associated with increased Complications

- Low Birthweight, IUGR, Preterm Birth; Rapid Repeat Birth (<6 months) Infant Death

- Opportunity to assess previous pregnancy complications and to formulate a plan to minimize future pregnancy adverse events
- Part of a holistic approach to ensuring women's health across the lifespan
 - Discuss implications of pregnancy-related disorder(s) on long-term health
 - Gestational diabetes
 - Pre-eclampsia/Eclampsia
 - Excessive weight gain during pregnancy
 - Obesity
- The post-partum visit is often a missed opportunity to address interconception health
 - Identified Needs: Consensus for Care and Guidelines

Attendance at Postpartum Visit

- Medicaid participation is 59.1%
- Private Insurance 79.9%
- Kaiser Permanente participation is 94%



- Interconception Care Project for California
- March of Dimes and ACOG District IX Project with Preconception Health Council of California (PHCC)
- Goal: Produce post-partum care guidelines for obstetric providers that incorporate risk assessment based on the previous pregnancy and develop recommendations for future care



- Identify an Interconception Care Advisory Council
- Identify interventions/messages that ALL postpartum women should receive
- Identify most common diagnoses or identifiable risks for pregnancy complications based on California delivery data
- Analyze evidence-based recommendations for treatment
- Develop one-page algorithm for each condition that will assist providers in assessments and referrals
- Produce web-based guidelines on each high risk diagnosis

- Alcohol Use
- Anemia
- Domestic Violence
- Gestational Diabetes*
- Gonorrhea and Chlamydia
- Hepatitis
- HIV
- Hypertension
- Migraine
- Obesity
- Postpartum Depression
- Preeclampsia
- Preterm Birth
- Cesarean Section
- Seizure
- Substance Abuse
- Syphilis
- Thrombocytopenia
- Thyroid Disorder
- Tobacco Use
- Vaccinations

All patient handouts available in English and Spanish

*Also available in Vietnamese

Three standard interconception messages that ALL women should receive at the post-partum visit

Messages printed on Patient Algorithms and Provider Handouts

Remember your ABCs:

folic  cid  reastfeeding  ontraception

Recuerde las tres As:

 cido fólico  mamantar  nticoncepción

Hãy nhớ ABCs của bạn (Remember your ABCs)

folic  cid  reastfeeding  ontraception
axít (thuốc bổ) bú sữa mẹ ngừa thai



Postpartum Visit Algorithm: Overweight/Obesity

Remember the ABCs:

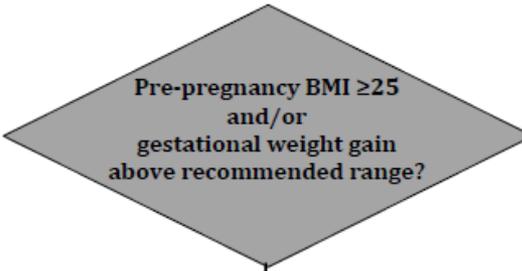


BMI classification
 BMI = [weight (lbs) x 703]/height² (in²) or
 BMI = weight (kg)/height² (m²)

- Underweight = <18.5 kg/m²
- Normal weight = 18.5-24.9 kg/m²
- Overweight = 25-29.9 kg/m²
- Obesity I = 30-34.9 kg/m²
- Obesity II = 35-39.9 kg/m²
- Obesity III (extreme obesity) = ≥40 kg/m²

Institute of Medicine Pregnancy Weight Gain Guidelines (singleton pregnancy)

- Underweight: gain 28-40 lbs.
- Normal weight: gain 25-35 lbs.
- Overweight: gain 15-25 lbs.
- Obese: gain 11-20 lbs.



No

Advise maintaining current weight

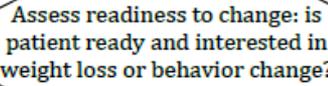
- Encourage maintaining healthy weight, diet and physical activity.
- Discuss breastfeeding infant with appropriate diet to meet higher caloric needs.

Yes

Assess comorbidities/risks to determine treatment priorities

Comorbidities: impaired fasting glucose or pre-diabetes; type II diabetes; obstructive sleep apnea; hypertension; coronary artery disease; dyslipidemia

Risks: personal or family history of gestational diabetes mellitus and/or coronary artery disease; increased weight circumference (female >35)



No

Education and motivation

- Motivate with the 5 R's: relevance, risks, rewards, roadblocks, repetition.
- Plan for periodic weight and BMI assessment: at least every 2 years or more frequently if that patient has comorbidities and/or risk factors.
- Consider reassessing BMI at subsequent visits as the patient may be ready to make a change at a later point.

Yes

Agree on a treatment plan or strategy

- Discuss diet, physical activity and behavior therapy.
- Consider pharmacotherapy if BMI = 27-29.9 with comorbidities or BMI >30 regardless of comorbidities.
- Consider surgery if BMI >30 with comorbidities.
- Refer to WIC program (if income-eligible) and/or nutritional consult with dietitian.
- Identify reasonable target weight loss range and timeline. Advise that 5-10% weight loss over six months is a realistic initial goal.
- Promote and encourage breastfeeding.
- Discuss contraception and delaying next pregnancy until a more normal weight is obtained.
- Schedule follow-up contact.

Interconception Care Project for California

A collaborative project led by ACOG District IX with funding provided by March of Dimes



Every Woman California © Preconception Health Council of California, 2011
Title V funded from California Maternal, Child and Adolescent Health Division

<http://www.everywomancalifornia.org/postpartumvisit>

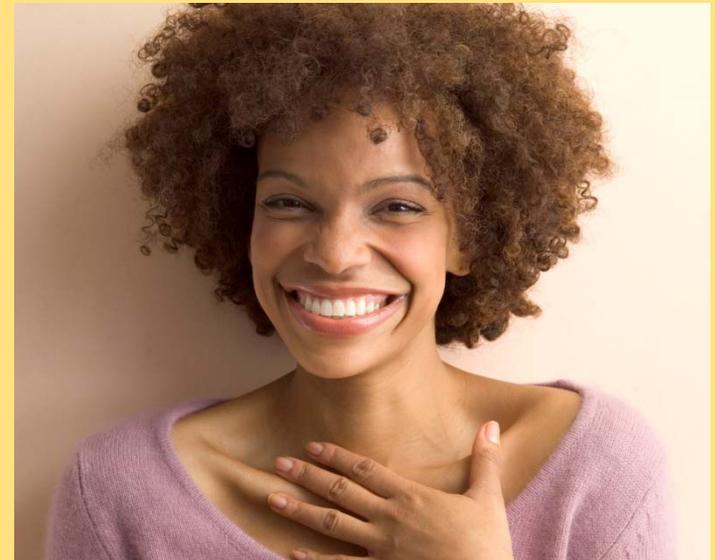
Preconception Health in California: Future Directions



- Continued focus on the overall health and well-being of women and girls
- “Reproductive life planning” as an important component of women’s health
- Incorporating a youth development framework into reproductive life planning work with adolescents
- Addressing social and economic factors
- Better integration with chronic disease programs

A Vision for Improving Preconception Health and Pregnancy Outcomes

- All women and men have high reproductive knowledge
- All women have a reproductive life plan
- All pregnancies are intended
- All women of childbearing age have health coverage
- All women of childbearing age are screened prior to pregnancy for risks related to outcomes
- Women with a prior pregnancy loss have access to interconception care aimed at reducing their risks



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California Preconception Health

For Additional Information or Questions Contact:

Email:

CDPHPreconception@cdph.ca.gov
info@everywomancalifornia.org

Website:

www.everywomancalifornia.org

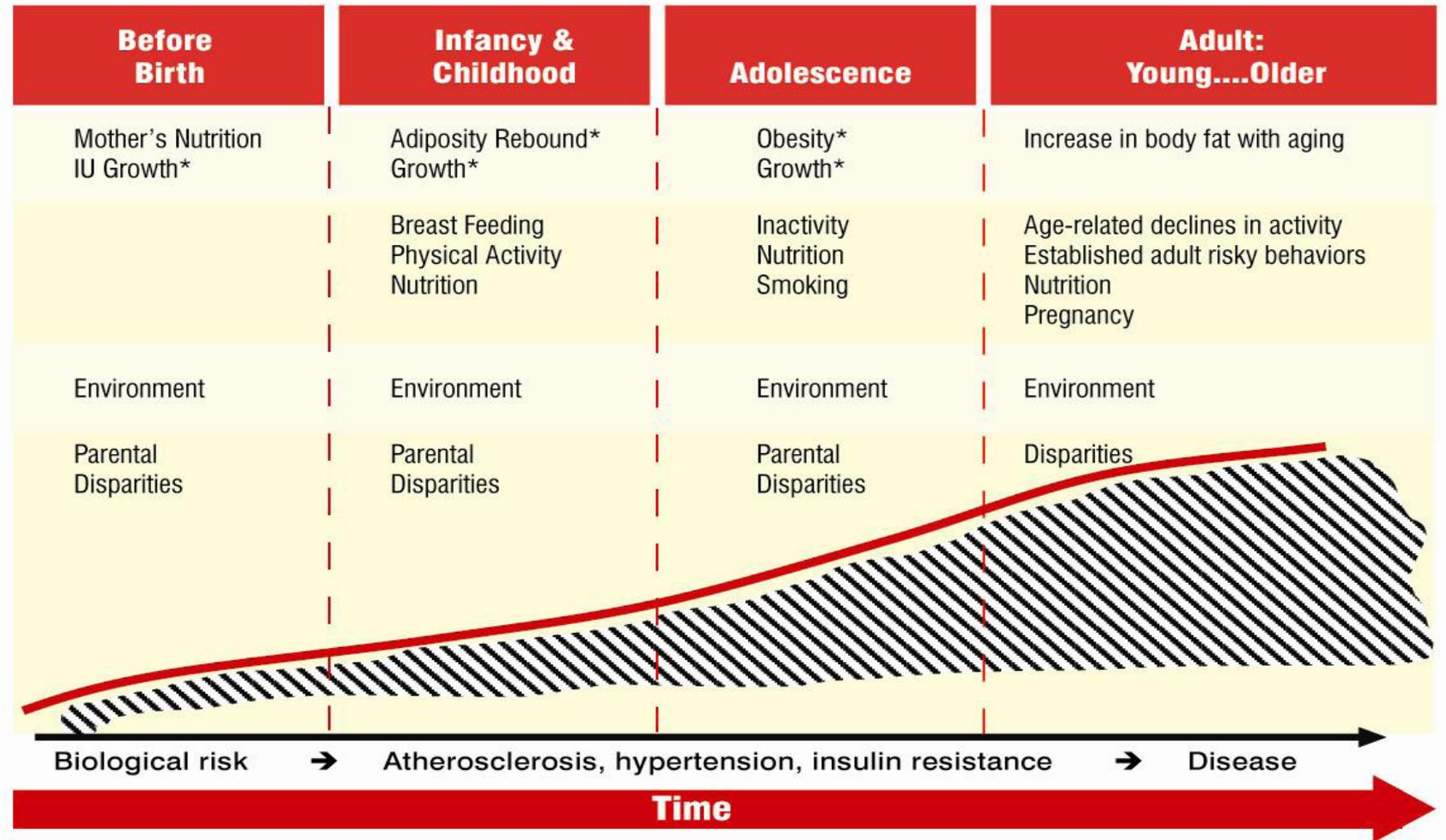


QUESTIONS

Nutritional Opportunities

Systems Change
Health Promotion Resources

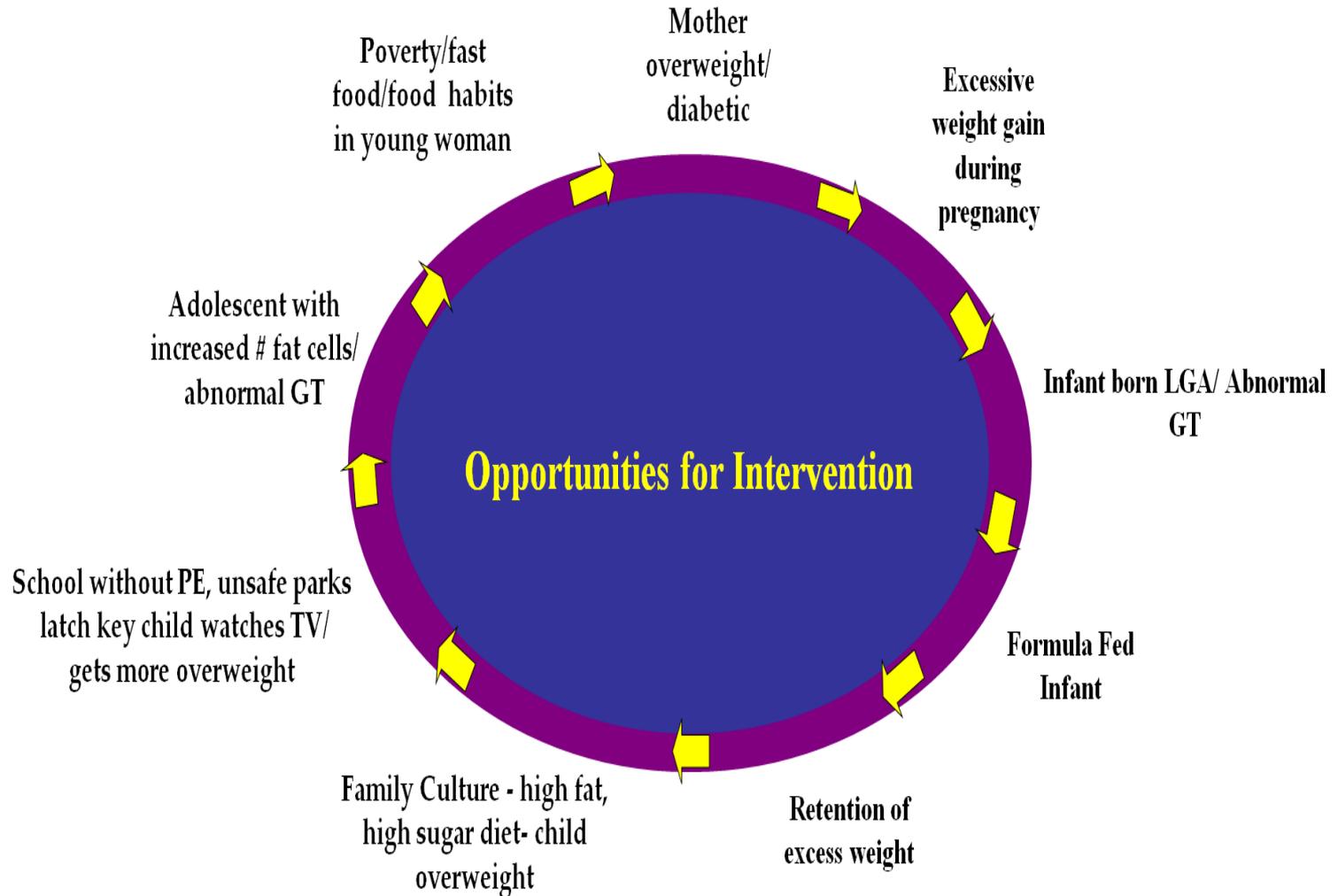
Obesity: A Life Course Approach



Source: Mary Haan, DrPH, MPH, University of Michigan. Adapted from: World Health Organization, Life course perspectives on coronary heart disease, stroke and diabetes: Key issues and implications for policy and research. *Summary Reports of a Meeting of Experts, 2–4 May 2001.*

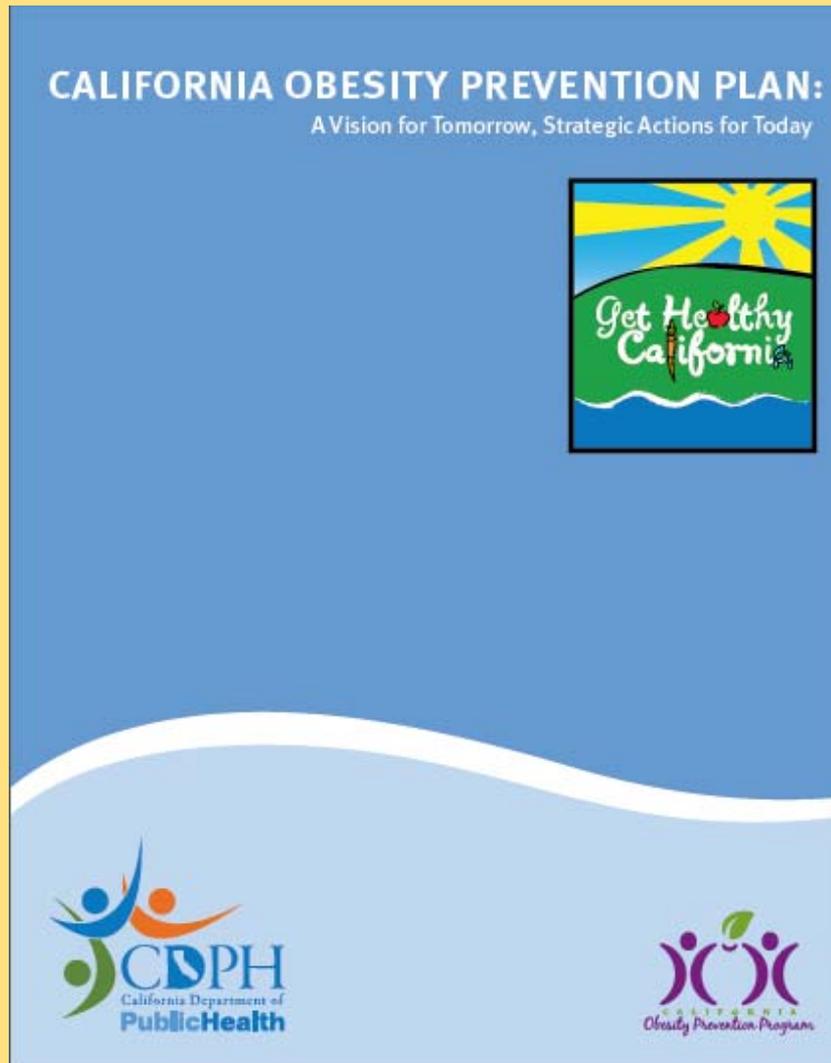
Breaking the Life-Course Cycle of Obesity

The following diagram³ shows different risk factors for women during her life-course cycle. Implementing an intervention at different stages provides an opportunity to break the cycle of obesity.



3. This model has been adapted from University of California, San Francisco's Family Health Outcomes Project.

MCAH Addresses California Obesity Prevention Plan



- State-level Leadership and Coordination
- Statewide Public Education
- Healthy Community Environments
- Statewide Tracking and Evaluating

- MCAH Program Integration:
- Adolescent Family Life Program (AFLP)
- CA Diabetes and Pregnancy Program (CDAPP)
- Black Infant Health (BIH)
- Comprehensive Perinatal Services Program (CPSP)
- Local health jurisdictions



- Birth and Beyond California
- Web-Based tools
- Hospital Summit
- Workplace Lactation Accommodation
- MCAH Program integration

- Early Childhood Caries
- Emergency Preparedness
- Hospital Policies and Toolkit
- Reimbursement for Lactation Support Services
- Vitamin D Information and Resources
- Lactation Accommodation: Work or School

- Obesity Prevention Group
- MCAH Nutrition Coordination Group
- WIC-MCAH Breastfeeding Coordination
- Association of State and Territorial Public Health Nutrition Directors
- United States Breastfeeding Promotion Committee



California Department of
Public Health CDPH

Skip to: [Content](#) | [Footer](#) | [Accessibility](#)

This site California

en Español

- Su salud en su idioma
- **Most Popular Links**
- Birth, Death, & Marriage Certificates
- Licensing and Certification
- WIC
- **Quick Links**
- About Us
- Decisions Pending & Opportunities for Public Participation
- Diseases & Conditions
- Job Opportunities
- Local Health Services
- Newsroom
- Public Availability of Documents
- **Related Links**
- California Health and Human Services Agency
- Department of Health Care Services (includes Medi-Cal)
- State Agencies Directory

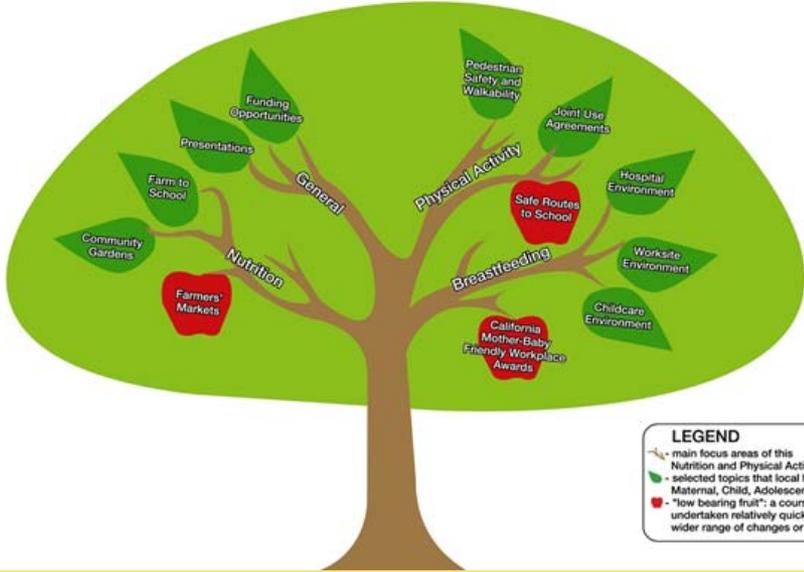
Home > Programs > Nutrition and Physical Activity > Systems and Environmental Change

Systems and Environmental Changes for Nutrition and Physical Activity



The purpose of this toolkit is to support optimal nutrition, physical activity, and breastfeeding through fostering partnerships between local health jurisdiction's Maternal, Child, and Adolescent Health (MCAH) Programs and existing organizations to promote healthy environmental changes. The resources that this toolkit links to were chosen as they appear to be feasible projects for MCAH Program involvement. This is not intended to be a comprehensive toolkit; however, it does provide concrete examples of environmental change projects that are specific for supporting optimal nutrition, physical activity and breastfeeding within the maternal, child and adolescent population.

Alert Links to non-California government web site addresses are provided for informational purposes only, and this listing does not imply California Department of Public Health endorsement of these programs.

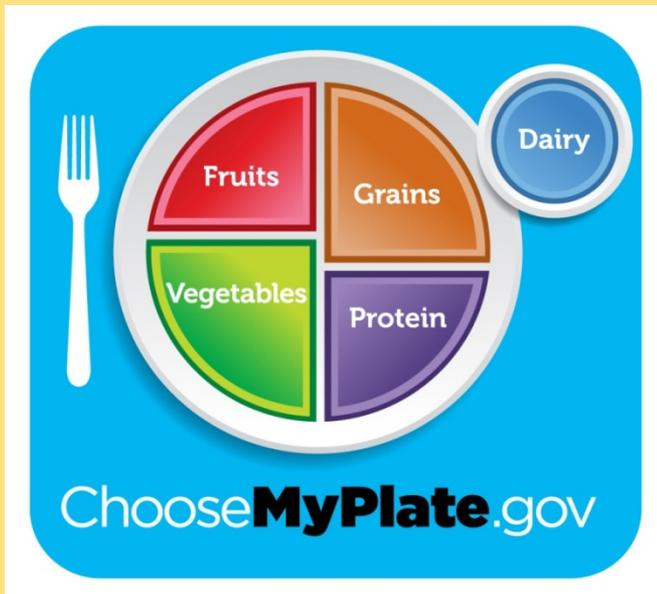


LEGEND

- main focus areas of this Nutrition and Physical Activity Toolkit
- selected topics that local health jurisdiction Maternal, Child, Adolescent Health Directors can support
- "low bearing fruit": a course of action that can be undertaken relatively quick and easy as part of a wider range of changes or solutions to a problem



New version



- USDA released MyPlate in June 2011
- Designed to remind Americans to eat healthy foods
- MCAH is integrating MyPlate into programs, e.g.
 - CPSP
 - CDAPP
 - AFLP

Old version





MyPlate for Moms

Make half your plate vegetables and fruits, about one quarter grains and one quarter protein. Choose foods that are high in fiber and low in sugar, solid fats or salt (sodium). These food amounts are for an average woman for one day. You may need more or less.

Vegetables

Eat more vegetables. Use fresh, frozen or low-sodium canned vegetables. Avoid French fries.

Daily Amount
3 or more of these choices:

- 2 cups raw leafy vegetables
- 1 cup raw vegetables or juice
- 1 cup cooked vegetables



Protein

Choose healthy protein. Eat vegetable protein daily. Avoid bacon, hot dogs and bologna.

Daily Amount
6-7 of these choices:

- 1 ounce fish, poultry or lean meat
- 1 egg
- ½ ounce nuts
- ¼ cup cooked dry beans, lentils or peas
- ¼ cup tofu
- 1 tablespoon nut butter



Grains

Eat mostly whole grains like brown rice. Limit bread, noodles and rice that are white.

Daily Amount
6 of these choices in the 1st trimester,
8 in the 2nd/3rd trimester and while breastfeeding:

- 1 slice whole wheat bread or ½ bagel
- 1 small (6-inch), whole wheat tortilla
- 1 cup cereal
- ½ cup cooked pasta, rice or cereal



Fruits

Add color with fruit. Make most choices fruit, not juice.

Daily Amount
2 of these choices:

- 1 cup fresh fruit
- 1 cup unsweetened frozen or canned fruit
- ½ - ¾ cup juice
- ½ cup dried fruit



Dairy

Enjoy calcium-rich foods. Choose pasteurized nonfat or lowfat milk, yogurt and cheese.

Daily Amount
3 of these choices for women and
4 for teens:

- 1 cup milk
- 1 cup soy milk with calcium
- 1 cup of plain yogurt
- 1 ½ ounces cheese



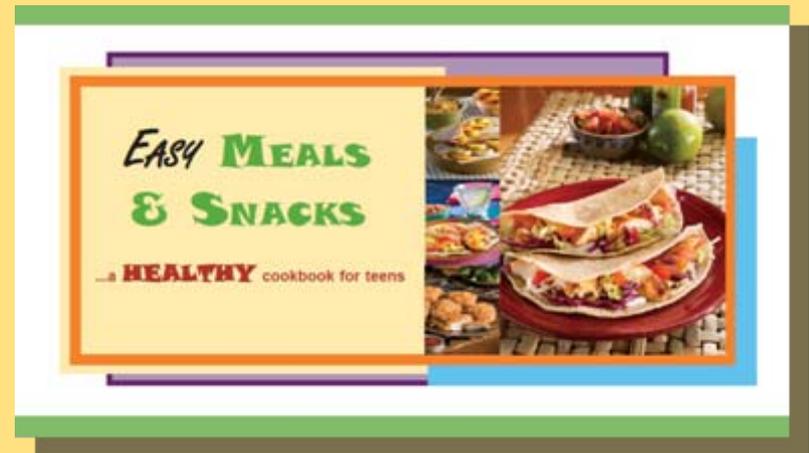
Choose Healthy Fats & Oils

- Use plant oils like canola, safflower and olive oil for cooking.
- Read food labels to avoid saturated and trans fats (hydrogenated fats).
- Avoid solid fats such as lard and butter.
- Eat cooked fish at two meals each week.
- Limit oils to 2 tablespoons each day.

Choose Healthy Beverages

- Drink water, nonfat or lowfat milk instead of sugary drinks like soda, fruit drinks and fruit juice.
- Limit caffeine drinks like coffee, tea. Avoid energy drinks.
- Do not drink alcohol when you are pregnant. If breastfeeding, you may have one alcoholic drink if you wait 4 hours.

- **To inspire adolescents to:**
 - Take a proactive role in their health
 - Make healthier food choices through simple food preparation
 - Be physically active
- **Components:**
 - Meal-planning tips
 - Healthy recipes
 - Fitness tips
 - Available in Spanish



Easy Meals and Snacks: A Healthy Cookbook for Teens



SUZANNE'S SALAD

This salad is great as a snack or as a side dish. Try it with Macaroni & Cheese (page 31).

Makes 6 servings. 1 cup per serving.

Prep time: 10 minutes

Ingredients

- 5 cups mixed lettuce greens, chopped
- 2 large celery stalks, sliced
- $\frac{3}{4}$ cup dried cranberries, currants or raisins
- $\frac{1}{2}$ cup walnuts, broken
- 2 large apples with the peel
- Favorite reduced-fat dressing (balsamic vinaigrette works best)

Preparation

1. Wash and slice celery stalks and apples. Set aside.
2. Combine all ingredients (including the apples and celery) in a large bowl. Mix the salad and serve.
3. Use vinaigrette or other reduced-fat dressings sparingly (up to 10 sprays or 1 tablespoon per serving).



Fitness Tip: Strengthen your wrists using this wrist curl:

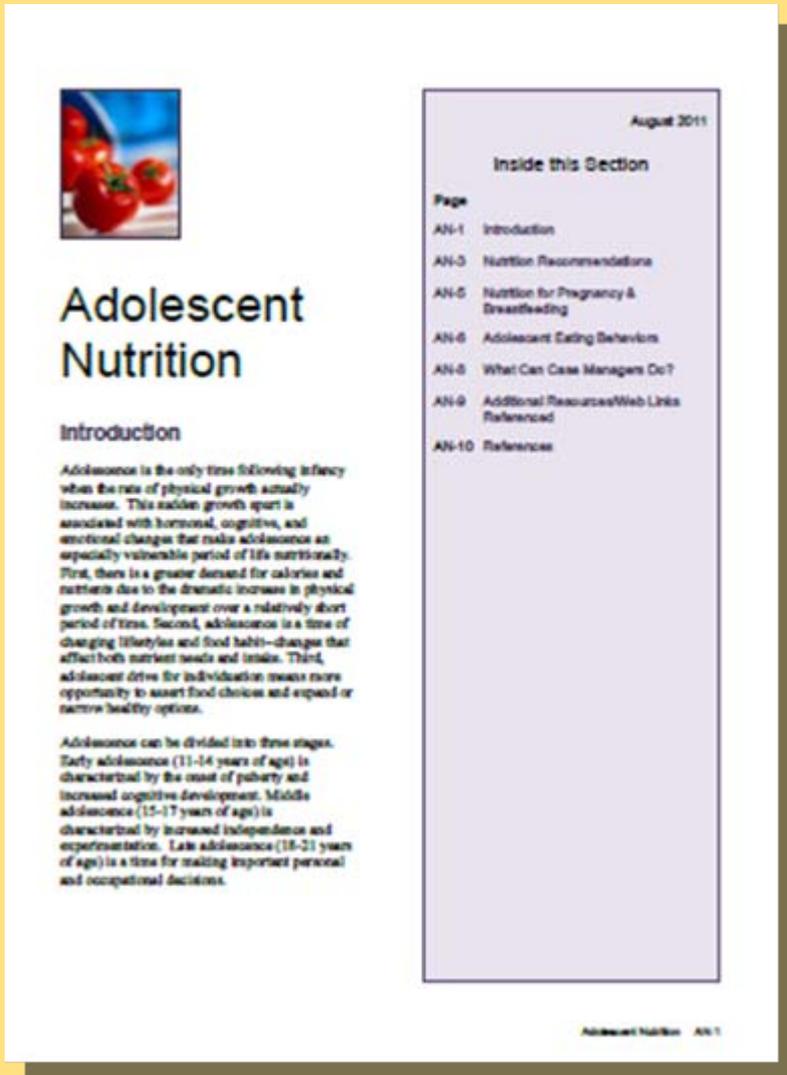
While seated, rest your forearm on the arm of a sturdy chair with your hand over the edge and palm facing upward. Hold weight (for example, a 14-ounce can or medium-sized water bottle) in your hand. Slowly bend your wrist up and down. Repeat 10-15 times. Repeat with other hand 10-15 times.

Photo courtesy of the California WIC Program and recipe adapted from Suzanne Haydu

SNACK/SIDE DISH

32

AFLP Nutrition and Physical Activity Guidelines



Adolescent Nutrition

Introduction

Adolescence is the only time following infancy when the rate of physical growth actually increases. This sudden growth spurt is associated with hormonal, cognitive, and emotional changes that make adolescence an especially vulnerable period of life nutritionally. First, there is a greater demand for calories and nutrients due to the dramatic increase in physical growth and development over a relatively short period of time. Second, adolescence is a time of changing lifestyles and food habits—changes that affect both nutrient needs and intakes. Third, adolescent drive for individualization means more opportunity to assert food choices and expand or narrow healthy options.

Adolescence can be divided into three stages. Early adolescence (11-14 years of age) is characterized by the onset of puberty and increased cognitive development. Middle adolescence (15-17 years of age) is characterized by increased independence and experimentation. Late adolescence (18-21 years of age) is a time for making important personal and occupational decisions.

August 2011

Inside this Section

Page
AN-1 Introduction
AN-3 Nutrition Recommendations
AN-5 Nutrition for Pregnancy & Breastfeeding
AN-6 Adolescent Eating Behaviors
AN-8 What Can Case Managers Do?
AN-9 Additional Resources/Web Links Referenced
AN-10 References

Adolescent Nutrition AN-1

- Tool for case managers to use in AFLP
- Nutrition, physical activity, healthy weight & breastfeeding are addressed
- Opportunity to impact the lives of teen mothers and their families over the life course

- Up-to-date nutrition, physical activity & breastfeeding resources
- Targeted pages for various MCAH populations
- Resources for consumers & professionals
- Vehicle for launching MCAH-developed products



MCAH Nutrition and Physical Activity Initiative (NUPA)



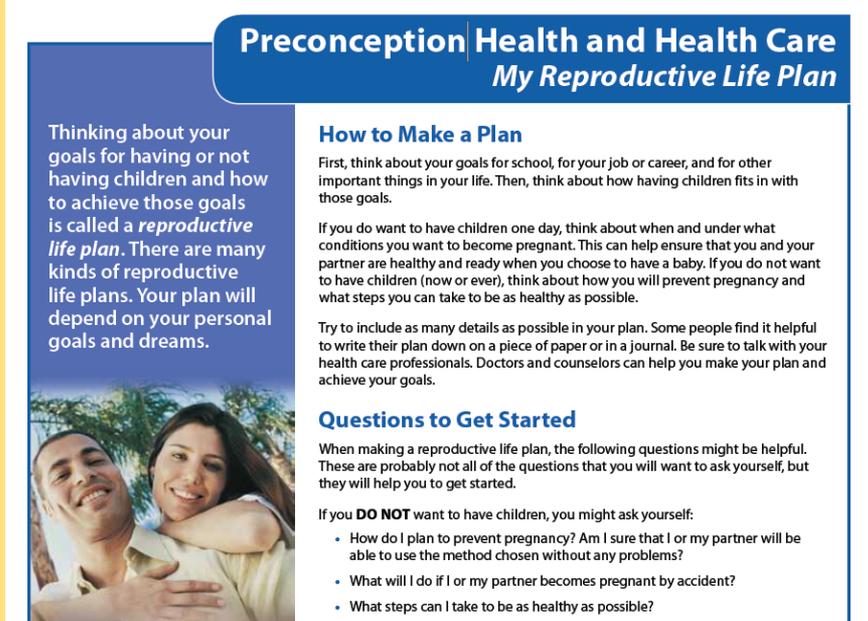
Maternal Health



Infant Health

Find these webpages and more by visiting
www.cdph.ca.gov/programs/mcah/Pages/default.aspx

- Goal setting
 - Reproductive Life Planning
- Direct Services
 - Nutrition including folic acid
 - Healthy preconception weight
 - Nutrition-related disease management
 - Anemia
 - Diabetes/Gestational
 - Hypertension



Preconception Health and Health Care
My Reproductive Life Plan

Thinking about your goals for having or not having children and how to achieve those goals is called a *reproductive life plan*. There are many kinds of reproductive life plans. Your plan will depend on your personal goals and dreams.

How to Make a Plan

First, think about your goals for school, for your job or career, and for other important things in your life. Then, think about how having children fits in with those goals.

If you do want to have children one day, think about when and under what conditions you want to become pregnant. This can help ensure that you and your partner are healthy and ready when you choose to have a baby. If you do not want to have children (now or ever), think about how you will prevent pregnancy and what steps you can take to be as healthy as possible.

Try to include as many details as possible in your plan. Some people find it helpful to write their plan down on a piece of paper or in a journal. Be sure to talk with your health care professionals. Doctors and counselors can help you make your plan and achieve your goals.

Questions to Get Started

When making a reproductive life plan, the following questions might be helpful. These are probably not all of the questions that you will want to ask yourself, but they will help you to get started.

If you **DO NOT** want to have children, you might ask yourself:

- How do I plan to prevent pregnancy? Am I sure that I or my partner will be able to use the method chosen without any problems?
- What will I do if I or my partner becomes pregnant by accident?
- What steps can I take to be as healthy as possible?