

Preventing Preterm Birth & Preeclampsia: How Can Pharmacists Help?

Low-Dose Aspirin (LDA) Campaign Webinar Series

Tuesday, January 16, 2024



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Inclusive Language Notice

- Currently recognized identifiers such as “birthing people,” “mother,” “maternal,” “they,” “them,” “she,” “her.” and “pregnancy-capable person” are used in reference to a person who is pregnant or has given birth.
- We recognize that not all people who become pregnant and give birth identify as mothers or women and will use the above-recognized terms interchangeably to represent all those present in this space receiving care for pregnancy services. All persons are equally deserving of respectful patient-centered care that helps them attain their full potential and live authentic, healthy lives. The healthcare team should respect individual patient preferences regarding gendered language throughout the course of their care.
- The term “**family**” is used to refer to any persons the pregnant or postpartum patient designates as such (alternatives: partners, husbands, wives, support persons, loved ones).
- The term “**clinician**” is used to denote nursing and medical staff, whereas the term “**provider**” refers to a clinician with diagnosing and prescribing authority.

Continuing Education Notice

- To receive contact hours for this webinar, please complete the evaluation via the link, which will be provided at the end of this session.
- You must be in attendance* on the webinar for a minimum of 50 minutes, and **signed in under your own account**, for a contact hour to be awarded.
- We do not offer Contact hours for on-demand webinar viewing.

Webinar Objectives

- 1 Discuss the role of pharmacists and the pharmacy community in promoting low-dose aspirin (LDA) for expectant mothers and birthing people
- 2 Review diagnostic criteria and risk factors for preeclampsia, identifying who meets the LDA criteria for preeclampsia prevention
- 3 Review essential tips for pharmacist and patient education on preeclampsia
- 4 Discuss ways in which Pharmacists can be more involved in preconception care

Today's Speakers



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The California Maternal Quality Care Collaborative

Mission:

To end preventable morbidity, mortality and racial disparities in maternity care.

- Celebrating 17 years!
- Multi-stakeholder collaborative since 2006
- Launched with funding from California Department of Public Health to address rise in maternal mortality
- Committed to evidence-based and data driven quality improvement
- Effector arm of the March of Dimes Prematurity Research Center – funding current LDA work



Let's Do Aspirin Campaign

Pilot Hospital Sites:

- Loma Linda University Children's Hospital
- Riverside University Health System - Medical Center (RUHS-MC)
- Scripps Chula Vista
- UC San Diego
- Mercy San Juan Sacramento





Dr. Joice Huang, PharmD

Disclaimer

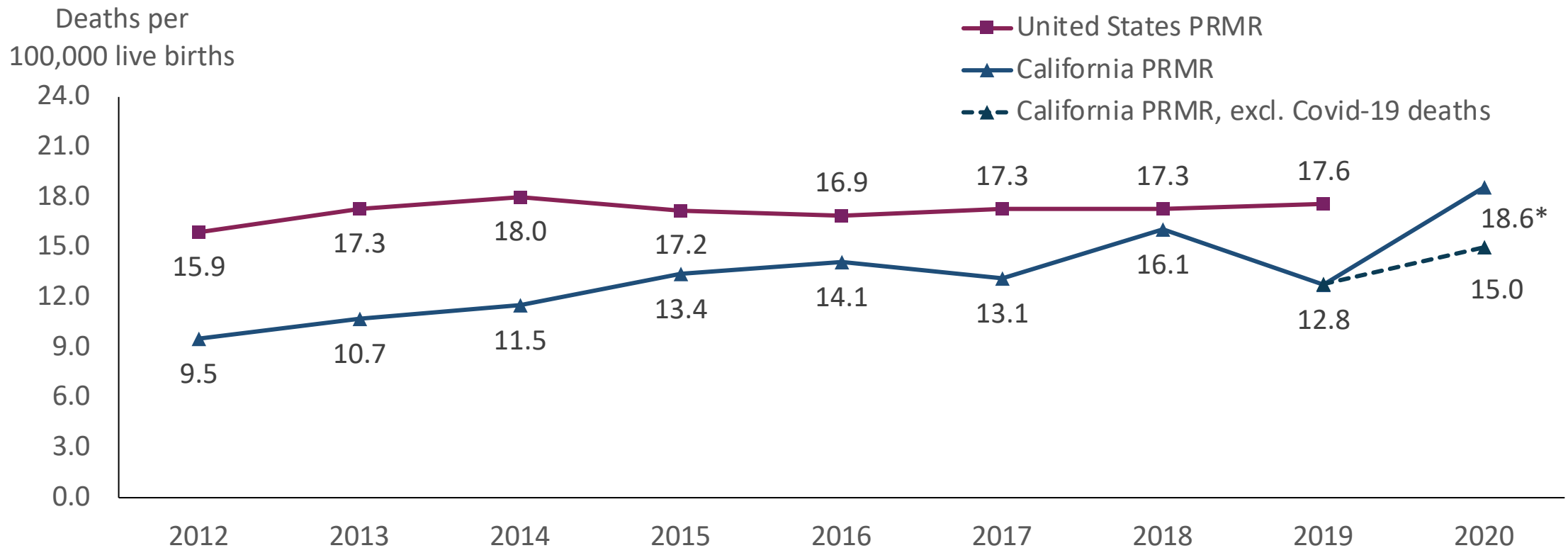
This slide set is considered an educational resource but does not define the standard of care in California or elsewhere. Readers are advised to adapt the guidelines and resources based on their local facility's level of care and patient populations served and are also advised to not rely solely on the guidelines presented here.

Drs. Huang and Ahmadyar are volunteers for CMQCC and contributed to this program in their personal capacity. The views and opinions expressed here belong to the speakers and do not necessarily reflect the views of their employer, AbbVie Inc.

Let's start with background information....

*What is the burden of preeclampsia?
What is the role of the Pharmacy?
How is preeclampsia diagnosed?*

Pregnancy-Related Mortality Ratio in U.S. and California 2012-2020

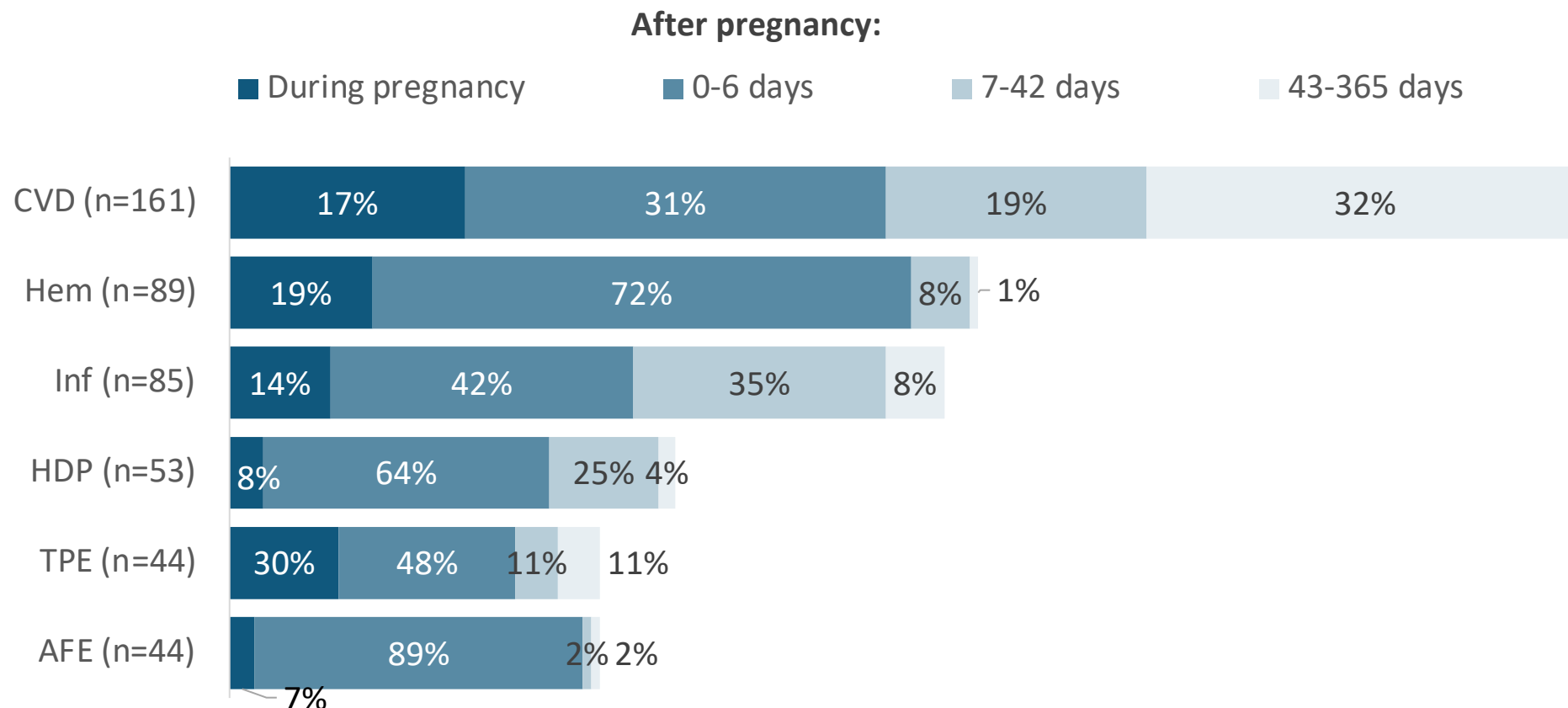


Pregnancy-related mortality ratio (PRMR) = Number of pregnancy-related deaths per 100,000 live births, up to one year after the end of pregnancy. Pregnancy-relatedness was determined by expert committee case review process. Data on U.S. PRMR were accessed at [Pregnancy Mortality Surveillance System | Maternal and Infant Health | CDC](#) on April 6, 2023).

* The CA 2020 PRMR was significantly higher than the PRMRs in 2012 and 2013



Pregnancy-Related Deaths by Cause and Timing to Death California 2012-2020 (N=564)

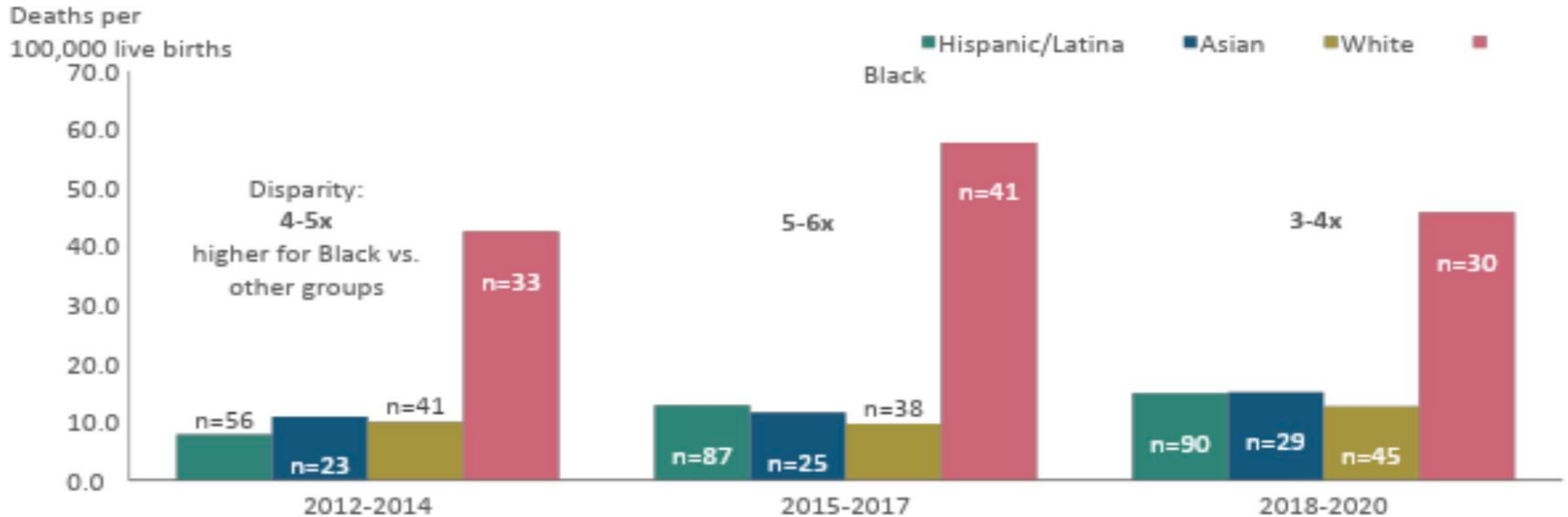


Pregnancy-related deaths include deaths within a year of pregnancy from causes related to or aggravated by the pregnancy or its management, as determined by expert committee review. Abbreviations: CVD = Cardiovascular disease; Hem = Hemorrhage; Inf = Sepsis or infection; HDP = Hypertensive disorders of pregnancy; TPE = Thrombotic pulmonary embolism; ; AFE = Amniotic fluid embolism. *Note: Deaths not shown in the above figure were from cerebrovascular accidents (26), anesthesia (10), other medical causes (78) and undetermined (4).*



Pregnancy-Related Mortality Ratio by Race/Ethnicity

California 2012-2020 (N=564)



Pregnancy-related mortality ratio (PRMR) = Number of pregnancy-related deaths per 100,000 live births. Pregnancy-related deaths include deaths within a year of pregnancy from causes related to or aggravated by the pregnancy or its management, as determined by expert committee review. PRMRs for American Indian/Alaska Native, Native Hawaiian/Pacific Islander, Multiple-race and other races are not shown due to small counts.



Statistics and
experiences suggest
more education is still
needed...

⚠ WARNING: Products sold here such as aspirin or other over-the-counter remedies such as goldenseal root powder are known to the State of California to cause cancer and birth defects or other reproductive harm. It is especially important not to use aspirin during the last three months of pregnancy, unless specifically directed to do so by a physician because it may cause problems in the unborn child or complications during delivery.

For more information go to: www.P65Warnings.ca.gov.

⚠ ADVERTENCIA: El Estado de California sabe que los productos que se venden aquí, como la aspirina y otros remedios de venta libre como la raíz de sello de oro, causan cáncer y defectos congénitos u otros daños reproductivos. Es de especial importancia no tomar aspirina durante los últimos tres meses del embarazo, a menos que un médico lo especifique, debido a que puede causar problemas en el niño que está por nacer o complicaciones durante el parto.

Para más información visite: www.P65Warnings.ca.gov.

Roles and Importance of Pharmacies

Pharmacists are the community point of contact with women of childbearing age. We offer essential services that impact maternal health and are highly accessible to many patients.

However, the pharmacy community has limited participation in managing major obstetric conditions such as preeclampsia.

California pharmacists are now able to prescribe birth control, providing a new avenue for us to be involved in preconception care.

Preconception Care

- Identifying patients at high risk for preeclampsia EARLY is a major challenge.
- Preconception care is a very important opportunity to reduce risks of preeclampsia and other pregnancy complications. It is important to educate everyone in childbearing age (late teens - 50 years old), not just those who are planning to become pregnant.
- Pharmacists can help incorporate preconception care into the daily interactions, e.g. health education, health promotion, and screenings and interventions.

What is Preeclampsia?

- Severe disorder causing high blood pressure, and can also lead to damage of the kidney, liver, heart, and/or brain.
- Happens after the 20th week of pregnancy or after delivery of the baby.
- Can lead to severe complications for the pregnant patient like seizure, stroke, and even death, as well as increased long term health risks for heart disease and diabetes.
- Often related to preterm delivery which can lead to severe complications and other health concerns for the newborn.

Source: <https://www.preeclampsia.org/the-news/Healthcare-practices/understanding-long-term-effects-of-preeclampsia-and-taking-charge>

Diagnostic Criteria For Preeclampsia

Blood pressure

- Systolic blood pressure of 140 mm Hg or more or diastolic blood pressure of 90 mm Hg or more on two occasions at least 4 hours apart after 20 weeks of gestation in a woman with a previously normal blood pressure

And Proteinuria

- Protein > 300 mg per 24 hour urine collection (or this amount extrapolated from a timed collection) or
- Protein/creatinine ratio of 0.3 mg/dL or more or
- Dipstick reading of 2+ (used only if other quantitative methods not available)

Or in the absence of proteinuria, new-onset hypertension with the new onset of any of the following:

- Thrombocytopenia: Platelet count < 100,000/ mcL
- Renal insufficiency: Serum creatinine > 1.1 mg/dL or a doubling of the serum creatinine concentration in the absence of other renal disease
- Impaired liver function: Elevated liver transaminases to twice normal concentration
- Pulmonary edema presenting in dyspnea
- New-onset headache unresponsive to medication
- Visual symptoms: scotoma (blind spots) and blurry vision

Source: Low-dose aspirin use during pregnancy. ACOG Committee Opinion No. 743 American College of Obstetricians and Gynecologists. Obstet Gynecol 2018; 132:e44-52.

Preeclampsia With Severe Features

- Systolic blood pressure of 160 mm Hg or more, or diastolic blood pressure of 110 mm Hg or more on two occasions at least 4 hours apart (unless antihypertensive therapy is initiated before this time)
- Thrombocytopenia (platelet count <100,000/ mcL)
- Impaired liver function that is not accounted for by alternative diagnoses and as indicated by abnormally elevated blood concentrations of liver enzymes (to more than twice the upper limit normal concentrations), or by severe persistent right upper quadrant or epigastric pain unresponsive to medications
- Renal insufficiency (serum creatinine concentration more than 1.1 mg/dL or a doubling of the serum creatinine concentration in the absence of other renal disease)
- Pulmonary edema
- New-onset headache unresponsive to medication and not accounted for by alternative diagnoses
- Visual disturbances

Source: Low-dose aspirin use during pregnancy. ACOG Committee Opinion No. 743
American College of Obstetricians and Gynecologists. Obstet Gynecol 2018; 132:e44-52.



Dr. Gina Ahmadyar, PharmD

*Who is at increased risk of preeclampsia?
What are the benefits of low-dose aspirin?*

High Risk Factors For Preeclampsia

Those with one high-risk factor should receive LDA

- Preeclampsia in a prior pregnancy
- Multifetal gestation (twins plus)
- Chronic hypertension
- Pregestational type 1 or 2 diabetes mellitus
- Kidney disease
- Autoimmune disease (lupus, etc.)
- Combinations of multiple moderate-risk factors

ACOG & SMFM - Low-Dose Aspirin Use for the Prevention of Preeclampsia and Related Morbidity and Mortality, Practice Advisory, 2021

<https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/12/low-dose-aspirin-use-for-the-prevention-of-preeclampsia-and-related-morbidity-and-mortality#>

Moderate Risk Factors For Preeclampsia

Those with two or more moderate-risk factors should receive LDA

- Nulliparity (first birth)
- Obesity (BMI>30 kg/m²)
- Mother or sister with history of preeclampsia
- Black race (as a proxy for underlying racism)
- Financial hardship
- 35+ years old
- Patient was born with a low birth weight
- Previous adverse pregnancy outcome
- In-vitro conception
- 10+ years since last delivery

<https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/12/low-dose-aspirin-use-for-the-prevention-of-preeclampsia-and-related-morbidity-and-mortality>

How Can We Prevent Preeclampsia?



Low-dose aspirin (LDA) is the only known way to reduce preeclampsia and mother/infant harms.

Benefits of Low-Dose Aspirin: MOA

Aspirin is an irreversible cyclooxygenase-1 (COX-1) enzyme inhibitor with anti-inflammatory and antiplatelet properties

LDA in pregnancy can support healthy placenta development, preventing changes that can lead to high blood pressure

Those taking aspirin are more likely to deliver at full term and less likely to have preeclampsia

Clinical Review & Education

2014 and re-Endorsed in 2021

JAMA | US Preventive Services Task Force | **RECOMMENDATION STATEMENT**

Aspirin Use to Prevent Preeclampsia and Related Morbidity and Mortality US Preventive Services Task Force Recommendation Statement

US Preventive Services Task Force



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS



Society for
Maternal-Fetal
Medicine
High-risk pregnancy experts

July 2018 Reaffirmed
in 2023

ACOG COMMITTEE OPINION

Number 743

**Committee on Obstetric Practice
Society for Maternal-Fetal Medicine**

This Committee Opinion was developed by the Committee on Obstetric Practice in collaboration with committee member T. Flint Porter, MD, and the Society for Maternal-Fetal Medicine in collaboration with members Cynthia Gyamfi-Bannerman, MD, MS, and Tracy Manuck, MD.

Low-Dose Aspirin Use During Pregnancy



Recommended by national medical and patient organizations:

Daily use of Low-Dose Aspirin starting between 12-16 weeks of gestation has substantial benefits for both mother and infant.

Benefits of Low-Dose Aspirin

LDA given to those at risk for preeclampsia

Reduces:

- Preeclampsia by 15%
- Preterm birth by 20%
- Fetal growth restriction by almost 20%
- Perinatal mortality by more than 20%

This translates to healthier moms and healthier babies.



US Preventative Task Force Recommendation,
Henderson, et al. Journal of the American Medical Association (JAMA). 2021; 326(12):1192-1206

...But These Recommendations Have Been Slow To Become Widely Used!

- Multiple studies find that less than 25% of eligible women are offered or take LDA.
- Women with chronic hypertension are the highest utilizing group but among them only ~50% take LDA.
- Among Black pregnant people who are eligible, only 10% received LDA.

Parrinella K, Wong MS, Wells M, Gregory KD. Identification of criteria missed by clinicians among patients not prescribed aspirin prophylaxis for preeclampsia. SMFM, 2022.

US Preventative Task Force Recommendation, Journal of the American Medical Association (JAMA)

Medical Information & Prescribing Are Not Enough: *Barriers To Adoption*

- Information overload, confusion about preeclampsia.
- Difficulty obtaining prescription.
- Difficulty with pill-taking (“pregnancy fog”, health and personal challenges).
- Fear of medication in pregnancy.
- Perception of mixed messages among health care providers about aspirin safety.
- Perception of stigma about risk categories e.g., obesity.

Source: Vinogradov R, Smith VJ, Robson SC, Araujo-Soares V. Aspirin non-adherence in pregnant women at risk of preeclampsia (ANA): a qualitative study. *Health Psychol Behav Med.* 2021 Aug 6;9(1):681-700. doi: 10.1080/21642850.2021.1951273. PMID: 34395057; PMCID: PMC8354178

There Are Very Few Reasons Not to Take Low-Dose Aspirin (81mg)

- **Contraindications:**

- Allergic to aspirin or other nonsteroidal anti-inflammatory drugs (NSAIDs)
- Aspirin-induced asthma, rhinitis, and nasal polyps
- Aspirin-induced acute bronchospasm

- **May not be the right treatment if history of:**

- Gastrointestinal bleeding or stomach ulcers
- Low platelets (<100,000) or conditions that cause impaired blood clotting
- Gastric bypass surgery
- First trimester bleeding

What Can Pharmacists Do

- Proactively educate your patients, family, friends about LDA and about preeclampsia symptoms
- Educate your patients on the importance of monitoring BP during pregnancy
- Key messages to share when patients ask about LDA
 - LDA is very safe to take, safely used in all races and ages
 - LDA can make pregnancies last longer and keep moms and babies safer
 - If taking LDA, it is important to take it daily



An example of a self-administered **Checklist** for Eligibility for Low-Dose Aspirin

Am J Obstet Gynecol. 2020 Sep;223(3):B7-B11.

Preeclampsia Risk Factors

What is your height _____? Usual weight before pregnancy _____?

Have you been told you have or had any of the following:

- yes no Preeclampsia ("toxemia") in a previous pregnancy
- yes no Twins or triplets in the current pregnancy
- yes no Hypertension (high blood pressure)
- yes no Diabetes mellitus (type 1 or type 2)
- yes no Kidney disease
- yes no Autoimmune disorder (lupus, rheumatoid arthritis, etc.)
- yes no Antiphospholipid or anticardiolipin syndrome

- yes no Did your mother or sister have preeclampsia ("toxemia") during a pregnancy?
- yes no Are you 35 years old or older?
- yes no Did you weigh less than 5 1/2 pounds (2.5 kg) at birth?
- yes no Are you of African or Afro-Caribbean ancestry?
- yes no Are you taking low-dose aspirin (81 mg daily)?
- yes no Will this be your first child?

If you have previous children:

- yes no Is your youngest child 10 years old or older?
- yes no Any previous child weighing less than 5 1/2 pounds (2.5 kg) at birth?

Signed by Patient _____ Date: _____

Office Use Only:

- BMI _____ (Initials _____) GA _____ wks
- Recommend low-dose aspirin
- No recommendation
- Already on low-dose aspirin

Version August 5, 2020

Frequently Asked Questions

Is Low-Dose Aspirin Safe in Pregnancy?

- Yes, in the absence of contraindications, LDA is safe!
- LDA: No higher rates of maternal harms
 - Abruptio, hemorrhage not increased
- LDA: No higher rates of fetal harms
 - Congenital malformations, premature ductal closure, bleeding not increased
- The concerns for aspirin in pregnancy are related to full adult doses (2 x 325mg or 650mg) which have different biochemical effects. Even these effects are modest.

What is the Optimal Dose of LDA?

- 1 tablet (81 mg) daily is currently recommended by USPSTF, ACOG, and SMFM; but physicians can individualize dosage.¹
- A large, multicenter, placebo (PBO)-controlled trial (ASPIRE, NEJM 2017)² included 1776 pregnant women at very high risk for preeclampsia. Patients were randomized to PBO or 150mg ASA/QD from 11 – 14 weeks until 36 weeks of gestation. Primary outcome was pre-term preeclampsia.
- In the ASA group, 1.6% had preeclampsia, vs PBO group, 4.3% had preeclampsia (OR = 0.38; 95% CI = 0.20 – 0.74, p=0.001)

1. <https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/12/low-dose-aspirin-use-for-the-prevention-of-preeclampsia-and-related-morbidity-and-mortality>
<https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/12/low-dose-aspirin-use-for-the-prevention-of-preeclampsia-and-related-morbidity-and-mortality>

2. N Engl J Med 2017; 377:613-622

When Should LDA Be Started And Stopped?

- Greatest benefit is seen with start time 12 – 16 weeks (some studies found modest benefit seen up to a start time of 28 weeks).
- Most recommendations for those taking a single pill (81 mg) continue daily use until delivery.

US Preventative Task Force Recommendation, Journal of the American Medical Association (JAMA)

- If taking the higher dose (2 pills, 162 mg), in practice many recommend stopping at 36 weeks to avoid anesthesiologist worries over possible epidural complications.

Discussion

- What are some ways you can identify women for preconception care?
- For those in preconception care, how would you introduce the topic of pregnancy complications including preeclampsia?
- What additional tools or avenues would be helpful to engage more pharmacists on LDA in pregnancy?

Questions?



Patient Education Materials

Prevent Preeclampsia with Low-Dose Aspirin

Am I at risk for preeclampsia?

Ask your healthcare provider if aspirin is right for you.



#LETSDOASPIRIN



For more information, scan the QR Code with the camera on your smart phone.



CMQCC
California Maternal Quality Care Collaborative

TO KEEP BABY AND YOU SAFE FROM PREECLAMPSIA

Let's Do Aspirin!

What is preeclampsia?
Preeclampsia is a serious disease during pregnancy where high blood pressure and other complications can put baby and you at risk.

How can I prevent preeclampsia?
Low-dose aspirin, as recommended by your healthcare provider, is the only known effective solution to prevent preeclampsia.

How can low-dose aspirin keep baby safe?
Studies have shown that taking low-dose aspirin during pregnancy may help reduce your risk for serious problems, like preeclampsia and premature birth.

Ask your healthcare provider, "Am I at risk for preeclampsia?"

#LETSDOASPIRIN



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California Maternal Quality Care Collaborative



Scan the QR Code to access the **MARCH OF DIMES** Health Action Sheet to prevent preeclampsia and premature birth.

Recording & Webinar Evaluation

- At the end of this webinar please click the evaluation link provided to submit your evaluation for this webinar or scan the QR code below.
- The webinar recording and slides will be posted on CMQCC's website. <https://www.cmqcc.org/resources-tool-kits/webinars>



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code to complete
evaluation

Thank you for joining us!

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@CAMaternalQualityCare on Instagram



Access the LDA Project Resources here:

<https://www.cmqcc.org/qi-initiatives/low-dose-aspirin-prevent-preeclampsia>