Safety and Efficacy of Contraceptive Methods for Obese and Overweight Women

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KEYWORDS

• Obesity • Overweight • Contraception • Body mass index
• Hormonal contraception • Contraceptive efficacy

KEY POINTS

- Obesity is a public health challenge; many reproductive-age women are overweight or obese.
- Differences in pharmacokinetics and pharmacodynamics between normal weight and obese women using hormonal contraceptives have been noted, although efficacy does not appear to be severely impacted.
- Both obesity and estrogen-containing hormonal contraception increase the risk of venous thromboembolism (VTE). However, the absolute risk of VTE in obese, reproductive-age women using estrogen-containing contraceptives remains acceptably low.
- Studies suggest depo medroxyprogesterone is associated with more weight gain than other forms of hormonal contraception. Irrespective of contraceptive use, many women gain weight over time and retain weight gained during pregnancy.

INTRODUCTION

The obesity epidemic has become one of the greatest challenges to public health in the 21st century. More than one-third of adults in the United States are obese, resulting in 150 billion dollars in added medical costs each year.[1] Among women of reproductive age, 58.5% are overweight or obese.[2] Obese women who become pregnant have increased rates of gestational diabetes, hypertensive disease, macrosomia, and cesarean delivery, making the provision of contraception to obese women who wish to prevent pregnancy imperative.[3]

Disclosures: Dr P.S. Lotke serves on an international advisory board for Bayer Healthcare and as a clinical trainer for Nexplanon (Merck).

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Providing contraception to women of different weights raises 3 issues. First, contraceptives follow a one size fits all approach, with identical dosing regardless of body weight. No evidence suggests that contraceptives are ineffective in obese women. However, concerns have been raised about differences in the pharmacokinetics and pharmacodynamics of hormonal contraceptives that may alter efficacy in women of different body mass indices (BMIs). Secondly, estrogen-containing methods increase the risk of venous thromboembolism (VTE), for which obesity is an independent risk factor. Discussion is ongoing as to whether the risk of VTE in obese women who use combined hormonal contraceptives exceeds an acceptable level. Finally, women frequently have questions about the effect of contraceptive methods on weight gain. Hormonal medications are known to affect appetite, which may be concerning to women who are already above an ideal body weight.

These issues should be contextualized. A method with decreased efficacy in an obese woman will work better than no method. The increased risk of VTE related to combined hormonal contraceptives is lower than the risk of VTE associated with pregnancy. Studies suggest depo medroxyprogesterone acetate (DMPA) may be associated with some weight gain, but this weight gain may be lower than the weight retention associated with pregnancy. By comparing relative risks, both providers and patients will feel more confident about their contraceptive choices.

DEFINING OVERWEIGHT AND OBESITY

BMI, calculated by the weight in kilograms divided by height in meters squared, is a crude but useful indicator of body fat. The US Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) have defined BMI categories as indicated in **Table 1**.[4]

EPIDEMIOLOGY OF OBESITY AND UNINTENDED PREGNANCY IN WOMEN OF DIFFERENT BODY MASS INDEX GROUPS

Differences in rates of obesity fall along racial and socioeconomic lines and mirror disparate rates of unintended pregnancy. Nearly 70% of Hispanic women and 80% of non-Hispanic black women of reproductive age are overweight or obese, compared with 55% of non-Hispanic reproductive age white women.[2] Approximately 30% of non-Hispanic black women have a BMI of 35 or greater compared with 15% of women

Table 1
Weight categories and prevalence of obesity in reproductive-aged women

Category	BMI (kg/m^2)	Prevalence (%)[a]
Underweight	Below 18.5	40.5
Normal weight	18.5–24.9	
Overweight	25.0–29.9	25.5
Grade 1 obesity	30.0–34.9	15.1
Grade 2 obesity	35.0–39.9	11.3
Grade 3 obesity	40.0 and above	7.6

[a] Prevalence in Women age 20–39 years, 1999 to 2008, in the United States.

Data from Physical status: the use and interpretation of anthropometry. Report of a WHO Expert Committee. World Health Organ Tech Rep Ser 1995;854:1–452; and Flegal KM, Carroll MD, Kit BK, et al. Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999–2010. JAMA 2012;307(5):491–7.