

## AHA/ACOG PRESIDENTIAL ADVISORY

# Promoting Risk Identification and Reduction of Cardiovascular Disease in Women Through Collaboration With Obstetricians and Gynecologists

A Presidential Advisory From the American Heart Association and the American College of Obstetricians and Gynecologists

In 2001, the Institute of Medicine (now known as the National Academy of Science) published a seminal monograph, *Exploring the Biological Contributions to Human Health: Does Sex Matter?*,<sup>1</sup> describing the importance of both sex and gender on human biology and physiology. Gender-specific medicine, which recognizes gender differences and similarities in cardiovascular disease recognition, prevention, and management, has exerted a powerful salutatory effect on women. Significant improvement in mortality and morbidity rates in women have been seen over the past 2 decades, in part as a result of initiatives such as the American Heart Association's (AHA's) Go Red For Women movement. Go Red For Women initially focused on raising awareness of heart disease as the No. 1 killer of women. This campaign expanded gender-focused research and the development of gender-based guidelines that led to a significant reduction in the rates of death among women.

Despite these advances, gender-based inequalities continue, with women being less likely to receive guideline-recommended diagnostic testing and therapies. Furthermore, despite the above-stated declines in mortality, more recently there has been an increase in mortality rates in women.<sup>2</sup> Despite significant efforts to raise awareness about heart disease, the most recent data show that only 45% of women identify heart disease as their leading cause of death and that fewer than half of primary care physicians consider cardiovascular disease to be a top concern in women, after breast health and weight.<sup>3</sup>

A majority of women consider their obstetrician/gynecologist (OB/GYN) to be their primary care physician, particularly women during their childbearing years, and we know that many of the life-span milestones for women impart unique effects on cardiovascular health, particularly pregnancy and menopause. Shaw et al<sup>4</sup> use the term *healthcare team for women* to describe the importance of collaboration among clinicians who care for women in order to improve quality and equitable healthcare gaps in women. We now know that 90% of women have at least 1 risk factor for developing heart disease and that optimal prevention strategies (eg, the AHA's Life's Simple 7) begin decades before clinical heart disease is apparent. For these and many other reasons, a partnership with an OB/GYN to optimize early identification and modification of risk factors for heart disease and stroke can be a critical element in improving women's health.

## CURRENT STATE OF CARE FOR WOMEN

### Traditional Cardiovascular Risk Factors

Traditional atherosclerotic cardiovascular disease (ASCVD) risk factors, such as hypertension, diabetes mellitus, hypercholesterolemia, and obesity, affect both sexes, but some may affect women differently and are considered to be more

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**Key Words:** AHA Scientific Statements  
■ cardiovascular diseases ■ prevention  
■ risk factors ■ women's health

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potent. The population-adjusted risk of cardiovascular mortality is greater for women than men: 20.9% versus 14.9%.<sup>5</sup> The impressive correlation of increased body mass index with elevated systolic blood pressure is noteworthy. After 65 years of age, women are more likely to be hypertensive than men, and the concern is that only 29% of elderly women have adequate blood pressure management, in contrast to 41% of men.<sup>2</sup> Furthermore, diabetes mellitus confers a greater cardiovascular risk for women than men: 19.1% versus 10.1%.<sup>5,6</sup> Regardless of the presence of type 1 or type 2 diabetes mellitus, there is an increased risk for ASCVD in women to a greater degree than in men.<sup>7</sup> Unfortunately, diabetic women are less likely than diabetic men to be treated for cardiovascular risk factors.

Hypercholesterolemia imparts the highest population-adjusted cardiovascular risk for women at 47%; benefits of statin therapy are similar for women and men.<sup>5,8</sup> The new Pooled Cohort Risk Equations, which are gender-specific<sup>9</sup> and should be used for cholesterol management with lifestyle guidelines,<sup>10</sup> are applicable to both genders.

Given that 2 of 3 women in the United States are either obese or overweight, we must be cognizant of the adverse associations that increased weight has on cardiovascular health, including additive risk for hypertension, dyslipidemia, physical inactivity, and insulin resistance.<sup>5,11</sup> Obese women also have a higher coronary artery disease risk at 64% compared with obese men (46%). We are also aware that psychosocial problems, particularly depression, preferentially disadvantage women.<sup>12,13</sup> In the INTERHEART study (The Effect of Potentially Modifiable Risk Factors Associated With Myocardial Infarction), psychosocial factors were associated with cardiovascular mortality more for women (45.2%) than men (28.8%).<sup>5</sup>

Cardiovascular risk for women who smoke is 25% greater than for male smokers,<sup>14</sup> and smoking is one of the strongest risk factors for ASCVD. In addition, cigarette use combined with oral contraceptives increases the risk of stroke,<sup>15</sup> and smoking is more prevalent among younger women than younger men, with 16.7% of US women being smokers.

Physical inactivity is the most prevalent risk factor for women in that one fourth of US women report no regular physical activity and three fourths report less than the recommended amount.<sup>10</sup> In the INTERHEART study, exercise provided a greater protective effect for women than for men.<sup>5</sup> Specific data for women from the Nurses' Health Study identified a decrease in the development of diabetes mellitus in women who exercise regularly and, among diabetic women, a decrease in the risk of cardiovascular events with physical activity.<sup>16,17</sup> Finally, women are

55% less likely than men to participate in cardiac rehabilitation.

## Nontraditional Risk Factors Unique to or Predominant in Women

There are also certain ASCVD risk factors and conditions that are not necessarily sex specific but rather are female predominant.<sup>18</sup> These include certain autoimmune disorders, including, but not limited to, rheumatoid arthritis, systemic lupus erythematosus, and scleroderma.<sup>19</sup> These disorders are highly prevalent among women who have an increased risk of coronary artery disease and other cardiovascular disease.<sup>20–22</sup> Breast cancer predominantly affects women, and its treatments increase the risk of cardiovascular disease, with the increased risk in ASCVD becoming manifest just 7 years after breast cancer diagnosis.<sup>23</sup> These adverse outcomes warrant screening and intervention for cardiovascular risk factors in these populations.

## Sex-Specific ASCVD Risk Factors

There are unique ASCVD risk factors for women, many related to pregnancy or hormonal influences. The impact of adverse pregnancy outcomes is emerging as an important predictor of future cardiovascular disease risk. Complications of pregnancy, including preeclampsia, gestational diabetes mellitus, gestational hypertension, preterm delivery, and low-for-estimated-gestational-age birth weight, indicate a subsequent increase in cardiovascular risk.<sup>20,24–28</sup> Pregnancy is essentially a “stress test” for women, and these adverse pregnancy outcomes can be used to identify women who are at an increased risk for ASCVD, even in those for whom the conditions resolve after delivery. Preeclampsia and gestational hypertension impart a 3- to 6-fold increased risk of subsequent hypertension and a 2-fold risk for ischemic heart disease and stroke. Furthermore, these risk factors often do not translate to women as a predictor of future risk for ASCVD and are often not assessed when standard ASCVD risk assessment tools are used.<sup>29</sup> Unfortunately, these adverse pregnancy outcomes also may never be part of a patient's electronic health record, even if the delivery occurred in the same institution where the woman received primary care and risk assessment. Nonetheless, there is a highly accurate degree of recall of pregnancy-related events in women,<sup>30</sup> and a detailed pregnancy history should be included in the health record and referred to by those providing primary or disease-related health care to reproductive-age and postmenopausal women.

Other unique risk factors for women include polycystic ovarian syndrome,<sup>4</sup> functional hypothalamic amen-

**Table. Female Sex and Cardiovascular Disease Risk Factors**

| Female-Specific CVD Risk Factors     | Female-Predominant CVD Risk Factors |
|--------------------------------------|-------------------------------------|
| Adverse pregnancy outcomes           | Autoimmune inflammatory diseases    |
| Pregnancy-related hypertension       | Rheumatoid arthritis                |
| Gestational hypertension             | Systemic lupus erythematosus        |
| Preeclampsia                         | Scleroderma                         |
| Eclampsia                            |                                     |
| Gestational diabetes mellitus        |                                     |
| Preterm delivery                     |                                     |
| Low birth weight for gestational age |                                     |
| Polycystic ovarian syndrome          | Breast cancer                       |
| Functional hypothalamic amenorrhea   |                                     |
| Reproductive hormones                |                                     |
| Oral contraceptives                  |                                     |
| Hormone replacement                  |                                     |

CVD indicates cardiovascular disease.

Modified from Gulati.<sup>18</sup> Copyright © 2017, American Heart Association, Inc.

orrhea,<sup>31</sup> menopausal status, and hormone use, none of which are assessed in contemporary risk assessment tools (Table). These risk factors should be assessed in women to ensure that traditional ASCVD risk factors are controlled for and periodically reassessed.

## Hormone Therapy

Most oral contraceptives do not impart an increase in cardiovascular risk for healthy women without traditional cardiovascular risk factors. However, oral contraceptive use by women who are cigarette smokers is associated with a 7-fold increase in cardiovascular risk, and hypertensive women are likely to have an elevation in blood pressure in association with oral contraceptive therapy. Stroke risk is increased by 1.4- to 2.0-fold, with its risk being more prominent among older women.<sup>32–34</sup>

In a Canadian population,<sup>35</sup> women with successful fertility therapy had a decrease in many cardiovascular events, whereas women with unsuccessful fertility therapy were at increased cardiovascular risk. Therefore, the use of oral contraceptives and hormonal therapy for infertility should be included in the health record.

## RECOMMENDATIONS FOR CARDIOVASCULAR PREVENTION

Many women see their OB/GYN as their sole physician, and this presents a unique opportunity to leverage this relationship to optimize risk reduction initiatives, reduce long-term healthcare costs, and provide comprehensive well-woman care. The American College of Obstetri-

cians and Gynecologists workforce found a decreasing number of office-based general internists and a significant reduction of family physicians performing deliveries and suggests that the role of the OB/GYN should increase as the coordinator of women's health care. Experts continue to emphasize the primary healthcare provider role for any young women at the entry point into the healthcare system.<sup>36</sup> Because OB/GYNs are primary care providers for many women, the well-woman visit is the foundation of practice. The annual visit provides a powerful opportunity to counsel patients about maintaining a healthy lifestyle and minimizing health risks.<sup>37</sup>

An optimal well-woman cardiovascular prevention visit should include a thorough family history, screening for and targeted review of cardiovascular risk factors (including those unique to women), and lifestyle counseling to improve cardiovascular risk factors with the goal of preventing future cardiovascular events. The preferred approach is to begin early in a woman's life to maximize opportunities to prevent atherosclerosis, a slow, progressive disease that often begins in young adulthood or earlier. Recommendations for screening intervals to assess cardiovascular disease risk factors vary between societies, with some commonalities. The American College of Cardiology/AHA guidelines for the assessment of cardiovascular risk find it reasonable to screen adults free of cardiovascular disease for risk factors such as smoking, hypertension, diabetes mellitus, total cholesterol, and high-density lipoprotein cholesterol every 4 to 6 years between the ages of 20 and 79 years to calculate their 10-year cardiovascular risk. Either 30-year or lifetime cardiovascular disease risk estimation can be used in adults 20 to 59 years of age with a 10-year risk of cardiovascular disease <7.5%.<sup>9</sup> To efficiently screen a woman for cardiovascular disease risk, both the traditional and nontraditional risk factors described above and highlighted in the Table should be considered. Nontraditional risk factors may affect the aggressiveness of the preventive treatment and may guide the initiation of preventive medications such as statins and antiplatelet drugs.

All well-woman visits, including the postpartum follow-up visit, should be considered an opportunity to focus on lifestyle choices that optimize cardiac health, including weight management, smoking cessation, physical activity assessment, nutritional counseling, and stress reduction. This is especially important for those with pregnancy complications that suggest an increased risk for premature cardiovascular events.

## Diabetes Mellitus and Abnormal Glucometabolic State

The US Preventive Services Task Force suggests screening for abnormal blood glucose in adults 40 to 70 years

of age who are overweight or obese. It is also reasonable to screen those with a family history of diabetes mellitus or established cardiovascular disease according to American Diabetes Association recommendations. Patients with diabetes mellitus (defined as hemoglobin A<sub>1c</sub> >6.4%) should be treated to achieve hemoglobin A<sub>1c</sub> <7.0%. Prediabetes should be defined as hemoglobin A<sub>1c</sub> of 5.7% to 6.4%. All patients with diabetes mellitus, prediabetes, or metabolic syndrome should receive lifestyle counseling, which has been shown to have even better outcomes than medical therapy.<sup>38</sup> Women with gestational diabetes mellitus should be screened for diabetes mellitus postpartum and receive counseling on increased risk and periodic screening based on current guidelines.<sup>39</sup> Metabolic syndrome (defined in women as 3 of the following 5 components: blood pressure >130 mm Hg systolic or 85 mm Hg diastolic, triglycerides >150 mg/dL, high-density lipoprotein <50 mg/dL, fasting glucose >100 mg/dL, waist circumference >35 in)<sup>40</sup> has also been recognized for putting women at increased risk for cardiovascular events, with each component being highly susceptible to lifestyle changes.<sup>41</sup>

## Hyperlipidemia

The AHA recommends that all adults ≥20 years of age have their cholesterol and other traditional risk factors checked every 4 to 6 years. In addition, if the family history suggests a genetic lipid disorder such as markedly elevated lipids with a family history of premature cardiovascular disease, it is imperative to check lipids on the initial visit regardless of age because cardiovascular event rates are far greater in those with genetic lipid disorders.<sup>42,43</sup>

Women with elevated lipids should receive counseling to lower their intake of saturated fats and to increase dietary fiber through a DASH (Dietary Approaches to Stop Hypertension), Mediterranean, or plant-based whole-food diet.<sup>44,45</sup> If diet alone is not adequate to achieve optimal lipid levels, statins are the first-line agent for cardiovascular event reduction. However, women of child-bearing age need to be specifically counseled to not become pregnant while taking a statin. The data to date for statins in pregnancy are mixed, but current guidelines still recommend against their use.<sup>29,46</sup> Although elevated triglycerides portend increased cardiovascular risk, particularly in women, treatment with medical therapy is suggested when triglycerides are >500 mg/dL because this carries an elevated risk of pancreatitis. In addition to appropriate dietary counseling and supplementation with omega-3 fatty acids, pregnant patients with familial hypertriglyceridemia, particularly with a history of pancreatitis, may benefit from the use of fenofibrates when triglyceride levels are >1000 mg/dL, particularly in the face of other comorbidities such as hypertension and diabetes mellitus.<sup>47</sup>

## Hypertension

The AHA recommends that blood pressure should be screened during regular healthcare visits at least once every 2 years for anyone ≥20 years of age.<sup>48</sup> The US Preventive Services Task Force recommends that adults ≥40 years and individuals at increased risk for high blood pressure should be screened annually.<sup>49</sup> Blood pressures should be checked with proper technique to ensure that patients are treated on the basis of accurate measurements.<sup>50–52</sup> Home blood pressure monitors or ambulatory blood pressure monitors may also be needed to confirm true hypertension. New American College of Cardiology/AHA 2017 guidelines define an elevated blood pressure as a systolic blood pressure of 120 to 129 mm Hg and a diastolic blood pressure <80 mm Hg, stage 1 hypertension as a systolic blood pressure of 130 to 139 mm Hg or a diastolic blood pressure of 80 to 89 mm Hg, and stage 2 hypertension as a systolic blood pressure of at least 140 mm Hg or a diastolic blood pressure of at least 90 mm Hg.<sup>52</sup> Lifestyle guidance should be given to all patients with elevated blood pressures. Causes of hypertension to assess include obesity, excess sodium intake, low-fiber diets, physical inactivity, excess alcohol intake, and sleep apnea.

Women without cardiovascular disease or elevated risk for cardiovascular disease should be treated with medical therapy if their blood pressure measurements are >140/90 mm Hg. However, if they have established cardiovascular disease or an elevated cardiovascular risk such as a 10-year risk >10%, treatment should begin at blood pressures >130/80 mm Hg.<sup>52</sup>

Contraceptive agents such as low-dose estrogen (eg, 20–30 µg of ethinyl estradiol), progestin only, intrauterine devices (copper or progestin releasing), barrier methods, or abstinence are recommended in women with established hypertension; avoidance of typical combined oral contraceptive pills in women with uncontrolled hypertension is suggested.<sup>52</sup>

## Optimal Weight and Weight Loss

Checking a patient's weight at every visit and discussing the patient's progress can prove effective to achieve behavioral change. Achieving an ideal weight can have benefits on all cardiovascular risk factors<sup>53</sup> and reproductive outcomes.<sup>54</sup> In many cases, referral to a registered dietician or a weight loss program can prove successful for more specific guidance and patient accountability. The interconception and postpartum visits provide an excellent opportunity to counsel women on achieving a healthier weight. Excessive weight gain during pregnancy is associated with significant retention of weight after pregnancy and into adult life.



## Diet and Nutritional Concerns

To date, the DASH diet and the Mediterranean diet have the highest level of evidence for cardiovascular protection, with more plant-based options conveying an even greater benefit.<sup>55,56</sup> Optimal diets have been shown to reduce cardiovascular and cancer risks and can be essential for reproductive health.<sup>57</sup> Assessing a patient's diet during an office visit may best be done by simple food frequency questionnaires (Mediterranean Diet Score, Rate Your Plate) to potentially guide a patient to areas for improvement. In the absence of a specific nutritional deficiency, there is no role for supplementation with vitamins, folic acid, or vitamin E for cardiovascular risk reduction.<sup>58</sup> Obtaining nutrients from a well-balanced diet is key, with dietary patterns for reduction of cardiovascular disease being more effective than a focus on individual nutrients.<sup>58,59</sup>

## Physical Activity

The American College of Cardiology/AHA 2013 lifestyle guidelines suggest that women engage in 150 min/wk of moderate-intensity physical activity, 75 min/wk of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic physical activity. This can be performed in episodes of at least 10 minutes, preferably spread throughout the week.<sup>10</sup> In addition, the AHA advocates for attaining 10 000 steps daily ( $\approx$ 5 miles) for the maintenance of heart health. Encouraging women to get this activity in divided doses, based on their specific daily activities, can make this goal more achievable. Pregnant women may experience benefits from exercise in pregnancy, including a reduction in preeclampsia and gestational diabetes mellitus.<sup>60</sup> The American College of Obstetricians and Gynecologists supports exercise in pregnancy: 20 to 30 minutes of moderate-intensity exercise most or all days in a week (when not contraindicated), which can include aerobic and strength conditioning.<sup>60</sup>

## Smoking Cessation

The recommended practice for smoking cessation assessment is the use of the 5 As: (1) ask about smoking; (2) advise the patient to quit through clear, personalized messages; (3) assess willingness to quit; (4) assist in quitting; and (5) arrange follow-up and support. In-person behavioral counseling sessions, even when <10 minutes, effectively increase the proportion of adults who successfully quit smoking and remain abstinent for 1 year. Although less effective, even interventions <3 minutes in duration increase cessation rates in some studies. Recommendations for smoking cessation include behavioral interventions and US Food and Drug Administration–approved pharmacotherapy. Combining behavioral and pharmacotherapy interventions may increase cessation rates from  $\approx$ 8% to 14%<sup>49</sup> compared

with usual care or minimal behavioral interventions such as self-help materials or brief advice on quitting.<sup>61,62</sup>

## Mental Health and Stress Reduction

Mental health and stress reduction are imperative at all stages of life, but perhaps more so in stages of a woman's life that are influenced by hormonal and environmental factors, particularly postpartum and menopause.<sup>63</sup> After both myocardial infarction and stroke, women tend to have higher incidences of depression (odds ratio, 1.27–3.15; hazard ratio, 3.52).<sup>21,64,65</sup> Mental health can affect cardiovascular health and attainment of optimal risk factors. In the healthcare realm overall, mental health and reduction of stress are often overlooked, even though they can greatly affect patient outcomes. There are data to suggest that programs for mindfulness and meditation improve a woman's well-being.

## My Life Check and Life's Simple 7

The AHA constructed the 2020 Impact Goal to improve the cardiovascular health of all Americans with 7 health metrics defining ideal cardiovascular health.<sup>66</sup> Based on 4 behavioral factors (smoking, physical activity, diet, and weight) and 3 health factors (total cholesterol, blood pressure, and metabolic control), scores are divided into ideal, intermediate, or poor levels of attainment. Providing feedback to patients about their risk level and tracking their progress can be a simple way to improve behaviors.

## LIFE SPAN–SPECIFIC RECOMMENDATIONS

The above recommendations for risk factor recognition and treatment are universal to women of all ages. At specific stages of a woman's life, however, healthcare providers should be more attuned to specific factors. Numerous studies have demonstrated that OB/GYNs are a major gateway into women's care and can positively influence a woman's lifetime health.

## Menarche to Premenopause

Development of heart-healthy behaviors can have an even greater impact on cardiovascular disease reduction and reproductive health at this age. A detailed family history is critical during this period for estimating the patient's cardiovascular risks. Careful assessment and counseling should be done before the initiation of any oral contraceptives during this time period.

## Pregnancy

Pregnancy has been referred to as the physiological stress test that reveals underlying disease processes.

Risk factor assessment has shown that 30% to 40% of pregnant women have 1 risk factor that can lead to long-term health problems and that 20% to 30% carry a predictor of cardiovascular disease risk. Because only specific drugs have been tested in pregnancy, recommendations for medical treatment of cardiovascular risk factors should be limited to those deemed safe in pregnancy on the basis of established guidelines.<sup>60</sup> Because a number of medications for lipid lowering and smoking cessation are not deemed safe during pregnancy, behavioral counseling can play a critical role during this period, as can more aggressive medical therapy during the times when a woman is not trying to conceive. Pregnant women should be counseled on following the Institute of Medicine guidelines for weight gain during pregnancy based on prepregnancy body mass index and make an attempt to achieve a healthier weight between pregnancies if they are overweight or obese.

### Premenopause and Postmenopause

Recognizing both traditional and nontraditional cardiovascular disease risk factors is imperative for optimal medical therapy and lifestyle guidance. Decisions about the use of hormone replacement therapy should also be guided by a thorough risk assessment.

## CONCLUSIONS AND RECOMMENDATIONS

Because cardiovascular disease continues to be the leading cause of death in women, we are obligated to seize the opportunity with an urgent call to action. Clinicians who provide care to women must take an active role in chronic disease prevention. Coordinated health-care delivery among OB/GYNs and cardiologists would allow a better assessment of patient needs and improve outcomes by minimizing cardiovascular morbidity and mortality. To facilitate these improvements in care, we propose a set of principles to guide the identification and prevention of cardiovascular disease in women.

1. Healthy lifestyles and behaviors should be a point of emphasis in the care of all women. The poor Western diet and lack of exercise are the root causes of poor outcomes such as cardiovascular disease and diabetes mellitus, leading to excessive healthcare costs. Multidisciplinary and innovative strategies should be developed to engage and empower women to change their lifestyles. Healthy behaviors should be discussed at each visit.
2. Screening for cardiovascular disease and cardiovascular risk factors in women should be enhanced. Eliciting a full patient history will reveal critical clues about patient risk factors and may trigger appropriate referrals. Preexamination questionnaires can

include surveys addressing diet, physical activity, depression screening, and lifestyle choices, as well as a detailed family and social history. Templates can be created for visits that include both traditional and nontraditional cardiovascular disease risk factors to ensure that the clinician has addressed all key areas such as genetic risk factors, smoking cessation, and mental health. Regular screening and risk review sends a consistent message to patients of the importance of healthful lifestyle adherence; a comprehensive and standardized approach to screening and risk identification is key.

3. Providers and healthcare systems should leverage technology to improve the cardiovascular health of women. Use of electronic health records and connecting medical data silos are crucial to providing integrated patient care. Software algorithms can trigger patient education and referrals by analyzing data contained in enhanced and comprehensive screenings. Consumer technology firms are developing devices and software to allow consumers to monitor and enhance their health. OB/GYNs and cardiologists should take an active role to ensure that the medical history collected is comprehensive, and key insights should trigger the correct recommendations and referrals to the appropriate physicians. These new consumer medical technologies should be leveraged to institute prevention and intervention strategies for behavioral change and extended to social media networks to educate, empower, and motivate women. Consumer devices, apps, and social media networks have the potential to reach most populations and to assist in reducing healthcare disparities.
4. OB/GYNs and cardiology providers can improve the cardiovascular health of women through enhanced collaboration. There is a significant opportunity to bridge the disciplines of cardiology and obstetrics and gynecology, including standardized protocols and enhanced cardiac screening. Shared information can be used to assess risk, initiate interventions, and facilitate significant lifestyle changes. Care can be coordinated to minimize cardiovascular morbidity and mortality and to improve outcomes. By providing a platform for comprehensive well-woman care, primary prevention, and early intervention, providers of women's health can provide patient education, empowerment, and motivation.

### Educational Resources

Primary care clinicians may find the following resources useful in talking with adults and pregnant women about several health issues affecting women:

- AHA Life's Simple 7 website<sup>67,68</sup>
- AHA Go Red For Women website<sup>69</sup>

- Mediterranean diet—Go Red For Women<sup>70</sup>
- How to reduce added sugar in diet—Go Red For Women<sup>71</sup>
- Pregnancy and heart disease—Go Red For Women<sup>72</sup>
- AHA high blood pressure and women<sup>73</sup>
- Gestational diabetes mellitus—Go Red For Women<sup>74</sup>
- Committee on Practice Bulletins—Obstetrics: Practice Bulletin No. 180: Gestational Diabetes Mellitus<sup>39</sup>
- AHA prevention and treatment of high cholesterol<sup>75</sup>
- Smoking cessation: Centers for Disease Control and Prevention fact sheets on quitting smoking<sup>76</sup> and the US Department of Health and Human Services' BeTobaccoFree,<sup>77</sup> SmokeFree Women,<sup>78</sup> and Public Health Service 2008 clinical practice guidelines<sup>79</sup>
- American College of Obstetricians and Gynecologists Patient Page<sup>80</sup>

## ARTICLE INFORMATION

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members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

This advisory was approved by the American Heart Association Science Advisory and Coordinating Committee on May 1, 2018, and the American Heart Association Executive Committee on May 7, 2018. A copy of the document is available at <http://professional.heart.org/statements> by using either "Search for Guidelines & Statements" or the "Browse by Topic" area. To purchase additional reprints, call 843-216-2533 or e-mail [kelle.ramsay@wolterskluwer.com](mailto:kelle.ramsay@wolterskluwer.com).

The American Heart Association requests that this document be cited as follows: Brown HL, Warner JJ, Gianos E, Gulati M, Hill AJ, Hollier LM, Rosen SE, Rosser ML, Wenger NK; on behalf of the American Heart Association and the American College of Obstetricians and Gynecologists. Promoting risk identification and reduction of cardiovascular disease in women through collaboration with obstetricians and gynecologists: a presidential advisory from the American Heart Association and the American College of Obstetricians and Gynecologists. *Circulation*. 2018;137:e843–e852. DOI: 10.1161/CIR.0000000000000582.

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## Disclosures

### Writing Group Disclosures

| Writing Group Member | Employment   | Research Grant  | Other Research Support | Speakers' Bureau/Honoraria | Expert Witness | Ownership Interest | Consultant/Advisory Board   | Other |
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This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all members of the writing group are required to complete and submit. A relationship is considered to be "significant" if (a) the person receives \$10 000 or more during any 12-month period, or 5% or more of the person's gross income; or (b) the person owns 5% or more of the voting stock or share of the entity, or owns \$10 000 or more of the fair market value of the entity. A relationship is considered to be "modest" if it is less than "significant" under the preceding definition.

\*Modest.

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