The Atherosclerosis Risk in Communities (ARIC) Study program is a multicenter epidemiological study. The cohort component of the ARIC study involves examination of 16,000 representative men and women from four communities: Forsyth County, North Carolina; Jackson, Mississippi; Suburban Minneapolis, Minnesota; and Washington County, Maryland – twice, at three-year intervals. A more detailed description of the rationale, goals and potential impact of this program is found in Chapter 61. One unique component of this program is B-mode ultrasound examinations of popliteal and extracranial carotid arteries. This noninvasive method has the ability, when used with detailed and standardized protocols, to detect and potentially monitor plaque evolution in asymptomatic subjects. We report here briefly the methods used in the B-mode imaging component of this study.

The examination of participants in a separate, designated ultrasound area in each of the four ARIC Field Centers consists of the following components: (1) B-mode ultrasound imaging of one popliteal artery and both extracranial carotid arteries; (2) measurement of common carotid artery distensibility; (3) automatic monitoring of blood pressure throughout the ultrasound examination; and (4) beat-to-beat monitoring of heart rate with rapid sequential blood pressure monitoring during a postural change exam at the conclusion of the study. Interpretation of the ultrasound examination is performed at the ARIC Ultrasound Reading Center (URC) located at the Bowman Gray School of Medicine in Winston-Salem, North Carolina.

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