| **Study, year** | **Screening test** | **Reference standard** | **Type of study** | **Setting;Screener** | **Subjects** | **Age, sex, and race of enrollees**  |
| --- | --- | --- | --- | --- | --- | --- |
| Berenson et al, 199334 | Mercury sphygmomanometer or physiometrics automatic recording device | Three additional measurements at three week intervals | Cohort | School-based screening;Nurses | Children in third grade through high school in Franklinton, LA | Mean age NR (range 8-18 years)50% White50% Black |
| Ewart et al, 198735 | Hawksley mercury column sphygmomanometer, using either adult or pediatric cuff, after 10 minutes at rest | Two additional measurements over six-week screening period | RCT | School-based screening;Certified technicians | Children in 9th and 10th grade at two large public high schools in Baltimore, Maryland | Mean age 15 years55% Black (of 110 participants) |
| Fixler et al, 197936 | Random-zero mercury sphygmomanometer with appropriate cuff, on right arm, in sitting position after four minutes rest | Two subsequent measurements with at least four weeks between second and third measurements | Cohort | Dallas Independent School District;Public health, vocational, and school nurses and nurses' aides | Eighth-grade students | Mean age 14 years46% Black40% White14% Latin-Americans  |
| Kelsall & Watson, 199037 | Standard mercury sphygmomanometer with appropriate cuff, at end of health appraisal with child in sitting position | Three measurements; >95th percentile referred for further testing | Cohort | 18 junior schools: Nottingham, England; School nurses | School children aged 10 or 11 | Mean age NR (range 10-11 years)Race not reported |
| Michaud et al, 198938 | Random-zero mercury sphygmomanometer with adult cuff, on right arm, in sitting position after a few minutes rest | Two additional measurements, one after 10 minutes followed by a third measurement after one month orConfirmation by a physician  | Cohort | High schools and vocational schools; the Canton of Vaud, Switzerland;Public health nurses | White adolescents aged 16 through 19 years | Mean age NR (range 16-19 years)100% White |
| Miller and Shekelle, 197639 | Mercury sphygmomanometer on right arm after 5 to 10 minutes lying flat quietly on a cot | Elevated BP on screening, recalled for repeat BP by pediatric cardiologist. If BP at this visit remained high, then had up to four subsequent measurements over 20 to 30 minutes | Cohort | High school;Greater Chicago, IL region;Trained technicians | Black or White 10th graders | Mean age 15 years52% Male94% White6% Black |
| Moore et al, 200940 | Average of two measurements one minute apart using digital BP monitor, with appropriate cuff on right arm, in seated position, after resting for 3-5 minutes | Two additional measurements on separate occasions  | Cohort | Anadarko, OK public school district;School nurses | Elementary, middle or high-schoolers | Mean age 11 years (range 5-17 years)50% Male61% American Indian 28% White6% Hispanic 5% Black |
| Rames et al, 197841 | Mercury sphygmomanometer on right arm, in seated position, after a short explanation of the procedure | Second measurement, followed by three more measurements after lying quietly for 30 minutes | Cohort | Schools;Muscatine, IA;Nurses | Students aged 5 to 18 years | Mean age NR (range 5 to 18 years)50% Male96% Whiteother races not reported |
| Reichman et al, 197542 | Mercury sphygmomanometer, in seated position, with left arm resting on a table; positive screens immediately confirmed by a blinded observer | Rescreening at least one week after initial positive | Cohort | High School of Fashion Industries, New York, NY;Trained community workers | Students aged 12 to 20 years | Mean age NR (90% aged 14-17 years; total range 12 to 20 years)10% Male78% Black21% White1% Other |
| Sailors et al, 198343 | Mercury sphygmomanometer | Subsequent mercury sphygmomanometer readings (up to three measurements) | Cohort | Elementary, middle, and high schools Yonkers, NY; Trained health aid | Children in grades 3, 7, and 10 | Mean age NR; 36% 3rd graders, 39% 7th graders, 25% high school (primarily 10th grade)69% White19% Black11% Hispanic 1% Arabic 1% Asian |
| Sinaiko et al, 198844 | Mercury sphygmomanometer on right arm, in seated position, average of 2 readings | Children with BP >70th centile of age specific distribution had a single further visit for a 2 further BP measurements which were averaged, within three weeks of the initial screen | Cohort | Public schools;St. Paul and Minneapolis, MN;Trained personnel | Children aged 10 to 16 years old | Mean age NR (range 10 to 16 years) 74% White26% Black |
| Stern et al, 198045 | Two averaged measurements with a mercury sphygmomanometer, on the right arm, with students in sitting position | Rescreening four months after index test | Baseline sampling for trial recruit-ment | High schools;Kannapolis, Concord, and Cabarrus Counties, North Carolina;Nurses | High school students | Mean age NR (range 15-19 years)Race NR |

| **Study, year** | **Number screened** | **Definition of a positive screening exam** | **Proportion with positive screening exam** | **Definition of a case** | **Proportion with positive reference standard and recreened**  | **True positive rate** |
| --- | --- | --- | --- | --- | --- | --- |
| Berenson et al, 199334 | 1,604 | BP >90th percentile | 255/1,604 (15.9%) | Four consecutive measurements >90th percentile | 255/1,604 (16%) | 89/255 (35%) |
| Ewart et al, 198735 | 1,400 | Blood pressure >85th percentile of the screening distribution | 299/1,400 (21.4%) | Initial screening between 85th and 95th percentile: second measurement at the end of the semesterInitial screening above the 95th percentile: three measurements above 95th percentile during six-week screening period | 299/1,400 (21%) | 159/299 (53%) |
| Fixler et al, 197936 | 10,641 | SBP or DBP >95th percentile | Single measurement947/10,641 (8.9%) | Three positive screens | 947/10,641 (9%) | 167/947 (18%) |
| Kelsall & Watson, 199037 | 677 | SBP or DBP >90th or 95th percentile | Single measurement90th percentile: 35/677 (5.2%)95th percentile: 19/677 (2.8%) | Positive screen on three measurements | 35/677 (5%) | 9/35 (26%) |
| Michaud et al, 198938 | 3,386 | DBP >90 or above and/or SBP >140  | 113/3,386 (3.3%) | Positive screen on three measurements | 338/3,386 (10%) | 113/338 (33%) |
| Miller and Shekelle, 197639 | 13,231 | SBP >145 and/or DBP >85 | 602/13,231 (4.5%) initial positive screen | Positive screen upon second examination | 403/13,231 (3%)  | 191/403 (47%) |
| Moore et al, 200940 | 1,829 | >95th percentile according to NHBPEP standards | 252/1,829 (13.8%)  | BP >95th percentile upon 2 or more occasions of rescreening | 252/1,829\* (13.8%)\*Assuming all initially positive screens rescreened; unclear from text if this is the case | 42/252 (17%) |
| Rames et al, 197841 | 6,622 | BP >95th percentile or greater than 140/90  | 1,179/6,622 (17.8%) | Up to 4 positive rescreens | 931/6,622 (14%; not all positive screens rescreened) | 41/931 (4%) |
| Reichman et al, 197542 | 1,863 | BP >140/90 | 110/1,863 (5.9%) | Positive screen on two measurements (includes initial screening measurement) | 110/1,862 (5.9%) | 46/110 (42%) |
| Sailors et al, 198343 | 5,399 | SBP 130 mmHg systolic and/or DBP 85 mmHg or higher | 140/5,399 (2.6%) | Followup BP at or above 130/85 | 140/5,399 (3%) | 36/140 (26%) |
| Sinaiko et al, 198844 | 10,446 | DBP >82 mmHg in children 10 to 12 years old, or >85 mmHg in children 13 years or older or SBP >130 mmHg | SBP: 223/10,446 DBP: 475/10,446  | Elevated BP on 2 separate occasions.  | 2,808/10,446 (27%) | SBP: 50/223 (22%)DBP: 81/475 (17%) |
| Stern et al, 198045 | 5,000 | SBP >140 mmHg, and/or DBP >90 mmHg | 172/5,000 (3.4%), of which only 118 available for confirmation by reference standard, of whom 50 had elevated BP at 2nd measure | Elevated BP on 2 occasions (initial screen, and repeat test 4 months later) | 118/5,000 (2%) | 50/118 (42%) |

BP = blood pressure; DBP=diastolic blood pressure; NHBPEP = National High Blood Pressure Education Program; NR = not reported; RCT = randomized controlled trial; SBP=systolic blood pressure.