| **Study, year** | **Screening test** | **Definition of a positive screening exam** | **Reference standard** | **Type of study** | **Country**  **Setting** | **Population characteristics** | **Sample size**  **Proportion with condition** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Casey, 199443 | CDC Risk Assessment Questionnaire | ≥1 positive answers | Venous | Cross-sectional | United States Urban general pediatric department | Low-risk vs. high-risk  Mean age, months: 10 vs. 9  Female: 50% vs. 50%  Ethnicity: 29% vs. 33% African American  62% vs. 62% white | n=167  Elevated BLL, overall  ≥10 µg/dL: 29% (48/165)  10 to 14 µg/dL: 22% (36/165)  15 to 19 µg/dL: 4% (7/165)  20 to 44 µg/dL: 2.5% (4/165)  46 µg/dL: 0.5% (1/165) |
| Dalton, 199644 | CDC Risk Assessment Questionnaire  Additional behavioral risk factor questions | ≥1 positive or equivocal answers | Venous | Cross-sectional | United States Medical center | Mean age: NR (range, 6 to 72 months)  Female: NR Ethnicity: NR | n=516  Elevated BLL, overall  ≥10 µg/dL: 22% (101/463)  ≥15 µg/dL: 6% (28/463) |
| France, 199648 | CDC Risk Assessment Questionnaire  Additional risk factor questions | ≥1 positive or equivocal answers | Venous | Cross-sectional | United States Multisite primary care network | Mean age: NR (range, 5 months to 6.5 years)  Female: NR  Ethnicity: NR | n=2,978  Mean BLL: 4.19 µg/dL  Elevated BLL ≥10 µg/dL: 2.9% (85/2978) |
| Holmes, 199749 | CDC Risk Assessment Questionnaire  Additional risk factor questions | Unclear | Venous | Cross-sectional | United States Continuity clinic at a children's hospital | Mean age, months: 28.44 (range, 9 to 72)  Female: 46%  Ethnicity: 39% Hispanic, 39% black, 18% white | n=754  Elevated BLL ≥10 µg/dL: 3.1% (25/801) |

| **Study, year** | **Proportion unexaminable by screening test** | **Analysis of screening failures** | **Proportion who underwent reference standard and included in analysis** | **Sensitivity (95% CI)** | **Specificity (95% CI)** |
| --- | --- | --- | --- | --- | --- |
| Casey, 199443 | n=2 | NR | 98% (165/167) | Overall: 40% (19/48) (25.77 to 54.73)  By screening question:  Peeling paint: 15%  Renovation: 31%  Sibling with Pb: 6%  Adult's job with Pb: 2%  Live near Pb industry: 6% | Overall: 60% (70/117) (50.36 to 68.78)  By screening question:  Peeling paint: 76%  Renovation: 75%  Sibling with Pb: 99%  Adult's job with Pb: 97%  Live near Pb industry: 98% |
| Dalton, 199644 | n=0 | NR | 89.7% (463/516) | CDC Risk Factors  Overall: 70.3% (60.39 to 78.98)  Behavioral Risk Factors  Playing near outside of house: 74.2% (64.60 to 82.44) | CDC Risk Factors  Overall: 31.8% (27.00 to 36.84)  Behavioral Risk Factors  Playing near outside of house: 54.1% (28.05 to 37.98) |
| France, 199648 | n=562 (19%) | Prevalence of elevated BLL did not differ for those who did not complete screening questionnaire: 3.2% (p=0.51) | 81% (2,416/2,978) | CDC + additional questions: 59.7% (48 to 72)  CDC alone: 57% (45 to 69) | CDC + additional questions: 36% (34 to 38)  CDC alone: 51% (49 to 53) |
| Holmes, 199749 | n=47 (5.9%) | NR | 94% (754/801) | 68% (46.50 to 85.05) | 58% (53.93 to 61.23) |

| **Study, year** | **Positive likelihood ratio**  **(95% CI)** | **Negative likelihood ratio (95% CI)** | **Positive predictive value (95% CI)** | **Negative predictive value (95% CI)** | **Quality rating** |
| --- | --- | --- | --- | --- | --- |
| Casey, 199443 | Overall: 1.0 (0.65 to 1.49)  Peeling paint: 0.625  Renovation: 1.24  Sibling with Pb: 6.0  Adult’s job: 0.67  Live near Pb: 3 | Overall: 1.0 (0.77 to 1.33)  Peeling paint: 1.12  Renovation: 0.92  Sibling with Pb: 0.95  Adult's job: 1.01  Live near Pb: 0.96 | Overall: 29% (19/66) (21.09 to 37.94)  Peeling paint: 20%  Renovation: 34%  Sibling with Pb: 75%  Adult's job: 25%  Live near Pb: 60% | Overall: 71% (76/99) (64.75 to 76.03)  Peeling paint: 68%  Renovation: 73%  Sibling with Pb: 72%  Adult's job: 71%  Live near Pb: 72% | Fair |
| Dalton, 199644 | CDC risk factors: 1.03 (0.89 to 1.19)  Playing near outside of house: 1.62 (0.97 to 1.27) | CDC risk factors: 0.93 (0.67 to 1.31)  Playing near outside of house: 0.78 (0.54 to 1.13) | CDC risk factors: 22.33% (19.91 to 24.94)  Playing near outside of house: 23.58% (21.23 to 26.12) | CDC risk factors: 79.31% (73.26 to 84.29)  Playing near outside of house: 82.07% (76.11 to 86.80) | Fair |
| France, 199648 | CDC + additional questions: 0.93 (NR)  CDC alone: 1.16 (NR) | CDC + additional questions: 1.12 (NR)  CDC alone: 0.84 (NR) | CDC + additional questions: 2.8 (NR)  CDC alone: NR | CDC + additional questions: NR  CDC alone: NR | Fair |
| Holmes, 199749 | 1.60 (1.21 to 2.13) | 0.56 (0.31 to 0.99) | 5.21% (3.98 to 6.80) | 98.13% (96.73 to 98.94) | Fair |

| **Study, year** | **Screening test** | **Definition of a positive screening exam** | **Reference standard** | **Type of study** | **Country**  **Setting** | **Population characteristics** | **Sample size**  **Proportion with condition** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Kazal, 199747 | CDC Risk Assessment Questionnaire  Additional risk factor questions | Unclear | Venous | Cross-sectional | United States Rural clinic, Navajo Reservation | Mean age, months: 30.5  Female: 49%  Ethnicity: 98% Navajo | n=368  Elevated BLL ≥10µg/dL: 2.2% (8/368) |
| Muniz, 200350 | CDC Risk Assessment Questionnaire  Additional risk factor questions | ≥1 positive or equivocal answers | Venous | Retrospective cohort | United States Rural clinic | Mean age: NR (range, 9 to 24 months)  Female: NR  Ethnicity: NR | n=171  Elevated BLL ≥10 µg/dL: 2.3% (4/171) |
| Robin, 199745 | Modified Health Care Financing Administration questionnaire | ≥1 positive answers | Venous | Cross-sectional | United States Urban and rural Medicaid recipients | Mean age: NR (range, 2 to 6 years)  Female: 51.3%  Ethnicity:  Alaska native: 60% White: 28%  Black: 5% | n=967  Elevated BLL ≥10 µg/dL: 0.6% (6/967) |
| Schaffer, 199651 | CDC Risk Assessment Questionnaire  Additional risk factor questions | ≥1 positive or equivocal answers to the CDC questions | Venous (approximately 6% were capillary) | Cross-sectional | United States Rural clinic | Mean age: NR (range, 6 to 72 months)  Female: NR  Ethnicity: NR | n=705  Elevated BLL ≥10 µg/dL: 8.4% (59/705) |
| Snyder, 199546 | CDC Risk Assessment Questionnaire  Additional risk factor questions | ≥1 positive answers | Venous | Cross-sectional | United States Public clinics | Mean age: NR (range, 6 to 72 months)  Female: NR  Ethnicity: NR | n=247  Elevated BLL ≥10 µg/dL: 7.7% (19/247) |

| **Study, year** | **Proportion unexaminable by screening test** | **Analysis of screening failures** | **Proportion who underwent reference standard and included in analysis** | **Sensitivity (95% CI)** | **Specificity (95% CI)** |
| --- | --- | --- | --- | --- | --- |
| Kazal, 199747 | n=45 (12.2%) | NR | 100% | CDC questions: 42.9% (9.90 to 81.59)  CDC + additional questions: 42.9% (NR) | CDC questions: 68.52% (68.52 to 78.50)  CDC + additional questions: 66.1% (NR) |
| Muniz, 200350 | n=0 | NR | 100% | CDC questions: 25% (NR)  CDC + additional questions: 50.0% (6.76 to 93.24) | CDC questions: 49% (NR)  CDC + additional questions: 49.70 (41.88 to 57.53) |
| Robin, 199745 | n=0 | NR | 100% | 83.3% (35.88 to 99.58) | 38.6% (35.50 to 41.77) |
| Schaffer, 199651 | n=1 (0.1%) | NR | 99.2% (705/711) | CDC + additional questions: 75% (NR)  Condensed questionnaire from 4 items most likely to correctly identify patients: 88% (NR) | CDC + additional questions: NR  Condensed questionnaire from 4 items most likely to correctly identify patients: NR |
| Snyder, 199546 | n=0 | NR | 100% | CDC questions: 31.6% (12.58 to 56.55)  Additional questions: 89.5% (66.86 to 98.70)  CDC + additional questions: 89.5% (66.6 to 98.70) | CDC questions: 79.8 (74.02 to 84.83)  Additional questions: 37.3% (30.99 to 43.91)  CDC + additional questions: 31.6% (25.6 to 38.0) |

| **Study, year** | **Positive likelihood ratio**  **(95% CI)** | **Negative likelihood ratio (95% CI)** | **Positive predictive value**  **(95% CI)** | **Negative predictive value**  **(95% CI)** | **Quality rating** |
| --- | --- | --- | --- | --- | --- |
| Kazal, 199747 | 1.63 (0.68 to 3.91)  CDC + additional questions: 1.27 (NR) | 0.77 (0.41 to 1.48)  CDC + additional questions: 0.79 (NR) | 3.49% (1.48 to 7.98)  CDC + additional questions: 2.7 (NR) | 98.31% (96.83 to 99.11)  CDC + additional questions: 98.1 (NR) | Fair |
| Muniz, 200350 | CDC + additional questions: 0.99 (0.37 to 2.68) | CDC + additional questions: 1.01 (0.37 to 2.71) | CDC + additional questions: 2.33% (0.88 to 6.03) | CDC + additional questions: 97.65% (93.90 to 99.11) | Fair |
| Robin, 199745 | 1.36 (0.95 to 1.95) | 0.43 (0.07 to 2.59) | 0.84% (0.59 to 1.21) | 99.73% (98.40 to 99.95) | Fair |
| Schaffer, 199651 | CDC + additional questions: NR  Condensed questionnaire from 4 items most likely to correctly identify patients: NR | CDC + additional questions: NR  Condensed questionnaire from 4 items most likely to correctly identify patients: NR | CDC + additional questions: NR  Condensed questionnaire from 4 items most likely to correctly identify patients: NR | CDC + additional questions: 98%  Condensed questionnaire from 4 items most likely to correctly identify patients: 98% (NR) | Fair |
| Snyder, 199546 | CDC questions: 1.57 (0.77 to 3.19)  Additional questions: 1.43 (1.19 to 1.71)  CDC + additional questions: 1.31 (1.09 to 1.56) | CDC questions: 0.86 (0.63 to 1.17)  Additional questions: 0.28 (0.08 to 1.06)  CDC + additional questions: 0.33 (0.09 to 1.25) | CDC questions: 11.54% (6.02 to 20.98)  Additional questions: 10.6% (9.00 to 12.5)  CDC + additional questions: 9.83% (8.36 to 11.52) | CDC questions: 93.33% (91.11 to 95.03)  Additional questions: 97.7% (91.89 to 99.38)  CDC + additional questions: 97.3 (90.54 to 99.27) | Fair |

**Abbreviations:** BLL=blood lead level; CDC=Centers for Disease Control and Prevention; CI=confidence interval; LR=likelihood ratio; NR=not reported; Pb=lead.