

# Recommendation for Full-Day Kindergarten for Children of Low-Income and Racial/Ethnic-Minority Families

Community Preventive Services Task Force

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**Summary:** The Community Preventive Services Task Force recommends full-day kindergarten programs to improve the health prospects of minority children and children from low-income families, based on strong evidence that, compared with half-day kindergarten or full-day kindergarten on alternating days, full-day programs substantially improve reading and mathematics achievement—determinants of long-term academic and health-related outcomes (e.g., reduced teen pregnancy and risk behaviors). The achievement gains apparent at the beginning of first grade do not, themselves, guarantee academic achievement in later years. Ongoing school environments that support learning and development are essential.

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Children in low-income families often experience delays in language and other development by the age of three. Compensating for these delays before children begin regular schooling can be critical to providing them with equal opportunities for lifelong employment, income, and healthy behavior. This recommendation, based on the findings of a systematic review,<sup>1</sup> is the first in a series of assessments of effectiveness of interventions to promote health equity by promoting the health of low-income and minority populations. The initial set of reviews focuses on educational interventions.

## Intervention Definition

Full-day kindergarten is a formal program offered for children aged 4–6 years in a school or school-like setting during the school year prior to entering first grade. Activities are organized, developed, and supervised by at least one adult. Full-day kindergarten programs run 5 days a week and last 5–6 hours per day. Half-day kindergarten generally lasts about 3 hours per day and alternate-day full-day kindergarten about 5–6 hours per day, but on alternating days.

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Names and affiliations of the Task Force members can be found at [www.thecommunityguide.org/about/task-force-members.html](http://www.thecommunityguide.org/about/task-force-members.html)

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## Task Force Recommendation

The Community Preventive Services Task Force (Task Force) recommends full-day kindergarten programs to improve the health prospects of minority children and children from low-income families, based on strong evidence that full-day programs substantially improve reading and mathematics achievement—determinants of long-term academic and health-related outcomes (e.g., reduced teen pregnancy and risk behaviors)—when compared with half-day kindergarten or full-day kindergarten on alternating days. Achievement gains apparent at the beginning of first grade do not themselves guarantee academic achievement in later years. Ongoing school environments that support learning and development are essential.

## Rationale

### Basis of Finding

The Task Force finding is based in part on a published meta-analysis<sup>2</sup> that meets Community Guide systematic review standards in terms of intervention definition, search procedures, outcome assessment, study design and execution evaluation, and synthesis of effect estimates. An updated search for studies published since 2009, when the search conducted for the meta-analysis ended, did not identify additional studies that met review inclusion criteria. To assess longer-term effects of full-day kindergarten, The Community Guide review also included evidence from other sources.

The meta-analysis focused on full-day kindergarten programs and their association with improved kindergarten academic achievement as compared separately to half-day kindergarten and alternating-day full-day kindergarten—the temporal equivalent of half-day kindergarten. Effectiveness was measured by standardized achievement tests or assigned grades at the end of kindergarten or the beginning of first grade.

Thirty reports contained 43 samples that compared full-day kindergarten with half-day kindergarten; these studies indicated that full-day kindergarten improved academic achievement by an average of 0.35 SDs (Cohen's *d*; 95% CI=0.23, 0.46). Using the binomial effect size display,<sup>3</sup> this result implies that if a group of children were evenly divided between full-day kindergarten and half-day kindergarten, 59% of those in full-day kindergarten would have test scores above the population median, compared with 41% of those in half-day kindergarten. Seven studies compared full-day kindergarten with alternating-day full-day kindergarten and found that full-day kindergarten improved achievement by an average of 0.43 SDs (Cohen's *d*; 95% CI=0.07, 0.79).

Intended to increase acquired knowledge, improve the ability to reason and solve problems, and improve social-emotional skills that allow healthy social interaction, education is a major determinant of health. Educational attainment leads to health through three interrelated pathways<sup>4,5</sup>: (1) development of psychological strengths promoting healthy interaction, problem-solving ability, and a consequent sense of control; (2) ability to pursue and maintain productive work and income; and (3) achievement of healthy behaviors and the ability to negotiate the health care system.

In addition, extensive evidence from early childhood experiments, such as the Perry Preschool Study,<sup>6</sup> the Carolina Abecedarian Project,<sup>7</sup> and the Chicago Child-Parent Centers,<sup>8</sup> as well as systematic reviews,<sup>9</sup> shows that academic achievement in early childhood programs has long-term educational, economic, and health consequences. For these reasons, the Task Force considers measures such as standardized tests of academic achievement reasonable outcomes on which to base public health recommendations.

Other results from the meta-analysis were each based on a single study. Outcomes included self-confidence, ability to work or play with others, independence, and school attendance by the end of kindergarten or the beginning of first grade. The outcome most relevant for this review is ability to work and play with others, which can be regarded as a social-emotional health outcome. The study that reported on this outcome showed a significant effect favoring full-day kindergarten ( $d=1.06$ , 95% CI=0.63, 1.49).<sup>10</sup>

In a separate analysis of data derived from the Early Childhood Longitudinal Studies, Cooper and colleagues<sup>2</sup>

found the possible loss of benefit of full-day kindergarten by the end of third grade. However, a Community Guide assessment of long-term effects of early childhood education, conceptually comparable to kindergarten, indicates that better-designed studies show greater long-term academic and health effects than do studies not controlling for conditions following the early childhood program.<sup>11</sup>

## Other Benefits and Harms

In addition to improved educational and social-emotional outcomes, full-day kindergarten may have other benefits as well as potential harms. Some researchers postulate that full-day kindergarten allows more individualized instruction, easier identification of and referral for problems, and improved nutrition.<sup>12</sup> In addition to improving health-related educational outcomes, full-day kindergarten programs may also allow parents more time for work, thus increasing family income and resources and community well-being.

In contrast, other researchers propose that full-day kindergarten may put pressure on children to achieve before they are developmentally ready; increase fatigue and irritability for both students and teachers; and reduce planning time for teachers.<sup>13</sup>

## Considerations for Implementation

Barriers to establishing full-day kindergarten may include concerns about a lack of play time, lack of qualified teachers, and rapid turnover among teachers.

## Interpreting the Recommendation

Poverty is known to pose challenges to early developmental and educational opportunities of the growing child. If these challenges are not met or compensated, further challenges may accrue and hinder long-term education and its health-related benefits. The recommendation made here indicates that full-day kindergarten can serve to improve academic achievement and may also enhance the social skills of developing children, strengthening foundations for ongoing learning and interaction. However, maintenance of these early benefits may require subsequent strong educational programs to ensure maintenance and growth of benefits over time.

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