

Table 1: History of ADA guidance for A1C targets in youth with diabetes recommended by the American Diabetes Association since 2000. Changes from the previous guidance are indicated in italics. Letters in parenthesis indicate the level of evidence per American Diabetes Association evidence level grading (1).

Goal	Date & Publication
<p>“Successful treatment with diet and exercise is defined as cessation of excessive weight gain with normal linear growth, near-normal fasting blood glucose values (126 mg/dl), and near-normal HbA1C (less than 7% in most laboratories)”</p>	<p>2000 Consensus Statement –Type 2 Diabetes in Children and Adolescents (2)</p>
<p>Recommendations: Develop or adjust the management plan to achieve normal or near-normal glycemia with an A1C goal of <7%. (B) Less stringent treatment goals may be appropriate for patients with a history of severe hypoglycemia, patients with limited life expectancies, very young children or older adults, and individuals with comorbid conditions. (E)</p>	<p>2003 Standards of Medical Care for Patients With Diabetes Mellitus (3)</p>
<p>Recommendations: Develop or adjust the management plan to achieve normal or near-normal glycemia with an A1C goal of <7%. (B) <i>More stringent goals (i.e., a normal A1C, <6%) can be considered in individual patients. (B)</i> Less stringent treatment goals may be appropriate for patients with a history of severe hypoglycemia, patients with limited life expectancies, very young children or older adults, and individuals with comorbid conditions. (E)</p>	<p>2004 Standards of Medical Care in Diabetes (4)</p>
<p>Age-specific glycemic goals Children <6 years old—to minimize the risk of hypoglycemia as well as excessive hyperglycemia, both lower and upper targets for this age-group are</p>	<p>2005 Care of Children and Adolescents With Type 1 Diabetes, A statement of the American Diabetes Association (5)</p>

<p>provided. An A1C value between 7.5 and 8.5% is recommended.</p> <p>Children 6–12 years old—An A1C goal of $\leq 8\%$, a level $\sim 1\%$ higher than the adult standard, is recommended ($< 8\%$ in table).</p> <p>Adolescents (13–19 years)—Concerns regarding the risks of hypoglycemia and of the potential of creating a feeling of failure in the patient and family leads us to the general recommendation of $< 7.5\%$ in this group.</p>	
<p>Recommendations:</p> <p>Develop or adjust the management plan to achieve normal or near-normal glycemia with an A1C goal of $< 7\%$. (B)</p> <p>More stringent goals (i.e., a normal A1C, $< 6\%$) can be considered in individual patients <i>and in pregnancy</i>. (B)</p> <p>Less stringent treatment goals may be appropriate for patients with a history of severe hypoglycemia, patients with limited life expectancies, very young children or older adults, and individuals with comorbid conditions. (E)</p> <p><i>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</i></p> <p><i>Toddlers & preschoolers (< 6)</i></p> <ul style="list-style-type: none"> • <i>Before meals: 100-180</i> • <i>Bedtime/overnight: 110-200</i> • <i>A1C: ≤ 8.5 (but $\geq 7.5\%$)</i> <p><i>School age (6-12)</i></p> <ul style="list-style-type: none"> • <i>Before meals: 90-180</i> • <i>Bedtime/overnight: 100-180</i> • <i>A1C: $< 8\%$</i> <p><i>Adolescents & young adults (13-19)</i></p> <ul style="list-style-type: none"> • <i>Before meals: 90-130</i> • <i>Bedtime/overnight: 90-150</i> • <i>A1C: $< 7.5\%$ (a lower goal [$< 7\%$] is reasonable if it can be achieved without excessive hypoglycemia)</i> 	<p>2005</p> <p>Standards of Medical Care in Diabetes (6)</p>
<p>Recommendations:</p>	<p>2006</p>

<p><i>The A1C goal for patients in general is an A1C goal of <7%. (B)</i></p> <p><i>The A1C goal for the individual patient is an A1C as close to normal (<6%) as possible without significant hypoglycemia. (E)</i></p> <p>Less stringent treatment goals may be appropriate for patients with a history of severe hypoglycemia, patients with limited life expectancies, very young children or older adults, and individuals with comorbid conditions. (E)</p> <p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> • Before meals: 100-180 • Bedtime/overnight: 110-200 • A1C: <8.5% (<i>but</i> >7.5%) <p>School age (6-12)</p> <ul style="list-style-type: none"> • Before meals: 90-180 • Bedtime/overnight: 100-180 • A1C: <8% <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 • A1C: <8% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	<p>Standards of Medical Care in Diabetes (7)</p>
<p>Recommendations:</p> <p>The A1C goal for patients in general is an A1C goal of <7%. (B)</p> <p>The A1C goal for the individual patient is an A1C as close to normal (<6%) as possible without significant hypoglycemia. (E)</p> <p>Less stringent treatment goals may be appropriate for patients with a history of severe hypoglycemia, patients with limited life expectancies, very young children or older adults, and individuals with comorbid conditions. (E)</p>	<p>2007</p> <p>Standards of Medical Care in Diabetes (8)</p>

<p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> • Before meals: 100-180 • Bedtime/overnight: 110-200 • A1C: <8.5% (but >7.5%) <p>School age (6-12)</p> <ul style="list-style-type: none"> • Before meals: 90-180 • Bedtime/overnight: 100-180 • A1C: <8% <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 • A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	
<p>Recommendations:</p> <p><i>Lowering A1C to an average of ~7% has clearly been shown to reduce microvascular and neuropathic complications of diabetes and, possibly, macrovascular disease. Therefore, the A1C goal for nonpregnant adults in general is <7%. (A)</i></p> <p><i>Epidemiologic studies have suggested an incremental (albeit, in absolute terms, a small) benefit to lowering A1C from 7% into the normal range. Therefore, the A1C goal for selected individual patients is as close to normal (<6%) as possible without significant hypoglycemia. (B)</i></p> <p>Less stringent A1C goals may be appropriate for patients with a history of severe hypoglycemia, patients with limited life expectancies, children, individuals with comorbid conditions, and those with longstanding diabetes and minimal or stable microvascular complications. (E)</p> <p><i>Consider age when setting glycemic goals in children and adolescents with type 1 diabetes, with less stringent goals for younger children. (E)</i></p>	<p>2008</p> <p>Standards of Medical Care in Diabetes (9)</p>

<p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> • Before meals: 100-180 • Bedtime/overnight: 110-200 • A1C: <8.5% (but >7.5%) <p>School age (6-12)</p> <ul style="list-style-type: none"> • Before meals: 90-180 • Bedtime/overnight: 100-180 • A1C: <8% <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 • A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	
<p>Recommendation:</p> <p>Consider age when setting glycemic goals in children and adolescents with type 1 diabetes, with less stringent goals for younger children. (E)</p> <p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> • Before meals: 100-180 • Bedtime/overnight: 110-200 • A1C: <8.5% (but >7.5%) <p>School age (6-12)</p> <ul style="list-style-type: none"> • Before meals: 90-180 • Bedtime/overnight: 100-180 • A1C: <8% <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 	<p>2009 Standards of Medical Care in Diabetes (10)</p>

<ul style="list-style-type: none"> A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	
<p>Recommendation:</p> <p>Consider age when setting glycemic goals in children and adolescents with type 1 diabetes, with less stringent goals for younger children. (E)</p> <p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> Before meals: 100-180 Bedtime/overnight: 110-200 A1C: <8.5% (but >7.5%) <p>School age (6-12)</p> <ul style="list-style-type: none"> Before meals: 90-180 Bedtime/overnight: 100-180 A1C: <8% <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> Before meals: 90-130 Bedtime/overnight: 90-150 A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	<p>2010</p> <p>Standards of Medical Care in Diabetes (11)</p>
<p>Recommendation:</p> <p><i>Consider age when setting glycemic goals in children and adolescents with type 1 diabetes. (E)</i></p> <p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> Before meals: 100-180 Bedtime/overnight: 110-200 A1C: <8.5% (A lower goal [<8.0%] is reasonable if it can be achieved without excessive hypoglycemia) <p>School age (6-12)</p>	<p>2011</p> <p>Standards of Medical Care in Diabetes (12)</p>

<ul style="list-style-type: none"> • Before meals: 90-180 • Bedtime/overnight: 100-180 • A1C: <8% (A lower goal [<7.5%] is reasonable if it can be achieved without excessive hypoglycemia) <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 • A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	
<p>Recommendation:</p> <p>Consider age when setting glycemic goals in children and adolescents with type 1 diabetes. (E)</p> <p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> • Before meals: 100-180 • Bedtime/overnight: 110-200 • A1C: <8.5% (A lower goal [<8.0%] is reasonable if it can be achieved without excessive hypoglycemia) <p>School age (6-12)</p> <ul style="list-style-type: none"> • Before meals: 90-180 • Bedtime/overnight: 100-180 • A1C: <8% (A lower goal [<7.5%] is reasonable if it can be achieved without excessive hypoglycemia) <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 • A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	<p>2012</p> <p>Standards of Medical Care in Diabetes (13)</p>
<p>Recommendation:</p>	<p>2013</p>

<p>Consider age when setting glycemic goals in children and adolescents with type 1 diabetes. (E)</p> <p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> • Before meals: 100-180 • Bedtime/overnight: 110-200 • A1C: <8.5% (A lower goal [<8.0%] is reasonable if it can be achieved without excessive hypoglycemia) <p>School age (6-12)</p> <ul style="list-style-type: none"> • Before meals: 90-180 • Bedtime/overnight: 100-180 • A1C: <8% (A lower goal [<7.5%] is reasonable if it can be achieved without excessive hypoglycemia) <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 • A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	<p>Standards of Medical Care in Diabetes (14)</p>
<p>Recommendation:</p> <p>Consider age when setting glycemic goals in children and adolescents with type 1 diabetes. (E)</p> <p>Plasma blood glucose and A1C goals for type 1 diabetes by age group:</p> <p>Toddlers & preschoolers (0-6)</p> <ul style="list-style-type: none"> • Before meals: 100-180 • Bedtime/overnight: 110-200 • A1C: <8.5% (A lower goal [<8.0%] is reasonable if it can be achieved without excessive hypoglycemia) <p>School age (6-12)</p> <ul style="list-style-type: none"> • Before meals: 90-180 	<p>2014</p> <p>Standards of Medical Care in Diabetes (15)</p>

<ul style="list-style-type: none"> • Bedtime/overnight: 100-180 • A1C: <8% (A lower goal [<7.5%] is reasonable if it can be achieved without excessive hypoglycemia) <p>Adolescents & young adults (13-19)</p> <ul style="list-style-type: none"> • Before meals: 90-130 • Bedtime/overnight: 90-150 • A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia) 	
<p>Recommendation:</p> <p><i>An A1C goal of <7.5% is recommended across all pediatric age-groups. E</i></p> <p>Plasma blood glucose and A1C goals for type 1 diabetes across all pediatric age groups:</p> <p><i>Before meals: 90-130 mg/dl (5.0-7.2 mmol/L)</i></p> <p><i>Bedtime/overnight: 90-150 mg/dl (5.0-8.3 mmol/L)</i></p> <p><i>A1C: <7.5% (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia)</i></p>	<p>2015</p> <p>Standards of Medical Care in Diabetes (16)</p>
<p>Recommendation:</p> <p>An A1C goal of <7.5% (58 mmol/mol) is recommended across all pediatric age-groups. E</p> <p>Blood glucose and A1C goals for type 1 diabetes across all pediatric age groups:</p> <p>Before meals: 90-130 mg/dl (5.0-7.2 mmol/L)</p> <p>Bedtime/overnight: 90-150 mg/dl (5.0-8.3 mmol/L)</p> <p>A1C: <7.5% (58 mmol/mol) (A lower goal [<7.0%] is reasonable if it can be achieved without excessive hypoglycemia)</p>	<p>2016</p> <p>Standards of Medical Care in Diabetes (17)</p>
<p>Recommendation:</p> <p>An A1C goal of <7.5% (58 mmol/mol) is recommended across all pediatric age-groups. E</p> <p>Blood glucose and A1C goals for children and adolescents with type 1 diabetes:</p> <p>Before meals: 90-130 mg/dl (5.0-7.2 mmol/L)</p>	<p>2017</p> <p>Standards of Medical Care in Diabetes (18)</p>

<p>Bedtime/overnight: 90-150 mg/dl (5.0-8.3 mmol/L)</p> <p>A1C: <7.5% (58 mmol/mol) (A lower goal [<7.0%, 53 mmol/mol] is reasonable if it can be achieved without excessive hypoglycemia)</p>	
<p>Recommendation:</p> <p>An A1C goal of <7.5% (58 mmol/mol) is recommended across all pediatric age-groups. E</p> <p>Blood glucose and A1C goals for children and adolescents with type 1 diabetes:</p> <p>Before meals: 90-130 mg/dl (5.0-7.2 mmol/L)</p> <p>Bedtime/overnight: 90-150 mg/dl (5.0-8.3 mmol/L)</p> <p>A1C: <7.5% (58 mmol/mol) (A lower goal [<7.0%, 53 mmol/mol] is reasonable if it can be achieved without excessive hypoglycemia)</p>	<p>2018</p> <p>Standards of Medical Care in Diabetes (19)</p>
<p>Recommendations:</p> <p><i>A reasonable A1C goal for most children and adolescents with type 2 diabetes treated with oral agents alone is <7%. More stringent A1C goals (such as <6.5%) may be appropriate for selected individual patients if they can be achieved without significant hypoglycemia or other adverse effects of treatment. Appropriate patients might include those with short duration of diabetes and lesser degrees of β-cell dysfunction and patients treated with lifestyle or metformin only who achieve significant weight improvement. E</i></p> <p><i>A1C targets for youth on insulin should be individualized, taking into account the relatively low rate of hypoglycemia in youth-onset type 2 diabetes. E</i></p>	<p>2018</p> <p>Evaluation and Management of Youth-Onset Type 2 Diabetes: A Position Statement by the American Diabetes Association (20)</p>
<p>Recommendation:</p> <p><i>An A1C target of <7.5% should be considered in children and adolescents with type 1 diabetes but should be individualized based on the needs and situation of the patient and family. E</i></p>	<p>2018</p> <p>Type 1 Diabetes in Children and Adolescents: A Position Statement by the American Diabetes Association (21)</p>
<p>Recommendations:</p> <p><i>13.21 An A1C target of <7.5% (58 mmol/mol) should be considered in children and adolescents with type 1</i></p>	<p>2019</p> <p>Standards of Medical Care in Diabetes (22)</p>

<p><i>diabetes but should be individualized based on the needs and situation of the patient and family. E</i></p> <p><i>13.56 A reasonable A1C target for most children and adolescents with type 2 diabetes treated with oral agents alone is <7% (53 mmol/mol). More stringent A1C targets (such as <6.5% [48 mmol/mol]) may be appropriate for selected individual patients if this can be achieved without significant hypoglycemia or other adverse effects of treatment. Appropriate patients might include those with short duration of diabetes and lesser degrees of β-cell dysfunction and patients treated with lifestyle or metformin only who achieve significant weight improvement. E</i></p> <p><i>13.57 A1C targets for patients on insulin should be individualized, taking into account the relatively low rates of hypoglycemia in youth-onset type 2 diabetes. E</i></p> <p>Blood glucose and A1C goals for children and adolescents with type 1 diabetes:</p> <p>Before meals: 90-130 mg/dl (5.0-7.2 mmol/L)</p> <p>Bedtime/overnight: 90-150 mg/dl (5.0-8.3 mmol/L)</p> <p>A1C: <7.5% (58 mmol/mol) (A lower goal [<7.0%, 53 mmol/mol] is reasonable if it can be achieved without excessive hypoglycemia)</p>	
<p><i>Recommendations:</i></p> <p><i>13.21 A1C goals must be individualized and reassessed over time. An A1C of <7% (53 mmol/mol) is appropriate for many children. B</i></p> <p><i>13.22 Less-stringent A1C goals (such as <7.5% [58 mmol/mol]) may be appropriate for patients who cannot articulate symptoms of hypoglycemia; have hypoglycemia unawareness; lack access to analog insulins, advanced insulin delivery technology, and/or continuous glucose monitors; cannot check blood glucose regularly; or have nonglycemic factors that increase A1C (e.g., high glycators). B</i></p> <p><i>13.23 Even less-stringent A1C goals (such as <8% [64 mmol/mol]) may be appropriate for patients with</i></p>	<p>2020</p> <p>Standards of Medical Care in Diabetes (23)</p>

a history of severe hypoglycemia, limited life expectancy, or extensive comorbid conditions. B

13.24 Providers may reasonably suggest more-stringent A1C goals (such as <6.5% [48 mmol/mol]) for selected individual patients if they can be achieved without significant hypoglycemia, negative impacts on well-being, or undue burden of care, or in those who have nonglycemic factors that decrease A1C (e.g., lower erythrocyte life span). Lower targets may also be appropriate during the honeymoon phase. B

13.59 A reasonable A1C target for most children and adolescents with type 2 diabetes treated with oral agents alone is <7% (53 mmol/mol). More stringent A1C targets (such as <6.5% [48 mmol/mol]) may be appropriate for selected individual patients if they can be achieved without significant hypoglycemia or other adverse effects of treatment. Appropriate patients might include those with short duration of diabetes and lesser degrees of β -cell dysfunction and patients treated with lifestyle or metformin only who achieve significant weight improvement. E

13.60 Less-stringent A1C goals (such as 7.5% [58 mmol/mol]) may be appropriate if there is increased risk of hypoglycemia. E

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