Children & Adolescents with Type 1 Diabetes – Envolve PeopleCare (EPC) Clinical Guidelines

Topic	Optimal Goal	Clinical Intervention Provided – Coaching provided to Parent/Guardian with participation by child/adolescent based on age-appropriate self-management as appropriate [2]
1. Glycemic Control	A1C <7.5% for all children and adolescents [3]	• Obtain baseline A1C upon assessment and as ordered by physician. • Obtain self–monitoring of blood glucose (SMBG) frequency and readings. • Share glycemic goals of ADA. • Discuss pathophysiology of diabetes, including explanation of honeymoon period if newly diagnosed. • Review current insulin regime and assess for compliance. • Provide education on appropriate timing and consistency of insulin administration. • Provide education on appropriate handling, storage, administration and injection technique for injectables. • Review usual carbohydrate intake pattern. • Instruct on proper balance of insulin, nutritional intake and physical activity to control blood glucose levels. • Advocate for initiation of regular blood glucose monitoring by parent/guardian and/or child/adolescent as appropriate. (For children with type 1 – a minimum of 3 tests daily will be recommended).
2. Signs & Symptoms	Reduce or eliminate	• Review history of hyper and hypoglycemic episodes. • Educate on signs and symptoms of hyper and hypoglycemia and appropriate treatment: o Readily available source of glucose (tablets, gels, liquids). o Appropriate use of glucagon. o Importance of medical identification emblem. o Treatment of ketones and when to seek medical treatment. • Instruct on sick day rules, how to prevent ketoacidosis (DKA) during illness.
3. Nutrition	Nutrition adequacy for optimal growth and development	• Obtain nutritional intake patterns during coaching sessions. • Review weight and clinical measures. • Provide individualized dietary instruction based on identified needs (weight gain, weight loss, glycemic control, celiac disease, nutrition adequacy of current dietary intake). • Discuss importance of carbohydrate monitoring and blood glucose control (via carbohydrate counting, carbohydrate choices, or plate method).
4. Physical Activity	≥60 minutes of moderate physical activity daily	• Obtain current physical activity status upon assessment. If less than goal (modified based on physical/medical limitations): o Provide specific recommendations to initiate or increase current physical activity program. • If at goal: o Provide specific recommendations for maintaining current physical activity program. • Encourage limiting time in sedentary activities such as screen time (i.e., televisions, computer time, video games) as appropriate.

		• Provide education on risk of hypoglycemia with initiation of/or increase in physical activity.
5. Appropriate Physical Growth	Normal Growth & Development BMI 5th—85th percentile for age	• Ask parent or guardian if healthcare provider is measuring child's height & weight and if there have been any problems identified. • Obtain current height and weight as available from parent or guardian. • Abnormal growth can indicate possible co-morbidity or poor glycemic control o see screening intervention o evaluate glycemic control and insulin regime
6. Preventive Care	Compliance	• Discuss importance of routine physician office visits and lab work. • Discuss purpose and benefits of A1C test. • Discuss importance of routine dental, eye and foot examinations. • Recommend annual influenza vaccine (after the age of 6 months). • Recommend pneumonia vaccine before the age of 2 years. • Educate on importance of discussing appropriate vaccinations with physician.
7. Screening	Celiac and Thyroid Disease	• All children and adolescents with Type 1 Diabetes should be screened for Celiac and Thyroid Disease upon diagnosis • Children with previously normal TSH levels may be rechecked every 1-2 years or obtained any time the growth rate is abnormal. • Children should be tested for Celiac disease if growth failure, failure to gain weight, weight loss or gastroenterological symptoms occurs. • Suggest that relatives of those with type 1 have antibody testing done for risk assessment in the setting of a clinical research study.
8. Blood Pressure	≤90th percentile for age, sex and height.	• All children and adolescents with Type 1 Diabetes should be screened for hypertension (after the age of 3 years old). • Obtain baseline BP upon assessment and upon each physician visit (unless otherwise specified by physician).Share goal BP levels of ADA & NHLBI. • Discuss pathophysiology of high blood pressure and increased macro & micro vascular risk. • Initial treatment includes lifestyle changes (no added salt diet and increased physical activity). • If prescribed, provide education on appropriate timing and consistency of medication administration. • Provide education on risk factor(s) if present. • Instruct on appropriate questions for next physician visit (if applicable).

9. Lipids	TC <170 mg/dL LDL <100 mg/dL HDL ≥35 mg/dL TG ≤150 mg/dL	• Obtain a fasting lipid profile in children ≥10 years of age soon after diagnosis (once glucose control is stabilized). Monitor annually if lipids are abnormal; if LDL values are within the accepted risk level, repeat lipid profile every 3 to 5 years. • Obtain baseline labs upon assessment and annually (unless more frequent testing is ordered by physician) based on above guidelines. • Share lipid goals of ADA. • Discuss pathophysiology of abnormal lipids and increased cardiovascular risk. • Initial treatment includes lifestyle changes (low fat diet, increased physical activity and improved glucose control). • If prescribed, provide education on appropriate timing and consistency of medication administration. • Provide education on risk factor(s) if present. • Instruct on appropriate questions for next physician visit (if applicable).
10. Diabetes Related Complications	Reduce the risk of developing complications	• Review recommendations for routine screenings (comprehensive foot examination, dilated eye examination, and assessment of urinary albumin:creatinine ratio (UACR). • Provide education on the etiology and prevention of: o retinopathy o diabetic kidney disease o peripheral neuropathy o cardiovascular disease • Assess for signs and symptoms of complications, if present instruct on appropriate questions for next physician visit.
11. School and day care	Maintain optimal glucose control in school setting	• Educate on importance of maintaining supplies at child's school or day care. Items to include: o diabetes management/treatment plan o insulin o testing supplies o hypoglycemia treatment supplies, including glucagon o hyperglycemia treatment supplies o contact numbers for parent/guardian and emergency contacts o box or bag to put all supplies in o snacks o others as needed by the child • Discuss ADA Act of 1990 (diabetes is a disability within school and provisions must be made as needed) • For children in school (1st and beyond) - discuss the Rehabilitation Act of 1973, section 504 ("504 plan" to be set up with teachers for how to handle various situations and means of communication between primary teacher, substitutes, and all who have contact with the student)
12. Referrals		• Referrals will be made to case management, treating physician and/or others services as available (if issues are

	Parental Involvement School Involvement Psychiatric issues Risk Behaviors	discovered during counseling sessions) under but not limited to the following conditions: • Question, concerns or issues regarding Parental/Guardian involvement in diabetes care • Question, concerns or issues regarding school staff involvement in diabetes care • Question, concerns or issues regarding adjustment to diagnosis and or suspected psychiatric disorders (including eating disorders) • Question, concerns or issues regarding any of the following: o Alcohol, tobacco & illicit drugs use o unprotected sexual activities o driving w/o SMBG o noncompliance with insulin administration

I have reviewed and approved the Envolve PeopleCare (EPC) Clinical Guidelines for Children & Adolescents with Type 1 Diabetes and agree with the use in supporting the clinical staff in providing Disease Management services as outlined in the Standards of Care.

Egils Bogdanovics, MD **2/4/18**

Frank Crociata, DO **1/12/18**

Woody Kageler, MD **1/15/18**

Medical Director Signature and Credentials — Date

Approved by the Quality Management Committee

Jeremy Corbett, MD **1/15/18**

QMC Chairperson — Date

[1] Assessment: All participants will be assessed as High Clinical Risk unless/until glycemic control is established or Parent/Guardian declines to participate in calls twice a month.

2 see attached table: Major Developmental issues and their effect on diabetes in children and adolescents

[3] Blood glucose should be individualized: lower goals may be reasonable based on a benefit –risk assessment; however, goals may be higher than those listed for children with frequent hypoglycemia or hypoglycemia unawareness.

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REVISION LOG

Date	Description	Author(s) Initials	Reviewers	Review Schedule	Comments/overview of changes
11/28/07	2007 annual review	CP/PV	Carol Peckham Patty Vickers Eglis Bogdanovics, MD Frank Crociata, MD	Annual	MD's approvals received via email and fax; all signatures on file
7/08/08	2008 annual review	CP/PV	Carol Peckham Patty Vickers Eglis Bogdanovics, MD Frank Crociata, MD	Annual	MD's approvals received via email and fax; all signatures on file
6/10/09	2009 annual review	CP/PV	Carol Peckham Patty Vickers Eglis Bogdanovics, MD Frank Crociata, MD	Annual	MD's approvals received via email and fax; all signatures on file
1/28/10	2010 annual review	CP/PV	Carol Peckham Patty Vickers Eglis Bogdanovics, MD Frank Crociata, MD	Annual	MD's approvals received via email and fax; all signatures on file
3/2/11	2011 Annual review	PV	Patty Vickers	Annual	changes in lower limits of A1C; minor formatting changes
2/9/12	2012 Annual review	PV	Patty Vickers Eglis Bogdanovics, MD Frank Crociata, DO Woody Kageler, MD	Annual	Minor formatting changes MD's approvals received via email and fax; all signatures on file
2/20/13	2013 Annual Review	PV/PN	Patty Vickers Pam Neff Eglis Bogdanovics, MD Frank Crociata, DO Woody Kageler, MD	Annual	MD's approvals received via email; all signatures on file. Added statement about injectables (handling, storage, etc.)
1/21/2014	2014 Annual Review	PV/PN/CP	Patty Vickers Pam Neff Carol Peckham Egils Bogdanovics, MD Jeremy Corbett, MD Frank Crociata, DO Woody Kageler, MD	Annual	MD/DO's approvals received via email; all signatures on file. Minor change in terminology of albuminuria. Added new screening recommendation for relatives of those w/ type 1 to have antibody testing for risk assessment. Revised Topic 5 (Appropriate Physical Growth) so that a growth chart is not required.
6/24/2014	Mid-year revision	PV	Patty Vickers Pam Neff	Annual	MD/DO's approvals received via email; all signatures on file

			Carol Peckham Egils Bogdanovics, MD Jeremy Corbett, MD Frank Crociata, DO Woody Kageler, MD		Change in A1C target per new ADA Position Statement (all pediatric age groups now have a single A1C target).
1/20/15	2015 Annual Review	PV	Patty Vickers Pam Neff Carol Peckham Egils Bogdanovics, MD Jeremy Corbett, MD Frank Crociata, DO Woody Kageler, MD	Annual	MD/DO's approvals received via email and fax; all signatures on file Minor changes to physical activity goal, BP target. Added eye & foot exam and pneumonia vaccine recommendations.
1/13/16	2016 Annual Review	PV	Patty Vickers Pam Neff Theresa Neumer Carol Peckham Egils Bogdanovics, MD Jeremy Corbett, MD Frank Crociata, DO Woody Kageler, MD	Annual	MD/DO's approvals received via email and fax; all signatures on file Revised recommendation on age at which to obtain 1st lipid panel; change in terminology from "nephropathy" to "diabetic kidney disease".
1/9/17	2017 Annual Review	PV	Patty Vickers Pam Neff Theresa Neumer Carol Peckham Pat Kristen Egils Bogdanovics, MD Jeremy Corbett, MD Frank Crociata, DO Woody Kageler, MD	Annual	MD/DO's approvals received via email and fax; all signatures on file. All references of Nurtur changed to Envolve PeopleCare (EPC). Added optimal goal for BMI.
1/8/18	2018 Annual Review	PV	Patty Vickers Pam Neff Theresa Neumer Carol Peckham Pat Kristen Egils Bogdanovics, MD Jeremy Corbett, MD Frank Crociata, DO Woody Kageler, MD	Annual	MD/DO's approvals received via email and fax; all signatures on file. Revised recommendation for pneumonia vaccine per ADA.

Table 2— Major developmental issues and their effect on diabetes in children and adolescents

Developmental stage (approximate ages)	Normal developmental tasks	Type 1 diabetes management priorities	Family issues in type 1 diabetes management
Infancy (0–12 months)	• Developing a trusting relationship/"bonding" with primary caregiver(s)	• Preventing and treating hypoglycemia	• Coping with stress
		• Avoiding extreme fluctuations in blood glucose levels	• Sharing the "burden of care" to avoid parent burnout
Toddler (13–36 months)	• Developing a sense of mastery and autonomy	• Preventing and treating hypoglycemia	• Establishing a schedule
		• Avoiding extreme fluctuations in blood glucose levels due to irregular food intake	• Managing the "picky eater" • Setting limits and coping with toddler's lack of cooperation with regimen
			• Sharing the burden of care
Preschooler and early elementary school-age (3–7 years)	• Developing initiative in activities and confidence in self	• Preventing and treating hypoglycemia	• Reassuring child that diabetes is no one's fault
		• Unpredictable appetite and activity	• Educating other caregivers about diabetes management
		• Positive reinforcement for cooperation with regimen	
		• Trusting other caregivers with diabetes management	
Older elementary school-age (8–11 years)	• Developing skills in athletic, cognitive, artistic, social areas	• Making diabetes regimen flexible to allow for participation in school/peer activities	• Maintaining parental involvement in insulin and blood glucose monitoring tasks while allowing for independent self-care for "special occasions"
	• Consolidating self-esteem with respect to the peer group	• Child learning short- and long-term benefits of optimal control	• Continue to educate school and other caregivers
Early adolescence (12–15 years)	• Managing body changes	• Managing increased insulin requirements during puberty	• Renegotiating parents and teen's roles in diabetes management to be acceptable to both

	• Developing a strong sense of self-identity	• Diabetes management and blood glucose control become more difficult	• Learning coping skills to enhance ability to self-manage
		• Weight and body image concerns	• Preventing and intervening with diabetes-related family conflict
			• Monitoring for signs of depression, eating disorders, risky behaviors
Later adolescence (16–19 years)	• Establishing a sense of identity after high school (decision about location, social issues, work, education)	• Begin discussion of transition to a new diabetes team	• Supporting the transition to independence
		• Integrating diabetes into new lifestyle	• Learning coping skills to enhance ability to self-manage
			• Preventing and intervening with diabetes-related family conflict
			• Monitoring for signs of depression, eating disorders, risky behaviors

Diabetes Care, Volume 28, Number 1, January 2005