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EDITORIAL

ISPAD Clinical Practice Consensus Guidelines 2018: What is new in diabetes care?

The release of the 2018 ISPAD guidelines comes at a time when type 1 diabetes represents an increasingly major burden in both adults and children.[1,2] In 2017, it was estimated that more than 1.1 million children around the world have diabetes.[1,3] These children need help to survive, using insulin and other therapies, and to live a full life without stigma, restrictions, or disabling complications due to their diabetes.

This supplement of *Pediatric Diabetes* updates the guidelines previously released by ISPAD in 2014. Since the first version of the guidelines was published in 1995,[4] evidence has accumulated demonstrating the lasting benefits of near normal glycemia. Intensive management of all aspects of diabetes, especially glycemic control, is now the international gold-standard in children, adolescents, and young adults. At the same time, the different types of insulin analogs have increased, albeit at considerable expense, and technology use, including pumps, sensors, and automated insulin delivery systems, has risen in all age groups in countries where these treatment modalities are accessible. Advances in the genetic diagnosis of atypical diabetes have guided decisions regarding the best treatment for many children.[5] Type 2 diabetes in youth, a consequence of the obesity epidemic, has become widespread in many regions of the world and the evidence base for treatment of this disorder has expanded significantly since 2014.[6] Moreover, pathophysiology-based treatment with glucagon-like peptide 1 (GLP-1) agonists and Inhibitors of dipeptidyl peptidase 4 (DPP-4) and sodium-glucose co-transporter 2 (SGLT2) inhibitors is being investigated and will likely increase the pharmaceutical options available for adolescents with type 2 diabetes in the next few years.

The ISPAD guidelines serve a critical function by gathering, in one comprehensive document, advice on diabetes care that is focused on children, adolescents, and young adults with diabetes. All chapters have been updated to reflect advances in scientific knowledge and clinical care that have occurred since 2014. Each chapter is organized as follows: what is new, executive summary, and recommendations; main body of the chapter; references. All chapters can be freely downloaded on the ISPAD website (www.ispad.org) and each chapter includes a section on recommended standards of care with evidence grades according to the American Diabetes Association.[7] Please contact the ISPAD Secretariat at: secretariat@ispad.org if your organization is interested in translating these into other languages.

Three new chapters have been added to the 2018 guidelines. One of these provides recommendations on the use of technology in children, adolescents, and young adults with diabetes and appraises the pros and cons, as well as costs, of pumps, sensors, and automated insulin dosing devices.[8] The other two new sections are guidelines for the management of diabetes care in preschool children and for children while attending school.[9,10] These chapters consider several aspects necessary for successful treatment of children and adolescents, including education, nutrition, glucose monitoring, medication, and insulin or other therapy.

The *"Glycemic control targets and glucose monitoring"* chapter has been updated to reflect the major advances that have occurred regarding blood glucose monitoring, and technology.[11] An individualized approach to the patient is emphasized and a decrease in "target" HbA1c to <7% is recommended for those using the new technologies consistent with the goal for children, adolescents, and young adults with type 2 diabetes.

The ISPAD guidelines are intended for worldwide application and have been drafted by an international writing team of experts in different specialties from many countries and posted for open peer review by ISPAD members via the Society's website. It is our intent and hope that the guidelines will be widely consulted and are freely available to be used to:

- improve awareness among governments, health care providers, and the general public of the serious long-term implications of inadequately managed diabetes and the essential resources needed for optimal care
- assist individual care givers in managing children and adolescents with diabetes in a prompt, safe, equitable, standardized manner in accordance with the latest scientific knowledge, as interpreted by experts in the field
- provide evidence-based advice to improve the care of children, adolescents, and young adults with diabetes
- acknowledge that in many regions of the world technologically advanced care may not be feasible; for this reason, an Appendix describing limited care is included as part of the guidelines.[12]

As was previously stated in 2009 and 2014, "*these guidelines are not strict protocols nor are they the final word*". We are aware that children, adolescents, young adults, and their families who live with diabetes, are each unique and, therefore, our guidelines complement but cannot replace the guidance that a capable medical team can give in

supporting the person and family living with diabetes to do so successfully and thrive. Individual clinical judgment and decision-making also require the family's values and expectations be considered in the implementation of treatment.

Furthermore, we encourage all families of patients living with diabetes to participate in clinical trials and research. Their involvement in research is fundamental to increasing our knowledge of the pathophysiology of diabetes and to advancing treatment approaches aimed at its prevention and its optimal management during childhood, adolescence, and into young adulthood.

The Editors wish to give thanks to the large number of individuals who have contributed to this new version of the guidelines, including the ISPAD members who reviewed these chapters via the ISPAD online forum. As far as possible, significant input by individuals has been acknowledged, but we would also like to thank those who have contributed and whose names have not been included.

The Pediatric Endocrine Society has formally endorsed the 2018 ISPAD guidelines. ISPAD also welcomes any additional endorsement of these guidelines by other professional organizations worldwide and opportunities to collaborate to further the ISPAD mission of a better world for children, adolescents, and young adults with diabetes. Lastly, but by no means least, we would like to recognize the invaluable role of Professor Mark Sperling as a Special Guest Editor.

The American Diabetes Association evidence grading system for clinical practice recommendations is as follows:

Level of evidence	Description
A	Clear evidence from well-conducted, generalizable, randomized, controlled trials that are adequately powered, including: • Multicenter trial • Meta-analysis incorporating quality ratings • Compelling nonexperimental evidence, (ie, "all-or-none" rule) developed by the Center for Evidence-Based Medicine at Oxford* Supportive evidence from well-conducted, randomized, controlled trials that are adequately powered, including: • Well-conducted trials at ≥1 institutions
B	Supportive evidence from well-conducted cohort studies including: • Prospective cohort studies or registry • Meta-analysis of cohort studies Supportive evidence from a well-conducted case-control study
C	Supportive evidence from poorly controlled or uncontrolled studies including: • Randomized clinical trials with ≥1 major or ≥3 minor methodological flaws that could invalidate the results • Observational studies with high potential for bias • Case series or case reports Conflicting evidence with the weight of evidence supporting the recommendation
E	Expert consensus or clinical experience

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