

In Brief

This article focuses on family conflict and parenting behavior and their link to self-esteem, treatment adherence, and glycemic control in children and adolescents with type 1 diabetes. From the diabetes literature and normal child development research, the concept of “authoritative parenting” seems especially applicable to the coping tasks facing parents and youth around the management of type 1 diabetes. Research on general family conflict, diabetes-specific family conflict, and child development are discussed with respect to the translation of findings to assist health care providers and parents.

Family Conflict and Diabetes Management in Youth: Clinical Lessons From Child Development and Diabetes Research

Barbara J. Anderson, PhD

For families who have children with type 1 diabetes, intensive treatment simultaneously increases the importance of treatment adherence and requires more disease-focused behavior by the child as well as by the parents. As diabetes management in youth becomes increasingly complex, so do the influences of increased technology and heightened expectations for treatment success on the parent-youth relationship.

In this article, recent research evidence linking parent-youth conflict and the child's adherence and glycemic control will be discussed. Rather than providing a comprehensive review of the literature, the focus here is on recent research evidence that has clinical implications for families and for health care providers. In addition, the research review will link different parenting styles to glycemic control and adherence, and there will be a discussion of several classic parenting styles, categorizations as defined in the literature on normal child development. In the second section of this article, lessons are suggested for parents and health care teams who want to prevent conflict or reduce existing diabetes-related struggles in the family. The article concludes with suggestions for new directions for research into the prevention and management of diabetes-related conflict in families.

Recent Research on General Conflict and Parenting Behavior in Families Facing Type 1 Diabetes

Over the past decade, advances in treatment technologies and philosophies for a range of chronic diseases of childhood, including type 1 diabetes, have placed increasing demands on children and their families. An increase in family stress and conflict is a potential consequence of increasingly complex and demanding therapies.¹ Moreover, it is well documented that higher levels of conflict in the family correlate with lower levels of child adherence to the diabetes treatment regimen.²⁻⁸

General family conflict has been demonstrated to relate to adherence in youth with type 1 diabetes in both cross-sectional studies^{3,4,8} and longitudinal, prospective research.⁹ In a study of parenting, child development, and diabetes adherence and control, Miller-Johnson et al.¹⁰ demonstrated that ratings of increased conflict were directly related to diabetes adherence problems and poorer blood glucose control. The authors reported that conflict between the child with diabetes and the parent begins before the adolescent period and that the strains of increased responsibilities and demands of the treatment regimen lead to parent-child conflicts. The authors concluded that research is

needed on interventions that teach conflict management.

Investigating general parenting styles in families with younger children with type 1 diabetes, Davis et al.¹¹ found that parental warmth was related to better adherence in 4- to 10-year-olds. The authors suggested that greater parental warmth may improve adherence through reduced family conflict, an increase in family cohesion, or both. In addition, these investigators found that parental restrictiveness was associated with worse glycemic control in this cohort of families and suggested that parental restrictiveness leads to family conflict in children and adolescents with type 1 diabetes.

Other investigators have explored the relationship between glycemic control and adherence to the diabetes regimen with general measures of family conflict and global parenting behaviors not specific to diabetes management.^{3,9,12} To summarize these studies' findings:

- Higher family cohesion, parental warmth (defined as support and affection), and an "authoritative" style of parenting (which involves being engaged with the child with warmth while limit-setting and having high maturity demands with low levels of coercive control) are related to higher levels of adherence and cooperation by the child or adolescent with the tasks of diabetes treatment and to better glycemic control.
- Higher general family conflict, parental restrictiveness, and criticism and an "authoritarian" style of parenting (high levels of maturity demands with high levels of coercive control) are related to lower levels of adherence and cooperation by the child or adolescent with the tasks of diabetes management and to poorer glycemic control.

Before turning to research on diabetes-specific conflict, it is instructive to understand these different general parenting styles in more depth.

Parenting Styles in the Child Development Literature

Diana Baumrind,¹³ a pioneering psychologist dedicated to the study of parenting behavior, investigated the types of parent-child relationships that enhance children's competence. Competence was defined as a composite measure of the child's self-reliance, self-esteem, and peer affiliation (abili-

Table 1. Baumrind's Parenting Styles Classification¹³

	Control	Maturity Demands	Clarity of Parent-Child Communication	Nurturance
Authoritative	High	High	High	High
Authoritarian	High	Medium	Low	Low
Permissive	Low	Low	Low	High

ty to express warmth to peers). In her research, Baumrind studied four dimensions of parenting behavior: control, maturity demands, clarity of parent-child communication, and parental nurturance.

From these four dimensions, she defined three categories of parenting behavior (Table 1). *Authoritative* is the parenting style highest on all four dimensions. This is the style of parental control that was associated with the highest competence in children. These parents are not intrusive and allow the child considerable freedom within reasonable limits, and yet these parents will impose restrictions in areas in which they have greater knowledge or insight. The *authoritarian* parenting style is marked by high control with the frequent use of power; parents are less warm and do not encourage the child to express himself when parent and child disagree. Children of these parents were less competent than children of parents with the authoritative parenting style. Finally, Baumrind defined the *permissive* parenting style as one in which parents use control infrequently, make almost no demands for mature behavior from their children, and yet are relatively warm. Permissive parents had the least competent children.

Building on Baumrind's work, Maccoby and Martin¹⁴ characterized parenting along two dimensions: *demandingness for mature behavior*, the regulation and control of a child's behavior, and *responsiveness to the child*, or child-centered parenting, with time and attention spent engaging the child. Combining these two dimensions yielded four categories of

parenting styles as shown in Table 2.

The next iteration of parenting styles research conceptualized parental behavior along two major dimensions: acceptance-rejection (warmth-hostility) and control-autonomy.¹⁵ Other investigators suggested that the control-autonomy dimension is composed of two related but distinguishable sub-dimensions: psychological autonomy-psychological control and firm control-lax control.¹⁶ While these studies developed new labels for parenting styles—such as the "democratic" (authoritative) parent, the "hostile authoritarian" parent, and the "hostile-neglectful parent"—they did not significantly extend the basic categories suggested earlier by Baumrind. In addition, these later psychological investigators focused more on the link between parenting styles and the child's developing self-concept or self-esteem.

Contemporary psychologist Robert Brooks has continued this focus on parenting styles and self-esteem and suggests that parental warmth is related to a stronger sense of self-esteem in healthy school-aged children.¹⁷ Moreover, Brooks has written that providing children the following five opportunities strengthens the child's developing sense of self-esteem:

1. Developing responsibility and making a contribution
2. Providing opportunities for making choices and decisions and solving problems
3. Offering encouragement and positive feedback
4. Establishing self-discipline by creating guidelines and consequences
5. Helping children feel OK about mistakes and failures¹⁷

Table 2. Maccoby and Martin Classification of Parenting Styles¹⁴

Demanding of Mature Behavior	Responsiveness to Child	
	High	Low
High	Authoritative-reciprocal	Authoritarian-autocratic
Low	Indulgent-permissive	Indifferent-uninvolved

Although Brooks was speaking to the development of self-esteem in children without diabetes, it seems likely that diabetes management increases the potential for these five opportunities to occur within the context of the relationship between the parents and their child with diabetes. As discussed earlier, research on general parenting characteristics and diabetes reported that parental characteristics of warmth, authoritative parenting, and reasonable demands on the child's behavior were related to better adherence and better glycemic control in youngsters with diabetes. The concept of self-esteem was not studied directly in these investigations. However, the general child development literature would suggest that youngsters with diabetes who have parents with warm, authoritative parenting styles also may have enhanced self-concepts that mediate better adherence to diabetes management. In other words, one can speculate that these youngsters with warm, authoritative parents feel better about themselves (as a child with diabetes) and feel better about their parents (with respect to parental involvement and communications around diabetes management).

Diabetes-Specific Conflict in Families Facing Type 1 Diabetes

This section reports on a recent cross-sectional study conducted by the author with colleague Lori Laffel and the research team at the Joslin Diabetes Center in Boston, Mass.,¹⁸ looking at the relationships between family diabetes conflict, parent involvement in diabetes management, adherence, and glycemic control in a cohort of youth between the ages of 8 and 17 years and recently diagnosed with type 1 diabetes. The measure of diabetes-specific conflict used was developed by Rubin et al.⁵ It was found that diabetes-specific conflict significantly predicted glycemic control, with higher conflict linked with poorer control, as measured by hemoglobin A_{1c} (A1C).

Significant age-related differences in parent involvement in diabetes tasks were found despite similar disease durations in the two age groups; however there were no findings of age-related differences in the youth report of diabetes-related conflict. For both children (8–12 years) and adolescents (13–17 years), patients whose parents were more involved in diabetes management tasks were

more adherent to blood glucose monitoring and were in better glycemic control. Thus, even though parents of youth 13–17 years of age were significantly less involved in the tasks of diabetes management than were parents of younger patients (8–12 years of age), in both age groups, parent involvement was strongly related to better adherence and better glycemic control.

In addition, it was found that across both age groups, youth reported significantly more diabetes-specific family conflict than did their parents. Steinberg¹⁹ similarly found that children and teens reported significantly higher levels of conflict than did their parents. This suggests to us that some youth with type 1 diabetes experience family interactions around diabetes as more stressful and conflictual than do their parents. In this particular study, parental involvement in treatment tasks was not related to the level of diabetes-specific conflict.

If these findings are taken in the context of the research presented earlier on general family conflict and parenting styles in diabetes, it seems likely that with respect to parent involvement in diabetes management tasks, the important question is not “how much involvement?,” but rather, “how is this involvement communicated?” When the warmth, limit-setting, and encouragement of authoritative parents are brought to bear on interactions around diabetes management, youth of all ages may experience this involvement as more supportive and less stressful and, in turn, feel better about themselves and about their parents.

Clinical Lessons for Parents and Health Care Providers

In the clinical intervention research at Joslin, parents demonstrated clearly that their attitudes, beliefs, feelings, and knowledge about diabetes and its management all contribute to diabetes-specific conflict in the family. Families and patients needed education first to explore how they feel about diabetes, and second, to learn how to think and talk about diabetes in the most constructive way in the family. For example, it is more helpful for parents to refer to “high” or “low” blood glucose values instead of “good” or “bad” values. When family members talk about diabetes in a more neutral, non-shame and non-blame approach, children with

diabetes feel less judged and more open to communicating about their diabetes.²⁰

Parents' and children's feelings about this complex, chronic disease span a spectrum of normal reactions including guilt, fear, shame, sorrow, and anger. Peyrot²¹ has discussed why it is critical for families to have the opportunity to express their emotions about diabetes with a knowledgeable and objective professional. Clearly, this is a vital function for members of the child's multidisciplinary diabetes care team. Feelings about diabetes form the foundation for the subsequent language and behaviors about diabetes that become established as family behavior patterns develop soon after diagnosis.

However, in order for a father to say “high” instead of “bad” when he sees a reading of 350 on his daughter's blood glucose monitor, he has to understand (from diabetes education that has been reinforced many times) that occasional high and out-of-target-range blood glucose values do not cause complications. This parent must also understand that the reason we focus on A1C results is that they provide a “big picture” of the child's average blood glucose levels and that we track A1C over time and evaluate it every 3–4 months in order to see the big picture in terms of the effectiveness of the child's current insulin regimen with respect to her glycemic control. This type of attitude, which this parent can learn from the health care team, can help sustain blood glucose monitoring in the child, for without parental and provider criticism, youth can more comfortably maintain this difficult, annoying, and sometime painful task that is expected 4–8 times daily.

Conclusion

How can child development research on parenting styles be integrated into current research studies of diabetes-specific conflict in families? First, there is a need to design a research protocol to investigate the impact of diabetes-specific parenting education classes or seminars, with a primary prevention cohort (newly diagnosed or living with diabetes < 5 years) and secondary intervention cohort (families living with diabetes > 5 years). This research design needs to be randomized and controlled similar to that of the Diabetes Control and Complications Trial. This would provide the

opportunity to understand how diabetes-specific parenting education does or does not prevent or reduce diabetes-specific conflict and its well-documented impact on adherence and glycemic control.

The next most critical goal is the adaptation of established parenting education curricula, such as the Systematic Training for Effecting Parenting (STEP) program²³ and Raising an Emotionally Intelligent Child,²⁴ which are based on the concepts of parenting styles discussed earlier and into which could be integrated proven pediatric behavioral diabetes family-based interventions, such as Coping Skills Training,²⁵ Behavioral Family Systems Therapy,²⁶ and Family Teamwork.²⁷

For diabetes health care providers, the child development literature instructs us to help parents build, if necessary, a new parenting style specific to diabetes management. All members of the health care team must recognize that styles of parenting are a complex interplay of the parents' personality, their own early experiences, their own parenting models, and their current life stresses. Our goal is to model how to communicate with children with diabetes in a way that provides clear and realistic behavioral expectations around diabetes management blended with supportive and nonjudgmental communications.

We must also help parents learn to negotiate their parental role in diabetes management with their child or teenager. For many parents, negotiating with a 14-year-old about monitoring blood glucose (or homework!) is a totally unfamiliar role. The research-informed means of helping parents with this challenge include the following.

Diabetes providers need to speak privately with parents about their own fears and personal feelings about their child's diabetes and help parents verbalize their most secret feelings about diabetes.

Diabetes providers need to teach parents that they cannot coercively control or punish their child in order to get their child to monitor blood glucose or give insulin injections. The parenting styles research teaches us that parental control coupled with noncoercive and nurturing messages is most effective in achieving desired child behavior changes. Parents can encourage their children to monitor blood glucose, support them by ask-

ing how they, as parents, can assist, and try to problem-solve with their child. Parents can call on their diabetes team at any time to assist them in negotiating with their child or adolescent around the tasks of diabetes management—especially when parents feel that they are in a dead-end no-win situation in communicating with their child about diabetes management.

Parents need to have realistic goals for their child's behavior, for blood glucose levels, for their child's adherence behavior goals, and for their own behavior as parents. As outlined by Brooks¹⁷ and discussed above, "Helping children feel OK about mistakes and failures" is the best insurance policy against future mistakes and failure, for it builds and strengthens child self-esteem. Blaming, punishing, and shaming children for their mistakes and failures only predicts more negative and discouraging outcomes.

In the 2003 American Academy of Pediatrics publication *Family Pediatrics: Report on the Task Force on the Family*,²⁸ one of the task force's conclusions reinforces the theme of this article—that children do best when authoritative, sensitive parenting is provided by parents who are responsive to their needs and feelings and who use consistent limits. Health care providers can model for parents a nonjudgmental language around diabetes and its management that is only possible once realistic goals have been established for the child's behavior, for blood glucose values, and for parental behavior change.

Acknowledgments

The author was supported by grant DK-46887 from the National Institute of Diabetes and Digestive and Kidney Diseases and grants from the Charles H. Hood Foundation and the Katherine Adler Astrove Youth Education Fund.

References

- Drotar D, Rickert KA, Burgess E, Levi R, Nobile C, Kaugars AS, Walders N: Treatment adherence in childhood chronic illness: issues and recommendations to enhance practice, research, and training. In *Promoting Adherence to Medical Treatment in Chronic Childhood Illness*. Drotar D, Ed. Mahwah, NJ, Lawrence Erlbaum, 2000, p. 455-478
- Bobrow ES, AvRuskin TW, Siller J: Mother-daughter interaction and adherence to diabetes regimens. *Diabetes Care* 8:146-115, 1985

- Hanson CL, Henggeler SW, Burghen GA: Social competence and parental support as mediators of the link between stress and metabolic control in adolescents with insulin-dependent diabetes mellitus. *J Consult Clin Psychol* 55:529-533, 1987

- Hanson CL, Henggeler SW, Harris MA, Burghen GA, Moore M: Family system variables and the health status of adolescents with insulin-dependent diabetes mellitus. *Health Psychol* 8:239-253, 1989

- Rubin RR, Young-Hyman D, Peyrot M: Parent-child responsibility and conflict in diabetes care (Abstract). *Diabetes* 38 (Suppl. 2):28A, 1989

- Wysocki T, Hough BS, Ward KM, Allen AA, Murgai N: Use of blood glucose data by families of children and adolescents with IDDM. *Diabetes Care* 15:1041-1044, 1992

- Schafer LC, Glasgow RE, McCaul KD, Dreher M: Adherence to IDDM regimens: relationship to psychosocial variables and metabolic control. *Diabetes Care* 6:493-498, 1983

- Schafer LC, McCaul KD, Glasgow RE: Supportive and nonsupportive family behaviors: Relationships to adherence and metabolic control in persons with type I diabetes. *Diabetes Care* 9:179-185, 1986

- Jacobson AM, Hauser ST, Lavori P, Wolfsdorf JL, Herskowitz RD, Milley JE, Bliss R, Gelfand E, Wettlieb D, Stein J: Adherence among children and adolescents with insulin-dependent diabetes mellitus over a four-year longitudinal follow-up. I. The influence of patient coping and adjustment. *J Pediatr Psychol* 15:511-526, 1990

- Miller-Johnson S, Emery RE, Marvin RS, Clarke W, Lovinger R, Martin M: Parent-child relationships and the management of insulin-dependent diabetes mellitus. *J Consult Clin Psychol* 62:603-610, 1994

- Davis CL, Delamater AM, Shaw KH, La Greca AM, Eidson MS, Perez-Rodriguez JE, Nemery R: Parenting styles, regimen adherence, and glycemic control in 4- to 10- year-old children with diabetes. *J Pediatr Psychol* 26:123-129, 2001

- Hauser ST, Jacobson AM, Lavori P, Wolfsdorf JL: Adherence among children and adolescents with insulin-dependent diabetes mellitus over a four-year longitudinal follow-up. II. Immediate and long-term linkages with the family milieu. *J Pediatr Psychol* 15:527-554, 1990

- Baumrind D: Child care practices anteceding three patterns of preschool behavior. *Genetic Psychol Monographs* 75:43-88, 1967

- Maccoby EE, Martin, J: Socialization in the context of the family: parent-child interaction. In *Handbook of Child Psychology*. 4th ed. Vol. 4. Mussen PH, Series Ed., Hetherington EM, Vol. Ed. New York, Wiley, 1983, p. 1-101

- Anthony EJ: The behavior disorders of children. In *Carmichael's Manual of Child Psychology*. 3rd ed. Vol. 2. PH Mussen, Ed. New York, Wiley, 1970, p. 667-764

- Schaefer ES: A configurational analysis of children's reports of parent behavior. *J Consult Psychol* 29:552-557, 1965

- Brooks RB: Self-esteem during the school years: its normal development and hazardous decline. *Pediatr Clin North Am* 39:537-550, 1992

- Anderson BJ, Vangsness L, Connell A, Butler

D, Goebel-Fabbri A, Laffel LMB: Family conflict, adherence, and glycaemic control in youth with short duration type 1 diabetes. *Diabet Med* 19:635–642, 2002

¹⁹Steinberg EB: Predictors of diabetes-specific conflict among parents and children with insulin-dependent diabetes mellitus (IDDM) (Abstract). *Diss Abstr Int* 60(2-B): 859, 1999

²⁰Polonsky WH: Understanding and assessing diabetes-specific quality of life. *Diabetes Spectrum* 13:36–41, 2000

²¹Peyrot M: Recognizing emotional responses to diabetes. In *Practical Psychology for Diabetes Clinicians*. 2nd ed. Anderson BJ, Rubin RR, Eds. Alexandria, Va., American Diabetes Association, 2002, p. 211–218

²²Dinkmeyer D, McKay GD, Dinkmeyer JS, Dinkmeyer D, McKay JL: *Parenting Young Children: Systematic Training for Effective Parenting*. Circle Pines, Minn., American Guidance Service, Inc., 1997

²³Gottman J: *The Heart of Parenting: Raising an Emotionally Intelligent Child*. New York, Simon & Schuster, 1997

²⁴Grey M, Boland EA, Davidson M, Li J, Tamborlane WV: Coping skills training for youth with diabetes mellitus has long-lasting effects on metabolic control and quality of life. *J Pediatr* 137:107–113, 2000

²⁵Wysocki T, Harris MA, Greco P, Bubbs J, Danda CE, Harvey L, McDonell K, Taylor A, White NH: Randomized, controlled trial of

behavior therapy for families of adolescents with insulin-dependent diabetes mellitus. *J Pediatr Psychol* 25:23–33, 2000

²⁶Anderson BJ, Brackett J, Ho J, Laffel LM: An office-based intervention to maintain parent-adolescent teamwork in diabetes management: impact on parent involvement, family conflict, and subsequent glycemic control. *Diabetes Care* 22:713–721, 1999

²⁷Family pediatrics: report of the task force on the family. *Pediatrics* 111:1541–1571, 2003

Barbara J. Anderson, PhD, is an associate professor of pediatrics at Baylor College of Medicine in Houston, Texas.