Diabetes in Adolescence

Controlling a chronic disease like diabetes calls for all the things that are anathema to adolescents. It demands injections, a basic diet pattern, and, most importantly, a high degree of self-discipline.

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Adolescence—a time of social, psychological, and physical adjustment—is perhaps the most difficult time to develop diabetes. Controlling it calls for self-discipline and demands injections, a basic diet pattern, and, most hampering of all, a schedule.

Diabetes may be a lack of insulin or secretion of ineffective insulin. As insulin-making ability decreases, carbohydrate tolerance also decreases and problems of fat and protein metabolism develop. Increasingly, studies are showing, however, that the vascular effects of diabetes can be prevented or delayed by controlled management of the disease(1). If the findings of these studies continue to hold true, many pressures will be brought to bear on teen-agers to obtain and maintain a high level of metabolic control, which requires a high degree of self-discipline. The authority imposed by the disease may be just another pressure from which to rebel.

Juvenile diabetes mellitus in teen-agers must be considered from various angles. There are, first of all, pre-adolescents who have had diabetes before reaching adolescence. Then there are teen-agers who develop diabetes in adolescence, and a third group, those who develop diabetes and become adolescents simultaneously.

Psychological adjustment to diabetes during adolescence depends upon the time the diabetes occurs. The adolescent who has had diabetes during childhood passes through the adolescent years as smoothly as the non-diabetic if there has been good family support and medical management which has maintained good health and good diabetic control. If the mental health of the home has been inadequate, however, diabetic children may develop problems in adolescence. For example, an overprotective mother who has closely guarded her
child day in and day out, may find in adolescence that her child may fear getting away from the protectiveness he has experienced or else he will actively rebel against being "mothered." Overprotection may also affect an elementary school child even before adolescence supervenes. Guilt, psychological insecurity, or mental illness may amplify parents' responses and their child's reactions when he develops diabetes.

The opposite—transferring too much responsibility to the child—may be interpreted in adolescence as lack of love. Outright rebellion for attention by not taking his insulin, taking too much insulin, or eating more sweets than allowed may occur and cause a crisis in the diabetic status.

If childhood control of the disease has been poor, or if severe deterioration has occurred before the diabetes is diagnosed and treated, physical changes may be an added burden on the adolescent. Kidney disorders, urinary tract infection, other infections, and cataracts may make everyday living difficult. The will to continue life will decrease as physical status degenerates. Kidney transplants, cataract removal, and improved control may add a few years, but the chance for a long life is not probable. An adolescent who is well read may recognize these signs and the possibility that he may die in his late teens or early twenties. Adjustment under these circumstances will not be easy.

Adolescence and pubescence may occur concurrently. Increased growth hormone and other body hormonal changes are a stress which causes increased need for insulin output. If the beta cells that produce insulin are unable to meet the demand, then insulin shutdown can occur.

The adolescent in whom pubescence has already occurred wants to know who's, why's, where's, and how's and most importantly, the question all adolescents ask at some time, "why me?" The adolescent who develops diabetes is more aware of this query than most others. His psychological responses and developing maturity are threatened. Physicians, nurses, and families are sometimes at a loss to know how to treat these young people who alternate in their desire to be treated as adults at one moment and as children at another.

A decision has to be made about whether to discuss the disease on a one-to-one basis or include parents in the education sessions. Easily, this could be a time when anything is done for the adolescent as parents face a fear of the unknown without adequate instruction. Or, an adolescent could be "given" his disease to care for as best he can. Neither is satisfactory.

Social life is highly important to teen-agers. The adolescent who has had diabetes for some time can usually give himself his insulin and, therefore, is able to travel on school trips or stay overnight with a friend. His parents feel somewhat secure, for they know he is able to handle an insulin reaction and knows his limits in relation to his disease. They are able to give him the support he needs as he prepares himself for adulthood. Such a teen-ager can maintain a fairly normal social life and, with adequate family education and good family interaction, continue to adjust well.

If his classmates ask if the disease is "catching," he will not go through the trials of being shunned since he knows the correct response. He'll know enough to order tea or diet pop, milk, or a hamburger when the others order cokes or sundaes. He learns to take his insulin in the locker room or slip an injection while sitting on the bench between innings if it is time for him to do so. He keeps on him a simple sugar, some money, identification, and food for minor emergencies or increased exercise. He treats low blood sugar before it becomes symptomatic. Socially he adjusts without much difficulty.

The overprotected adolescent, however, will have difficulty in most new situations. He will have fears about trying anything new. Most likely he will not give his own injections and might not even check his own urine specimens. His parents will accompany him on each outing or trip. If he rebels, he will be threatened with their vocalizations of fear. Making new friends and going out on his own will be painful and difficult. Socially, he will have many problems.

The adolescent in poor physical health will have his social and school adjustment hampered by frequent hospitalizations. He may be well-adjusted enough to enjoy his friends when well, but when he is not feeling well and knows about his poor condition he may reject social contacts.

Diabetes education can help an adolescent achieve a better social adjustment. He should learn that others who have the disease have become famous or active in sports. He can be helped to recognize the possibilities within himself, and will, if he knows his parents are behind him. As hormonal changes occur and cause variation in his psychological outlook and response, he will be able to recognize his continuing ability to make friends, go to parties, go camping, or partake in other activities. He will be able to climb mountains or win races. He should be helped to recognize that he'll need variations in food or insulin in relation to exercise variations. He may find that after his diabetes is controlled, he may be able to run faster, longer, and more efficiently than he did before he became a diabetic. His chances for social adjustment will usually be good.

The postpubescent adolescent, as well as his prepubescent counterpart, may "use" his diabetes as an excuse for not doing what he dislikes, to gain attention, to make changes in his surroundings, or to rebel against his parents or other representatives of authority. If all of the care is put on his shoulders, he may respond wisely or with a "don't care" attitude. But, again, if there is adequate support from his family, he will be able to adjust to most situations.

A diabetic adolescent may believe that he reacts differently from others. Comparisons have been made of non-diabetics with diabetes in relation to their adjustment in school(2). Logically, one might deduce that a chronic disease would cause decreased interaction and poor results in school. To the contrary, well-controlled diabetes often results in a brighter child. Teachers frequently have noted the

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With well-regulated insulin and snacks, the management of a teen-ager's diabetes may be altered to fit the adolescent life-style.

difference when a diabetic youth has been placed on a program which makes him more normoglycemic. The adolescent who is hyperglycemic most of the time will probably miss numerous days of school and not do as well as he could.

One study of comparison reported no substantial differences in educational achievement between diabetics and nondiabetics(3). As usual, there were overachievers but not more than the expected. Problems were believed to be within the trials and tribulations of normal adolescent adjustment. It is possible that an adolescent might feel his school problems are related to his diabetes rather than to normal maturation. Conflicts such as these can cause elevated blood sugar because of emotional stress and cause alterations in basic metabolic processes. If not altered by adequate treatment or by resolution of the school conflict, it could cause a more severe response by his disease.

Public school health teams often misunderstand the problems of the diabetic adolescent. A recent study showed that counselors and teachers in secondary school had a median of slightly greater than 50 percent correct answers when given a test about diabetes in students(4).

What became most apparent was that these teachers and counselors were unaware of the vocational and educational opportunities available to assist diabetic adolescents, whereas they were quite familiar with the vocational and educational training opportunities for nondiabetics. School systems were found to be poorly informed about the needs of the diabetic child for specified lunch times, physical education, and in-school snacks. The school personnel did not understand the needs of diabetic children during extracurricular activities. Many professionals believe these activities should be altered to fit in with the diabetic management schedule.

On the other hand, professionals more and more are recognizing that on two or more doses of insulin with three meals and three between-meal snacks, the diabetic management may be altered to fit the adolescent's lifestyle, with more flexibility and fewer limitations, but still with optimal control. If an adolescent recognizes that he can participate in football, go on band trips, or do whatever else he chooses to do, he is better able to develop self-confidence. Alterations in his regimen can be made wisely, especially if knowing about possible alterations is a part of his and his family's continuing education.

Adolescent adjustment appears to be related to the support given by a stable family, which influences an adolescent's attitudes. Having to inject oneself with insulin may alter one's self-image as it did to one six-year-old child who, on request, drew a picture of himself and then placed dots all over the picture. When asked what he had done, he said, "That's a pin cushion." Certainly, an adolescent will subconsciously, if not consciously, respond to these same images.

Davis, in an article on diabetic attitudes, reported that only 11 percent of his youthful study population had negative feelings about injections and that only one out of 72 named diabetes as the worst disease a person could have(5). This and other responses showed the amazing ability of teenagers to adjust to their diabetic status.

Although Fischer and Kennedy believe that regimentation leads to emotional problems and poor attitudes, Kubany and others have found no significant correlation between regimentation and emotional stress(6,7,8). Precalinary data from an ongoing study at the University of Missouri show no significant variation in emotional maturation of the well-controlled diabetic versus the nondiabetic(9).

Regimentation requires discipline. Self-discipline is maturity. Self-discipline and maturity lead to good control of the diabetes: maintaining a balanced diet, exercise, and insulin to keep in as normal a physiologic state as possible, with minimal, if any, insulin reactions. Moderated discipline gives support to the adolescent as he plunges into the changing world around him.

Many diabetic adolescents enter college. In Davis' study, all planned to enter college(5). A well-informed diabetic teen-ager can adapt well to college life(10). The still-adjusting new college student may respond to his first throes of freedom from overprotective parents by eating incorrectly, sleeping less, and not checking his urine. His response may be a total denial of his disease until he succumbs to diabetic ketoacidosis(11). The more mature freshman, with a firm family foundation, will usually follow through with self-discipline and good understanding of his care. If poor family support or overprotectiveness is the case, an adolescent, especially in the college situation, will tend to deny or rebel against his diabetes(11). This is difficult for parents to accept, especially if he has been a "good boy" at home. One or two hospitalizations will usually bring him to the realization that if he doesn't take care of himself, no one will.

Adolescents will have problems adjusting, whether to normal maturation or to the maturation process plus diabetes. Collier and Etzweiler state that "the most effective control for any individual juvenile diabetic can only be achieved by a well-educated and properly motivated patient and his family cooperating with a knowledgeable and interested physician"(12).

Adolescents perceive themselves to be able to handle their care at a much earlier age than parents usually give them credit for(13). Garner, in a study that included 54 adolescents, aged 14 to 18, found that the actual age of adolescents participating in self-care in general was less than the "ideal" age of assuming responsibility(14). In both studies, 12 was the age when both adolescents and their parents believed the
boy or girl could assume more responsibility for his or her own care.

Adolescent education is most often overlooked in diabetics of long standing; most is derived from parents(15). But, once adolescence is reached, there should be individual or group instruction or interviewing without the parents. Parent education should be done separately. Parents need guidance in relation to their child’s adjustment to a more mature status. Since Etzwiler found that youth and parents did not significantly differ in their knowledge of the disease, up-to-date and new specific information should be stressed, as well as review of the basics of diet, urine testing, record keeping, and injection procedures(16).

Not much will happen, though, without motivation. Many times motivation in girls will not come until the time of marriage or pregnancy. A youngster’s motivation may come as a result of supportive parents, from the realization that soon he will be on his own, from fear of consequences of the disease, from recognition that information will help him make better decisions about his care, or from understanding that he should keep himself in as good a condition as possible to profit from research developments. Diabetic camps often are a motivating factor. A desire to be a senior or junior counselor or to help younger campers may stimulate a desire to learn more himself. In essence, this opens the door to knowledge that he may possibly have denied himself in the past.

On the negative side, we find that loss of a boy friend, a poor self-image, perhaps triggered by the appearance of acne, difficulty in school, or a misunderstanding with parents, may cause lack of motivation. Why should adolescents care about diabetes control if everything around them is going wrong? This is the time when group therapy or other types of psychiatric intervention helps. One program offers individual and family therapy once a week(17). This therapy is aimed at such family characteristics as overprotective parents, parental involvement in decision-making, extreme rigidity, or a tendency to involve the child in parental problems during each period. Faithful to this system, Bobby is not troubled by low blood sugar reactions.

Bobby Clarke, captain of the victorious Philadelphia Flyers ice hockey team and the National Hockey League sportsman named “Most Valuable Player of 1974,” is also a diabetic. But, his diabetes—diagnosed when he was a teenager—remains in the background of his life.

Bobby keeps it under constant control by taking 70 units of NPH insulin before breakfast each day and varying his food consumption according to how active he is. For him changing food intake is easier than changing insulin doses.

On days when he doesn’t have team practice or a hockey game, he eats only his three meals a day, finding no need to supplement them with additional snacks. On game days, all the Philadelphia Flyers eat a steak dinner about 1 o’clock and then snacks before they play in the evening. Bobby has more concentrated carbohydrate around dinner time plus a Coke before the game and

Based on “An Interview with Bobby Clarke,” “Diabetes Forecast, Jan./Feb. 1975.
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and then blame the adolescent’s illness as the cause of all their problems.

Through therapy and other methods of motivation, an adolescent may begin to open channels for better communication, especially with his family, nurse, and physician, so that better care for his health needs are possible. If a problem arises between visits, an adolescent should feel comfortable enough, because of previously established rapport, to call his physician or nurse to ask for advice or get an answer to a question. This security of knowing that he has a source of help anytime, night or day, helps him develop improved self-worth and, thus, gain confidence in himself because he believes someone is truly interested in him. One important question may be whether he should marry and whether he should have children. Because the disease is as well-controlled as it is, diabetes are marrying and some are producing children who develop diabetes so that the diabetic population is increasing (8). This raises serious questions about diabetes reproducing themselves.

The adolescent is a growing, changing, and maturing individual. Diabetes does add weight to the problems of adjustment he already has. The health team, plus good family understanding and support, are his best tools to mesh all changes and adjustments into adulthood. To look outward rather than inward as he develops, for he must learn to depend on his own resources as he matures and not feel insecure as he is buffeted by life’s turmoils. If his family has not been supportive, he needs the support of the health team to begin to look out for himself and in the process attain a better level of health and maturity.

In adolescence, diabetes must be looked at not as an excuse for nonaccomplishments but as a challenge, a challenge to accomplish almost anything he wants, not because he has diabetes but in spite of it.

REFERENCES: THE Pangs AND THE PAINs OF ADOLESCENCE

Caghan


O’Boyle

4. Ibid., pp. 115-116.
6. Ibid., pp. 491-492.

Ostaszewski/Marshall

2. MARSHALL, J. L. AND OTHERS. The Anterior Drawer Sign—What is it? (To be published)
3. BUXEY, R. M. AND OTHERS. Prevention of Knee Instability—Experimental Model for Prosthetic Anterior Cruciate Ligament, (To be published)

Guthrie/Guthrie

3. Ibid.
13. GUTHERIE, D. W. Study of 230 Families and Their Diabetic Children. (Unpublished data)

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