

Chapter 18

Responsibilities
of Children at
Different Ages

INTRODUCTION

Daily diabetes care has grown more complex in recent years. In addition to the usual family responsibilities, it is not unusual for families to:

- ✓ do four or more blood sugars per day
- ✓ give three or more shots each day
- ✓ use an insulin pump
- ✓ juggle sports and exercise
- ✓ count carbohydrates or follow other food plans

Good sugar control requires the active involvement of parents for many years. The myth that children should be encouraged to do all of their own diabetes care at an early age no longer applies. Diabetes is a family disease.

Children of different ages are able to do different tasks and to accept different responsibilities. It is important not to expect more from children than they are able to do. If they are unable to do the tasks, they may develop a sense of failure and later poor self-esteem resulting in poor self-care. Family members need to watch for signs that the child needs more assistance, especially during times of high blood sugars.

The ability to do certain tasks may vary from day to day and parents must be available to help as needed. The children should be encouraged to gradually assume care for themselves as they are able. The ability to successfully live independently, both in everyday life and with diabetes care, is the eventual goal for all of our children.

TEACHING OBJECTIVES:

1. Present the importance of long-term family support and involvement in the diabetes management.
2. Define age-appropriate skills and tasks.

LEARNING OBJECTIVES:

Learners (parents, child, relative or self) will be able to:

1. Outline family support roles for diabetes management.
2. Identify at least one age-appropriate sign of readiness for learning diabetes skills/tasks.



The purpose of this chapter is to review “normal” child development and how it relates to diabetes care. Although parts of this chapter may not be important for each reader, sections may be helpful to some families. It must be remembered that all children develop at different rates (and our own children are always the most advanced).

Age alone, as a guideline, does not tell us when an individual child is ready to assume tasks. There is no such thing as a “magic age” when the diabetes suddenly becomes the responsibility of the child or teenager. Be patient! Independence takes a long time. The suggestions below may vary for any given child or family. Diabetes is a “**family disease**” and the family must work together. Family members need to help each other. Sharing tasks will help prevent the diabetes care from becoming the responsibility of just one person.

CHILD UNDER THREE YEARS

🐾 Traits and Responsibilities Not Related to Diabetes

This is a time of rapid development of a small, wondrous creature who eats, sleeps, cries, soils diapers and starts to learn about the world.

Motor and brain development are the most rapid of any time in life:

- ✓ sitting (6-8 months)
- ✓ crawling (6-12 months)
- ✓ walking (12-18 months)
- ✓ language development

These developments open up a whole new world.

Accidents are the infant's major danger.

They must be protected from:

- ✓ stairs where they might fall
- ✓ poisons and medicines they might swallow (from cupboards, garages and purses)
- ✓ auto accidents
- ✓ other dangers (including coffee tables with sharp edges)

All infants with or without diabetes need love. Parents and care providers need to cuddle and hold infants frequently throughout the day. This is particularly true after shots and blood sugar tests, as infants do not understand parents causing pain. Parents must remember that the testing and shots are essential to their infant's life and they must move beyond feelings of guilt (as discussed in Chapter 10). Much of the fussing around blood sugar tests and shots is due to the interruption in the child's activity rather than pain. Infants develop trust during this period and combining the diabetes care with love will help to make the diabetes care a part of normal life. Young adults often look back with appreciation to their parents for the shots and care they gave them when they were young.

Responsibilities Related to Diabetes

Although babies and toddlers are not able to do any of their own self-care, the following are some special suggestions that may help parents.

✓ Blood sugar testing:

- Toes are used more frequently as a site for doing the testing.
- The BD Ultrafine lancets are smaller and may hurt less.

More frequent blood sugar testing is usually done (see Chapters 6 and 7) because the babies and toddlers cannot tell if their blood sugars are low.

The parents may learn to recognize a cry, crankiness or body movements that are different than usual and that indicate a need to do a blood sugar level. Teething can be a difficult time when more blood sugars are needed to

separate a low blood sugar from normal fussiness. The temptation to let an infant nap longer than usual is offset by the possibility of hypoglycemia.

✓ Blood sugar levels:

- The blood sugar level to aim for is also higher (80-200 mg/dl [4.5-11.1 mmol/L]; see Chapter 7) as severe lows may be more dangerous to the infant's rapidly developing brain.
- Low blood sugars can be treated with less carbohydrate than for an older child (usually 5-10g due to smaller body size). This amount is found in 1/4 cup of milk, orange or apple juice or 2-3 oz of sugar pop (soda), although the amount needed may vary from infant to infant.
- Infants who suck on a bottle of milk or juice frequently during the day or night will tend to have higher blood sugar levels. Overnight sucking on a bottle can also lead to dental decay.

✓ Shots:

- Shots are sometimes given while the infant is sleeping (if he/she tends to get very upset). If the child squirms or awakens at the time of the shot, the dad (or mom) should reassure the child. A statement such as, "It is just daddy (or mommy) giving you your insulin" may be all that is needed.
- The bottom (buttock) is used more frequently as a place to give the shot.
- Eating is often variable and parents can wait to give the shot until they see what is eaten. This is easiest to do when the rapid-acting Humalog/NovoLog/Apidra insulin is being used. The dose of insulin can then be reduced if intake is low.

The amount of time taken to eat a meal should be the same for all the children, with or without diabetes. Special treatment can result in eating problems. It is important for the parents to stay in control.

Table 1
Age-Related Responsibilities and Traits

	Non-diabetes-related	Diabetes-related
Age below 3 years	<ul style="list-style-type: none"> • developing gross motor skills • developing speech skills • learning to trust • responding to love 	<ul style="list-style-type: none"> • parents must do all care • acceptance of diabetes care as part of normal life • often give shots after seeing what is eaten
Age 3-7 years	<ul style="list-style-type: none"> • imaginative/concrete thinkers • cannot think abstractly • self-centered 	<ul style="list-style-type: none"> • parent does all tasks • gradually learns to cooperate for blood sugar tests and insulin shots • inconsistent with food choices – may still need to give shots after meals • gradually learns to recognize hypoglycemia • undeveloped concept of time • adult needs to do all insulin pump management
Age 8-12 years	<ul style="list-style-type: none"> • concrete thinkers • more logical and understanding • more curious • more social • more responsible 	<ul style="list-style-type: none"> • can learn to test blood sugars • at age 10 or 11, can draw up and give shots on occasion, although they still need supervision • can make own food choices; can learn initial carb-counting • do not appreciate that doing something now (e.g., good diabetes control) helps to prevent later problems (e.g., diabetes complications) • can recognize and treat hypoglycemia • by 11 or 12 years, can be responsible for remembering snacks, but may still need assistance of alarm watches or parent reminders • can do own insulin pump boluses, but needs adult help to remember
Age 13-18 years	<ul style="list-style-type: none"> • more independent • behavior varies • body image important • away from home more • more responsible • abstract thinking • able to understand the importance of doing something now to prevent problems in the future 	<ul style="list-style-type: none"> • capable of doing the majority of shots or insulin pump management and blood sugar tests, but still needs parental involvement and review to make decisions about dosage • knows which foods to eat; can do carbohydrate counting • gradually recognizes the importance of good sugar control to prevent later complications • may be more willing to inject multiple shots per day

- The amount of rapid-acting insulin is kept low due to body size and due to an apparent increased sensitivity to rapid-acting insulin. With the insulin syringes currently available, it is not usually necessary to dilute insulins. Most parents learn how to judge 1/2 unit dosages using the 0.3cc (30 unit) insulin syringes. The Precision Sure Dose® 0.3cc syringes have markings for half-unit measurements (Chapter 9). Similarly, the BD Pen Mini® can deliver half-unit increments.

It is important for parents of infants with diabetes to incorporate the diabetes into their everyday lives. Children learn through imitation. If parents have adjusted to the diabetes and can view their child with the same positive feelings they had prior to the diagnosis of diabetes, it will help the child to grow up feeling positive and psychologically healthy. A summary of non-diabetes and diabetes traits for each age group is shown in Table 1.

AGES 3-7 YEARS

Traits and Responsibilities Not Related to Diabetes

- ✓ *They think concretely.*

Concrete thinking means things are either black or white, right or wrong, good or bad. They do not think abstractly. For example, they are unable to realize that “Having a shot of insulin will help me to stay healthy.” Instead, a shot may be considered a punishment for doing something wrong. Parents need to repeat over and over that the child hasn’t done anything wrong and to try to describe in the child’s language why pokes and shots are important.

- ✓ *They start to see themselves as separate individuals from their parents.*

Children gradually become very curious in this period. They often want to know how things work. They can annoy parents with the simple words “how” and “why.”

- ✓ *Children of this age are very self-centered.*

They may progress from playing with a toy alone to gradually learning to share a toy or to share the love of their parents. Primary attachments are to parents and family. Interest in other relationships, such as school peers, begins at six to seven years of age.

- ✓ *Age responsibilities in children 5-7 years old begin to increase dramatically.*

They can help pick up their toys, make their bed or put their dirty clothes in the hamper when guided by the parent. They are capable of fixing simple foods, such as cereal or a sandwich, but still do not understand simple dangers such as putting a knife in a toaster or being careful around boiling water. They must have much parental supervision.

- ✓ *Children 5-7 years old are learning to read, opening a whole new world.*

They are discovering many new things, asking lots of questions and practicing new skills. They feel more independent and, in some ways, they are. Usually they are cooperative and love to be helpful. However, they still require a good deal of adult supervision.

Responsibilities Related to Diabetes

- ✓ *The parents must do all diabetes related tasks.*

Fine motor coordination (the coordination of the fingers when handling small items) is not yet fully developed. They cannot do tasks such as accurately drawing insulin into a syringe. This is also true when a child of this age is using an insulin pump. The adult must always be available to do all of the pump management.

- ✓ *They can gradually learn to cooperate with their parents (e.g., sitting still for blood sugar tests and insulin shots)*
- ✓ *They can help by choosing or cleaning a finger for a blood test or by choosing the site for the insulin shot.*
- ✓ *Children as young as three or four can sometimes recognize low blood sugars.*

They can tell parents when they are hungry.

Their complaints may be vague or seem strange to us (“Mommy, my tummy tickles” or “Daddy, I don’t feel good.”) However, these clues can be very helpful to parents. Helping children verbalize the body sensations of low blood sugars is an important task for family members.

- ✓ If a shot (e.g., Lantus) is going to be given after the child is asleep, this should be discussed between the child and parents. Some children will say “fine.” Others want control and will ask to have the shot given before they go to sleep.
- ✓ *By age 5-7 years, recognizing low blood sugars is more completely developed, particularly if the parents have encouraged it.*
- ✓ *Children of ages 4-7 years may have some concept of which foods they can eat.*

They can be taught to ask, “Does it have sugar in it?” or “Do you have a diet pop?” They cannot be expected to always or even very often make the “right” choices over the ones that look or taste good. They will probably choose foods that are similar to what friends or family are eating. They can be expected to have some temper tantrums at being limited in high-sugar food.

There is not much concept of time at this age. An adult will need to make sure that a snack is taken at a specific time. Sometimes a watch that beeps at a set time can be used as a reminder for a snack.

- ✓ *They usually have no objection to wearing a diabetes ID bracelet or necklace.*

It is good to get children into the habit of wearing the ID when they are young. This may help them to do this as they get older.

It is important for parents of children in this age group (as in all age groups) to keep a positive attitude. Remember the blood sugar tests and insulin shots help to keep the child healthy. Playing games around diabetes chores and gradually getting the child to help (even in little ways) may be beneficial. One fun game is to use quarters or stickers to reward the child for guessing

the blood sugar number while the meter counts down. Whoever is closest “wins.” It will help the child to learn to tell when they are high or low. Hugs and kisses will reassure the child that the parents’ love continues. To be able to keep a positive attitude, parents need their own support for their worries and hard work. Friends, family, diabetes support groups or other sources of support can be extremely helpful.

AGES 8-12 YEARS

Traits and Responsibilities Not Related to Diabetes

- ✓ *Children of this age continue to think in concrete ways.*

They can gradually think more objectively and understand another person’s point of view.

- ✓ *Fairness and meeting their needs are very important.*
- ✓ *Children at these ages are more social and peers begin to play a more important role in their lives.*

They usually begin to spend nights at friends’ houses. They have more peer activities than do younger children. Becoming involved in some team sports can help them to stay involved as they get older. This is a great age to do classroom education about diabetes. The more peers understand, the less likely they will tease. They can soon become a real support to your child. Peer support is important, especially later during adolescence.

- ✓ *Children can be helpful by learning to take on increased responsibilities.*

They may help with doing dishes, feeding pets, cleaning their own room and other rooms or taking out the garbage. Special rewards, such as stars on a calendar, may be helpful in encouraging certain activities.

- ✓ *They are capable of more complex food preparation and can better understand safety and danger issues.*

Responsibilities Related to Diabetes

✓ *Some children begin to do their own blood sugar testing at ages 8-10.*

✓ *At about this age some children wish to begin to give some of their own insulin shots.*

The ability to accurately draw up the insulin is a bit slower in developing, but it is usually present at 10 or 11 years of age. The coordination needed between seeing something and using the fingers to successfully do the job (eye-hand coordination, fine motor skills) develops during this age. This is an exciting time to watch a child develop. Adult supervision is essential for all of these important tasks.

The child can get “burned out” if:

- they begin any of these tasks at too young an age
- they have too much responsibility without the parent being available to take over when needed

They will be more likely to rebel during the teen years by missing shots or not testing blood sugar levels. In addition, they may have difficulty requesting their parents’ help when needed if they are expected to perform self-care tasks alone. Parents must stay involved in diabetes management with this age group!

✓ *Children of this age sometimes feel that “life isn’t fair,” particularly as it pertains to diabetes.*

It is helpful to just listen to them if they express such feelings.

✓ *Children may be able to give their own shots when staying at a friend’s house.*

As the children are usually very active when staying at a friend’s, we often suggest reducing or omitting the dose of rapid-acting insulin and reducing the dose of the evening long-acting insulin by 10-20 percent. The parent can draw up the shot ahead of time and put it in a small box,

toothbrush holder or other container and leave it at the friend’s home. They may even place it in the Inject-Ease. They may ask the friend’s parent to supervise the shot. It is important to remember to roll a syringe containing NPH insulin between the hands to re-mix it prior to giving the shot.

It is also essential that the friend’s parents be informed about hypoglycemia. The handouts in the school or baby-sitters sections (Chapters 23 and 24) may be helpful.

✓ *Children of this age can eat lunch at school and make choices to avoid high sugar foods.*

Some will begin to learn to count carbohydrates.

✓ *They can gradually learn to recognize and treat their own hypoglycemic reactions.*

✓ *They are also more aware of time and can learn to be responsible for eating a snack at a set time.*

✓ *Insulin pumps are sometimes considered by the family in this age group.*

It is important for the family to meet with all team members (Chapter 26). This helps to determine who is truly ready to start using the pump.

✓ *Sports can be very important at this age.*

A child who learns to enjoy athletics is starting a healthy pattern for their life as well as for controlling diabetes.

Parents of the child in this age range must be patient in teaching the child about diabetes and how to do diabetes-related tasks. **The parents must still be very involved in supervision of the diabetes care.** They must also be secure enough to let the child begin to assume some responsibilities on his/her road to becoming an independent person.

Diabetes camp, group ski trips, hikes or other events allow the children to receive invaluable support from each other and to realize that they are not the only person in the world with diabetes.

AGES 13-18 YEARS

Traits and Responsibilities Not Related to Diabetes

- ✓ *Teens gradually develop independence and a sense of their own identity.*

As noted in Chapter 19, Special Challenges of the Teen Years, this age group varies greatly between wanting independence versus needing dependence. Some rebellious behavior may be demonstrated toward parents as teens grow into separate individuals.

- ✓ *Skills increase greatly in this age group.*

Automobiles can be driven legally and power lawn mowers can (hopefully) be used. Teenagers may take jobs to earn their own money. Activities, in general, are greatly increased.

- ✓ *Body image becomes a major concern.*

Teenagers worry about how others view them. The slightest pimple may become a catastrophe. Early in this period, friends of the same sex are very important, whereas later, interest in the opposite sex usually begins.

- ✓ *More time is spent with friends.*
- ✓ *The older teen is away from the home more and stays out later with friends.*
- ✓ *Experimentation with alcohol at some point is common.*

Responsibilities Related to Diabetes

- ✓ *Teens gradually take over more of their diabetes care.*

Parents still need to be available to assist with giving a shot from time to time. They need to take over the diabetes care for a period of time if the youth seems “burned out.” Teens generally do better if they get extra help, particularly with insulin dosage.

As noted in Chapter 19, A SUPPORTIVE ADULT CAN BE AN ASSET FOR A

PERSON WITH DIABETES, REGARDLESS OF AGE. Even parents of older teens still need to help with making sure adequate diabetes supplies are available (and paying for them) and making sure that clinic appointments are made and kept every three months.

Parents should come to the clinic, although the staff may request to see a teen individually to discuss issues that may be difficult to talk about with parents present.

- ✓ *Many teens dislike the chore of writing blood sugar results in a log book.*

If the parents agree to do this at the end of each day (with the teenagers’ OK), it is a way for the parents to keep tabs on the diabetes. Having values written down (and often faxed to the diabetes care provider) is important in looking at trends and knowing when changes in insulin dosages need to be made.

- ✓ *Experimentation with alcohol will likely upset the diabetes control (see Chapter 11) and can cause severe hypoglycemia.*

- ✓ *Experimentation with street drugs upsets schedules and diabetes as well. The use of drugs can result in:*

- increased appetite and higher blood sugars
- loss of incentive for good diabetes management
- eating meals irregularly

- ✓ *Good peer support can help the continuation of:*

- an exercise regimen
- a healthy diet
- a consistent lifestyle
- not using tobacco products (an added risk for diabetic kidney disease and for later heart attacks). Most people who are going to use tobacco will begin prior to age 20 years. Usually, if the peer

Table 2

Average Ages for Diabetes-Related Skills

Skill	Age of Mastery (in years)	
	Recommended by the American Diabetes Association	Survey of Care Providers
A. Hypoglycemia		
1. Recognizes and reports	8-10	4-9
2. Able to treat	10-12	6-10
3. Anticipates/prevents	14-16	9-13
B. Blood glucose testing	8-10	7-11
C. Insulin injection		
1. Gives to self (at least sometimes)	—	8-11
2. Draws two insulins	12-14	8-12
3. Able to adjust doses	14-16	12-16
D. Diet		
1. Identifies appropriate pre-exercise snack	10-12	10-13
2. States role of diet in care	14-16	9-15
3. Able to alter food in relation to blood glucose level	14-16	10-15

Abstracted from a survey done by Drs. T. Wysocki, P. Meinhold, D.J. Cox and W.L. Clarke at Ohio State University and the University of Virginia (*"Diabetes Care"* 11:65-68, 1990).

group does not smoke or chew, the youth will make a similar choice.

Identification with peers is so important in this age group that their support (or lack of it) may greatly affect the teen's diabetes management.

- ✓ *A belief in God and church, synagogue or mosque activities may help guide the teen.*
- ✓ *Continued involvement with parents can provide stability, limits, love and support.*
- ✓ *Grandparents can be a tremendous help at any age (see Chapter 24).*

Again, support from peers (with or without diabetes) is very important in this age group (see Chapter 19, Special Challenges of the Teen Years).

- ✓ *There is often a feeling of invincibility or "it can't happen to me."*

Regular clinic visits at this age may help the teen realize that diabetes care and responsibility are important. Teens with diabetes are faced with more difficult tasks and more serious life issues than their peers. Teens with diabetes often seem to mature earlier than teens without diabetes. They learn at an earlier age when they have to be serious in life and when they can have fun.

- ✓ *Insulin pump use is often considered in this age group (Chapter 26).*

Transition to a pump is more successful if this is the teen's choice. If the parents "push" for an insulin pump, but the teen is not ready, there is a lower chance for success. It is important to have the help of the entire diabetes team when making this decision. Readiness for the pump can be assessed together. This age group is often quicker than parents in learning the use of

the pump (a mini-computer). Glucose control can improve ONLY if meal boluses are remembered. This activity can often require adult help.

The parents' role for the teenager is to be available to help when either forward or backward steps toward adult maturity are taken. Providing support, stability, limits and love are essential at this difficult age (as at all ages).

Age alone should not be the primary factor in deciding that a person should assume responsibility for diabetes self-management. Parents who offer continued assistance and who share the responsibilities with the teen will generally have a teen in better diabetes control.

The average ages for mastering tasks as recommended by the American Diabetes Association and by a survey of care providers are shown in Table 2.

DEFINITIONS

Eye-hand coordination: The ability to use the hands to finely adjust what is seen with the eyes. This ability usually develops around the age of 10.

Fine motor control: The ability to carefully move the fingers with precision (e.g., drawing insulin to an exact line on a syringe). This ability usually develops around age 10 or 11.

Self-esteem: How a person feels about himself/herself.



QUESTIONS AND ANSWERS FROM NEWSNOTES

Q It seems like every time our eight-year-old son stays at his friend's house or has his friend stay overnight at our house he has low blood sugar the next morning. Should we be making changes?

A “Overnights” are an important social and developmental step in our society. It is important that children with diabetes be able to participate just like any other child. Overnights are also a step in developing independence and are sometimes the first night spent away from the parents. It is important for the child to be safe in relationship to the diabetes. The children usually run and play a bit harder with their friend on overnights. They also stay up a bit later than normal and use more energy. It is generally wise to reduce the insulin dose, both the rapid-acting (20-50 percent) and the long-acting (10-20 percent) insulins, on these nights.

A good bedtime snack is also advisable. Remember the “pizza factor,” that pizza tends to keep a blood sugar up better than most other foods. If there is a frozen pizza in the freezer, it may be a good night to use it. It is also wise to awaken the child at a reasonable time in the morning and to get a glass of juice or milk down sooner rather than later.

Do remember that if the child is able to do a shot but is not yet old enough to draw it up, the morning NPH and rapid-acting insulin can be pre-drawn. The syringe can be put into a little box or toothbrush holder and just rolled to mix the next morning. Think about reducing the dose again for the morning shot if it is likely that the two friends will be playing together much of the next day.