

## Chapter 19

# Special Challenges of the Teen Years

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### A. STRUGGLE FOR INDEPENDENCE

Parents often despair at the thought of their “angelic” child becoming an adolescent. The teen years have been defined as the period in life when one varies between wanting to be a child and wanting to be an adult. These feelings vary from hour-to-hour, day-to-day, week-to-week and year-to-year. The “child” part of the adolescent still wants to be completely dependent on parents and other adults. The emerging “adult”

Table 1  
Special Challenges for the Teenager

- A. Struggle for independence
- B. Growth and body changes
- C. Identity
- D. Peer relationships, alcohol, drugs, tobacco
- E. Sexuality
- F. Consistency (exercise, eating, emotions and lifestyle)
- G. Driving a car
- H. College
- I. Emotional changes

#### TOPICS:

Psychosocial  
Adjustment

Goal Setting and  
Problem Solving

Pregnancy

#### TEACHING OBJECTIVES:

1. Discuss how teenagers typically assume responsibility for diabetes care and the role of their family.
2. Discuss special challenges of teen years, including tobacco use, alcohol, substance abuse, sex, identity issues and lifestyle.

#### LEARNING OBJECTIVES:

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

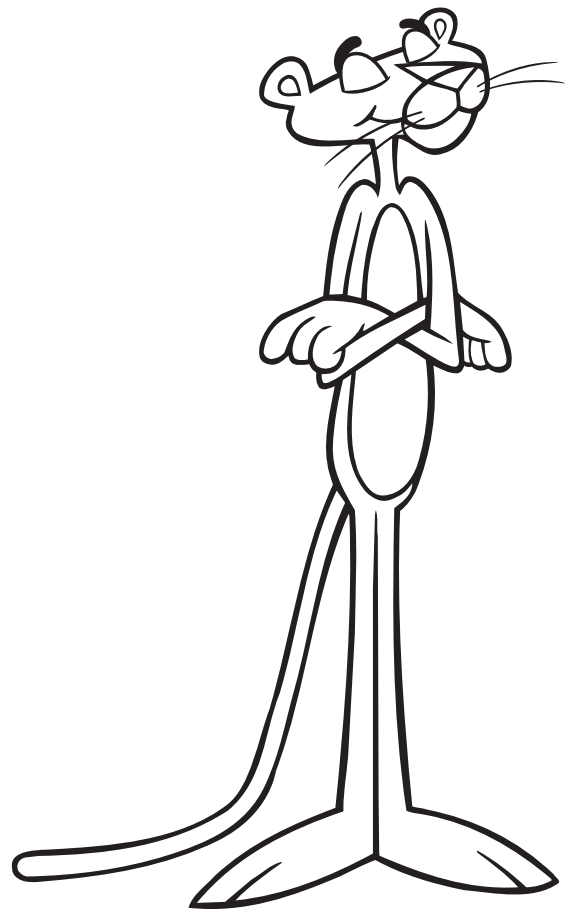
1. Support teenagers with diabetes to assume independent care for their diabetes.
2. Develop action plan with diabetes provider(s) to minimize health risks.

wants to be an entirely independent person. There are many shades between these two extremes that may linger for some time. Daily life has become more complicated and the task of independence is not easy. In the past, we believed that children with diabetes should assume their own management at a certain age and that they would suddenly become independent. **We now know that independence is not age specific and is a gradual process.** We think of diabetes as a **family condition.** Daily diabetes care has become far more complicated in recent years. It requires a great deal of parent-child partnership to achieve good blood sugar control and healthy independence.

The “child vs. adult” struggle can greatly influence diabetes management during the adolescent years. A teenager may want entire responsibility for the diabetes management at one time – faithfully checking blood sugars, exercising, watching food and “treat” intake and taking the responsibility for the injections (or oral medicines for type 2). At another time, blood sugars will not be checked unless the parent is there to help, injections or oral medicines may be forgotten or “treats” may be consumed in large quantities. Exercise, which is critical for persons with type 1 or type 2 diabetes, may be ignored. Parents can lessen the effects of this variable attitude toward the diabetes care by remaining involved and offering to share these responsibilities with their teenager. Offering to exercise with the teen makes it more fun and challenging for everyone. **We believe that a supportive adult who is readily available, BUT NOT OVERBEARING OR CONSTANTLY NAGGING, can be a help to any person with diabetes, regardless of age. Remember that independence is rarely achieved without occasional conflict.**

*Parental partnership (involvement) with the teen can be accomplished in a variety of ways:*

- ✓ drawing up and/or giving injections
- ✓ keeping a log book to record blood sugars and noting trends and problems



- ✓ helping to fax blood sugars to the diabetes care team (fax sheets are found in Chapter 7)
- ✓ helping with weekend dosing when teens may want to sleep in and could use some help with shots and a quick breakfast

These not only help the teenager, but also help keep the parent “in the loop” and aware of what is going on with management.

Diabetes care is usually NOT the top priority for a teenager. Their main interests may be their peers, schoolwork, sports, a car, a job, etc. (in varying orders of importance for different teens). The parents may need to help in keeping a focus on the things necessary for good sugar control.

If the teenagers’ actions (or lack of them) result in possible serious dangers to his/her health, then the parents have no choice but to step back in for a time. This is particularly true when insulin shots or oral medicines (type 2) are being missed. Hopefully, the next try at taking on more responsibility will be more

**Julie is a 16-year-old girl** who has had diabetes for seven years. She and her family have always prided themselves on Julie's good diabetes control. Julie is a talented dancer and hopes to become a professional dancer some day. She dances on Mondays, Wednesdays and Fridays at 5:30 p.m. At a clinic appointment, it is discovered that her diabetes has become out of control with her HbA<sub>1c</sub> unexpectedly being over 10 percent. In talking with Julie, she admits to missing evening injections sometimes when she goes to dance class. She says she just doesn't have time to get her homework, blood test and injection done and still get something to eat before leaving for dance class.

#### PLAN:

Julie's parents volunteered to help with the blood testing and injections on those nights and to make some dinner for her. Julie was relieved to have her parents take over some of the diabetes care, but admitted it was hard to ask for help after being responsible for her own diabetes care for several years.

**NOTE:** Another possibility is the missed shots were done on purpose in order to keep her "dancer's figure." If so, this is more serious. More discussion on this topic can be found later in this chapter under the topic, "Emotional Changes" and in Chapter 17 under "Eating Disorders."

successful. Remember to take things one step at a time. Just because a young person has had diabetes many years does not mean they have assumed ownership of the job. Sometimes professional counseling is necessary.

The majority of teenagers gradually assume adult independence without too much difficulty. In contrast to the parents' worst fears, they do grow up! In fact, the teenager with diabetes may assume adult responsibilities earlier than other teenagers.

#### *Achieving independence step by step:*

The task of how to help children grow to be independent young adults is a challenge for most families. Diabetes complicates that task somewhat. It is normal for parents of children with diabetes to feel anxious about normal separations such as overnights, camp and school trips. Parents worry about injections, low blood sugars and whether the schedule and snacks will be remembered. With good preparation and supervision, these separation experiences are an important part of growing up and eventually becoming independent. These experiences are also usually a lot of fun for kids. It is best to start with brief periods of separation, like staying at a relative or friend's house overnight.

#### **Overnights**

Staying at a friend's home, even for one night, can be a big step, as can a visit to relatives. This often begins prior to the teen years. We generally suggest a small reduction in insulin dosage (short and long-acting insulins) for overnights (at home or away). Kids are usually up later and tend to burn more energy. (Then the parents do not need to worry quite as much about low blood sugars while their child is away.)

#### **Summer Camps**

Follow these short visits with longer stays at a diabetes camp or other summer camps (often beginning prior to the teen years). Youth learn that they CAN survive without the parents and their parents learn that their children CAN survive without them! (Re-education for both is important.)

#### **School and athletic trips**

Eventually teens will want to participate in longer school excursions and/or sports trips. With some insulin adjustments and education of staff, these should be a safe and important part of independence and life experience.

## Clinic Visits

Teenagers can begin seeing diabetes care team members by themselves at diabetes clinic visits. Parents are still needed at these visits to review plans and problems with their teens and the diabetes care team. As noted in Chapter 18, better sugar control usually results if parents stay involved in offering continued assistance and sharing responsibilities with the teenager.

## B. GROWTH AND BODY CHANGES

The adolescent growth spurt and the development of adult sexual characteristics result in many body changes - probably more than occur at any other single time in life.

### Growth Hormone

The gain in height is a result of increased hormone levels (growth hormone, testosterone and estrogen). Growth hormone partially blocks insulin activity. Insulin requirements increase dramatically and are usually the highest per pound body weight that they will ever be. The insulin requirement usually decreases when growth is completed. If blood sugar control is good during puberty, full growth is usually reached. Research from our Center has shown that better growth (to full adult potential) is more likely with good sugar control.

### Sex Hormones

Female sexual development includes breast and hair development, widening of the hips and the onset of menstrual cycles. These pubertal changes may be slightly delayed in girls with diabetes. Blood sugars may increase during menstruation. Many girls will increase their NPH or pump basal insulin and/or their rapid-acting insulin during this time. Some girls, who use an insulin pump, will switch to a different basal rate setting to provide more insulin during menses.

Males have enlargement of the testes and penis, and facial and other body hair begins to grow. When body odors become noticeable,

for males or females, the use of deodorants is desirable. Acne (“zits”) or pimples may develop in either sex, making good skin care important. Tetracycline or other antibiotics are fine to use if acne becomes a problem. Males may be tempted to try steroid drugs to try to make their muscles larger. Use of these steroid drugs can prevent full height attainment, lead to increased blood cholesterol levels and an increased risk for heart attacks later in life. They also may cause aggressive behavior, resulting in problems getting along with others. The drugs reduce insulin sensitivity and cause increased blood sugar levels. Non-prescribed steroid drugs should not be used.

### Thyroid Hormone

The thyroid gland (in the neck) must function properly during this time or growth will not progress normally. As part of the regular diabetes check-up visits, the diabetes care provider will monitor the size and function of the teen’s thyroid gland. About half of teenagers with diabetes get some thyroid gland enlargement. This is an “autoimmune” disorder, as is diabetes. Antibodies against the thyroid gland can be measured (although expensive and often not paid for by insurance). A simple test called TSH (Thyroid Stimulating Hormone) is usually adequate for screening. Thyroid problems are also discussed in Chapter 22.

### Body Image

Teenagers are often very concerned about “body image” (self-consciousness) and a single pimple can be a disaster. Diabetes does not usually result in visible body alterations. Having diabetes may make teens “feel” different from their peers. Wearing an insulin pump (see Chapter 26) is often visible and a constant reminder of having diabetes. This is a reason why pumps should not be “pushed” on a person until they are ready. The refusal to wear an identification (ID) bracelet or necklace, to wear an insulin pump or to refrain from eating high carb foods may relate to not wanting to feel different from peers. Some teens hide their pumps under baggy clothes. They may choose

not to bolus if eating with friends. As they gain confidence and maturity, they will bolus when needed without regard to their peers.

## C. IDENTITY

### Who Am I?

Teens are searching for the answer to the question, “Who am I?” It is important to emphasize the positives about who they are at this stage of their lives (e.g., someone who loves a sport, music, mechanics, school plays or other interests), and who secondarily happens to have diabetes. The diabetes should not come first. Positive reinforcement should be given when a good attitude toward living with diabetes is demonstrated. Compliments are important. For example, “Good job on getting your blood tests done even with the stress of finals” (even though the stress and not exercising may have resulted in high sugar values). In contrast, it may be necessary for parents to “bite the bullet” and not respond when stress results in blood sugar testing not being done. A sincere offer to record results or give injections during busy times can be helpful for both the teen and the parent.

Additional identity problems may occur in youth living in single-parent or divided-parent households. Approximately 25 percent of youth now live in single-parent homes. Youth may feel a need to help care for a single-parent. Their identity may vary between being a care provider and needing to be cared for.

### Risk-taking

The in-the-middle age range of adolescence (approximately ages 14-17 years) is usually the most difficult time. The teen often sees himself/herself as “invincible.” Risk-taking and experimentation tend to occur more frequently.

*Some of the experimentation may include:*

- ✓ bright hair colors or styles
- ✓ unusual clothing
- ✓ piercings in an unusual place(s)
- ✓ a tattoo(s)

*Some diabetes-related risk behaviors are:*

- ✓ “I don’t need to wear a bracelet; I’ve got an ID card in my wallet.”
- ✓ “I’m not going to carry sugar; I can get something at my friend’s house if I need it.”
- ✓ making poor food choices without taking the steps to maintain blood sugar control
- ✓ not doing blood sugars (particularly prior to driving)
- ✓ missing shots

Regular (or more frequent) clinic visits and HbA<sub>1c</sub> tests at this time may help the teen. Parents need to let the teen know that they trust their child to act maturely. Patience on the part of the care providers and from the parents is a real virtue.

## D. THE PEERS

Peer relationships are very important to teenagers, often more so than relationships with parents. Early in adolescence, close friends are usually of the same sex. In later adolescence this often changes or is “added to” by members of the opposite sex. Being like their peers is very important. Having diabetes and “being different” can be a problem. Some teenagers are comfortable doing blood tests or giving themselves injections in front of their friends. Others will absolutely refuse to let anyone other than the closest friend know that they have diabetes. The willingness or refusal to wear an ID, as well as doing diabetes tasks in front of friends, may reflect the teen’s own degree of acceptance of diabetes.

Much of a teen’s identity relates to conforming with their peer group. Peer groups can be important in helping the teen make decisions about the use of drugs, alcohol or tobacco. If the peer group rejects or accepts these, the teen with diabetes will probably do likewise.

*Effects of the use of these substances on diabetes are listed below:*

- ✓ **Tobacco use** (smoking or chewing) affects blood vessels in anyone. Tobacco use by a person with diabetes is particularly harmful as it can lead to possible kidney disease and heart disease later in life.
- ✓ As in all people, **chewing tobacco** can lead to dental problems and cancer of the mouth.
- ✓ **Smoking cigarettes** is associated with an increased likelihood of lung cancer and heart disease.
- ✓ **Alcohol consumption** can result in delayed severe insulin reactions. (This is discussed in more detail at the end of Chapter 11.)
- ✓ **Drugs** that alter awareness of time have their greatest effects on diabetes by interfering with consistency in eating and insulin injections. Alterations of judgment can also be very dangerous.
- ✓ **Chronic drug use** may result in an “I don’t care” attitude toward diabetes management with poor health outcomes.

*Warning signs which should alert investigation of behaviors:*

- ✓ withdrawal from the usual routines
- ✓ change in sleeping pattern (sleeping more/less)
- ✓ changes in friends
- ✓ not communicating with family members
- ✓ mood changes and irritability

Participation in an activity group for teenagers with diabetes can be helpful. It may help the teenagers share their feelings with others who also have diabetes. They soon realize that others have many of the same feelings that they do, and they are quite normal in spite of having diabetes!

Teens in an area without such groups might find a useful resource on-line:

[www.childrenwithdiabetes.com/fsn](http://www.childrenwithdiabetes.com/fsn) (the ‘fsn’ is for Family Support Network) is a useful website for information and support.

Research has shown that the teen with

diabetes who involves his/her peers by sharing knowledge about diabetes is more likely to achieve better sugar control. We encourage teens to bring a friend to the clinic visit to continue to learn how they can support their friend with diabetes.





## E. SEXUALITY

- 🐾 Teenagers with diabetes run the same risk as non-diabetic teens of contracting diseases such as AIDS, herpes, chlamydia and other sexually transmitted diseases (STDs). It is very important to talk with the health care provider about prevention, protection and contraception to reduce the risk of an unplanned pregnancy or STDs.
- 🐾 **Pregnancy in a woman with diabetes (also see Chapter 27) carries added risks for the baby and the mother:**
  - ✓ Excellent sugar control PRIOR to becoming pregnant, will reduce the risk for miscarriage or birth defects in the baby.
  - ✓ Poor sugar control, particularly in the early part of pregnancy, will increase the risk for birth defects.
  - ✓ The pregnancy must be carefully planned and should be undertaken only after the HbA<sub>1c</sub> has been in the “excellent” range for several months. This is an excellent time to use an insulin pump.
  - ✓ Kidney function changes in any pregnancy and it is particularly important for a woman with diabetes to see her physician/specialist to monitor kidneys to avoid problems. Good progress has been made in recent years to minimize the risks of pregnancy in diabetes with good blood sugar control and medical care.
  - ✓ Eye (retinal) changes do sometimes worsen during pregnancy and it is important to see the eye doctor more frequently at this time.
  - ✓ It is wise for a woman with diabetes to consult with a doctor who specializes in diabetic pregnancies before and during her planned pregnancy.

*Tom is in his last year of high school and was recently diagnosed with diabetes. He feels confident that he can give his own injections and test his blood sugar. His greatest concern is that he enjoys sleeping in on weekends and that he no longer will be able to do this.*

**PLAN:**

*Tom has some good options these days that will provide more flexibility in his schedule and with insulin dosing. If he is willing to put in the effort, either using the insulin pump or Lantus (plus Humalog boluses or injections at meals) will offer this flexibility. If dosed correctly, both potentially allow teens to sleep in without problems. These are very good options to discuss with the diabetes care provider to see which one would work best. Parents can offer important support by helping with testing.*

-  Research has shown that there is no increased risk for teenage girls with diabetes to use birth control pills compared with non-diabetic teenage girls using birth control pills.
-  The only sure way to absolutely prevent a sexually transmitted disease or pregnancy is to abstain from sex. If the teen chooses to have sex, a condom should always be used (even if other methods are already being used). The use of condoms can help prevent sexually transmitted diseases and AIDS, although they do not guarantee absolute protection.
-  **If a male or female believes they cannot cause or become pregnant due to diabetes, they are absolutely wrong. People with diabetes can cause a pregnancy or become pregnant just like anyone else.**
-  The stress of the teen years may be heightened by conflicts about emerging sexuality.

## **F. CONSISTENCY (EXERCISE, EATING, EMOTIONS AND LIFESTYLE)**

The word CONSISTENCY is in capital letters throughout Chapter 12, “Food Management and Diabetes.” If everything could be the same every day, blood sugar control would be much easier. Unfortunately,

there is no such thing as consistency in many teenagers’ lives. Bedtime may be at 10:00 p.m. on school nights but then at midnight or later on Friday and Saturday nights. Many teens like to sleep late on weekends. If the teen is on Lantus insulin or on the pump, this may work well, though we would continue to urge testing midmorning to make sure the blood sugar is not low. Teens who are still on NPH dosing will need to take their insulin on schedule. We suggest an absolute limit of 9:00 a.m. as the time when the NPH insulin must be taken with at least a glass of juice. The teenager can then go back to sleep for an hour. If the teen sleeps later than 9:00 a.m. without juice or food intake, the insulin taken the previous evening may lead to hypoglycemia. Likewise, taking the insulin later than usual results in overlap with the evening insulin and a greater likelihood of low blood sugar. Once again, supportive adults must be available to make this plan work.

Consistent exercise is often a challenge. Seasonal sports, such as football or soccer, call for heavy exercise for a few months, but may be followed by weeks or months of little activity. Blood sugars will vary and the insulin dose and eating plan may need frequent adjustments for changes in activity level. It is good to have a “back-up” activity such as biking, walking, jogging or aerobics so that there is some exercise every day. Daily exercise is also very effective in controlling weight. Some teens who use an insulin pump use one set of basals for exercise days and another set for days without exercise.



## G. DRIVING A CAR

Perhaps no new function in this age group requires more responsibility than the driving of a car. The teen's own life, as well as the lives of friends or total strangers, may be in the balance. The Center's video\* (made in 2001) on hypoglycemia emphasizes safety while driving. If food has not just been eaten, it is essential to do a blood sugar test before driving. This is particularly true after a sports activity or exercising. It has been shown that driving with a low blood sugar results in greater impairment than driving when drunk. **FRIENDS DO NOT LET A FRIEND DRIVE WHEN LOW!**

If a person does feel low while driving, it is essential to pull over and have a snack. They should never assume they can "make it" home or to the nearest convenience store. The person should not resume driving until the blood sugar is tested again and is (shown to be) back up. Snacks (a small can of juice, granola bar, etc.) should be kept in the glove compartment.

If an accident does occur as a result of a low blood sugar, most states suspend the driver's license for a year. This points out that teens need to be extra careful not to drive with a low blood sugar.

\* The video is available through the Children's Diabetes Foundation (CDF) website shown on the back cover of this book. The address for CDF is also on the back cover.

## H. COLLEGE

Starting college is a challenge for anyone. It is even more so for the person with diabetes. Our Center has offered a "College Workshop" for the past twenty-five years. Students who have completed one or more years of college are the most helpful in preparing the pre-college students. The Children's Diabetes Foundation website has an educational section about college:

[www.childrensdiabetesfdn.org/education.html](http://www.childrensdiabetesfdn.org/education.html)

Getting all the needed diabetes supplies together in addition to the usual packing is an extra chore.

*Other important issues to remember or consider are:*

- ✓ If the college student is to live in a dorm, getting the (meningococcal) meningitis vaccine is important and should be discussed with your primary care physician.
- ✓ The flu shot is also advised.
- ✓ Hepatitis shots should be current.
- ✓ It is important to take emergency phone numbers. Because of health privacy laws, a release for parents to be contacted during illness should be signed and filed with the student health service.
- ✓ A copy of this book may be helpful with questions about sick-days or other diabetes-related problems.
- ✓ This book or the condensed "*First Book*" version may also be helpful in educating a roommate about diabetes, especially about hypoglycemia.
- ✓ Make certain a roommate and/or dorm counselor can recognize and treat low blood sugars.
- ✓ Being aware of the usual high calorie/high fat cafeteria food. Selecting alternatives may help prevent weight gain (often referred to as the "freshman 15").
- ✓ More frequent testing of blood sugars will help to make the transition safer.



## I. EMOTIONAL CHANGES

Much of the above sections of this chapter are about normal changes in adolescence. However, a few other areas still need to be considered. Rapid mood swings are more common during adolescence. Mood swings may change the blood adrenaline level, affecting blood sugars. Adrenaline (epinephrine) causes the blood sugar to rise. In general, normal adolescent mood changes should not affect overall glucose control significantly. Adolescence is frequently an age when other conditions may emerge. Mood disorders (like clinical depression) and anxiety disorders are common, though they are often unrecognized conditions. If your teenager shows unusual changes which concern you, please talk with your healthcare team. (Also see Chapter 17 for discussions of depression and eating disorders.)

*Such changes to watch for include:*

- ✓ frequent irritability or anger
- ✓ a drop in grades or school performance
- ✓ loss of interest in activities that were previously enjoyable
- ✓ suspected substance abuse
- ✓ changes in sleep habits (unable to go to sleep or sleeping all the time), loss of appetite
- ✓ “hanging out” with a different group of friends or dropping friends all together

These may be symptomatic of an underlying mood disorder.

Teenagers’ eating habits may be affected by their emotions. Teenagers are notorious for rather unusual eating habits and this poses a challenge for teens with diabetes who might not want to see themselves as “different.”

*Some teenagers develop mild to severe eating disorders:*

- ✓ Anorexia: not eating
- ✓ Bulimia: binging on food and self-induced

vomiting and/or use of laxatives. With diabetes, skipping insulin shots is a dangerous way to control weight.

Parents should be suspicious of eating disorders if their teen overeats or doesn’t exercise and still doesn’t gain weight. Weight loss without dieting or exercise should also alert the parents to possible missed insulin injections or boluses. The HbA<sub>1c</sub> level is usually above nine percent if insulin is being missed (for any reason). Teens tell us that their main reason for missing shots or boluses is just “forgetting.”

Stress is a normal part of life (e.g., arguments with friends, worrying about grades or concern about making a team). Learning to deal with stress is an important part of growing up.

Professional counseling can be helpful and parents and care providers should watch for signs of depression. The teen years can be a time when thoughts emerge about what it means to have a chronic condition for life.

It should be apparent that the saying “**DIABETES IS A COMPROMISE**” fits particularly well with the teenage years. Consistency in areas that would benefit diabetes control sometimes needs to be compromised in helping a teenager to develop normally.

## SUMMARY

The teen years can be stressful for everyone. However, they can also be the happiest years of an individual’s life. The teen with diabetes has extra stresses, but with a supportive family, these can be managed. Diabetes is a partnership between the parents and the teenager. It is often important for parents to be patient and to remember that they, too, were once teenagers. Parents must find ways to stay involved in the diabetes management, but not to be overbearing. Parents must be available to help and to be supportive but still let the teenager gain independence. **The good news is they do grow up!**

## DEFINITIONS

**Adolescence:** The term given to the teenage years.

**Adrenaline (epinephrine):** The stress hormone made in the adrenal gland in the abdomen. It causes blood sugars to rise.

**AIDS:** Acquired Immune Deficiency Syndrome. This is a serious condition acquired by sexual contact with an infected person or by sharing needles with an infected person. If a mother has AIDS during pregnancy, she can also pass it on to her baby.

**Estrogen:** Female hormone made in the ovary (located in the abdomen) that causes female body changes.

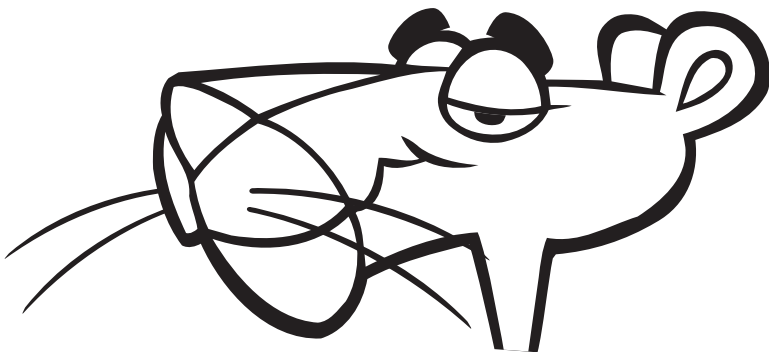
**Growth hormone:** A hormone (like insulin) made in the pituitary gland at the base of the brain that is important for growth. It blocks the insulin activity.

**Peers:** One's group of friends.

**Self-consciousness (body image):** Concern about how oneself appears to others.

**Sexually transmitted diseases (STDs):** Diseases contracted through sexual contact, such as herpes, chlamydia, gonorrhea (clap) or syphilis.

**Testosterone:** A male hormone made in the testes that causes male body changes.



## QUESTIONS AND ANSWERS FROM NEWSNOTES

**Q** At the last clinic visit, we expected a great HbA<sub>1c</sub> because my daughter's blood sugar record looked so good. We were shocked to find out that she had not been testing and was falsifying her tests! Her HbA<sub>1c</sub> was the highest ever. What should we do?

**A** Blood sugar testing can be difficult for some kids, particularly when they see high blood sugars. Unfortunately, they can feel discouraged or feel bad that they will be criticized for their high blood sugars ("what did you eat?"). When kids stop testing or falsify numbers, it is important that we find out why they were doing so. Sometimes they worry about disappointing their parents; sometimes testing makes them feel like a failure; and sometimes they want to avoid lectures from well-intended adults. There are many reasons why kids do this. If we understand, we are in a better position to help them. Talk with them about how blood sugars are not "good or bad" but helpful information to guide dosing. They may need more involvement by parents for a while to support their efforts to test.

**Q** Are birth control pills okay to use for a college-aged student with diabetes? Is there an increased risk for cancer if they are used? What are the main side effects?

**A** Initial research reported from our Center and published in the *Journal of the American Medical Association* in 1994 (271:1099) did not show any bad effects on the eyes or kidneys of women with diabetes who used oral contraceptives for a mean of 3.4 years (range: 1.0-7.0 years).

Remember that it is important to plan pregnancies very carefully when a woman has diabetes. If a pregnancy occurs when the HbA<sub>1c</sub> is low (near the non-diabetic normal), the fetus has little or no increase in risk for birth defects

from the mother's diabetes. However, if the HbA<sub>1c</sub> is high, the baby has a high risk for birth defects (abnormalities of the spinal cord, heart, lips and palate and other organs). It is during the first 1-3 months of pregnancy when the vital organs are forming that excellent sugar control is critical to the fetus. Often, women do not even realize they are pregnant during this most crucial time. Therefore, the pill may be very important in allowing careful planning for a married couple who wants to plan the pregnancy around a time of excellent sugar control. (Pregnancy is discussed in Chapter 27.)

It must be remembered that much of the early research on the pill was done in the 1960s and 1970s when high-dose estrogen and progestin tablets were in use. The current pill has 1/3-1/4 the dose of the earlier pill. Also, women who smoked cigarettes were included in the early studies and it is now realized that smoking was a greater risk for some of the side effects being studied (e.g., blood clots) than was the pill.

In relation to cancer risk, the Food and Drug Administration (FDA) ruled that after evaluating 29 studies, they found no increased risk for breast cancer among pill users. In fact, epidemiological studies have shown the pill to help prevent ovarian and uterine cancer.

The main reasons women give for discontinuing the pill are acne, weight gain, no menses (amenorrhea) and breakthrough bleeding. In the clinic, we like to follow blood pressure, just to make sure it remains steady.

**Q** Is it true that growth is reduced by poor sugar control?

**A** Research published from our Center in 1995 (*Diabetic Medicine*, Vol. 12, 129-133) was one of the first studies to use long-term HbA<sub>1c</sub> values to show that optimal growth is not reached if long-term

HbA<sub>1c</sub> values are not in a good range. In addition to the growth rate of the person with diabetes, the final adult height was compared to that of siblings, as well as the expected adult height based on the parents' heights. All were reduced in people with increased HbA<sub>1c</sub> values. In contrast, growth was not altered in people who kept their HbA<sub>1c</sub> values in a good range.

**Q** Our teenage son has had a mildly elevated HbA<sub>1c</sub> value (nine percent) over the past year. His physician and his mother and I have warned him about kidney failure and vision problems, but it doesn't seem to do any good. He currently receives Humalog and NPH insulin before breakfast and dinner. What would you suggest?

**A** First, it has long been known that scare tactics do not work with teenagers. This is particularly true in the mid-teen period (14-17 years) when they are "invincible," which may in itself lead to risky behavior. If you want your son to change, you and his healthcare providers might start with "planting seeds." It might be suggested that an extra shot each day, perhaps of Humalog/NovoLog using the insulin pen, would help at lunch or with the afternoon snack. At first, he may resist. Continue to offer education but without the scare tactics. Any positive change should be praised and encouraged. Hopefully, this will help him to continue the positive action he has taken. It helps if he is able to feel a benefit (feeling better, less frequent voiding, etc.). If growth picks up with the lower HbA<sub>1c</sub> value, point this out to him. The lower HbA<sub>1c</sub> value should also be a plus and give him positive feedback for this. Hopefully, the sum total will be such that he will want to continue with the new behavior. This model for making change has many potential applications, both in diabetes-related change and in other areas.

*To Whom It May Concern:*

RE: \_\_\_\_\_, student

\_\_\_\_\_ has type 1 diabetes and requires daily insulin injections for survival. \_\_\_\_\_ will be checking his/her blood sugar on a glucose meter 6-8 times per day to make sure the insulin that is injected is keeping the blood sugar in the desired range.

\_\_\_\_\_ will need a small refrigerator in his/her room to store insulin and keep juice and snacks. He/she will need to keep syringes, lancets, glucose test strips, insulin, meter and all related products in a safe, private area in his/her room. He/she will need to keep a container to dispose of needles and syringes. We recommend using a Safe-Clip by BD to clip needles so that they cannot be reused. Lancets can be recapped and disposed of with the syringes.

Staff and close friends within the dorm need to know the signs and symptoms of a low blood sugar and how to treat these lows. We would encourage the Student Health Center staff to review a care plan and call if they have questions or concerns.

\_\_\_\_\_ has no restrictions on diet or activity. He/she will be drinking sugar-free drinks, water, tea, coffee or milk, as desired. He/she will need a healthy well-balanced diet. We recommend that students have a microwave in the room with access to snacks in the room 24 hours a day. We are happy to assist him/her and the family with insulin adjustments via fax as needed. We suggest that he/she have access to snacks through the dorm meal plans especially when exercise increases. If he/she is planning to participate on a ski trip or hiking events, extra snacks, juice and water will be necessary to carry along with diabetes care supplies. The insulin doses may need to be decreased by \_\_\_\_\_ to prevent low blood sugars as much as possible.

\_\_\_\_\_ and his/her family are doing an excellent job of managing diabetes. Going to college is a big adjustment for all students, including those with diabetes. We expect insulin requirements to change when students are stressed, staying up late to study and are very active. \_\_\_\_\_ will be able to handle all of his/her own diabetes care, but may need assistance with a low or high blood sugar.

If you have questions, please contact us at \_\_\_\_\_.

Sincerely,

Physician \_\_\_\_\_

Phone \_\_\_\_\_ Pager \_\_\_\_\_

Nurse \_\_\_\_\_

Phone \_\_\_\_\_ Pager \_\_\_\_\_