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Contents

	Page No.
Children's Page	5
What is Osteoporosis and What causes it	7
All About Diabetes and Pregnancy by Barbara Brody	10
Looking Past the A1C Test by Allison Tsai	16
Food Insecurity and Diabetes by Andrew Curry	20

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To Diabetic Association of Pakistan

DIABETIC ASSOCIATION OF PAKISTAN

WISHES ALL ITS READERS

EID MUBARAK

ڈایابیٹک ایسوسی ایشن آف پاکستان

کی جانب سے تمام قارئین کو

عید مبارک

Diabetes and Pregnancy: Terms to Know

By Barbara Brody

Gestational diabetes refers to diabetes that appears during pregnancy and usually disappears after you give birth (though it raises your risk for type 2 later in life). Some other important distinctions between that condition and preexisting type 1 or type 2 diabetes:

DOCTORS

Preexisting diabetes: You'll need to see an endocrinologist and maternal-fetal medicine specialist (perinatologist), possibly in addition to a regular ob-gyn

Gestational: Because it's so common, your regular ob-gyn may be comfortable monitoring you.

BIRTH DEFECTS

Preexisting diabetes: If your blood glucose isn't well managed very early in pregnancy, your baby is at risk for major malformations. You face higher risks, too, including low blood glucose, preeclampsia (a late-pregnancy complication that's associated with very high blood pressure and organ damage), and diabetic ketoacidosis (DKA).

Gestational: Your child isn't at risk for major malformations because the condition doesn't develop until the second or third trimester, after the baby's major organs have been formed. You face some risks, including preeclampsia, but the danger isn't as great as in women with preexisting diabetes.

MEDICATION

Preexisting diabetes: Medication is required, usually insulin.

Gestational: The condition can often be managed with lifestyle changes but it many require insulin.

Source: Diabetes Forecast May-June 2019

Dear Children “Friends of Diabetes”

Summer is fast approaching and the sun is getting warmer. You must be planning many outdoor games. It would be great fun. Let me remind you that you have to take care of your blood glucose control despite sports. Check your blood sugar a bit more frequently, take plenty of clean cool water and have a modest snack before you go to play cricket or hockey. If the blood sugar is well stabilized, you will feel fit and will have no threat of hypoglycaemia.

Enjoy your games and take good care of yourself.

Your Uncle

HIGH BLOOD SUGAR-HYPERGLYCAEMIA

WHY DOES THIS HAPPEN?

- EATING TOO MUCH
- NOT GETTING ENOUGH EXERCISE
- NOT TAKING SUFFICIENT INSULIN

WHAT ARE THE SYMPTOMS?

- EXCESSIVE THIRST
- FREQUENT PASSING OF URINE
- INCREASED HUNGER
- TIREDNESS
- FEELING OF NAUSEA
- VOMITING
- VERY HIGH BLOOD SUGAR
- KETONES IN URINE

WHAT SHOULD BE DONE?

- REGULAR INSULIN 10 UNITS IMMEDIATELY
- IMMEDIATE CONSULTATION WITH THE DOCTOR

What is Osteoporosis and What Causes It?

Osteoporosis is a bone disease that occurs when the body loses too much bone, makes too little bone, or both. As a result, bones become weak and may break from a fall or, in serious cases, from sneezing or minor bumps.

Osteoporosis means "porous bone." Viewed under a microscope, healthy bone looks like a honeycomb. When osteoporosis occurs, the holes and spaces in the honeycomb are much larger than in healthy bone. Osteoporotic bones have lost density or mass and contain abnormal tissue structure. As bones become less dense, they weaken and are more likely to break. If you're 50 or older and have broken a bone, ask your doctor or healthcare provider about a bone density test.

Osteoporosis is Common

About 54 million Americans have osteoporosis and low bone mass, placing them at increased risk for osteoporosis. Studies suggest that approximately one in two women and up to one in four men age 50 and older will break a bone due to osteoporosis.

Osteoporosis is Serious

Breaking a bone is a serious complication of osteoporosis, especially with older patients. Osteoporotic bone breaks are most likely to occur in the hip, spine or wrist, but other bones can break too. In addition to causing permanent pain, osteoporosis causes some patients to lose height. When osteoporosis affects vertebrae, or the bones of the spine, it often leads to a stooped or hunched posture.

Osteoporosis may limit mobility, which often leads to feelings of isolation or depression. Additionally, twenty percent of seniors who break a hip die within one year from either complications related to the broken bone itself or the surgery to repair it. Many patients require long-term nursing home care.

Osteoporosis is Costly

Osteoporosis is responsible for two million broken bones and $19 billion in related costs every year. By 2025, experts predict that osteoporosis will be responsible for approximately three million fractures and $25.3 billion in costs annually.

Osteoporosis Can Sneak up on You

Osteoporosis is often called a silent disease because one can't feel bones weakening. Breaking a bone is often the first sign of osteoporosis or a patient may notice that he or she is getting shorter or their upper back is curving forward. If you are experiencing height loss or your spine is curving, be sure to consult your doctor or healthcare professional immediately.

Diseases, Conditions and Medical Procedures That May Cause Bone Loss

There are many health problems and a few medical procedures that increase the likelihood of osteoporosis. If you have any of the following diseases or conditions, talk to your doctor or health care provider about what you can do to keep your bones healthy.

Autoimmune Disorders

- Rheumatoid arthritis (RA)
- Lupus
- Multiple sclerosis
- Ankylosing spondylitis

Digestive and Gastrointestinal Disorders

- Celiac disease
- Inflammatory bowel disease (IBD)
- Weight loss surgery

Medical Procedures

- Gastrectomy
- Gastrointestinal bypass procedures

Cancer

- Breast cancer
- Prostate cancer

Hematologic/Blood Disorders

- Leukemia and lymphoma
- Multiple myeloma
- Sickle cell disease

Neurological/Nervous System Disorders

- Stroke
- Parkinson's disease
- multiple sclerosis (MS)
- Spinal cord injuries

Blood and bone marrow disorders

- Thalassemia

Mental Illness

- Depression
- Eating disorders

Endocrine/Hormonal Disorders

- Diabetes
- Hyperparathyroidism
- Hyperthyroidism
- Cushing's syndrome
- Thyrotoxicosis
- Irregular periods
- Premature menopause
- Low levels of testosterone and estrogen in men

Other Diseases and Conditions

- AIDS/HIV
- Chronic obstructive pulmonary disease (COPD), including emphysema
- Female athlete triad (includes loss of menstrual periods, an eating disorder and

excessive exercise)
- Chronic kidney disease
- Liver disease, including biliary cirrhosis
- Organ transplants
- Polio and post-polio syndrome
- Poor diet, including malnutrition
- Scoliosis
- Weight loss

Note: This list may not include all of the diseases and conditions that may cause bone loss. Talk to your doctor and ask if any of the conditions you have may be causing bone loss.

Medicines that May Cause Bone Loss

Some medicines can be harmful to your bones, even if you need to take them for another condition. Bone loss is usually greater if you take the medication in high doses or for a long time.

It's important to talk with your healthcare provider about the risks and benefits of any medicines you take and about how they may affect your bones, but do not stop any treatment or change the dose of your medicines unless your healthcare provider says it's safe to do so. If you need to take a medicine that causes bone loss, work with your healthcare provider to determine the lowest possible dose you can take to control your symptoms.

The following medicines may cause bone loss:
- Aluminum-containing antacids
- Antiseizure medicines (only some) such as Dilantin® or Phenobarbital
- Aromatase inhibitors such as Arimidex®, Aromasin® and Femara®
- Cancer chemotherapeutic drugs
- Cyclosporine A and FK506 (Tacrolimus)
- Gonadotropin releasing hormone (GnRH) such as Lupron® and Zoladex®
- Heparin
- Lithium
- Medroxyprogesterone acetate for contraception (Depo-Provera®)
- Methotrexate
- Proton pump inhibitors
- Selective serotonin reuptake inhibitors (SSRIs) such as Lexapro®, Prozac® and Zoloft®
- Steroids (glucocorticoids) such as cortisone and prednisone
- Tamoxifen® (premenopausal use)
- Thiazolidinediones such as Pioglilazone
- Thyroid hormones in excess

Note: This list may not include all medicines that may cause bone loss.

Osteoporosis and Steroid Medicines

While steroid medicines can be lifesaving treatments for some conditions, they can also cause bone loss and osteoporosis. These medicines are often referred to as steroids, glucocorticoids or corticosteroids. They should not be confused with anabolic steroids, which are male hormones that some athletes use to build muscle.

Steroids are much like certain hormones made by your own body. Healthcare providers prescribe them for many conditions, including rheumatoid arthritis (but not osteoarthritis), asthma, Crohn's disease, lupus and allergies. They are often prescribed to relieve inflammation. They are also used along with other medicines to treat cancer and autoimmune

Continued on Page 15

All About Diabetes and Pregnancy

What women with diabetes need to know about staying healthy before, during, and after pregnancy

By Barbara Brody

Just 50 years ago, women with type 1 diabetes were generally advised against having a baby. "If you did get pregnant, you'd spend most of the pregnancy in the hospital," says Marina Chaparro, RDN, CDE, a dietitian and certified diabetes educator at Joe DiMaggio Children's Hospital in Florida and founder of the family nutrition program Nutrichicos. Fortunately for Chaparro, who has type 1, times have changed. While she had to make a few adjustments during her pregnancies—she gave birth to her second child in late 2018—she and her babies were never in any serious danger.

The key, she learned, is to plan far ahead. While diabetes treatment has evolved a lot over the years, the basics of development in the womb haven't.

"The major organs are formed very early in pregnancy, just five to eight weeks after your last menstrual period," says ob-gyn Linda Barbour, MD, MSPH, a professor of medicine, director of the OB Diabetes Clinic at the University of Colorado Anschutz Medical Campus, and past chair of the American Diabetes Association's Pregnancy and Reproductive Health Council. During that brief window, your baby's neural tube, which includes the brain and spinal cord, forms. So does the heart. "Most women don't even know that they're pregnant yet."

Preconception

Because crucial development happens so early, talking to your health care provider at least a few months before you start

trying to conceive is one of the most important things you can do to ensure a healthy pregnancy. The reason: If your A1C is 10 percent or higher, you have about a 1 in 5 chance of having a baby with a malformation such as a heart, kidney, brain, or spinal cord defect, Barbour says. Get your blood glucose in target range before you conceive, however, and that changes. If your A1C is 6.5 percent or less, you're no more likely to have a baby with a birth defect than a woman without diabetes, according to Barbour.

Worried that your A1C is too high? Ask your doctor, diabetes educator, or a registered dietitian how you can make changes to your diet, exercise, and medication regimen to bring it down. And no matter what your A1C is, start taking prenatal vitamins with folic acid now to further lower your child's risk of birth defects.

If you don't have diabetes but have risk factors for type 2, now is the time to be screened. The 2019 Standards of Medical Care in Diabetes from the American Diabetes Association (ADA) recommends testing for undiagnosed diabetes during the first prenatal visit. Not sure if you're at risk? Take the type 2 risk test.

Prepregnancy is also a smart time to make sure your weight is within a healthy range. Obesity ups your risk for complications, so if you're overweight, focus on weight loss before you conceive. Your ob-gyn or endocrinologist should also test your thyroid function. "The risk of thyroid disorders is higher in women with diabetes, and proper levels of thyroid hormone are important for the IQ of the fetus," says Jeffrey Faig, MD, clinical professor of obstetrics and gynecology at Stanford University School of Medicine and director of the Endocrine Disorders in Pregnancy Program at Lucile Packard Children's Hospital Stanford.

Next stop: the ophthalmologist. Retinopathy can worsen during pregnancy, so it helps to get it in check first. If you have signs of retinopathy, have your eyes rechecked each trimester. Diabetic kidney disease (nephropathy) can also worsen, so make sure you've been screened prior to pregnancy.

Chaparro adds that this is also a great time to make sure you have the right pregnancy providers lined up. "I kind of interviewed my ob-gyn and asked, 'How many people have you seen with type 1 diabetes?' " If the doctor doesn't have a lot of expertise in this area, consider looking for one who does and/or a perinatologist (a maternal-fetal medicine specialist) who has treated women with diabetes.

First Trimester

Congratulations—you're pregnant! Whatever you do, don't stop taking your diabetes medication unless a specialist has switched you to a different one. "Diabetes medications [other than insulin] might not be officially approved for use during pregnancy, but none of them have been associated with major malformations," says Barbour. "It's much worse to stop your medication and have your sugars suddenly increase."

That said, insulin is the first-choice drug for blood glucose management during pregnancy—for those with all

types of diabetes, according to the ADA's Standards of Medical Care in Diabetes. Because insulin doesn't cross the placenta, it's the safest option for the developing baby. Plus, oral diabetes meds generally aren't enough to overcome insulin resistance in pregnant women with type 2 diabetes. That's why doctors usually switch women with type 2 to insulin even if their preconception blood glucose is well managed on a different drug.

Whether you're new to insulin or have been on it since childhood, you're going to need to keep tweaking your dose. "In the first trimester, if you have type 1, your insulin needs might actually decrease," says Chaparro. Adjusting your dose is key—you risk hypoglycemia otherwise. That's dangerous to you, of course, but regular bouts of hypoglycemia can also be harmful to your baby's developing brain, says Barbour.

Also making lows more likely: Your ideal blood glucose during pregnancy is lower than what you might be used to because high blood glucose poses such a great risk to the baby. The ADA's Standards of Medical Care in Diabetes suggests aiming for a fasting glucose level below 95 mg/dl, a reading of under 140 mg/dl an hour after eating, and a reading of under 120 mg/dl two hours after eating. If you're having trouble accomplishing that, work with your doctor or diabetes educator to review your personal blood glucose targets and develop a plan for managing your highs and lows.

In order to make sure your blood glucose stays as close to target range as possible, monitor your blood glucose when you wake, before you eat, and one or two hours after meals. Ask your doctor or diabetes educator for specific guidance.

The role of continuous glucose monitors (CGMs) in pregnancy is still being evaluated, so stick with a blood glucose meter when making treatment adjustments, such as dosing insulin. Nonetheless, a real-time CGM will monitor your glucose 24-7, and if it drops while you're sleeping an alarm will wake you. That's important—especially for women with type 1, who are more likely to become hypoglycemic, says Barbour.

A diabetes educator or registered dietitian can help you adjust your diet. For the most part, the same well-balanced eating plan that was recommended prepregnancy still stands, but an expert can help you make some tweaks or start you on a new plan if you were previously off course.

Also important: You're not exactly "eating for two." In fact, during the first trimester, you don't need any extra calories at all, says Chaparro.

While blood glucose and nutrition are probably your main focus, start taking steps to prevent preeclampsia, a late-pregnancy complication that's associated with very high blood pressure and organ damage. All women with diabetes are considered at high risk for preeclampsia, but taking a baby aspirin daily (after the 12-week mark) will lower your risk, according to the American College of Obstetricians and Gynecologists.

Second Trimester

The morning sickness and fatigue you might have had during the first trimester will start

to lift, which means you should be able to eat a little more. That's largely a good thing—just don't overdo it. Most women need to eat only 300 extra calories a day during the second and third trimesters. "That's not a lot," says Chaparro. "One slice of whole-grain bread with some almond butter will do it."

Now that you're feeling a bit better, you'll be able to move more, too. "Physical activity will help your stress level, blood sugar, and make labor easier, so stay as active as possible," says Chaparro. Whether you take a short walk 15 minutes after a meal or do more intense exercise is up to you, provided you were previously used to that level of activity. Shoot for at least 150 minutes of moderate activity, such as brisk walking, per week.

A few caveats, which apply to all pregnant women: Now isn't the time to start training for your first marathon. Avoid contact sports, activities that put you at risk for falls (such as riding a bike outside), anything that raises your temperature too high (think hot yoga or running outdoors on a sweltering day), and heavy lifting (switch to lighter weights). When in doubt, consult your doctor.

While it's natural to put on weight, aim to gain no more than 25 to 30 pounds during your pregnancy if you started out with a normal body mass index (BMI, a ratio of weight to height used to estimate how close a person is to a healthy weight). If you're overweight or obese, aim to put on less.

Obesity further raises your risk for pregnancy complications, including preeclampsia, stillbirth, and having a baby that's very large. Studies have also found that children of mothers who were obese during pregnancy are more apt to develop heart disease, asthma, and type 2 diabetes.

As your baby grows, so will your insulin requirements. "Being pregnant creates more insulin resistance because of progesterone and other hormones that are needed for the baby," says Chaparro.

This trimester is also when a number of important screening tests are done: At 18 weeks, you'll have a fetal echocardiogram to make sure the baby's heart is healthy. You'll also get regular ultrasounds, including the anatomy scan (at 18 to 22 weeks), which provides a detailed look at all your baby's parts.

Third Trimester

You may end up needing as much as double your usual insulin dose by late in the third trimester. "I usually require about 30 units of total insulin every day, but by the end of my pregnancies I needed about 80 units," says Chaparro. Keep working closely with your doctor to adjust your medication as needed.

Starting at 28 weeks, your doctor will probably recommend a growth scan every four weeks. Your baby's size is a major concern because women with diabetes are more likely to have a baby that's larger than normal (fetal macrosomia). This can complicate a vaginal delivery. The baby's shoulders can get stuck in Mom's pelvis, making a C-section necessary. Babies that are very large at birth are also more likely to become obese during childhood and develop risk factors for heart disease,

stroke, and type 2 diabetes.

In addition to monitoring your baby's size, growth scans look at amniotic fluid, which surrounds the growing fetus in the uterus. It increases when a mother's glucose is not well-managed, because the fetus is trying to flush out all that glucose. Too much amniotic fluid can trigger preterm labor, so if your level is high, you may need additional testing.

At 30 to 32 weeks, you'll also start getting nonstress tests, possibly twice a week, says Barbour. During one such test, you'll wear a monitor and count your baby's movements. You might also have what's known as a biophysical profile, which is a combination of a nonstress test and an ultrasound.

Women with diabetes are often induced earlier, at 37 to 38 weeks. Inducing labor slightly early (full term now officially starts at 39 weeks) reduces the risks to mother and baby, including the chance of stillbirth—especially if the baby is showing signs of distress or the mother isn't reaching her blood glucose targets or has preeclampsia. "We strongly encourage [women with diabetes] not to go beyond 39 weeks," says Barbour.

Postpartum

Right after you give birth—ideally at a hospital with a good neonatal intensive care unit in case your baby requires any special monitoring—a pediatrician will check your baby for low blood glucose. "The baby was getting sugar from Mom [and making extra insulin to compensate] and needs time to readjust," says Faig. If the baby's glucose level is too low, a sugar solution is an easy fix.

Meanwhile, your insulin needs are about to decline—drastically—which puts you at risk for hypoglycemia. "The moment the placenta is out, your insulin needs drop," says Chaparro. "Within a few hours, you might be back to prepregnancy levels."

You'll need to see a health care provider within two weeks for a checkup, says Faig. If you have type 2 and weren't previously using insulin, you might be able to switch back to an oral medication, though some women prefer to stay on insulin longer because it doesn't get into the breast milk.

Whatever treatment you opt for, "breastfeeding is strongly recommended," says Faig. "It helps lower Mom's blood sugar, plus children who are exclusively breastfed have a lower incidence of type 2." Not only that, but studies have found that mothers with gestational diabetes have a lower risk of developing type 2 in the future if they breastfeed.

The catch, however, is that nursing requires a lot of energy. "It's like you're running 5Ks every day," says Chaparro. To prevent dangerous lows, Faig recommends checking your glucose before you breastfeed and, unless it's already high, eating a snack.

Also know that postpartum depression is fairly common in women with diabetes. "You've had to live with a challenging chronic condition and worry about your own health. Now you also have to worry about a baby," says Barbour. Combine that with lack of sleep and major hormonal shifts, and you have a recipe for a potentially serious

impossible. Community leaders such as Nolen are working to find local solutions. Eight years ago, she helped start the West Broadway Farmers Market, located on the main street running through North Minneapolis. Once a week between mid-June and early October, people in the area have easy access to fresh fruits and vegetables brought in from local farms. An event that started with Nolen flagging people down as they drove past has grown into a neighborhood fixture with 12,000 customers in 2018. Nolen says it's one of the few thriving urban farmers markets in the Minneapolis area.

A few years ago, the farmers market partnered with a local doctor to offer people with diabetes "prescriptions" for fruits and vegetables. The prescriptions are worth up to $20 a week in produce at the farmers market, funded through grants from the USDA and North Point Health and Wellness, a local health care provider. "We're educating patients to use food as medicine," she says. "It's really inexpensive, when you think about the deeper health implications."

The "food prescriptions" have been a big success. Participants report eating healthier and come back week after week to shop. "If we can change the conditions around food," says Nolen, "we can change food-related conditions."

Going Hungry

The focus on food insecurity in inner cities has expanded to recognize that there are other groups that may have a hard time accessing healthy food. People in small towns and rural areas, for example, can face long drives to supermarkets with limited stock.

Older adults are another group that is particularly vulnerable to food insecurity and diabetes alike. Working with Feeding America, a national network of over 200 food banks, University of South Carolina public health researcher Andrea Warren, PhD, talked to food bank staffers and their older clients in nine states.

She found that diabetes was a major concern among older adults who depended on food banks. "Diabetes management was a real challenge for them," Warren says. "The No. 1 thing they reported was that they couldn't afford the right foods to manage their diabetes."

Warren's research revealed that programs designed to address food insecurity often fail older people with diabetes. Food banks, she says, are frequently designed around getting high-calorie staple foods such as pasta and bread to as many people in need as possible.

Meanwhile, fresh produce and proteins aren't available to older adults on a tight budget or to those with mobility issues. Food boxes, for example, are often full of carbs. Her research found that juice, pasta, and white rice were standard.

Accessing the right types of food wasn't the only issue. Preparing food from scratch was equally tough. "A lot of seniors, for various reasons, are unable to cook complicated things," Warren says. "They're unable to stand, or arthritis makes chopping hard." Older adults said they depended on sandwiches, canned soups, or meals they could microwave.

Warren says it's important to think

harder about ways to help older adults stay healthy. "When you're looking at food assistance, it's not designed to be responsive to the needs of people with diabetes," she says.

Warren's research highlighted some model programs that tried to tackle the needs of older adults with diabetes. One South Carolina food bank worked with Meals on Wheels to deliver low-sodium, diabetes-appropriate prepared meals to homebound seniors. And a California program packed diabetes-specific commodity food boxes with whole grains, quinoa, and protein-rich beans for its older clients with diabetes and high blood pressure.

As the population ages—by 2035, there will be more people in the United States over 65 than under 18—older adults, and older adults with diabetes, will represent a larger proportion of the food insecure. "We need to not just provide meals, but provide meals that ward off these health outcomes," Warren says.

That's not to say hunger can't still play a role. University of Toronto public health expert Christopher Tait, PhD, says many people who rely on public assistance for all or part of their food budgets may not be able to stretch their money to last until their next assistance payment.

That means people go through cycles where they eat a lot, followed by days of hunger. "Binge-fast cycles—overconsumption followed by chronic underconsumption—may add to the risk of insulin resistance," Tait says. The cycle can strain the body's capacity to produce insulin and eventually lead to type 2 diabetes.

If you're struggling to eat properly on a limited budget, or for other reasons, there are resources that can help:

Diabetes Care
Talk to your doctor or diabetes educator about your situation. They may be able to prescribe lower-cost insulin or refer you to programs designed to help with prescription costs.

To push for solutions to food insecurity in your area, consider:
- Advocating for summer farmers markets to provide an indoor winter market as well
- Looking for local programs that cultivate inner-city gardening spots, or school gardening programs that teach kids about healthy food choices
- Pushing for free breakfasts at schools
- Supporting laws and programs that repurpose foods left over from local restaurants, bakeries, and grocery stores

Source: Diabetes Forecast May/June 2019

mood disorder. If your "baby blues" don't improve after two weeks, or if you're overcome by feelings of sadness or have thoughts of harming yourself or your baby, tell your doctor or a mental health professional right away so you can get treated and start feeling better.

While this might all seem overwhelming, you don't have to let diabetes interfere with your dreams of having a family. "For women with diabetes, having a baby is a lot more work than it is for women who don't have diabetes," says Faig. "But if you do the work, you can expect to have just as good an outcome."

Source: Diabetes Forecast May/June 2019

Continued from Page 9

conditions and to support organ transplants. Common steroid medicines are cortisone, dexamethasone, methylprednisolone and prednisone. Intravenous forms include methylprednisolone sodium succinate.

Taking steroid medicines as pills in a dose of 5 mg or more for three or more months can increase the chance of bone loss and developing osteoporosis. Talk with your healthcare provider about taking the lowest dose for the shortest period of time for your condition. If you need to take steroid medicines for longer than this, you should take steps to prevent bone loss. While taking steroids, it is especially important to get enough calcium and vitamin D. It's also important to exercise and not smoke. You may also want to ask your healthcare provider if you need a bone density test.

Source:
https://www.nof.org/patients/what-is-osteoporosis/

Looking Past the A1C Test

The A1C test is the gold standard when it comes to assessing blood glucose management. But should we look at more?

By Allison Tsai

In 1968, scientist Samuel Rahbar, MD, PhD, discovered that hemoglobin A1C, a protein in the blood, is elevated in people with diabetes. At the time, the only ways to determine glucose levels were through a blood glucose test in a lab or a urine test at home, but those were far from ideal. Neither provided information about long-term management of diabetes. Instead, they showed the glucose level at one point in time.

Rahbar was onto something with the A1C, but the research community needed a few decades to catch up. Important advancements followed in the '70s, such as the first commercial A1C tests, but it wasn't until 1993 that the A1C would change diabetes management forever. "The Diabetes Control and Complications Trial put hemoglobin A1C on the map," says David Sacks, MB, ChB, FRCPath, a senior investigator at the National Institutes of Health.

The Diabetes Control and Complications Trial proved that the A1C can predict risk for diabetes complications in people with type 1 diabetes, and based on that data, researchers were able to develop blood glucose targets. "They said if your A1C is less than 7 percent, your risk for complications is very, very low," says Sacks. The role of A1C measurement was further solidified a few years later, when the United Kingdom Prospective Diabetes Study proved that the A1C could also predict complications in people with type 2 diabetes.

The American Diabetes Association currently recommends that most adults with diabetes who are meeting treatment goals and have stable glucose levels get an A1C test at least twice a year. For people who are changing medications, adjusting therapy, or not meeting their blood glucose goals, an A1C test should be done quarterly. The test allows you to set goals and then acts as a baseline to adjust treatment to meet those targets.

But does the A1C tell us the whole story?

Beyond A1C

Science has shown that the A1C can predict a person's risk for long-term diabetes complications, but it misses one important aspect of life with diabetes: low blood glucose (hypoglycemia). "The A1C is just an average, but it doesn't tell you the fluctuation that's happening to get to that average," says Dace Trence, MD, FACE, director of the Endocrine and Diabetes Care Center at the University of Washington Medical Center in Seattle. "It doesn't give the whole picture."

Consider this: Your A1C of 7 percent may be an average of two to three months of stable blood glucose levels. But it could also be an average of high highs and low lows. Those hour-to-hour or day-to-day fluctuations in glucose—known as glucose variability—may increase short- and long-term health risks. The higher your glucose variability, for instance, the greater the risk for hypoglycemia and a severe hypoglycemic event, especially if you take insulin, says Irl Hirsch, MD, professor of medicine at the University of Washington School of Medicine.

Research supports this: A study published in 2012 in the journal Diabetes Technology and Therapeutics found a significant association between same-day and multiday glucose variability and risk of hypoglycemia among people with type 2 diabetes taking insulin. Other research shows that these fluctuations in glucose may cause a chemical imbalance in the body known as oxidative stress. "Oxidative stress is thought to be the main cause of the vascular complications of diabetes," says Hirsch. A study published in 2006 in JAMA found that fluctuations in glucose triggered oxidative stress more than chronic high blood glucose.

Glucose swings don't make you feel your best, either. "It's interesting that patients will often share that they feel better when they don't see the highs and the lows," says Trence. "I frequently hear the comment, 'I feel like I've come out of a mental fog.'?"

Filling in Gaps

In the past, you may not have known if you were experiencing glucose swings, but new tools provide data that illuminate day-to-day ups and downs. Continuous glucose monitors (CGMs) track glucose levels around the clock. And the ambulatory glucose profile (AGP) condenses two weeks of finger-stick or, preferably, CGM glucose data into a 24-hour picture, which allows you and your doctor to pinpoint glucose variability.

Richard Bergenstal, MD, executive director of the Park Nicollet International Diabetes Center in Minneapolis, often uses CGM devices and AGP reports with his patients. Reviewing the

data has helped him catch glucose swings in patients whose A1Cs were within their target range. It gives him the opportunity to adjust these patients' treatment regimens to maintain their target A1Cs with more stable glucose levels.

Bergenstal isn't the only one noticing the benefit of looking at additional measures to assess diabetes management. A "beyond A1C" movement is growing within the research community. An international group of scientists, health care providers, and patients is working to expand the use and standardization of continuous glucose monitoring in regulatory, research, and clinical settings. This would give a more comprehensive picture of blood glucose levels than A1C alone, according to an article published in Diabetes Care last June.

The Big Question

Glucose variability is important in predicting and avoiding short-term risks such as serious hypoglycemia. Less clear is whether glucose variability plays a role in predicting long-term complications beyond what the A1C already tells us. Right now, it's a hypothesis with conflicting evidence, says Bergenstal, who published a point–counterpoint editorial with Hirsch in a 2015 issue of Diabetes Care.

A few studies have failed to establish glucose variability as a predictor of long-term complications. One study published in the June 2017 issue of Diabetes Care looked at finger-stick glucose data collected during the Diabetes Control and Complications Trial. The researchers collected thousands of glucose profiles over an average of 6½ years and gathered data on the progression of diabetes-related complications. "The study found that glucose variability did not appear to make a major difference beyond the impact of the A1C," says John Lachin, ScD, research professor of biostatistics, epidemiology, and statistics at George Washington University and the study's lead author. Hirsch notes, however, that this study lacks CGM data, which is the only way to show a true picture of glucose variability.

On the other side of the debate, several studies have established a connection between glucose variability and long-term complications. In one of the most cited, published in the October 2014 issue of Clinical Chemistry, researchers found that participants with the most glucose variability were more likely to have retinopathy and chronic kidney disease. There are limitations to this study, too: It's a retrospective analysis, which means scientists analyze data from studies that have already been completed. These studies, while valuable, are generally considered to provide weaker evidence compared with studies that follow patients over time.

Future Focus

If the measurement of glucose variability has what it takes to reach gold-standard status like the A1C test, it will come down to one thing that researchers can agree on: rigorous studies. In a perfect world, scientists would do long-term clinical trials, like the Diabetes Control and Complications Trial, using CGMs or a closed-loop system

For now, Bergenstal suggests talking with your doctor if you've been experiencing frequent lows or large fluctuations in your blood

glucose levels. A loaner CGM from your health care provider may even be an option to get a more comprehensive look at your day-to-day glucose levels. "I believe everybody needs a picture, intermittently, of where their blood sugars are to make the best treatment decisions," he says.

A1C Through the Ages

- **1968:** Samuel Rahbar, MD, PhD, discovers that hemoglobin A1C is elevated in people with diabetes.
- **Late 1970s:** The first commercial A1C tests become available.
- **1993:** The Diabetes Control and Complications Trial proves that the A1C can predict long-term complication risk for people with type 1 diabetes.
- **1998:** The United Kingdom Prospective Diabetes Study proves that the A1C can predict long-term complication risk for people with type 2 diabetes.

Source: Diabetes Forecast May/June 2019

Mission

The Mission of the Diabetic Association of Pakistan is to provide specialized Medical Care and Education to the people with diabetes.

Food Insecurity and Diabetes

Millions of Americans don't have access to healthy foods. That can lead to diabetes. So what's being done about food insecurity?

By Andrew Curry

North Minneapolis is one of the Minnesota city's most diverse neighborhoods, and one of its poorest. Devastated by riots in the late 1960s, the neighborhood has the highest crime rate in Minneapolis and limited public transportation options.

According to the federal government, the neighborhood is also a food desert. Researchers have used the term for decades to describe areas of the country—often poor or remote—where healthy food choices are hard to find.

North Minneapolis is a prime example. It has just one small grocery store, and almost half of the area's residents are dependent on public transportation, limiting their shopping options. And, says resident DeVon Nolen, "we have a high concentration of [people with] diabetes in the area."

But the problem is more complicated than it seems on the surface. Nolen, who manages a weekly farmers market in the middle of North Minneapolis, likes to point out that people in her area don't have trouble finding something to eat. She recently counted 37 restaurants on a 2.2-mile stretch of road that runs through the neighborhood. The problem is, they serve hamburgers, fried chicken, and pizza. Her neighbors often rely on drugstores and corner markets for meals.

The trouble people in North Minneapolis have when it comes to accessing healthy food reflects a larger problem in

America: food insecurity. The U.S. Department of Agriculture (USDA) defines it as "a lack of consistent access to enough food for an active, healthy life," and it's an issue that touches people of all ages with all types of diabetes.

The USDA estimates that 40 million Americans—including 12 million children—experienced food insecurity in 2017. That means that an estimated 1 in 10 households couldn't access or afford "enough food for an active, healthy life for all household members."

Likely Companions

Whether it's the result of too many empty calories (found in junk food such as potato chips and candy bars) or not enough nutritious ones, research shows that food insecurity in all its forms is a major risk factor for type 2 diabetes. In a study published in 2018 in the journal PLOS One, University of Toronto public health expert Christopher Tait, PhD, looked at health records and survey data from thousands of people living in the Canadian province of Ontario. The data showed a strong connection between food insecurity and diabetes. People who reported living in food-insecure households, Tait found, "were more than twice as likely to develop type 2 diabetes as those in food-secure households."

The findings might not make sense at first glance. After all, type 2 diabetes is often portrayed as a disease of excess: Too much food leads to obesity and eventually diabetes. Poverty, meanwhile, is connected with scarcity, including not having enough to eat.

But the reality is sometimes the opposite. "The experience of food insecurity in the U.S. is somewhat unique," says Andrea Warren, PhD, a researcher at the University of South Carolina. For most Americans experiencing food insecurity, the problem isn't that they're getting too few calories; it's that they're getting too many of the wrong kind.

"The food [that's easiest] to access tends to be high calorie," says Tait, noting that people who are food insecure "may be getting enough calories, but the calories they are getting contribute to weight gain." In other words: The cheapest and most readily available foods—fatty, fried takeout, high-sodium prepared meals, candy, and soft drinks—provide plenty of calories, but they contribute to or make it hard to properly manage chronic conditions such as high blood pressure, kidney disease, and diabetes. "You can meet your caloric daily requirement with pasta," Warren says, "but that doesn't mean it's a healthy diet."

That's why researchers and food policy experts have begun moving away from the term food desert. "It's not clear a food desert in itself is enough to create weight increase or an unhealthy diet," says medical anthropologist Joel Gittelsohn, PhD, a professor in the Department of International Health at Johns Hopkins University Bloomberg School of Public Health. "Neighborhoods that lack supermarkets may still have a lot of places where residents can buy food, for example. It's just not very good food."

Instead of barren deserts, Gittelsohn says it's more accurate to think of such neighborhoods as swamps. "The

term food desert is misleading because calling something a desert implies there's no food," he says. "Like a swamp, poor neighborhoods may be flooded with stores and fast-food restaurants peddling unhealthy foods and sugary soda."

Diabetes may be tied to food insecurity in other ways, too. For some people, diabetes may be the cause of their food insecurity, not just the result, says Enza Gucciardi, PhD, a nutrition researcher at Ryerson University in Toronto, Canada. Someone with complications from diabetes may have a harder time holding down a job, for example. And people on limited budgets might have to make hard choices between meals and medication to manage their diabetes. "If you have diabetes, or if you have a family and a child with diabetes, there are higher expenses," Gucciardi says.

For adults and children who already have type 1 or type 2 diabetes, food insecurity can also increase the risk of complications. "If you start skipping meals, it plays havoc on your blood sugar levels and puts you at higher risk of hypoglycemia," says Gucciardi. A study published in 2011 in the Archives of Internal Medicine found that food-insecure people with diabetes experienced twice as many hypoglycemic episodes as food-secure people with diabetes. On the flip side, those with diabetes who can afford only unhealthy fare may have more frequent high blood glucose levels, which can raise the risk of long-term complications.

Eliminating food insecurity would go a long way toward reducing the burden of diabetes. "Thinking about how to increase the accessibility and affordability of healthy food could make a big difference," Tait says. But researchers are quick to point out that food insecurity, like poverty, won't be an easy problem to fix.

Improving Access

A handful of cities around the country are taking steps to change the situation. In 2008, Minneapolis passed a first-of-its-kind law called the Staple Foods Ordinance. The law requires stores that sell food to stock produce and basic staples. The measure affected not just supermarkets, but also hundreds of corner stores, pharmacies, gas stations, and convenience stores across the city. You can now find fresh fruits and vegetables, milk, eggs, and products made with whole grains in addition to energy drinks, potato chips, and candy bars.

The city's health department has worked with stores to help them implement the law, and Melissa Laska, PhD, RD, a professor of epidemiology and community health at the University of Minnesota School of Public Health, says things are improving—slowly.

But the challenges remain huge. "I see stores trying," she says. "They put a basket of bananas on the counter as a healthier impulse buy. But then there's eight feet of counter space covered with candy, a Red Bull cooler next to the register, and a wall of cigarettes behind the counter," Laska says. "It's difficult to be a customer in some of these stores and still make healthy choices."

That doesn't mean change is

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میں ذہن متاثر ہوسکتا ہے لیکن اگر یہ کیفیت بار بار اور جلد ہو رہی ہو تو اثر پڑتا ہے اتفاقاً سے ایسا نہیں ہوتا لہٰذا اس کیفیت سے بچنے کیلئے انسولین کی مقدار صحیح لگانا، کھانا وقت پر کھانا ہے اور زیادہ شدت والی ورزش یا بہت ہی مشقت والے کھیل سے پہلے اور دوران ورزش خون میں گلوکوز کا ٹسٹ ضرور کرنا ہے اور اسکے مطابق غذا میں تبدیلی کرنی ہے۔

سوال: مجھے ذیابیطس قسم دوم ہے۔ ڈاکٹر نے غذائی ہدایات دیتے ہوئے فرمایا کہ چائے یا میٹھا مشروب (دہی کی لسی) بنانے کیلئے مصنوعی مٹھاس والی گولی یا پوڈر لے سکتے ہیں۔ میں نے لوگوں سے سنا ہے کہ یہ مٹھاس یادداشت کو کمزور کر دیتی ہے کیا یہ صحیح ہے؟ (رانا تنویر۔ کراچی)

جواب: مصنوعی مٹھاس والی گولیاں یا پوڈر کم مقدار میں استعمال کر سکتے ہیں اور اس کا یادداشت پر کوئی اثر نہیں پڑتا تاہم اسکی زیادتی یقیناً مضر صحت ہے۔ پورے دن میں دو سے تین گولیاں استعمال کر سکتے ہیں۔

سوال: کیا ذیابیطس میں مبتلا افراد ذہنی پریشانی اور افسردگی کا شکار ہوجاتے ہیں؟ (رحمت علی۔ سکھر)

جواب: اگر مرض کے بارے میں پریشان نہ ہوں اور مستقل اپنی ذیابیطس کو کنٹرول میں رکھیں تو کسی بھی قسم کی افسردگی نہیں لاحق ہوتی۔ چونکہ یہ تاحیات رہنے والا مرض ہے، مستقل اور پابندی وقت سے علاج ضروری ہے لہٰذا مستقل دیکھ بھال اور علاج پر ہونیوالے اخراجات کچھ نہ کچھ پریشان کر دیتے ہیں اور اگر ان تفکرات کو دور نہ کیا جائے تو افسردگی لاحق ہوجاتی ہے۔ ذہنی پریشانی اور افسردگی ذیابیطس کے کنٹرول پر بھی برا اثر ڈالتی ہے اور شوگر کی سطح معمولی سی بڑھ سکتی ہے۔ لہٰذا پریشان نہ ہوں۔ باقاعدگی سے علاج جاری رکھیں تاکہ خوش و خرم زندگی گزرے۔

کے خلیے کم شکری وجہ سے مجروح ہوجاتے ہیں جسکی وجہ سے ہڈیوں کے معمولی فریکچر کے صحیح ہونے میں کافی وقت لگ جاتا ہے اور نئی ہڈی دیر سے بنتی ہیں۔

عام افراد کے مقابلہ میں ذیابیطس میں مبتلا افراد کی ہڈیاں، ہڈیوں کی تشکیل نو کرنے والے خلیوں کے کمزور ہونے کی وجہ سے آسانی ٹوٹ جاتی ہیں۔

ذیابیطس قسم اول کے شکار افراد بھی اس سے متاثر ہوتے ہیں لیکن ان میں فریکچر کافی عرصہ کے بعد ہوتا ہے۔ چونکہ ذیابیطس قسم اول کم عمری میں ہوتی ہے اور جسمانی نشوونما کی وجہ سے اس عمر میں ہڈیوں کے بننے کا عمل بھی جاری رہتا ہے لہٰذا ہڈی کی توڑ پھوڑ ہونے میں کافی وقت لگ جاتا ہے لیکن ہڈیوں کا حجم کم ہوتا ہے اور ہڈیاں کمزور پڑ جاتی ہیں۔

ہڈیوں کے بھربھرا ہونے کے خطراتی عوامل:

۱) عمر: 30 سال کی عمر کے بعد ہڈیوں کی کمیت کم ہونا شروع ہوجاتی ہے اور عمر کے اضافہ کے ساتھ ساتھ ہڈیوں کی طاقت اور کام میں کمی آجاتی ہے اور ہڈیوں کے بننے کا عمل نہ ہونے کے برابر ہوتا ہے۔

۲) صنف: مردوں کے مقابلہ میں خواتین کو بھربھرے پن کی شکایت چار گنا زیادہ ہوتی ہے۔ اگر والدین یا دادا، دادی و نانا، نانی کو گرنے کے بعد ہڈیوں کا فریکچر ہوجائے تو بچوں میں بھی اسکے امکانات بڑی عمر تک پہنچتے پہنچتے زیادہ ہوجاتے ہیں۔ شاید وراثتاً ہڈیاں کمزور ہوں۔

۳) جسمانی وزن: بھاری جسم والے افراد کی ہڈیاں موٹی اور حجم میں زیادہ ہوتی ہیں۔ کمزور اور دبلے پتلے افراد کی ہڈیوں کا حجم کم ہوتا ہے۔

ہڈیوں کو مضبوط رکھنے کیلئے اقدامات:

اگر آپ کا معالج کہتا ہے کہ آپکی ہڈیاں کمزور ہیں تو فوری اقدامات بروئے کار لانے چاہئیں۔ عام افراد اور ذیابیطس میں مبتلا افراد کے لئے ہڈیوں کی صحت برقرار رکھنے کیلئے ایک جیسا طریقہ کار ہوتا ہے۔

۱) خطراتی عوامل سے آگہی: ذیابیطس ایک ایسا مرض ہے جو کہ ہڈیوں کے بھربھرے پن میں اہم کردار ادا کرتا ہے۔ لہٰذا مرض کے بارے میں زیادہ سے زیادہ معلومات حاصل کریں۔

۲) DEXA SCAN: 65 سال سے زیادہ عمر والی خواتین اور 70 سال سے زیادہ عمر والے مرد حضرات کا DEXA SCAN ضرور کروانا چاہیے۔ نارمل ٹسٹ کا یہ مطلب نہیں کہ ہڈیاں مضبوط ہیں کیونکہ ذیابیطس قسم دوم میں مبتلا افراد میں ہڈیوں کا حجم زیادہ ہوتا ہے جو کہ عام افراد (جنھیں ذیابیطس کا مرض نہیں ہے) کی طرح ہوتا ہے لیکن معدنیات کو باہم مربوط کرنے والے کولاجن (Collagen) کے اندر تغیرات کی وجہ سے ہڈیاں کمزور ہوتی ہیں۔

۳) ذیابیطس کا بہتر کنٹرول: ذیابیطس کا عمدہ کنٹرول ہڈیوں کو مضبوط رکھتا ہے اور خراب کنٹرول فریکچر کے امکانات کو بڑھا دیتا ہے۔ اگر A1C 8% سے زیادہ ہو تو کولھے کی ہڈی کے فریکچر ہونے کے امکانات بڑھ جاتے ہیں۔

۴) صحت بخش طرز زندگی اپنانا: کیلشیم اور وٹامن ڈی کی ضروریات کو غذا میں شامل کرنا۔ چار سال سے بڑی عمر کے افراد کو روزانہ 1300 ملی گرام کیلشیم اور 20 مائکرو گرام (800IU) وٹامن ڈی لینا چاہیے۔ ورزش بھی ضروری ہے۔ اس سے جسم کا توازن صحیح رہتا ہے اور ہڈیاں مضبوط ہوتی ہیں۔ جوگنگ اور وزن اٹھانا بہترین ورزش ہیں۔

۵) ادویات: عمر کے اضافہ کے ساتھ ہڈیاں کمزور اور بھری بھری ہوجاتی ہیں اور عموماً عمر رسیدہ افراد کیلشیم اور وٹامن ڈی نہیں لیتے۔ تحقیق سے ثابت ہے کہ ذیابیطس میں مبتلا افراد کو زیادہ خطرات ہوتے ہیں لہٰذا ڈاکٹر سے مشورہ کر کے یہ ادویات ضرور لیں۔ چاہے آپکی ہڈی کتنی ہی مضبوط کیوں نہ ہو۔

آپکے سوال اور انکے جواب

سوال: ذیابیطس قسم دوم میں مبتلا افراد کے لئے افعال گردہ کے ٹسٹ کی کیا اہمیت ہے؟
(منیر۔کراچی)

جواب: ذیابیطس تاحیات رہنے والا مرض ہے لہٰذا ممکنہ پیچیدگیوں سے باخبر رہنے کے لئے یہ ٹسٹس کروائے جاتے ہیں۔ ذیابیطس قسم دوم میں مبتلا افراد میں مرض کی تشخیص عموماً دیر سے ہوتی ہے لہٰذا مرض لاحق ہونے اور تشخیص کے درمیانی عرصہ میں کیا کچھ ہوا ہوگا اس کے بارے میں ضرور پتہ چل جاتا ہے۔ انتہائی معمولی سی پیچیدگی کی علامات ظاہر نہیں ہوتیں لیکن ٹسٹ سے ضرور پتہ چل جاتا ہے اور اگر وہ پیچیدگی آجاتی ہے تو قابل علاج ہے۔ اسی وجہ سے جہاں دیگر ٹسٹس ہوتے ہیں وہاں گردے کے افعال جانچنے کا ٹسٹ بھی کروایا جاتا ہے جس میں پیشاب کا خاص ٹسٹ برائے خوردبینی لحمیات (Microalbuminuria) پیشاب کا عام ٹسٹ، خون میں کریٹنن (Creatinine) اور گردے کے چھاننے کی اوسط صلاحیت eGFR نمایاں ہیں۔ خوردبینی لحمیات معلوم کرنے کے لئے پیشاب کا ایک خاص ٹسٹ ہوتا ہے جس سے پتہ چلتا ہے کہ لحمیات کی کتنی مقدار پیشاب میں آرہی ہے جو کہ پیشاب کے عام ٹسٹ سے نہیں پتہ چلتا اور اگر ٹسٹ مثبت آتا ہے تو فوری طور پر اسے کنٹرول کرسکتے ہیں ورنہ یہ باقاعدہ گردے کے عارضہ میں مبتلا کرسکتا ہے۔ eGFR میں اوسطاً گردے کے چھاننے کی صلاحیت معلوم کی جاتی ہے، اس کو دیکھتے ہوئے گردہ کے عارضہ کے مختلف مدارج پتہ چلتے ہیں اور ادویات کی مقدار میں بھی تبدیلی کرنی پڑتی ہے یا بند کرنی پڑتی ہے۔ ذیابیطس قسم دوم میں مبتلا افراد کو تشخیص کے وقت اور پھر ہر سال یہ ٹسٹس ضرور کروانا چاہئیں۔

سوال: میری بچی جسکی عمر 12 سال ہے پچھے دو سال سے ذیابیطس قسم اول کا شکار ہے۔ علاج باقاعدگی سے جاری ہے جو کہ انسولین ٹیکہ ہے۔ اس مرض کا ذہنی صلاحیت پر تو کوئی اثر نہیں پڑتا، مجھے تشویش ہے آگاہ کیجئے؟
(رضیہ۔حیدرآباد)

جواب: ایک بات ذہن میں رہے کہ آپکی بچی ذیابیطس قسم اول کا شکار ہے اور انسولین ٹیکہ اسکا علاج ہے لہٰذا یہ علاج تاحیات جاری رہے گا۔ ذیابیطس کا کنٹرول اچھا رہنا چاہیے تاکہ وہ صحتمند اور تندرست رہے اور پیچیدگیوں سے محفوظ بھی۔ یہ بچی بھی عام بچی کی طرح نارمل زندگی گزار سکتی ہے اور ہر وہ کام کرسکتی ہے جو دوسرے کرسکتے ہیں لہٰذا کوئی تفریق نہیں۔ آپ نے ذہنی صلاحیت کے بارے میں پوچھا ہے تو کچھ بھی اثر نہیں پڑتا۔ ذیابیطس کی ایک اہم پیچیدگی شدید کم شکری (ہائپوگلائسیمیا) ہے اس

ہوجاتا ہے اور ہر سات سال کے بعد ہڈیوں کا نیا ڈھانچہ تشکیل پاتا ہے۔

ذیابیطس میں مبتلا افراد میں زیادہ فریکچر کی وجہ اب تک واضح نہیں۔ ایک جاندار انسان سے جلد اور پٹھوں کے مقابلہ میں ہڈی کا سیمپل لینا انتہائی تکلیف دہ عمل ہے اور تیکنیکی عمل میں بھی اتنی پیش رفت نہیں ہوسکی کہ جو معلوم کرسکے کہ ہڈیوں کو خون پہنچانے والی رگوں میں کیا تبدیلیاں واقع ہوتی ہیں۔ فریکچر کی وجہ میں بلاواسطہ (ڈائریکٹ) ہڈی پر کیا ہورہا ہے واضح نہیں لیکن ذیابیطس کی ایک عام اور اہم پیچیدگی اعصابی نظام کی شکستگی ہے جس میں جسم کا توازن بگڑ جاتا ہے لہٰذا ان افراد کے گرنے کے واقعات بڑھ جاتے ہیں جو کہ فریکچر (ہڈی ٹوٹنے) کی وجہ بنتے ہیں۔ لیکن اسکے علاوہ ایک اور وجہ ہڈی کی ساخت میں تبدیلی ہے۔ ذیابیطس قسم اول میں مبتلا افراد کی عام افراد اور ذیابیطس قسم دوم میں مبتلا افراد کے مقابلہ میں ہڈی کمزور پڑجاتی ہیں اور بھربھری ہوجاتی ہیں لہٰذا انسان کے گرنے کی وجہ سے فریکچر نہیں ہوتا بلکہ ہڈی کی مضبوطی ختم ہوکر بھربھری ہونے کی وجہ سے آسانی ٹوٹ جاتی ہے یعنی ہلکی سی ضرب سے بھی۔

ہڈی کا حجم (Density):

اکثر دیکھا گیا ہے کہ ذیابیطس قسم دوم میں مبتلا افراد کا وزن زیادہ ہوتا ہے اور یہ خیال کیا جاتا ہے کہ انکی ہڈی مضبوط ہوگی جو کہ جسم کے وزن کو سنبھال لیتی ہے اور اسطرح ٹسٹ نہیں کرتے۔

بظاہر دیکھا جائے تو ذیابیطس قسم دوم میں مبتلا افراد اور عام افراد کی ہڈیاں ایک جیسی نظر آتی ہیں۔ بہت زیادہ استعمال ہونے والے DEXA ٹسٹ (Dual-Energy X-ray Absorptiometry scan) سے ہڈی کی صحت کا اندازہ لگایا جاتا ہے۔ اس ٹسٹ سے ہڈیوں میں موجود معدنیات کا حجم معلوم کیا جاتا ہے جو کہ خواتین میں 65 سے زیادہ اور مرد حضرات میں 70 سے زیادہ ہونا چاہیے تاہم DEXA ٹسٹ سے لحمیات Collagen (جو کہ ہڈی کی معدنیات کو جوڑتا ہے) کے بارے میں نہیں معلوم ہوتا۔ فریکچر ہونے کے خطرات معلوم کرنے کے لئے Computer Program FRAX ٹسٹ بھی کیا جاتا ہے۔ لہٰذا ذیابیطس میں مبتلا افراد کو یہ ٹسٹ بھی ضرور کروانا چاہیے۔

ذیابیطس قسم دوم میں مبتلا افراد میں DEXA ٹسٹ ہڈی کا حجم تو بتادیتا یعنی مقدار لیکن معیار (Quality) نہیں بتاتا جو کہ منحصر ہوتا ہے ہڈی کی مضبوطی پر۔ لہٰذا اگر حجم صحیح لیکن ہڈی معیاری نہ ہو تو فریکچر کے امکانات بڑھ جاتے ہیں۔ ذیابیطس قسم اول میں ہڈی بہت ہی زیادہ کمزور ہوجاتی ہے کیونکہ ہڈی کی معیاری سطح گرجاتی ہے۔

خون میں بڑھی ہوئی گلوکوز کی سطح یا ذیابیطس سے رفاقت 10 سال سے زیادہ ہو تو ہڈی کمزور ہوجاتی ہے اور بآسانی ٹوٹ جاتی ہے لہٰذا ہڈی کی مضبوطی کیلئے خون میں گلوکوز کی سطح کنٹرول میں رہنی چاہیے۔

ہڈیوں کو خون سے سیراب کرنے والی نالیاں ہڈیوں کو توانائی فراہم کرنے کے ساتھ ساتھ ہڈی بنانے میں معاون بھی ہوتی ہیں۔ ذیابیطس کنٹرول کرنے میں دی جانے والی ایک دوا پایوگلیٹازون ہڈیوں کو کمزور کردیتی ہیں۔ لہٰذا فریکچر کا خطرہ بڑھ جاتا ہے، افسردگی کے علاج کے لئے دی جانے والی ادویات بھی ہڈیوں کو کمزور کرتی ہیں لیکن اگر ضروری ہے تو دوا دینی پڑتی ہے۔ خون میں گلوکوز کی شدید کمی کے زیادہ واقعات ہڈیوں کو کمزور کردیتے ہیں۔ ہڈیوں

ہڈیوں پر ذیابیطس کے اثرات

ڈاکٹر وکیل عابدی
میڈیکل آفیسر
ڈایابیٹک ایسوسی ایشن آف پاکستان

ہڈیوں کا ٹوٹنا (فریکچر) ایک عام طبی مسئلہ ہے۔ صحت کی نگہداشت کرنے والے افراد کیلئے بہت بڑا چیلنج ہے۔ معمر افراد میں کلائی، کولھے اور ٹانگ کی ہڈیوں کا ٹوٹنا (فریکچر) ان کی روزمرہ کی زندگی کو اجیرن بنادیتا ہے۔ وہ کسی اور کے محتاج ہوجاتے ہیں اور انکا عرصہ حیات بھی کم ہوجاتا ہے۔ عام افراد کے مقابلہ میں ذیابیطس میں مبتلا افراد زیادہ متاثر ہوتے ہیں۔

یہ بہت ہی حیرت کی بات ہے کہ فریکچر کو ذیابیطس کی پیچیدگی میں شامل نہیں کیا جاتا اور یہ معاملہ بہت ہی کم زیر بحث رہا ہے۔ لیکن اب کچھ عرصہ سے محققین اور طبی نگہداشت کرنے والے افراد نے محسوس کیا کہ ذیابیطس ہڈیوں کو کمزور کردیتی ہے جسکے نتیجہ میں ہڈیوں کے ٹوٹنے کے امکانات بڑھ جاتے ہیں اور جیسے جیسے عمر میں اضافہ ہوتا چلا جاتا ہے فریکچر کی شرح بھی بڑھ جاتی ہے۔ ذیابیطس قسم دوم میں مبتلا افراد کو عام افراد کے مقابلہ میں کولھے کا فریکچر 30 سے 40 فیصد زیادہ ہوتا ہے جبکہ ذیابیطس قسم اول میں مبتلا افراد میں کولھے کے فریکچر کی شرح عام افراد کے مقابلہ میں بہت زیادہ ہوتی ہے یعنی 300 سے 400 فیصد زیادہ۔

جس طرح ذیابیطس کی پیچیدگیوں میں عارضہ رگ وقلب، عارضہ گردہ، آنکھ کی تکالیف یا اعصابی شکستگی شامل ہیں اسی طرح ہڈی کا ٹوٹنا بھی ذیابیطس کی ایک اہم پیچیدگی ہے۔

ہڈی معدنیات سے تشکیل پاتی ہے اور عموماً کیلشیم اور فاسفورس کا مجموعہ ہوتا ہے ان معدنیات پر خون کی مہین رگیں ہوتی ہیں اور لحمیات کو لاجن (Collagen) کے ذریعہ معدنیات جڑے ہوتے ہیں۔ ہڈیاں ایک ہی حالت میں نہیں رہتی بلکہ مستقل تبدیلی آتی رہتی ہے یعنی پرنا ڈھانچہ خاص خلیوں کے ذریعہ نئے ڈھانچہ میں تبدیل ہوجاتا ہے اور پرانا ڈھانچہ ختم

خون میں شکر کی انتہائی زیادتی
(HYPERGLYCAEMIA)

کیوں ہوتی ہے؟

☆ بہت زیادہ کھانے سے

☆ ورزش نہ کرنے سے

☆ مناسب مقدار میں انسولین نہ لینے سے

اِس کی علامات کیا ہیں؟

☆ پیاس کی زیادتی

☆ پیشاب کی بار بار حاجت

☆ بھوک میں اضافہ

☆ احساس تھکن

☆ قے یا الٹی

☆ متلی

☆ خون میں شکر کی زیادہ مقدار

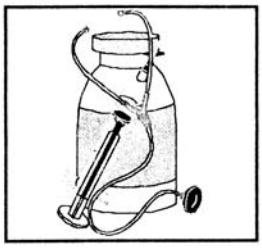
☆ پیشاب میں Ketones کا آنا

تو کیا کیا جائے؟

☆ فوری طور پر 10 یونٹ فوری اثر کرنیوالی انسولین (ریگولر یا پانی والی) لی جائے۔

☆ اپنے ڈاکٹر سے فوری طور پر رجوع کیا جائے۔

پیارے بچو!



ذیابیطس کے دوستو

موسم گرما شروع ہو چکا ہے اور روز بروز گرمی کی شدت میں اضافہ ہو رہا ہے۔ آپ لوگ یقیناً میدانی کھیل مثلاً ہاکی، کرکٹ وغیرہ ضرور کھیلتے ہوگے۔ کھیل کود اچھی صحت کے لئے ضروری ہے۔ یہاں میں آپکو یاد دلاتا چلوں کہ کھیل کے ساتھ خون میں گلوکوز کا بہتر کنٹرول بھی بہت ضروری ہے۔ کھیل کود اگر مشقت والا ہو تو خون میں گلوکوز کی جانچ بار بار کریں۔ کرکٹ یا ہاکی کھیلنے سے پہلے پانی وافر مقدار میں پئیں اور ہلکا پھلکا ناشتہ ضرور کرلیا کریں۔ اگر آپکی ذیابیطس قابو میں ہے تو صحت اچھی رہیگی، خود کو چاق و چوبند محسوس کرو گے اور کم شکری کی شکایت بھی نہیں ہوگی۔

کھیل سے لطف اندوز ہوں اور اپنی صحت کا خاص خیال رکھیں۔

آپکا انکل

ورزش کی افادیت

☆ ورزش آپکو چست وتوانا رکھتی ہے۔

☆ گروپ یا ٹیم کی صورت میں کھیلنے سے زیادہ مزہ آتا ہے۔

☆ دوران ورزش پٹھوں کو توانائی کی زیادہ ضرورت پڑتی ہے لہٰذا خون سے گلوکوز پٹھوں کی طرف زیادہ منتقل ہوتی ہے۔

☆ ورزش سے پہلے ہلکا پھلکا ناشتہ جو کہ ایک سینڈوچ، بسکٹ یا پنیر پر مشتمل ہو لے لینا چاہیے۔

☆ اپنے ساتھ جلد اثر کرنے والی شکر یا گلوکوز رکھنا نہ بھولیں۔

☆ کچھ کھیل ایسے ہیں جس میں گلوکوز (توانائی) بالکل استعمال نہیں ہوتی کیونکہ پٹھوں کو حرکت نہیں کرنی پڑتی مثلاً ٹی وی دیکھنا، کمپیوٹر پر گیم کھیلنا وغیرہ۔

☆ خون میں شکر اعتدال میں رکھنے کے لئے انسولین، غذا اور ورزش میں تناسب یا ہم آہنگی ہونا بہت ضروری ہے۔

اداریہ

عالمی سطح پر ذیابیطس کی شرح میں تشویشناک حد تک اضافہ ہوتا جارہا ہے بالخصوص ترقی پذیر ممالک میں جس میں پاکستان بھی شامل ہے۔ اگر فوری طور پر اسکی روک تھام کے لئے اقدامات بروئے کار نہیں لائے گئے تو شرح میں مزید اضافہ کا امکان ہے۔ اسوقت تقریباً 425 ملین افراد ذیابیطس کا شکار ہیں۔ ذیابیطس میں مبتلا ہر دو افراد میں سے ایک فرد اپنے مرض سے لاعلم ہے۔

ذیابیطس تاحیات رہنے والا مرض ہے اور اگر اسے کنٹرول میں نہ رکھا گیا تو مختلف پیچیدگیاں ظہور پذیر ہوتی ہیں جس سے نہ صرف ذہنی پریشانی بڑھتی ہے بلکہ اخراجات بھی بڑھ جاتے ہیں جو کہ مزید ذہنی پریشانیوں اور تفکرات میں اضافہ کردیتے ہیں۔ ان پریشانیوں سے چھٹکارہ حاصل کرنا اسی وقت ممکن ہے جب اس مرض کے بارے میں زیادہ سے زیادہ آگہی حاصل کی جائے کیونکہ جتنی مرض کے بارے میں معلومات ہوگی اتنی ہی اسکی بہتر دیکھ بھال اور مرض سے بچاؤ کی تدابیر ہوسکتی ہیں۔ سب سے پہلے تو ہمیں یہ پتہ ہونا چاہیے کہ وہ کونسے عوامل ہیں جو یہ مرض لاحق کرتے ہیں اور پھر ان افراد کو تشخیصی مرحلہ سے گزارنا چاہیے۔ خطراتی عوامل مندرجہ ذیل ہیں۔

۱) 40 سال سے زیادہ عمر والے افراد

۲) خاندان میں ذیابیطس کا مرض ہونا۔

۳) وہ افراد جنھیں ذیابیطس سے پہلے والا مرحلہ (Pre-diabetes) ہے۔

۴) دوران حمل میں ہوجانیوالی ذیابیطس کی شکار خواتین یا وہ خواتین جنکے ہاں 9 پونڈ یا اس سے زیادہ وزن کے بچہ پیدا ہوئے ہوں۔

۵) مٹاپا یا فربہی

۶) ہائی بلڈ پریشر اور خون میں کولیسٹرول (چکنائی) کی زیادتی

سب افراد کی تشخیص ممکن نہیں لیکن خطراتی عوامل رکھنے والے افراد کی نشاندھی کرکے جلد از جلد تشخیص لازمی ہے تاکہ انکا فوری علاج کرکے پیچیدگیوں سے بچایا جاسکے۔ اس سے نہ صرف گھر والوں کی پریشانیاں دور ہونگی بلکہ ذیابیطس میں مبتلا شخص کی زندگی خوش وخرم گزرے گی اور وہ بہتر طریقہ سے روزمرہ کے امور نمٹا سکے گا۔ ملک پر بھی معاشی بوجھ کم پڑیگا اور ملک ترقی کی منازل تیزی سے طے کرے گا۔ ذیابیطس کے بہتر کنٹرول کے لئے اچھا طرز رہن سہن (روزانہ 30 منٹ تیز تیز چہل قدمی، موزوں ومناسب مقدار میں غذا اور معیاری جسمانی وزن) اپنانا ہوگا۔

ڈایابیٹک ایسوسی ایشن آف پاکستان

(قائم کردہ ۱۹۶۶ء)

اِنٹرنیشنل ڈایا بیٹس فیڈریشن برسلز، بلجیئم سے الحاق شدہ

ڈایابیٹک ایسوسی ایشن آف پاکستان میں، ذیابیطس کے مریضوں کی دیکھ بھال کیلئے آٹھ ماہر ڈاکٹروں، دو ڈائیٹشن، ایک ڈایابیٹک ایجوکیٹر، بائیو کیمسٹ اور ماہر لیبارٹری ٹیکنیشنز کی خدمات حاصل کی گئی ہیں۔ نیز ایسوسی ایشن میں ضروری ساز و سامان سے لیس لیبارٹری بھی موجود ہے۔

مریضوں کیلئے سہولتیں

- ذیابیطس کے بارے میں مکمل مشورہ اور معلومات۔
- مکمل طبّی معائنہ اور تشخیص
- جدید آلات سے لیس لیبارٹری میں خون و پیشاب کے ٹیسٹ اور خون کے دیگر تمام ٹیسٹ
- ای سی جی (ECG) کی سہولت
- ذیابیطس کی وجہ سے پیدا ہونے والے زخموں کی دیکھ بھال اور مرہم پٹی۔
- پاؤں کی نگہداشت کا کلینک
- مستحق مریضوں میں دواؤں کی مُفت فراہمی اور مُفت خون و پیشاب ٹیسٹ
- ذیابیطس سے متعلق آنکھوں کا ہسپتال و کلینک

ڈایابیٹک ایسوسی ایشن آف پاکستان
مستقبل و منصوبے

- ذیابیطس کے مریضوں کیلئے ہسپتال کا قیام۔
- لیبارٹری میں توسیع
- ریسرچ و تحقیق میں توسیع

ڈایابیٹس ڈائجسٹ

جون ۲۰۱۹ء

مدیر اعلیٰ : پروفیسر اے صمد شیرا

مدیر : ڈاکٹر سیّد وکیل حُسین عابدی

اس شمارے میں	صفحہ نمبر
☆ اداریہ	۳
☆ بچوں کا صفحہ	۵
☆ ہڈیوں پر ذیابیطس کے اثرات (ڈاکٹر وکیل عابدی)	۷
☆ آپکے سوال اور انکے جواب	۱۰

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