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DIABETES WELLNESS NETWORK® YOUR INTERACTIVE DIABETES SUPPORT SYSTEM

Did Tithonus have Diabetes?

By Walter M. Bortz II, MD

Tithonus, son of the king of Troy, hooked up with lovely Eos, Goddess of the Dawn. Eos, in her passion, asked Zeus to grant her the great favor of conferring eternal life on her man. Zeus was not pleased, but felt somewhat obliged. So he granted Tithonus eternal life, but unaccompanied by ongoing youth. So Tithonus aged and aged, crinkled and wrinkled. Eos's bargain had soured.

Tithonus is said to survive today as the wretched chirp of a grasshopper.

I was reminded of this legend when Dr. Stephen Coles of UCLA visited here at Stanford two weeks ago. Steve is director of the super-centenarian study—that international roster of people over 110 years of age. His group is following about a hundred of these folk worldwide.

Steve showed many pictures of these oldest old. Not pretty. They are the present incarnation of Tithonus. I asked Stephen whether these oldest old had diabetes. NO. How can diabetes then be considered an inevitable accompaniment of aging if Tithonus and

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The Facts About Stroke

A recent study done by researchers at the Columbia University Medical Center found that individuals who had diabetes for 10 or more years had a threefold increased risk for having a stroke in comparison to someone without diabetes. Individuals who have had diabetes for five to ten years have an 80 percent increased risk of having a stroke, and those who have had diabetes less than five years have a 70 percent risk. The Northern Manhattan Study (NOMAS) followed 3,298 people who had never experienced a stroke. The mean age of the group was 69 with 52 percent being Hispanic. At the beginning of the study everyone was evaluated for diabetes. Twenty-two percent were found to have Type 2 diabetes. Participants were assessed on a yearly basis over a nine-year period. During that time frame an additional ten percent developed Type 2 diabetes. Follow-up with these patients found that 244 ischemic strokes had occurred and the risk of stroke was strongly associated with baseline diabetes or the development of diabetes during the study period. This is the first study to compare stroke risk with the length of time that an individual had diabetes. The existence of diabetes raised the risk of a stroke by 3 percent each year.

With such a high risk of stroke among our readers, we will devote this issue to stroke in order to raise awareness and provide some helpful suggestions on reducing the risk of developing a stroke.

What is a Stroke?

A stroke is a condition that results from a stoppage of blood flow to a portion of the brain. If the blood supply is cut off due to blockage of a blood vessel in

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Grasshopper © Carmen Rieb, 4th of July © Christos Georhiou

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the brain, the surrounding brain cells may be destroyed due to a lack of oxygen. If a blood vessel in the brain ruptures, the blood leaks into the brain damaging the brain cells. No matter which condition causes the damage to the brain cells the result is the same - brain cells are destroyed resulting in lasting brain damage, long-term disability, or death.

Once the brain tissue has died the body parts controlled by that are of the brain will not work properly. Two million brain cells die every minute during a stroke; therefore, recognizing the symptoms and seeking treatment immediately is of utmost importance. Stroke is the fourth leading cause of death in the United States, and someone is struck down by a stroke every 40 seconds. This is a very serious medical condition and immediate treatment is necessary.

Approximately 55,000 more women than men have a stroke each year, and African Americans have twice the risk as compared to whites.

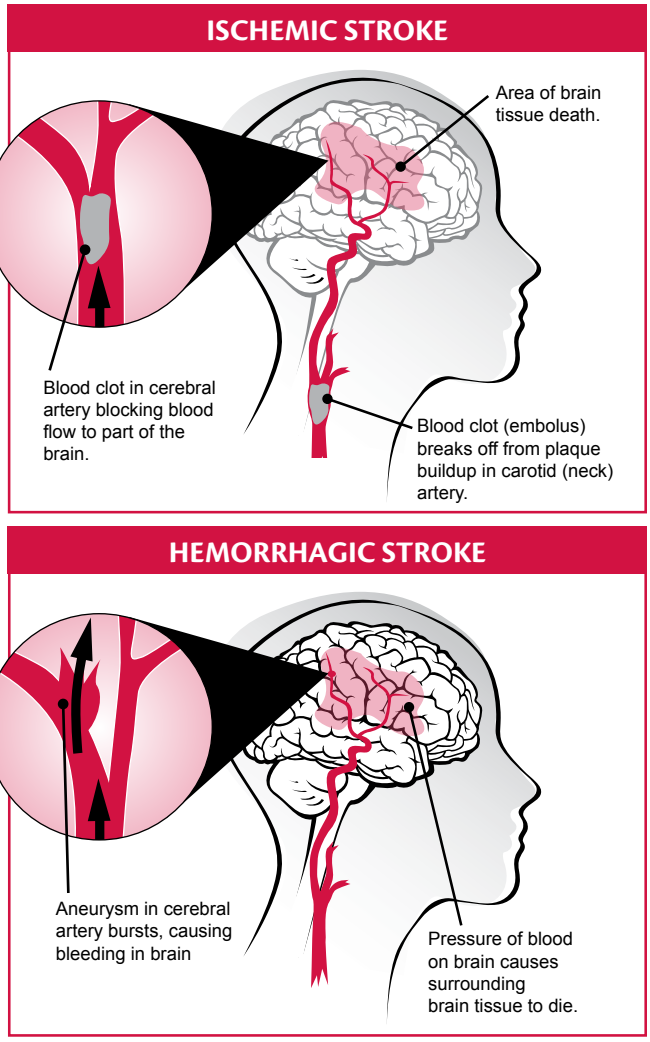
Types of Stroke

Trans ischemic attacks or TIA's are frequently referred to as a "mini" stroke. This occurs when an artery in the brain is temporarily blocked. An individual may experience stroke-like symptoms that may last for only a few seconds to several hours.

Ischemic strokes are most common and account for approximately 90 percent of all strokes. An ischemic stroke is caused by a blood clot that blocks a blood vessel within the brain. If the clot develops in the blood vessel that supplies blood to the brain it is called a thrombotic ischemic stroke. If the clot develops as a result of a blood clot or plaque traveling through the bloodstream from somewhere else in the body and lodging in the brain, it is called an embolic stroke.

Hemorrhagic stroke is caused by an artery that ruptures or leaks into the brain. The increased pressure that the leaking blood places on the brain tissue damages the brain cells. There are two types of hemorrhagic stroke — intracerebral in which the blood vessel inside the brain leaks or ruptures, and subarachnoid in which a blood vessel on the surface of the brain leaks or ruptures. In this case the bleeding occurs between the middle and inner membranes that cover the brain.

In hemorrhagic stroke the leaked blood causes swelling of the brain and the resulting increased pressure damages the tissue and cells of the brain.



Symptoms of a Stroke

- Sudden weakness
- Paralysis or numbness of the face—you may notice one side of the mouth drooping
- Slurred speech
- Paralysis or weakness of the arms or legs—especially on one side of the body
- Impaired vision—trouble seeing in one or both eyes
- Trouble speaking or understanding speech
- Dizziness
- Trouble walking
- Loss of balance or coordination
- Unexplained falls
- Difficulty breathing
- Loss of consciousness
- Sudden and severe headache

If an individual is experiencing any of these symptoms it is vital that they receive immediate medical attention. Call 911 and request an ambulance. Time is critical in limiting the damage to brain cells.

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Causes of Stroke

Strokes may be caused by a buildup of plaque in the arteries, by a heart problem, or from high levels of cholesterol. Cholesterol over time can build up and block either the carotid or vertebral arteries. As a result, the blood supply to the brain is compromised—causing a stroke; or a piece of plaque may break off and move through the arteries in the body and become trapped in a small blood vessel in the brain.

A heart problem may cause a blood clot to form within the heart; these clots could then travel to the brain and block a blood vessel. When this occurs it is called an embolism.

High blood pressure can weaken the blood vessels in the brain, which could result in a vessel breaking and bleeding within the brain. Smoking and drug abuse may increase your risk of having a blood vessel problem or a stroke.

Risk Factors for Stroke

There are conditions, behaviors and traits that may place you at a greater risk of having a stroke or a trans ischemic attack (TIA). Certain chronic conditions may increase your risk of a stroke: high blood pressure—a blood pressure that stays above 140/90, chronic kidney disease, diabetes, obesity, and smoking – all damage blood vessels and raise your blood pressure; smoking also reduces the amount of oxygen that may reach your brain and other body tissues. It has also been found that secondhand smoke damages blood vessels. Heart disease, heart failure, and atrial fibrillation may cause blood clots to form and this may lead to a stroke. Brain aneurysms—a bulge in your blood vessel similar to a balloon that may break or a malformation in the blood vessels in your brain—may rupture and cause bleeding into your brain tissue. Individuals with sickle cell anemia, vasculitis—an inflammation of blood vessels, and bleeding disorders may be at an increased risk for a stroke.

As you age, your risk for a stroke increases. Younger men are more likely to have a stroke than women; however, women die from strokes more frequently. Birth control pills increase a woman's risk of having a stroke. Ethnicity may also play a role in one's risk: African Americans, Alaska natives, and American Indians have a higher incidence of stroke as compared to Caucasians, Hispanics, or Asian Americans.

A family history of stroke or a TIA is a risk factor, and if you've had a stroke or experienced a TIA, you are at a higher risk for having another one.

These risk factors you have no control over; however, there are some risk factors that you *can* do something about – including the use of drugs or alcohol, an elevated cholesterol level, physical inactivity, obesity, stress and depression.

A healthy lifestyle will certainly lower your risk, and if you have a condition that increases your risk—such as diabetes, an elevated cholesterol level, or high blood pressure—it may be necessary for you to take medication as a preventive measure.

Diagnosis of a Stroke

Your healthcare professional diagnoses your risk for having a stroke based on your symptoms, test results, a physical exam, and your medical history. During the exam the healthcare professional will examine the arteries in your neck—called the carotid arteries—by listening with a stethoscope to determine if a decreased blood flow to the brain is present. The health care professional may also order tests such as a brain CT scan or an MRI to evaluate your brain's health. They may also do an arteriogram of the large blood vessels in your brain to evaluate blood flow. A carotid angiogram is done by injecting dye and taking x-rays of your carotid arteries. Your healthcare provider may also evaluate your heart health. An EKG and echocardiogram will provide information about the rhythm of your heart, and the pictures of your heart can determine if there are blood clots in the heart or in the large blood vessel of the aorta.

Blood work will also be done to evaluate your blood glucose level—as a low blood sugar may cause symptoms similar to a stroke. Platelets will be measured to determine if there may be a bleeding disorder—either not enough clotting or too much. They will also evaluate how long it takes your blood to clot—this can be done using a PT and PTT test. All these tests are done quickly in order to determine the cause of your symptoms and to help the healthcare professional decide on the best course of treatment.

Treatment

The treatment for your stroke will depend on its cause. A stroke is a medical emergency and it is important that you seek assistance immediately by calling 911. Do not take time to drive yourself to an emergency room or to call your healthcare professional. Call 911—as the emergency response team will begin treatment as they transport you to the hospital.

If it is determined that you have had an ischemic stroke

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Warning Signs of Stroke

A stroke is a very serious medical condition and it is therefore important to recognize the symptoms and seek treatment immediately by calling 911; minutes can make a difference in survival and long-term disability.

Use the FAST test to remember the warning signs:

F = Face

Ask the person to smile.
Does one side of the face droop?

A = Arms

Ask the person to raise both arms.
Does one arm drift downward?

S = Speech

Ask the person to repeat a simple sentence.
Does the speech sound slurred or strange?

T = Time

If you observe any of these signs independently or jointly call 911 immediately.

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or a transient ischemic attack (TIA), the treatment will include medications and medical procedures. The type of medicine that will be used is called a tissue plasminogen activator (tPA). This medication must be administered within four hours of the development of your symptoms. If – due to a medical reason—you cannot take a tPA, you may be given an antiplatelet medication such as aspirin in order to stop the platelets from clumping together and forming a blood clot. You may also receive an anticoagulant or a "blood thinner." A blood thinner may prevent blood clots from becoming larger or prevent new clots from forming.

There are also certain medical procedures that can be performed if it is determined that you have carotid artery disease—such as a carotid endarterectory or a carotid artery angioplasty. These procedures are done to open up the blocked carotid arteries.

If it has been determined that you've had a hemorrhagic stroke—which occurs when a blood vessel in the brain breaks or is leaking—it will be necessary to locate the source of the bleeding and control it. If you are taking blood thinners or antiplatelet medications your doctor will have you stop taking them. If the cause of the stroke was high blood pressure, you will be prescribed medications to lower your blood pressure; this will prevent further bleeding. It may also be necessary to perform surgery to prevent the aneurysm from rupturing again.

Reducing Your Risk

It is important to reduce your risk for a future stroke. This may involve lifestyle changes such as:

- Quitting smoking—talk to your healthcare provider about programs that may help you quit.
- Eating a healthy diet—choose foods that are low in saturated fat, cholesterol and trans-fat. Reducing your intake of red meat, removing the skin from chicken, and eating more fish, beans and fat-free or low-fat dairy products.
- Reducing your intake of sodium to lower blood pressure.
- Reducing your intake of sugar.
- Limiting your intake of alcohol.
- Losing weight—being overweight or obese increases your risk of stroke.
- Engaging in physical activity—this reduces blood pressure, lowers cholesterol, and assists with weight loss.

If your lifestyle changes are not effective, it may be necessary to add medications to reduce your risk of stroke. It is important to take your prescribed medications correctly. If you had an ischemic stroke it may be necessary to take blood thinning medications; the most common side effect is bleeding; therefore it is necessary to have blood tests on a routine basis to assess the effect of these medications. Discuss with your healthcare professional the schedule you should follow for lab tests and follow-up visits.

Because of the bleeding side effect, it is important that you know the signs of bleeding.

- Unexplained bruising and/or tiny red or purple dots on the skin
- Unexplained bleeding from the gums and nose
- Increased menstrual flow
- Bright red vomit or vomit that looks like coffee grounds
- Blood in your urine, bright red blood in your bowel movements, or black tarry bowel movements
- Pain in your abdomen or severe pain in your head

Call your healthcare provider immediately if you notice a lot of bleeding after a fall or injury. If you experience severe bleeding call 911.

Rehabilitation

The degree of brain cells that were damaged by your stroke will determine your need for rehabilitation therapy. A speech and language specialist may be able to help with

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Home Blood Pressure Monitoring

Many individuals with diabetes also have high blood pressure. Being able to monitor your blood pressure at home helps you to be sure your blood pressure is being controlled. There are many over-the-counter blood pressure machines available for use at home. It is important to use the equipment properly to ensure you are getting accurate readings. Below are some tips to make certain your readings are accurate.

- Avoid eating, drinking alcohol, exercising, smoking or bathing for 30 minutes prior to taking your blood pressure.
- Remove tight clothing from your arm.
- Sit up straight in your chair, feet placed flat on the floor, with your right or left arm resting on a table. Be sure the blood pressure cuff is at the same level as your heart.
- Relax and take some deep breaths. Start the machine and remain still with no talking until the measurement is complete.
- Be consistent in the arm you use; you may want to check to be sure you are receiving similar readings in both arms.
- Wait 2 to 3 minutes between readings; this allows your arteries to return to normal after a reading.
- Keep a record of your blood pressure and your pulse for your healthcare provider.

What the Numbers Mean

Systolic – the top number on the monitor is called your systolic blood pressure. This is the pressure in your arteries when your heart is contracting.

Diastolic – the lower number on the monitor is called your diastolic blood pressure. This measures the pressure in your arteries when your heart is relaxed, in between the contractions of the heart muscle (beats of your heart).

Pulse – this shows the rate at which your heart is beating, usually the number displayed reflects the number of beats per minute.

Talk to your healthcare professional about your goal for blood pressure and pulse, and at what point (number) you need to call your healthcare provider.

The Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) Study

Glycemic control in a real-world setting

The Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) study, studied 4,000 patients over a five-year period. It is well known that glycemic control worsens over time. In this trial researchers were able to observe individuals with diabetes over time, studying the adequacy of metformin, sulfonylureas, and insulin to maintain blood glucose control and the effect of these medications on weight. Diabetes is a progressive disease requiring medication adjustments over time. In the UK Prospective Diabetes Study (UKPDS) diabetes control worsened over time despite the use of intensive insulin therapy. The FIELD Study allowed for researchers to observe the outcomes of real-world diabetes care in primary care settings. This analysis allowed researchers to track the history of Type 2 diabetes and track its progression with changes in therapy over time.

The focus of the FIELD study was to determine whether fenofibrate could reduce cardiovascular disease risk in those with Type 2 diabetes. Glucose management was not part of the study. Participants came from 63 different areas in Australia, New Zealand, and Finland. It was a double-blind study, placebo-controlled trial for Fenofibrate therapy. Patients were 50-75 years of age, with Type 2 diabetes. Over 9,000 patients participated and were followed every six months for five years. In the beginning of the study 27 percent of the patients were using lifestyle interventions. Metformin and/or sulfonylurea were used by 59 percent of the participants, and 14 percent were using insulin. Within the insulin group 6.2 percent were using insulin alone and 7.5 percent were using insulin in combination with an oral hypoglycemic medication.

Over the five year time period, those using lifestyle measures alone dropped from 27 percent to 13 percent; while those using metformin and/or sulfonylureas remained constant at about 56 percent, and those using insulin increased to 31 percent. Within the group that started with lifestyle interventions only 44 percent remained on lifestyle interventions, while 54 percent progressed to oral agents and 3 percent were on insulin therapy.

Of those on oral agents initially—25 percent progressed to insulin therapy and 92 percent remained on at least one oral agent. For those starting on insulin, 97 percent were still taking insulin after five years. The goal of A1C was 7 percent, and maintaining this level of control resulted in increasing the dose of insulin over time. The increase in medication was followed by an increase in weight and an increase in hypoglycemic events. Future studies will be looking at the addition of insulin-sparing medication to reduce the weight gain that occurs with the addition of insulin.

Effect of Exenatide Twice Daily with Lantus in Patients with Type 2 Diabetes

NEWS TO MUSE

Exenatide has been approved to be used with insulin and studies are presently being conducted to see the benefit of this treatment regimen. Exenatide is a glucagon-like peptide 1 (GLP-1) receptor agonist that works to lower blood glucose levels by signaling your pancreas to release insulin. It reduces the amount of glucose your liver releases, suppresses your appetite, and slows down how quickly glucose enters your bloodstream after eating.

A study has been done to determine if the addition of this therapy has an impact on glycemic control and weight loss. In the study, exenatide was taken twice a day in addition to Lantus (glargine). Researchers analyzed the benefit of this combination therapy, reviewing the relationship with baseline A1C, duration of diabetes, BMI, glucose control, body weight changes and insulin doses.

Participants of the study were taking ≥20 units/day of Lantus, alone or with metformin and/or pioglitazone. The group was randomized and if A1C was greater than 8 Lantus was left unchanged, if it was 8 or below the dose was decreased by 20%. After 5 weeks insulin doses were titrated to achieve fasting blood glucose of < 100. Researchers also looked at subgroups – those with an A1C of ≤ 8%, and > 8, number of years with diabetes - < 9, 9 -15, and > 15 years and baseline BMI - < 30, 30-36, and > 36.

There were 122 individuals in the placebo group and 137 in the exenatide group. Findings included significant A1C reductions in both groups; however, the exenatide users had a greater A1C reduction in addition, and those who had diabetes for a longer duration had greater A1C reductions with the addition of exenatide.

In the group who took exenatide, individuals with a BMI of 36 and below experienced a greater reduction in A1C than those with a BMI greater than 36.

In regard to weight loss, those taking exenatide who had diabetes for a longer duration experienced the greatest weight loss.

And all participants taking exenatide experienced more weight loss than the placebo group.

In conclusion, the addition of exenatide may offer more benefit for those with a longer duration of diabetes and a higher BMI. As further research is done we hope to learn how to specify treatments that will provide the best benefit.

Are You Getting Enough Sleep?

According to the American Medical Association, people who sleep only 4-6 hours at night may only be producing one-half of the disease fighting antibodies as someone who sleeps for a longer time.

Sleeping less may result in weight gain, it may increase your stress level, as well as compromise your immune system.

Here are a few suggestions that may help improve your sleeping habits.

- Limit eating and drinking just before sleeping—a large meal may result in indigestion. Drinking alcohol may result in a restless sleep, causing you to wake up frequently.
- Wind down mentally at the end of the day. Go to a quiet place and read a book or listen to music to help relax you and slow you down from your busy life.
- Exercise early in the day.
- Stick to a regular schedule in order to regulate your body's sleep/wake cycle.

A lack of sleep may cause higher levels of chronic inflammation and insulin resistance; it may increase your production of cortisol (a stress hormone), impair your memory and reflexes, elevate your blood glucose levels, and increase your appetite—which may result in weight gain.

Research has shown that an individual's body mass index (BMI) affects slow wave and deep sleep. Getting at least eight hours of sleep each night should be a goal you strive for.

Sleep © OLLY; Blood Pressure Cuff © RVLSOFT

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communication if your stroke affected speech, language or your memory. A physical therapist and occupational therapist will work with you to strengthen and stretch your muscles. They will work to help you relearn how to do daily activities. Your bowel and bladder may be affected due to damage to muscles and nerves. You may need assistance from medication and a bowel specialist. Swallowing and eating problems may also occur; a speech therapist may be helpful in treating these conditions. In some cases there are changes in behavior and judgment dependent on the area of the brain that has been affected. These changes may result in depression, in which case it is important to seek support. Joining a support group may be helpful. It is important to discuss these issues with family and friends as their support is instrumental in your recovery.

MCM 10K

RUN FOR THE DIABETES CURE:

Join DRWF's team in the 37TH Annual MCM 10K fun run. Keep fit and help find the diabetes cure!

RACE DAY:
Sunday, October 28, 2012

DEADLINE TO JOIN:
September 1, 2012
www.diabeteswellness.net

Are You at Risk for Type 1 Diabetes?

The cause of Type 1 diabetes remains unclear and researchers are presently studying individuals who may be at risk in order to gain a better understanding of this disease. Type 1 diabetes is usually diagnosed in young people, although it may occur at any time. Approximately 30,000 new cases are diagnosed each year and it is thought that there are three million Americans with Type 1 diabetes.

Type 1 diabetes is an autoimmune disease in which the cells in the pancreas that make insulin are destroyed. Recent data show that Type 1 diabetes is increasing by about 3 percent annually. Approximately one-half of those individuals diagnosed are adults. A simple blood test is now available to identify the onset of Type 1 diabetes as early as 10 years before any symptoms begin.

Type 1 Diabetes TrialNet is a network of 18 research centers that are conducting clinical trials in an effort to expand a nationwide free screening program for Type 1 diabetes. Eligibility for screening includes anyone 45 years of age or younger with a sibling, parent or child with Type 1 diabetes; or individuals 20 years of age or younger with a cousin, aunt, uncle, niece nephew, half-sibling or child with Type 1 diabetes.

Family members of those with diabetes have a 15 times greater risk of developing diabetes as opposed to those with no family history. For those who do not live near one of the research centers, testing kits may be mailed to patients to be used by their local healthcare professional or lab. The screening tests the blood for specific antibodies that are present in those with Type 1 diabetes. Individuals who test positive for the antibodies are requested to join a monitoring study that is used to determine the level of risk. Individuals with the highest level of risk are followed every six months with blood tests and an oral glucose tolerance test.

Knowing an individual's risk for development of Type 1 diabetes reduces the risk of an individual becoming extremely ill at the time of diagnosis, as they will be monitored over time and early detection may prevent hospitalization. Another advantage of the screening program is the creation of a potential group of individuals who may be used to gain an understanding of diabetes development and possibly prevention. Presently, over 100,000 individuals have been screened and about 5 percent have been found to have the antibodies. Volunteers are being used in prevention studies as new information is learned about Type 1 diabetes. Studies are underway to learn more about the hereditary and environmental factors that may trigger the onset of Type 1 diabetes. Over 8,000 at-risk children are being followed in order to determine if diet or exposure to viruses may be a factor in the development of Type 1 diabetes.

To learn more about TrialNet and to find a testing center, go to
www.diabetestrialnet.org

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cohorts don't get it? Diabetes must be something else; due to something else than just aging.

I applaud this conclusion, as I am a perpetual student of the Serenity Prayer: Change what you can, accept what you must, and know the difference. If diabetes was due to aging, and aging is inescapable; then there can be no prospect for respite. But since Tithonus doesn't get diabetes then it must be due to something else, which we can do something about.

The mission of DRWF is to be sure that Tithonus and the rest of us don't have to contend with diabetes.

The mission of DRWF is to be sure that Tithonus and the rest of us don't have to contend with diabetes. Millions fall prey to this awful disease, but if Tithonus can avoid it then there must be hope for all of us even without Zeus's assistance.

Help DRWF change what we can.

DIABETES LOCAL

is seeking support groups to add to DiabetesLocal.org. Please send information about your support group to admin@diabeteslocal.org or call 800-941-4635.

DRWF at AADE Annual Meeting

We are looking forward to seeing our many friends and supporters at the American Association of Diabetes Educators Annual Meeting in Indianapolis, August 1-4. Our educator, Kathy Gold, will be presenting on Wednesday, August 1 from 1:30- 3:00 p.m. The title of the session is "***A Step-by-Step Guide: Building a Community Support System for Individuals with Diabetes.***" Be sure to stop by our booth — #1132 — and pick up copies of our new educational brochures and participate in our free ID necklace program.

Diabetes Wellness Network®

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