YELM FAMILY MEDICINE, PLLC

Committed to your health and our community

National ITP Awareness Month

In 2010, The Platelet Disorder Support Association announced the designation of the month of September as national ITP Awareness MonthSM. PDSA requested this designation as part of our ongoing commitment to increase public understanding of ITP and other platelet disorders and to connect patients and caregivers with life-altering resources and support.

PDSA was founded to ensure patients would no longer travel the ITP journey feeling confused, lost, frightened and alone. To ensure that this rare diagnosis wasn't accompanied by limited or no information and resources and to encourage research and better treatment options for patient-centered outcomes. While PDSA has always worked to encourage this progress, prior to 2010, there was no awareness month or color dedicated to understanding ITP and other platelet disorders.

Together We Can Make a Difference

As the premier ITP resource in North America and as an empowered community, we look ahead with great optimism for immune thrombocytopenia. We anticipate heightened collaborations, more meaningful conversations, expanded research, and new treatment options. We forecast a future for better outcomes and renewed strength for the ITP Warrior and prepare for a September painted purple and energized with the hope of brighter days to come.

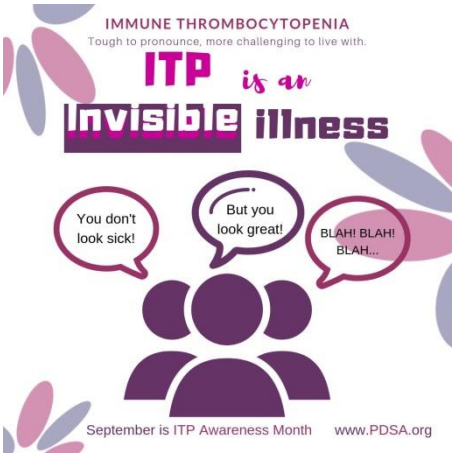
As you travel your journey this year, celebrate with us and connect with your defining spirit. Be inspired and get your purple on! Make a commitment to raise awareness, reach new heights and light the way to finding a cure.

Causes

While no one knows the precise

IN THIS ISSUE

We will be closed Monday, September 2nd. In observance of Labor Day. We will reopen on Tuesday September 3rd at 9am.



cause of ITP at this time, researchers continue to make progress in understanding it and the similarities to other autoimmune diseases. Since ITP can vary greatly between individuals, causes of ITP may also vary. Note that the theories on this page are listed separately (in alphabetical order), however they most likely overlap. For example, someone may have a defect in immune regulation which makes them more susceptible to developing ITP after an immunization or contracting H. pylori.

Bacteria and Virus Byproducts

This theory suggests that ITP (and other autoimmune diseases) may be caused by a person's immune response being confused between its own cells and invading virus and bacteria.

When a virus or bacteria invades our body, special cells chop it up into thousands of fragments and put some of these fragments in a type of pocket for the immune system to disable. T-cells (a type of white blood cell) latch on to the fragments in the pocket and send signals to destroy all of the tissues that have the same or similar makeup. The problem comes when the fragment to be destroyed looks like part of a platelet. In that case, antibodies attach to platelets as well as the fragments on other cells resulting in both the invaders and the platelets being destroyed.

In a similar theory, when our body is fighting a reaction, it produces a compound called interleukin-12 during its normal immune response. Interleukin-12 then creates many other immune compounds specific to a particular microbe. Researchers think this flurry of activity may activate any dormant self-reactive cells near the infection. (If the self-reactive cell is for platelets, you get ITP)

Free Radical Damage (Oxidative Stress)

In this theory, the DNA in our cells can be altered by reactive substances in our bodies. When the changed DNA is a part of the immune control function, it can result in a specific autoimmune disease.

Free radicals are particles with an unstable molecular structure that act as scavengers in the body and rob electrons from other molecules. Their production is hastened by stress, pollution, fertilizers, pesticides, prescription drugs, alcohol, electromagnetic radiation, etc.

Our bodies have built-in methods to control free radicals and change them into neutral substances. These detoxification mechanisms require specific enzymes to make them function well. If our bodies do not have the vitamins and minerals to make up the enzymes, or if the detoxification mechanism is damaged, the result is a surplus of free radicals and other toxic substances.

The excess free radicals and other noxious byproducts of a failed detox process roam our bodies and attack our weakest links. Depending on the DNA attacked, the electron grabbing can cause an autoimmune disease, including ITP.

Immune System Defects

Both developing and mature T-cells and B-cells (types of white blood cells) have been implicated in the development of ITP.

The immune system has a way of determining the difference between foreign invaders and normal tissues. It is a complicated process with various checkpoints. When one or more of these checkpoints is faulty, antibodies can target important tissues like platelets.

T-regulatory cells (a type of white blood cell) suppress the immune response of other cells. They keep the immune system in check by halting the immune reaction after clearing a virus or bacteria and by preventing the immune system from over-reacting and attacking normal cells, like platelets. In a study of mice with ITP, researchers found that the T-

regulatory cells were retained in the thymus instead of being released into the blood where they could do their job of balancing the immune system.

People with ITP also have fewer B-regulatory cells. These cells are important in regulating the T-regulatory cells and also play a role in deciding which cells are normal and which are not and need to be eliminated.

Intestinal Changes

Our bodies contain about 100 trillion microbes, most of them bacteria, and most of them living in the digestive tract. These microbes play a role in our adaptive immune system, the part of the immune system that disables harmful viruses and bacteria. When the beneficial bacteria living in the gut are modified by diet, antibiotics, or invading pathogens, the immune system can shift and particles can escape from the digestive tract. These disturbances of the intestinal immune system can lead to various intestinal diseases and have been increasingly linked to immune-mediated diseases outside of the intestine such as rheumatoid arthritis, multiple sclerosis, and other autoimmune diseases.

ITP and Families

Whether you've just been diagnosed with ITP, or have been living with the autoimmune condition for some time, you may wonder if the disease was passed on to you through your family—and if there's a chance you'll pass on ITP to future generations. Currently, ITP is not usually considered an inherited disease. If multiple family members have been diagnosed with ITP, the hematologist should verify that the cause of low platelets is truly autoimmune and is not due to an inherited disorder that affects platelet production.

When Genes Affect Your Platelets

Sometimes people are diagnosed with primary ITP when they have an entirely different form of the disease. Known as inherited or familial thrombocytopenia, low platelets are caused by a genetic mutation, not by autoantibodies, as is the case with primary ITP. Getting the right diagnosis is extremely important to avoid unnecessary treatments, receive the most effective care and manage the risk of related symptoms.

Some types of inherited thrombocytopenia are easy to spot by an experienced hematologist. Blood tests may show the platelets to be almost as large as red blood cells or very small, and are often accompanied by additional physical problems. But other cases are very difficult to diagnose or go undiagnosed because there are no specific tests to identify this group of diseases. The platelet size may be normal, several genes may be involved, and not everyone who carries the gene mutations has symptoms, including the parents.

- Dr. Michele Lambert, Philadelphia, Pennsylvania

Connecting Genetic Coincidence

The most important factor in advancing research regarding the link between genetics and ITP is you. Your family health history is an important component of a primary care visit to help tell the story of many common, chronic conditions as well as rare genetic disorders.

To help determine the possibility of inherited thrombocytopenia, your doctor may consider:

- Have the platelets always been low?
- Do they look different?
- Is there a history of low platelets or treatment for ITP in the family?
- Does the person have other congenital abnormalities?