# Study suggests 5 different types of Diabetes, not just 2

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Diabetes is one of those non-communicable diseases which is steadily increasing everywhere: both in developed and developing countries. According to World Health Organisation (WHO), diabetes not only can lead to complications but also can increase the risk of premature death.

For a long period of time, cases of diabetes have been categorised as type 1 or type 2. However, a recent research article, published in The Lancet, classified this fast-moving disease into five categories.

Currently diabetes is diagnosed by measuring only one metabolite — glucose; and that could be one explanation for the ineffectivity of the ongoing treatment strategies. Therefore, for further in-depth exploration of this emerging disease, the researchers from Sweden attempted to update the classification system of diabetes diagnosis.

At present diabetes has been classified according to age of onset and presence or absence of antibodies which attack pancreatic beta cells. But in
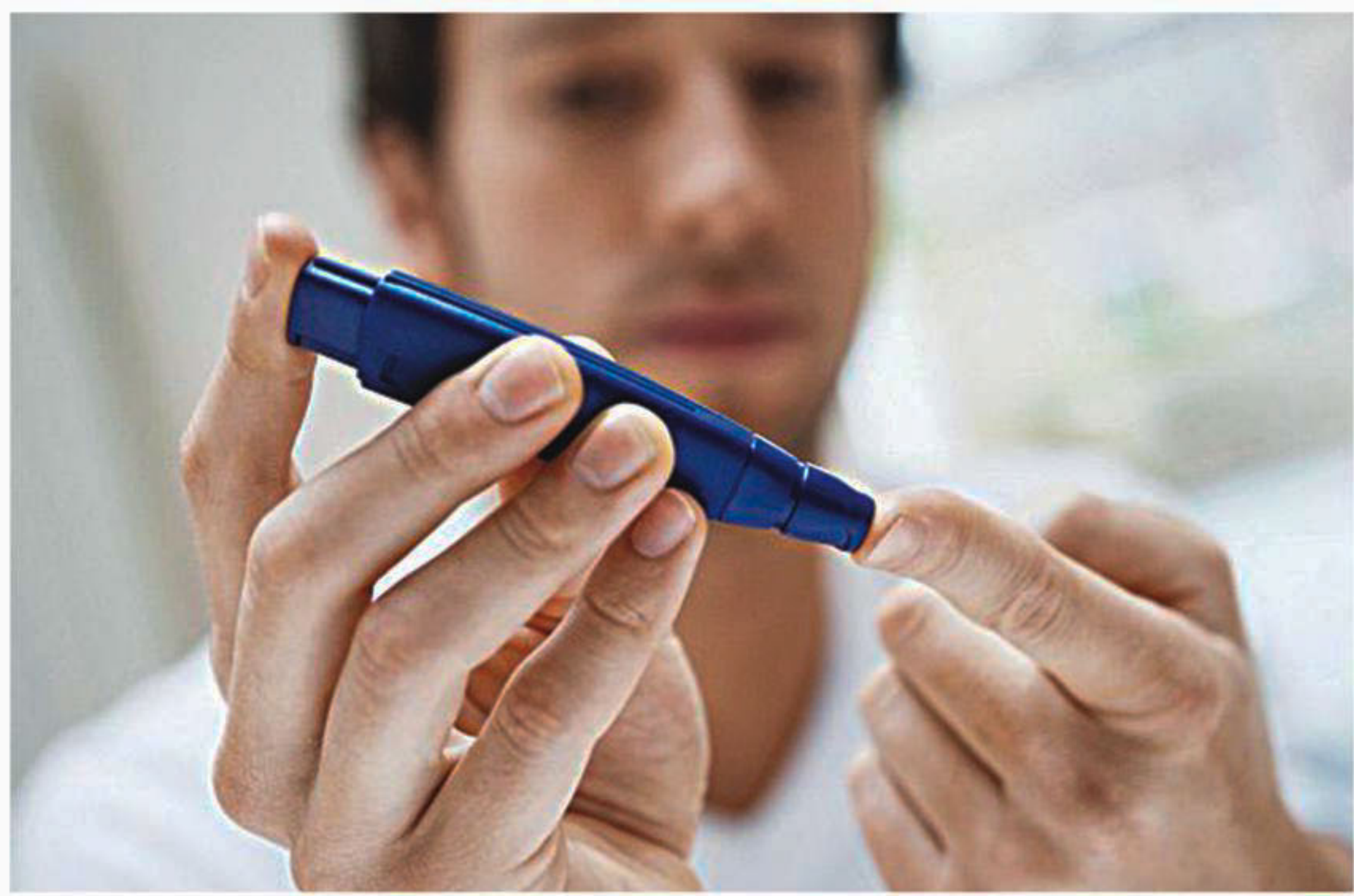
this research article, the authors proposed five "clusters" of the disease by focusing on six different variables: age, body mass index, presence of beta-cell antibodies, level of metabolic control and measures of beta-cell function and insulin resistance.

The newly classified clusters are:
1. **Severe Insulin-Resistant Diabetes (SIRD)** — not only bringing in insulin resistance but also the risk of diabetic kidney disease;
2. **Severe Insulin-Deficient Diabetes (SIDD)**, comprising of poor metabolic control mainly among young adults;
3. **Severe Autoimmune Diabetes**, coinciding with type 1 diabetes;
4. **Mild Age-Related Diabetes (MARD)**; and
5. **Mild Obesity-Related Diabetes (MOD)**.

The last two types are benign forms of diabetes. The researchers mentioned that SIRD and SIDD were masked with type 2 diabetes.

According to study results, these subtypes of diabetes will come to the aid in identifying people who could be at high risk of developing diabetes-related chronic complications and guiding healthcare professionals about treatment of choice.

The researchers also hoped that this newly proposed classification would be beneficial not only for newly diagnosed patient but also for those who are suffering from diabetes type 2 for a while.

Although the researchers did not claim this as the best classification system, their data suggested that this classification system is superior to the prevalent one. Therefore, adopting this new classification system could be an important step towards precision medicine in diabetes.

Last but not the least, further research on diabetes diagnosis among more diverse population is necessary before implementing this classification into everyday clinical practice.

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Kidney dysfunction contributes to severe Malaria

STAR HEALTH REPORT

Understanding the most severe presentations of malaria is key to lowering the mortality associated with the infectious disease, which currently stands around 500,000 deaths a year. Researchers have now reinforced the idea that kidney dysfunction is a contributing factor to severe *Plasmodium vivax* malaria cases. The results of their new study appear in PLOS Neglected Tropical Diseases.

Malaria, caused by a handful of Plasmodium parasites and spread by mosquitos in tropical and subtropical areas of the world, affects over 200 million people a year. Historically, P. vivax has been associated with more mild presentations of disease, with P. falciparum causing increased severity and mortality. However, severe cases of P. vivax have been more frequently reported in recent years. These cases are often associated with impaired immune response, inflammation, and kidney involvement.

The researchers studied levels of creatinine, a marker of kidney function, as well as markers of inflammation, and followed the course of disease in the patients. Severity of disease was associated with abnormal creatinine increases, and patients who died from severe disease had the highest levels of creatinine.

In addition, the levels of several immune molecules — including IFN-γ/IL-10 ratios and CRP values — could predict outcome in subjects with elevated creatinine, differentiating those who died. The results suggest that severe disease from *P. vivax* is associated with creatinine elevation and exacerbated inflammation.

HEALTH *bulletin*

Almost 300 million people have Hepatitis B virus worldwide

Around 300 million people in 2016 were living with hepatitis B virus (HBV) worldwide, yet just 1 in 20 (5%) eligible patients are getting treatment. Moreover, less than 1% of HBV-infected expectant mothers, who are at high risk of passing the virus on to their children and are the main source of the ongoing epidemic, are receiving the appropriate treatment.

The research, published in The Lancet Gastroenterology & Hepatology, provides the most detailed analysis of national, regional, and global prevalence of HBV infection around the world to date.

The authors from the Polaris Observatory (Centre for Disease Analysis Foundation, Lafayette, USA) warn that the World Health Organisation (WHO) targets toward elimination of HBV are unlikely to be achieved by 2030 without a rapid scale-up in access to screening and treatment in most countries.

If left untreated, HBV can cause a host of serious, long-term health problems including liver disease, and liver cancer.

Autism: Embracing knowledge and accepting the different

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April is the World Autism Month. Autism, or more appropriately, Autism Spectrum Disorder (ASD) includes a group of developmental disorders. Because it is a broad range of disorders, the disability of each person with ASD can be mild, it can be severe, or it can fall somewhere along the spectrum.

ASD is a neurodevelopmental disorder that impairs a person's ability to communicate and interact with others. People with ASD often look no different from the rest of us. Some have unique cognitive abilities ranging from gifted to severely challenged.
Signs of autism
As a neurodevelopmental disability, it impairs a child's social communication and interaction skills. What we consider normal back-and-forth conversation and emotion in a typical social context is deficient in children with ASD. Eye contact, body language, gestures, facial expression and other non-verbal communication skills are markedly different in ASD. Behavioural adaptation to suit diverse social contexts and understanding relationships are also missing. Rigidity of routines and distress at minor changes, recurrent patterns of behaviour with repetitive motor movements and action, use of objects, or speech are also signs of ASD. Children with

ASD often times show intense reactions to sounds, smells, tastes, textures, lights and colours.

The signs of autism may appear between 2 to 3 years of age although data suggest that most children are not diagnosed with ASD until after age 4 years.
Autism risk factors
There is no scientific evidence that indicates vaccines cause autism. We do not know yet what multiple factors specifically cause autism. However, we now know that there are genetic and environmental components that contribute to ASD.

1. Changes, or mutations, in certain genes increase the likelihood of a child developing autism. Researchers have so far identified approximately 107 such genes.

2. Autism seems to run in families. Children who have siblings with ASD are usually at a higher risk of also having ASD.

3. Parents who have children at an older age tend to have children with greater risk for ASD.

4. There is an increased risk of ASD in people with certain genetic or chromosomal conditions.

5. Certain medications are dangerous during pregnancy. Consumption of alcohol during pregnancy, maternal diabetes and obesity may also increase the risk factors for ASD.

6. Some medical conditions that often accompany autism include gastrointestinal disorder, attention

deficit hyperactivity disorder (ADHD), severe anxiety and phobias.
Treatment
There is no medicine to treat ASD yet. As ASD is usually accompanied by other conditions such as ADHD, there are medications available that can alleviate such related symptoms.

Autistic children need speech language therapy to improve communication skills. To control emotion and repetitive behaviour, cognitive behavioural therapy is provided that can help with melt downs and emotional outbursts. Therapists also practice positive reinforcement techniques which promotes positive social interaction and communication. Parent education is important coping with the challenges of children with ASD.

Very recently researchers at Duke University in North Carolina used umbilical cord blood infusions (containing stem cells) in children with ASD and preliminary results show great promise.

ASD is not a developmental dead end for the child or the family. The citizens of an enlightened society must strive to understand and help every child with ASD reach his or her greatest potential.

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Good news for the patients of Rheumatoid Arthritis who like to eat fish

Many ω-3 fatty acids downregulate pro-inflammatory cytokines; therefore, researchers have evaluated their effect in patients with rheumatoid arthritis (RA). Fish oil supplements, when added to traditional non-biologic triple therapy, can produce higher rates of remission and lower counts of tender joints.

To examine whether dietary fish intake also attenuates RA disease activity, investigators studied a subset of 176 RA patients from a larger cohort study. Participants were categorised by frequency of fish consumption (ranging from less than once monthly to twice weekly or more often and excluding fried fish, nonfried shellfish, and fish in mixed dishes). A single trained, blinded assessor evaluated disease activity scores (DAS) in 28 joints using DAS28-CRP scores (which reflect both clinical findings and C-reactive protein [CRP] levels).

Participants who ate fish more than twice weekly had significantly lower DAS28-CRP scores than those who ate fish less than once monthly. For each additional serving of fish weekly, DAS28-CRP was reduced significantly. Results were similar after adjusting for several demographic and clinical variables.

World Autism Awareness Day 2 April, 2018

Autism spectrum disorder (ASD) is a complex condition, affecting 1 in 68 children.

- A 2014 study in the American Journal of Epidemiology found that children born to iron-deficient mothers are five times more likely to develop autism. The risk increases when the mother is age 35 or older or has a metabolic condition such as obesity, high blood pressure or diabetes. Iron is crucial to fetal brain development, yet up to half of all pregnant women don't get enough of idea.
- Recommendations to consider if you're pregnant or trying to conceive:

The American College of Obstetricians and Gynecologists, the Royal College of Obstetricians and Gynecologists and other authorities endorse the following recommendations :

1. Discuss medications with your healthcare provider
2. Ask your doctor about folic acid
3. Avoid cigarette smoke and alcohol
4. Eat plenty of fresh produce, but wash it before eating
5. Cut down on packaged foods
6. Eliminate or limit to once a week your consumption to oily fish and tuna
7. Limit your use of personal care products (moisturizers, body wash, perfume, etc.) with strong scents and artificial ingredients. Visit this Parents.com webpage for some creative "safer swaps" such as fragrance-free products
8. While pregnant or breastfeeding, reduce or avoid your exposure to fumes from new household furniture, fabrics, non-stick frying pans and cars; pesticides, fungicides, fresh paint or solvents. Avoiding these products will reduce your exposure to potentially toxic chemicals such as perfluorinated compounds (PFCs)
9. Remember that "natural" doesn't necessarily mean safe during pregnancy