CONDITION

Gilbert syndrome

Gilbert syndrome is an inherited condition that causes harmless, temporary rises in a yellow pigment called bilirubin.

WHAT IT IS
Inherited reduced bilirubin processing causing mild intermittent jaundice

BODY SYSTEM
Liver and blood-pigment processing

MAIN SYMPTOMS
Usually none, yellow eyes, mild yellow skin

WHAT CAUSES IT
Inherited reduced activity of the UGT1A1 enzyme

HOW IT IS DIAGNOSED
Blood tests excluding liver disease and red-cell breakdown

MAIN TREATMENT
Reassurance and managing episode triggers

CAN IT BE CURED?
No, the inherited enzyme difference remains

IS IT AN EMERGENCY?
No, but new jaundice needs prompt assessment

LONG-TERM OUTLOOK
Normal lifespan without progressive liver damage

Overview

Gilbert syndrome is a common inherited condition that affects how the liver processes bilirubin. Bilirubin is a yellow substance produced when old red blood cells are broken down.

Normally, the liver changes bilirubin into a form that can leave the body in bile and stool. In Gilbert syndrome, this process works more slowly because an enzyme called UGT1A1 has reduced activity. As a result, a small amount of bilirubin can build up in the blood.

The extra bilirubin is mainly unconjugated bilirubin , meaning it has not yet been processed by the liver. Levels can rise and fall. During a rise, the whites of your eyes or your skin may look slightly yellow. This is called jaundice.

Gilbert syndrome does not damage the liver, develop into cirrhosis or usually require

treatment. Many people discover it by chance after a blood test. It matters mainly because jaundice can have other causes and because Gilbert syndrome can affect how the body handles a small number of medicines.

Symptoms

Most people with Gilbert syndrome have no symptoms. When symptoms occur, the main sign is mild jaundice that comes and goes.

You may notice:

Yellowing may be harder to see on some skin tones. Changes in the whites of the eyes may be easier to notice.

Some people report tiredness, nausea, abdominal discomfort, difficulty concentrating or a general sense of being unwell during an episode. These symptoms are not specific to Gilbert syndrome, and it is not always clear that bilirubin is their cause. New or persistent symptoms should not automatically be blamed on the condition.

Urine is not usually dark from Gilbert syndrome because unconjugated bilirubin does not pass into urine. Dark urine, very pale stools, widespread itching or steadily worsening jaundice may point to another liver or bile-duct problem.

- A yellow tint in the whites of your eyes
- Mild yellowing of the skin
- Episodes that appear during illness, fasting, dehydration or stress
- Blood tests showing raised bilirubin between otherwise normal results

Causes and risk factors

Gilbert syndrome is caused by inherited changes in the UGT1A1 gene. This gene provides instructions for making the enzyme that prepares bilirubin to leave the body.

Different UGT1A1 variants occur in different populations. Inheritance can therefore be more complicated than a single pattern in every family. A person may inherit relevant variants from both parents without either parent having noticeable jaundice.

Having these variants does not mean your bilirubin will always be high. Levels often increase when the body is under strain or has less energy available for normal bilirubin processing.

Common triggers include:

These triggers do not cause Gilbert syndrome. They may only make its effects more visible.

- Going without food or eating far fewer calories than usual
- Dehydration
- An infection or other short-term illness
- Intense physical exertion
- Emotional stress
- Lack of sleep
- Menstruation

Diagnosis

Gilbert syndrome is usually identified through blood tests. The typical pattern is a mild rise in bilirubin, mostly in its unconjugated form, while other measures of liver health remain normal.

Because jaundice has many possible causes, a clinician may also check for liver inflammation, blocked bile flow or increased breakdown of red blood cells. Tests may include liver enzymes, a full blood count and markers showing whether red cells are being destroyed too quickly.

The diagnosis is generally based on:

Genetic testing can identify UGT1A1 variants, but it is not usually needed when the blood-test pattern is clear. It may be considered if the diagnosis remains uncertain or if a medicine affected by UGT1A1 is being planned.

Scans and liver biopsy are not normally required for Gilbert syndrome itself. They may be used if symptoms or test results suggest a different cause of jaundice.

Do not assume that new jaundice is Gilbert syndrome if you have not been assessed before. Even someone with a confirmed diagnosis can develop an unrelated liver, blood or bile-duct condition.

- Repeated or previous mild unconjugated bilirubin elevations
- Otherwise normal liver blood tests
- No evidence of abnormal red-cell breakdown
- No symptoms or examination findings suggesting another condition

Treatment and management

Gilbert syndrome usually needs no medical treatment. The raised bilirubin is not harmful at the levels typically seen with this condition, so the aim is to understand the pattern and avoid unnecessary tests or worry.

Regular meals may help if fasting triggers your episodes. Staying hydrated, getting enough sleep and pacing unusually intense exercise may also reduce bilirubin rises. These steps may not prevent every episode.

There is no special "Gilbert syndrome diet." A balanced diet is usually appropriate. Extreme fasting, crash diets and severe calorie restriction are more likely to raise bilirubin.

Tell clinicians and pharmacists that you have Gilbert syndrome before starting a new medicine. Reduced UGT1A1 activity can change the handling of certain drugs. Important examples include the cancer medicine irinotecan and the HIV medicine atazanavir. This does not mean everyone with Gilbert syndrome must avoid them. It means the prescriber may need to consider your diagnosis, treatment plan and risk of side effects.

Do not stop a prescribed medicine because of Gilbert syndrome without discussing it with the prescriber.

Complications

Gilbert syndrome itself does not cause progressive liver damage, liver failure or cirrhosis. It also does not usually make jaundice dangerously severe.

People with the condition may have an increased tendency to develop certain pigment gallstones, although many never do. Gallstones can cause pain in the upper right or upper middle abdomen, especially if a stone blocks bile flow.

The most important practical concern is medicine handling. UGT1A1 helps process bilirubin as well as some drugs. A person with low enzyme activity may have a higher risk of specific side effects from certain medicines, particularly some cancer and HIV treatments.

A diagnosis of Gilbert syndrome can also lead to repeated tests if its usual blood-test pattern is not recognised. Keeping a record of the diagnosis and previous results may help future clinicians interpret a mild bilirubin rise.

Prevention

Gilbert syndrome cannot be prevented because it is inherited. Diet, stress or illness do not create the underlying enzyme difference.

You may be able to reduce visible jaundice episodes by avoiding long periods without food, drinking enough fluids and maintaining regular sleep. Managing illness and stress may also help. These measures manage triggers; they do not remove the condition or guarantee that bilirubin will stay normal.

There is usually no need for relatives to have genetic testing simply because one family member has Gilbert syndrome. Testing may be relevant in selected situations involving unexplained bilirubin results or medicines strongly affected by UGT1A1.

Living with it and what to expect

Gilbert syndrome remains present throughout life because the inherited enzyme difference does not change. Bilirubin levels may still fluctuate considerably. A blood test can be normal at one time and mildly raised at another.

Episodes of yellow eyes or skin may last for a short time and then fade as the trigger passes. Some people rarely notice jaundice, while others see it during infections, stressful periods or missed meals. The pattern can change over the years.

The condition is not expected to shorten life or steadily worsen liver function. Most people can work, exercise, travel, become pregnant and eat normally. Routine specialist follow-up is not usually needed once the diagnosis is secure and other causes have been excluded.

You may still need ordinary medical care for unrelated symptoms. Gilbert syndrome should not be used to explain persistent abdominal pain, fever, weight loss, dark urine or changes in bowel movements without an assessment.

It can be useful to keep the diagnosis in your medical record and mention it when medicines are prescribed. If you have access to previous bilirubin and liver-test results, they may help show your usual pattern.

When to get medical help

Arrange a prompt medical assessment if you develop jaundice for the first time. Jaundice has many causes, and a clinician needs to confirm that the pattern fits Gilbert syndrome.

If you already have a diagnosis, make a routine appointment if episodes become more frequent, last longer than usual or are accompanied by unexplained tiredness, abdominal symptoms or weight change.

Seek prompt medical advice if yellowing occurs with:

Seek emergency care for severe abdominal pain, confusion, fainting, difficulty waking, vomiting that prevents you keeping fluids down, or jaundice with rapidly worsening illness. These are not typical features of Gilbert syndrome and may have another cause.

- Dark urine or very pale stools
- Widespread itching
- New or persistent abdominal pain
- Fever or feeling significantly unwell
- Repeated vomiting
- Jaundice that is deeper or more persistent than your usual pattern
- Symptoms starting after a new medicine

Common questions

Is Gilbert syndrome serious?

Usually not. It causes mild, fluctuating bilirubin levels without damaging the liver. New or unusual jaundice still needs assessment because not all jaundice is caused by Gilbert syndrome.

Can Gilbert syndrome turn into liver disease?

No. Gilbert syndrome does not turn into hepatitis, cirrhosis or liver cancer. You can still develop an unrelated liver condition, so symptoms outside your usual pattern should be checked.

Why do my eyes turn yellow when I am ill or stressed?

Illness, stress, dehydration, missed meals and lack of sleep can temporarily raise unconjugated bilirubin. The whites of the eyes may then develop a yellow tint. It usually fades as the trigger resolves and bilirubin falls.

What foods should I avoid with Gilbert syndrome?

There is no required list of foods to avoid. Regular, balanced meals are generally more useful than a restrictive diet. Long fasts, crash diets and severe calorie restriction can trigger bilirubin rises.

Can I drink alcohol if I have Gilbert syndrome?

Gilbert syndrome does not create a specific universal ban on alcohol. Alcohol may make some people feel worse or contribute to dehydration, and heavy drinking can harm the liver for reasons unrelated to Gilbert syndrome. Follow general lower-risk advice and discuss alcohol

with a clinician if you have other liver concerns.

Will I pass Gilbert syndrome to my children?

Children may inherit UGT1A1 variants from you, but whether they develop raised bilirubin also depends on variants inherited from their other parent. Even people with relevant variants may have no visible symptoms.

Sources

- National Library of Medicine: MedlinePlus Genetics - Gilbert syndrome
- NHS - Gilbert's syndrome
- Grant LM, Faust TW, Thoguluva Chandrasekar V. Gilbert Syndrome. StatPearls, National Library of Medicine
- Fretzayas A, Moustaki M, Liapi O, Karpathios T. Gilbert syndrome. European Journal of Pediatrics. 2012;171:11-15
- Martin MA and colleagues. Clinical Pharmacogenetics Implementation Consortium guideline for UGT1A1 and atazanavir prescribing. Clinical Pharmacology & Therapeutics. 2016;99:363-369
- National Library of Medicine: Medical Genetics Summaries - Irinotecan therapy and UGT1A1 genotype