



## HOW COELIAC DISEASE WAS DISCOVERED

### World War II

For centuries it was known that some infants were born with an inability to thrive; after birth, they grew progressively weaker, had persistent diarrhoea, and sometimes, they died. But it wasn't until the 1940s, during World War II, that the causes of the condition were discovered by accident and it was given a name—coeliac disease. A Dutch paediatrician noticed that young children started to improve during wartime bread shortages. When bread was back on the table, their symptoms returned.

### PREPARING FOR YOUR TEST

When you are having blood tests to investigate whether you might have coeliac disease, it is important to continue to eat foods like breads and pastas that contain gluten; otherwise, test results may be negative even if coeliac disease is present.

If you have been diagnosed with coeliac disease you should continue to maintain your normal diet.

### WHERE CAN I HAVE MY BLOOD SAMPLE COLLECTED?

Blood collections for coeliac disease assessment are performed at all collection centres. Please visit [www.snp.com.au](http://www.snp.com.au) for the centre closest to you.

Please phone the collection centre to make an appointment for blood tests for children.

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## Coeliac disease new directions in testing



## DIAGNOSING COELIAC DISEASE

Coeliac disease is a lifelong autoimmune disorder triggered by eating gluten, a common protein found in wheat, or other similar proteins in rye, barley and oats. When you have coeliac disease, your immune system attacks the tiny hair-like projections, called villi, that line your small intestine. They become inflamed and flattened, which reduces the surface area that would normally absorb nutrients.

Coeliac disease is a common disorder and lifelong avoidance of foods that contain gluten is critical for good health.

It's been estimated that as many as 75 per cent of affected people don't know they have coeliac disease. For others, symptoms are vague. They might present to their doctor with persistent gut problems such as pain, bloating, constipation or diarrhoea. Some have recurrent mouth ulcers, a distinctive itchy skin rash, tiredness or weight loss. However, the majority of people with gut symptoms who visit their doctor usually find they have one of a range of other possible health problems. These include irritable bowel syndrome, inflammatory bowel disease, diverticulitis, intestinal infections and non-coeliac wheat and grain intolerances.

Typically, people are diagnosed with coeliac disease when they have a check-up for something else. They may have unexplained abnormal liver test results or have vitamin deficiencies. People with early-onset osteoporosis are also possible candidates. If you have a biological relative with coeliac disease, you should be tested. Also, people with Down syndrome or Turner syndrome are at higher risk. Coeliac disease has also been linked to other autoimmune diseases such as rheumatoid arthritis, thyroid disease and systemic lupus, as well as diabetes Type 1. A possible link with infertility remains uncertain.

Do you have persistent bloating, stomach problems, diarrhoea, constipation or a family member with coeliac disease?

If the answer is 'YES' then talk to your doctor about testing for coeliac disease.

Once thought to be a rare infant feeding problem, coeliac disease is now known to be more common, affects people of all ages and is genetically determined. In just the past few years our knowledge has advanced dramatically, new, more sensitive tests have been designed and our ideas about diagnosis are changing.

## THE ROLE OF GENES

More than 99 per cent of people with coeliac disease have one or both of two quite common genes, HLA-DQ2 and HLA-DQ8.

Only about one in 30 people who have inherited one of these genes goes on to develop coeliac disease. It's not yet clear what triggers the development of the disease, but growing evidence suggests that other genes come into play. Some of these overlap with genes associated with other autoimmune diseases. Environmental factors may also play a part.

## TESTING

### Blood tests

In the majority of people with coeliac disease, the immune system produces two types of antibodies. One type of antibody against an enzyme, called tissue transglutaminase (IgA tTG), which is a normal part of digestion. The other type is against gliadin which is a glycoprotein present in wheat and several other cereals. These antibodies are called anti-gliadin antibodies.

To test for coeliac disease, we perform two blood tests: IgA tTG and anti-gliadin antibodies

### IgA tTG

Measuring IgA tTG is considered the gold standard test for coeliac disease, because IgA tTG antibody is made in the small intestine and is more specific to coeliac disease. However, if you have a deficiency of IgA antibodies your IgA tTG antibody levels may also be affected. That's why we also test for anti-gliadin antibodies.

The IgA tTG test is less suitable for infants because IgA production does not develop properly until a later age.

#### DISCLAIMER

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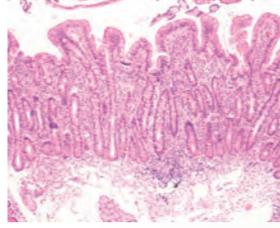
## NEW DIRECTIONS IN TESTING

Anti-gliadin antibody test: IgG DGP (Deamidated gliadin peptide antibody)

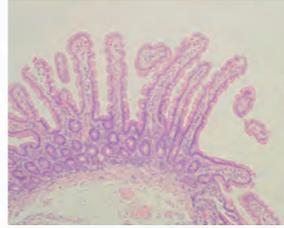
Most people with coeliac disease, and about 10 per cent of healthy people, have high levels of IgG antibodies. Therefore, the results of early tests for anti-gliadin antibodies were often affected by the level of IgG antibodies circulating in a patient's blood. However, in the past few years new tests based on a synthesised form of the anti-gliadin antibody, called deamidated gliadin peptides (DGP), have been developed. These tests are more reflective of the gliadin antibodies produced in coeliac disease and, as a consequence, test results are highly specific.

### Tissue for histopathology

If the results of your blood tests indicate that you could have coeliac disease, you may be referred to a gastroenterologist for further testing. A diagnosis is usually confirmed by examining samples of the lining of your small intestine. These samples will be taken during an endoscopy and sent to our laboratory, where our histopathologists will examine them under the microscope.



Small intestine of coeliac patient not on gluten-free diet.



Normal intestine of coeliac patient on gluten-free diet.

### Gene testing

Genetic testing to look for the HLA-DQ2 and HLA-DQ genes is useful in certain situations. For instance, when the serology test results are uncertain and the tissue examination is difficult to interpret. Also, because the genetic test is not affected by gluten intake, it can be used if a person has been following a gluten-free diet for some time.

Gene testing may be considered in family members (i.e. biological parents or children), of people with coeliac disease to find who has not inherited the gene. Those without the gene will not ever suffer from coeliac disease and therefore will not need to adopt a gluten-free diet.

## LOCATE OUR COLLECTION CENTRES

For a full list of collection centres and their opening hours, visit [snp.com.au](http://snp.com.au). With your web-enabled camera, phone-scan the QR code with a QR code reader application.



## SNP COLLECTION CENTRES LOCATOR APP

now available for iPhone and iPad



Sullivan Nicolaides PATHOLOGY  
Quality is in our DNA

Dr M Wyche  
Dr D Taylor  
Dr A Bettington  
Dr S Athanayagam

Dr J Robson  
Dr J Kencian  
Dr P Kanowski  
Dr M Martin  
Dr N Bluxton  
Dr J Lal

Dr M Harrison  
Dr L Price  
Dr D Papadimos  
Dr D Weedon  
Dr B Rowbotham  
Dr D Langguth

Office use only

PEN  HCC

Medicare number   if Veterans Affairs

LABORATORY COPY

Surname, Given name (including middle initials)

Your reference



Patient address

Sex Date of birth

Phone (Home) Phone (Work)

Antigliadin Ab  
IgA tTG

Coeliac gene DNA testing (tick if required)

Tests requested

Fasting   
Non-fasting   
Pregnant   
Hormone therapy   
LNMP   
Gestational age (weeks)

Clinical notes

URGENT!  Phone  Fax  By time:   
Private  Schedule Fee  Bulk Bill   
Vet Affairs no

PERSON COLLECTING SPECIMEN(S) TO COMPLETE:  
I identify/established the identity of the patient named on this request, collected and immediately/labelled the accompanying specimen(s) with the patient's details.  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Signature: \_\_\_\_\_

PRIVATE AND CONFIDENTIAL  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

IF RULE 3 EXEMPTION

REQUESTING DOCTOR'S SIGNATURE AND REQUEST DATE

Copy reports to

Requesting Doctor (provider no, surname, initials, address)   IF SELF-DETERMINE

DOCTOR

Hospital code

Ward code

SST EDTA CIT Histo Pap THP Swab Frozen Dedicated Other  
Tube Tube Tube Cont Slide Prep Thin Thin EDTA Tube  
Staff ID/Location code/Collection type (stamp) Pay cat Date collected / / Time collected  
Con code

HOSPITAL STATUS State the patient's status at the time of service or when the specimen was collected.  a private patient in a private hospital  a private patient in a recognised hospital

PATIENT ADVISORY STATEMENT  
PRACTITIONER TO TICK IF SNP REQUIRED:  Your treating practitioner has recommended that you use Sullivan Nicolaides Pathology. You are free to choose your own pathology provider. However, if your doctor has specified a particular pathologist named on this form on clinical grounds, a Medicare rebate will only be payable if that pathologist performs the service. You should discuss this with your doctor.

MEDICARE ASSIGNMENT (Section 20A of the Health Insurance Act 1973):  
offer to assign my right to benefits to the approved pathology practitioner who will render the requested pathology services) and any eligible pathologist determinable services) established as necessary by the practitioner. **ACCOUNT STATEMENT:**  
I understand that if any of the tests requested are not eligible for a Medicare rebate, I will receive an account, which I agree to pay in full. Patient signature and date.  
**PATIENT**  
PRACTITIONER'S USE ONLY (Reason patient cannot sign):

CONCESSION