

Frequently Asked Questions - CanDia5

Following is a list of the most common questions asked when discussing Candida testing.

1. Everybody has Candida so this test will be positive for everyone who is a carrier. Can it differentiate between carriers (commensal carriage) and infection?

- Approximately 75% of the population carries Candida asymptotically (without any signs of symptoms), therefore a large part of the population are carriers.
- Most people are colonized (usually in the mouth, vagina and gastrointestinal tract) by Candida. So we are exposed to Candida antigens from birth.
- The surface of the Candida organism is covered by proteins which have had mannose sugars attached to them. The mannose portion of these mannoproteins is highly immunogenic, so most healthy people will have antibodies against mannose due to the constant exposure of the mucosal surfaces of the GI tract and vagina to the Candida organism.
- However, the internal cytoplasmic antigens of Candida are only released when there is an active infection and the Candida organism is being broken open by the host's innate immune defences (Neutrophils and Macrophages). By using these antigens in our Candida test we measure only antibodies produced in response to infection not commensal carriage.
- Commensal = beneficial partnership between 2 organisms
- Commensal carriage = organisms carried within body as part of the normal flora in a harmless manner
- Asymptomatic = absence of symptoms
- Colonization = inhabitation

N.B: Asymptomatic colonization & commensal carriage are used interchangeably.

2. You don't need a test to diagnose Candida. You just need to have a look! (in case of thrush)

- The test is recommended for the following scenarios:
 - A patient with vulval pain & no other symptoms,
 - A patient with an itch but no other symptoms
 - A patient who is convinced that they have an infection but the doctor knows that they do not (i.e. to convince the patient)
 - To differentiate between bacterial & fungal infection (as the signs & symptoms can be the same for both)

- Most doctors will tell you that they can diagnose thrush without a problem and this is true for the patient with the classical symptoms of:
 - Itch
 - Cottage cheese-like discharge
 - Inflamed vagina
- We are recommending that the test be used for the not so 'clear-cut' cases listed above.

3. If I am not sure what is causing the infection, I just prescribe for all 3 possibilities.

- There are 3 possibilities where infection is concerned:
 - Bacterial (most common ~ 50%)
 - Fungal = Candida ~ 25%
 - Protozoal (more common in sexual health clinics) ~ 15%
- There are doctors who will take the irresponsible approach and just prescribe 3 treatments because:
 - They average 5-6 minute consultations (N.B. For us to know only)
 - They do not have time for tests

4. Will this test pick up a superficial infection?

- Yes. Regardless of where in the body the infection is occurring this test will pick it up as it is detecting Antibodies produced in response to the infection.
- The infection can be:
 - Superficial (surface skin lesions)
 - Invasive Candidiasis (defined by the CDC as a bloodstream infection by the organism that is disseminated throughout the body)
 - Systemic (usually multiple organ involvement, whole body response to severely compromised immune system)
 - Oral
 - Gastrointestinal
 - Vaginal

5. Does the test differentiate where the infection has originated?

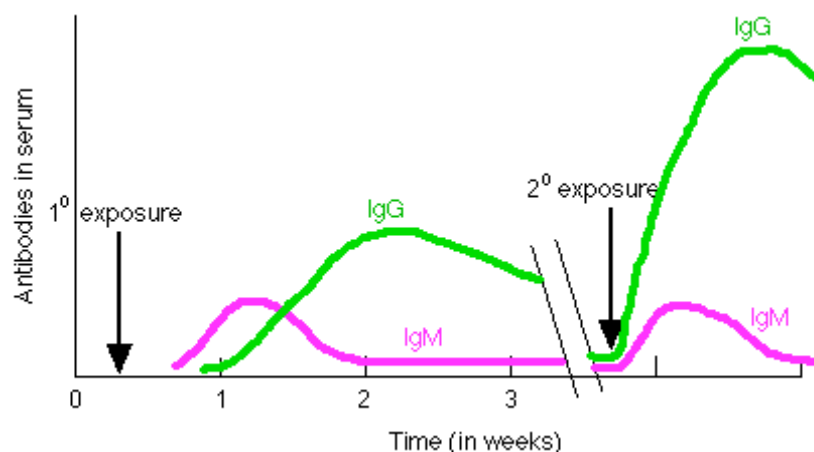
- No. The healthcare professional has to take a full clinical history & determine this for themselves.
- The test will, however, aid in eliminating the 2 other possible causes (ie: bacterial & protozoal)
- The test gives you a clear positive or negative, that is, it tells you whether the patient has a current (active) infection.

6. I am surprised you are using blood!

- That is because GP's are used to taking vaginal swabs.
- A swab does not differentiate between infection & commensal carriage because the cotton swab is sampling the surface of the vaginal wall. This is one of the areas colonized by *Candida* (refer to point 1.)
- Furthermore, if the patient has used a vaginal pessary or a douche then the area will have been sanitized and a swab will return negative as the numbers are too low for detection.
 - Pessary = medicated appliance for insertion into the vagina for treatment purposes
 - Douche = thorough washing of the vagina
- During an infection the body produces antibodies as part of its defence mechanism. These antibodies are different from those produced initially when a host is first exposed usually at birth (refer to point 1.).
- Therefore *Candida* can pick up these antibodies as they circulate freely in blood.

7. Why are you detecting IgG antibodies instead of IgM antibodies? IgM appear first.

- IgM produced during the primary immune response (released after primary antigenic stimulation). This happens the very first time a host is exposed. This is usually at birth during passage through the birth canal.
- IgG response is high & immediate after a second infection.
- A large percentage of the population has been exposed from birth therefore IgG antibody levels will be much higher than IgM. They will also be sustained a lot longer in the body and therefore easier to detect. (See diagram)



- Characteristics of the primary (1°) exposure / response:
 - Slow response
 - IgM predominates over IgG
 - Low amount and short lasting
- Characteristics of the Secondary (2°) exposure / response:
 - Faster and more effective than primary response
 - Larger amounts are produced, and these last longer.

8. **Our pathology provider does an Antigen test and this is sensitive enough.**

- This is not true. Although antigens do appear first they have a very short lifespan. They are cleared from the body very quickly by the bodies defence mechanism.
- Antigens do not circulate freely like antibodies. Antigens remain localized at the area of infection.
- Most patients do not go to the doctor until symptoms appear by which stage the antigens have cleared and antibodies are being produced.

9. **How does the test detect Candida?**

- It does not detect Candida the organism. The organism does not circulate in the blood except in the severely compromised. (These patients will be hospitalized in ICU)
- The test detects antibodies produced in response to an active infection Refer to point 1.).

10. **How long does a patient remain Antibody positive?**

- The antibody level reduces slowly over approximately 3 - 5 months after an infection.