Natural Killer Cell Testing at Queensland Fertility Group

Who should be tested?
NK Cell Activity testing can be considered in patients who have experienced:
- recurrent miscarriage (defined as three successive miscarriages if aged less than 35 years, two successive miscarriages if aged over 35 years)
- repeated IVF failure (defined as two or more unsuccessful fresh IVF cycles)

How do I book an NK Cell Activity blood test?
The NK Cell Activity blood test is available by appointment only at QFG clinics. The cost of the test is $275 (non-Medicare rebatable) and will need to be paid at the time of blood collection.

1. Discuss whether this test is needed with your QFG Specialist
2. Obtain a blood test request form from your QFG Fertility Specialist
3. Contact your local QFG clinic to book your appointment time. This blood test can only be performed on a Monday or Wednesday between 12pm and 1pm.
4. Attend your appointment and present your blood test request form to reception. One of our Phlebotomists will draw one small tube of blood collected into a specialised tube for the NK Cell blood test. Any additional tests on the request form may be collected at the same appointment.
5. Results of the test should be available within 4 business days after collection and will be sent to your referring QFG Specialist.

How is high Natural Killer Cell activity treated?
There are a number of different treatments being prescribed for patients with a diagnosis of high NK Cell Activity, including hormones and medications. Your QFG Specialist will carefully explain the most appropriate treatment for you based on your individual circumstances.

At this stage, treatments are at the trial stage only and further research is being conducted to determine the impact of immune system changes in women with high Natural Killer Cell Activity.

If you would like to know more about the NK Cell blood test and the QFG Fertility Specialists with expertise in this area please call us on 1800 111 483 or contact your local QFG clinic.
Immune factors affecting pregnancy

Our immune system, which contains immune cells, defends us against germs and microorganisms. In most cases, our immune system does a great job of keeping us healthy but in some instances (called autoimmune diseases) the immune system mistakenly recognises and attacks our own bodies (self), leading to inflammation, damage and disease. People with autoimmune diseases, such as Lupus and rheumatoid arthritis tend to have high levels of anti-nuclear antibodies that can lead to inflammation of the uterus and placenta, implantation failure and recurrent miscarriages.

Pregnancy is a unique situation in which the placenta ‘invades’ the lining of the womb and is a potential threat to the wellbeing of the mother. The mother’s immune system must recognise that threat, but also respond in such a way that does not eliminate it. The mother’s immune system is critical in establishing the relationship between the mother and the foetus that allows both to flourish.
What are Natural Killer Cells?

Natural Killer Cells (NK Cells) are the main immune cell-type found in the uterus. Their numbers increase through the menstrual cycle to peak at the time of implantation of an embryo. If an embryo does implant, NK numbers increase further. Uterine NK numbers start to decrease at 20 weeks of pregnancy and are absent at the end of pregnancy. Natural Killer Cells come in different forms. Some are helpful in completing pregnancy.

Their prime role appears to be the early detection (surveillance) and elimination (killing) of cells that are not recognised as ‘self’. If the placenta and foetus are mistakenly recognised as a threat, NK Cell Activity may potentially lead to problems during pregnancy, including miscarriages.

Current investigation into NK cells are looking at the link between the success or failure of embryo implantation and miscarriage. However, it should be emphasised that it currently is unproven as to whether NK cells do cause reproductive failure. The current evidence is still very limited and it is certainly possible that the studies so far simply describe an ‘association’ between NK Cell Activity and reproductive failure - rather than a specific ‘cause-and-effect’.
How is NK Cell Activity tested?

Testing for NK Cell Activity at QFG involves a simple blood test to measure the number and activation levels of the NK cells. The blood test can be performed at any stage of a woman’s monthly cycle as an alternative to, or in conjunction with, a traditional endometrial biopsy of the uterus.

An endometrial biopsy can be taken via a soft plastic catheter that is used to gently aspirate a tiny piece of the uterine lining, either while the patient is awake or under general anaesthetic, as part of a hysteroscopy. The biopsy is then sent off to the laboratory for testing. The biopsy has to be done at the luteal phase of the month (around Day 21 in a 28 Day cycle).

Your Fertility Specialist will decide which test/s is suitable for you.
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