

Artificial seeding at planned caesarean section

What is artificial seeding?

There's been increased media coverage and interest about the role that a newborn baby's ecosystem of good gut bacteria (their 'microbiome') has in helping them develop their immune system. Babies born by caesarean have slightly different gut bacteria to babies born vaginally. This is because babies born by caesarean do not become colonised with their mother's good vaginal bacteria.

Babies born by caesarean could be slightly more likely to develop conditions such as asthma, allergic diseases and obesity than babies born vaginally.

Researchers wonder if there's a way of helping babies born by caesarean to get the potential benefits of their mother's vaginal bacteria. One idea is for the mother to place a sterile muslin in her vagina for 1 hour before her caesarean for the baby to collect and absorb some of the mother's bacteria.

When the baby is born, the baby's face, mouth and hands are wiped to transfer the bacteria.

Is there any research evidence for seeding?

A 5-year study began in 2015 to find out if seeding is safe and beneficial. In 2016, researchers tested a very small number of the babies in the study and found they had more normal gut bacteria than in babies born vaginally.

Currently, there's not enough research evidence to promote this procedure.

However, as with any choice in pregnancy and childbirth, we may support women and families who choose artificial seeding. If it's something you want, we'll tell you about the risks and benefits.

Who can have artificial seeding?

It's suitable if you have a planned caesarean with singleton or multiple pregnancies from 37 weeks.

It's not suitable if:

- your waters break before your caesarean
- you have a high temperature, high heart rate, blood test results which suggest an infection, or you feel generally unwell
- you carry group B Strep, HIV, hepatitis B, hepatitis C or women who have active primary herpes or recurrent genital herpes

What do I need to do before my caesarean section?

If you decide you want artificial seeding, call your community midwife who will help you arrange a phone consultation to discuss the process.

When you prepare your bag for coming into hospital for your caesarean, you'll need to include a new, sealed pack of cotton muslin squares.

A smaller size of muslin square may be easier for you to insert into your vagina. You'll also need a large, unopened, zip-lock sandwich bag to put the muslin in.

What must I do on the day of my caesarean?

We'll admit you to the antenatal ward and the midwife caring for you will help you prepare for the operation.

At this point, you should insert the muslin into your vagina. The midwife caring for you can give you sterile water to moisten the muslin to help you insert it.

When inserting the muslin, make a fold or concertina of the fabric. This will allow maximum surface area for the vaginal flora.

It is recommended that the muslin stays in your vagina for one hour before your caesarean. You're responsible for removing the muslin before your caesarean.

You must put it in a plastic bag and seal it. We'll label it with your hospital patient sticker.

Your birth partner will need to take the plastic bag containing the muslin to the operating theatre with you and look after it carefully.

If you wish to remove the muslin before one hour has passed you can.

If there's a change in you or your baby's condition, which means that we need to do the caesarean sooner, you may need to remove the muslin before an hour has passed. This may reduce the amount of vaginal bacteria absorbed by the muslin.

We'll document in your notes that you've inserted a muslin for artificial seeding, and that it's been removed before your caesarean. You and the midwife will need to sign the notes.

What happens when my baby is born?

When your baby is born, we'll put them skin-to-skin on your chest if they don't need any immediate care. We'll keep your baby warm with towels.

Either you or your birth partner wipes the muslin over your baby's mouth, face, hands and body (in that order). The midwife will then dispose of the muslin.

What about group B strep?

[It's a type of normal gut bacteria](#). 1 to 2 in 5 women (20 to 40%) have group B strep in their vaginal flora. It can come and go, it's harmless and there are no symptoms in women. If babies get group B strep bacteria from their mothers, they can become severely unwell.

1 in 2 babies (50%) born to mothers carrying group B strep will become colonised with the bacteria during a vaginal birth. Without preventative antibiotics, 1 in 400 of these babies will develop severe group B strep disease. Of the babies who develop severe group B strep disease, about 1 in 19 of these babies may die and 1 in 14 babies may have a long-term disability.

If you have a planned caesarean, your baby only has a very small chance of becoming colonised with group B strep disease.

It's important because the process of artificial seeding could introduce group B strep bacteria to babies who would have otherwise avoided it. It's particularly important that you and your family consider this risk of introducing group B strep bacteria very carefully if you want to do artificial seeding.

Can I be tested for group B strep?

No. There's currently no test either locally or nationally.

If you're considering artificial seeding, you can get a [private enriched culture medium test](#) at around 35 weeks of pregnancy. This may give you extra information to help you weigh up the risks and benefits of artificial seeding.

If you test positive for group B strep in pregnancy, we can't support artificial seeding.

What if my baby becomes unwell?

You'll get routine information on the signs and symptoms that we give to all women after birth and before discharge from hospital. You should get urgent medical advice if you're concerned that your baby:

- shows abnormal behaviour, for example, inconsolable crying
- is unusually floppy
- develops difficulties with feeding or with tolerating feeds
- has an abnormal temperature unexplained by environmental factors (lower than 36C or higher than 38C)
- breathes rapidly
- has a change in skin colour.

You must tell your doctor or the health professionals involved in your baby's care that they had artificial seeding at birth. This may help them to diagnose and treat your baby.

What else can I do to help develop my baby's microbiome after birth?

Currently, artificial seeding only has a theoretical benefit. **The most effective way of developing your baby's microbiome is to breastfeed your baby exclusively.** The first breastfeed should ideally happen within the first hour after birth.

You should then exclusively breastfeed for at least 6 months. Scientific evidence supports the benefits of breastfeeding to help develop a baby's immune system and we recommend that you continue for as long as possible.

Contact us

01296 316103

Stoke Mandeville Hospital

01494 425520

Wycombe Hospital

How can I help reduce healthcare associated infections?

Infection prevention and control is important to the wellbeing of our patients so we have procedures in place. Keeping your hands clean is an effective way of preventing the spread of infections.

You, and anyone visiting you, must use the hand sanitiser available at the entrance to every ward before coming in and after you leave. You may need to wash your hands at the sink using soap and water. Hand sanitisers are not suitable for dealing with patients who have symptoms of diarrhoea.

More help or advice

Contact our patient advice and liaison service (PALS) on 01296 316042 or bht.pals@nhs.net

About our patient information

We aim to make the information as up to date and accurate as possible, but please note that it's subject to change. You must always check specific advice on any concerns you may have with your doctor.

Approvals:

Maternity Leaflets Group: Apr 2016, V2 Feb 2020, V3 Apr 2023

O&G SDU meeting: May 2016, V2 24 Jan 2020, V3 10.5.23

Clinical Guidelines Subgroup: not required

Bucks Maternity Voices: May 2016, V3 no changes

Equality Impact Assessment: May 2016, V2 Jan 2020, V3 Mar 2023

Patient Experience Group: Jul 2016, V3 not req as no changes

Division of Women, Children & Sexual Health Services