

# STUD AND REPRODUCTION SERVICES



Stud & Reproduction Services



**B&W Stud and Reproduction Services offers the complete breeding package for your mare and marketing opportunity for your stallion**



Stud & Reproduction Services

Stud and reproduction work is, and always has been, an important service offered by B&W Equine Vets.

B&W Equine Vets has its own stud facility based at the Willesley clinic near Tetbury in Gloucestershire. The stud has all the facilities expected of a commercial breeding farm along with the expertise of the Willesley specialist stud vet team. Mares and stallions can visit on an outpatient basis or be resident at the stud if more appropriate.

Most gynaecological procedures can be performed at home or on the stud farm where mares and stallions may be based. All B&W clinics have vets experienced in mare, foal and stallion work and have the back-up of the Willesley stud vet specialist.

Should you ever need it, our state-of-the-art hospital in Breadstone is staffed by a team of RCVS, European and American recognised specialists in surgery, orthopaedics, diagnostic imaging and internal medicine. With a full range of surgical, diagnostic and intensive care facilities, we can offer the highest level of specialist care for sick mares or foals.

## Our stud and reproduction services:

- Pre breeding tests
- Artificial insemination with fresh, chilled and frozen semen
- Embryo transfer
- OPU/ICSI
- Mare infertility investigations
- High risk and late term pregnancy monitoring
- Gynaecological management of thoroughbred mares
- Competition stallion management
- Stallion infertility examinations

## B&W Stud and Reproduction Services

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## PRE BREEDING TESTS

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Pre breeding checks are required for mares being covered or inseminated at most commercial studs. Each individual stud determines its own health test entry requirements. They may include a clitoral swab to test for Contagious Equine Metritis (CEM) and a blood sample to test for Equine Viral Arteritis (EVA).

The B&W Stud at the Willesley clinic requires each mare to be tested for CEM, EVA and a health report from your vet to declare they are free from strangles and other contagious disease. These tests need to be taken between one week and one month prior to arrival to ensure the results have been reported and are valid. It is also a good opportunity to assess the health of a mare's uterus and ovaries by ultrasound scan to ensure that there are no visible conditions that could affect the mare's ability to produce a foal.

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## ARTIFICIAL INSEMINATION

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Artificial Insemination (AI) is where the semen is placed directly into the mare's uterus, via a catheter through the cervix, by a qualified veterinary surgeon or AI technician. There are three options available:

1. Fresh semen - the semen is collected from the stallion on the same day as it is inseminated. This is the best option for mares that are having problems conceiving because it has the greatest longevity and it is also recommended if the stallion has reduced fertility. The semen is combined with a semen extender.

2. Chilled semen - the semen is collected 12-36 hours before insemination. This is used when the semen must travel over considerable distances e.g. when shipped from Europe. The semen is combined with a semen extender and cooled to preserve its mobility.

3. Frozen semen - the semen is cryopreserved, allowing it to be stored for an infinite time. This makes it possible to use busy competition stallions, deceased stallions and stallions from across the world. Timing is vital when performing AI with frozen semen as the freezing process reduces its lifespan when thawed. More ultrasound scans of the mare are therefore necessary to monitor for ovulation.

Please see the flowchart opposite for an outline of routine insemination.

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## EMBRYO TRANSFER

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Success rates with Embryo Transfer (ET) have improved enormously over the last 10 years.



It is now a routine gynaecological procedure for competition mares that are unable or unsuitable to carry their own pregnancy. Mares can continue to compete throughout the procedure.

The donor mare is inseminated as normal with fresh, chilled or frozen semen. The embryo is then flushed from her uterus at day 7 or 8 after she has ovulated and is transferred non surgically into a recipient mare whose reproductive cycle has been synchronised to that of the donor.

A minimum of two potential recipient mares should be supplied for synchronisation by the owner of the donor mare. If suitable recipient mares are not available, then the embryo can be flushed out of the donor and transported for transfer into a mare from a recipient herd at an alternative ET centre.

Pregnancy scans of the recipient mare are performed initially at 5 to 7 days after transfer when the embryo is 12 to 14 days old. Follow up scans are performed as necessary until a healthy embryo and heartbeat have been confirmed.

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## MARE INFERTILITY INVESTIGATIONS

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Various procedures can be used to investigate mares that have failed to conceive. Most will have had routine endometrial swabs and ultrasound examinations performed around the time of covering or insemination to identify mild uterine infections and/or uterine fluid. If these examinations are not able to confirm the cause of infertility, then more advanced techniques are available.

A small volume lavage will give a more comprehensive assessment of any inflammatory cells, bacteria or fungal elements in the mare's uterus than a routine

endometrial swab.

An endometrial biopsy can also be taken to assess the health of the uterine lining and will provide even more information than endometrial swabs and lavages. Uterine infections that have not previously been detected by swabs or lavages are sometimes picked up by an endometrial biopsy. It will also detect irreversible chronic degenerative changes to the uterine lining that will reduce the chances of conception. While these changes cannot be treated, it at least allows a breeding prognosis for the mare to be established.

A hysteroscopic examination is a visual examination of the uterus using an endoscope. This examination allows direct visualisation of the entire uterus and cervix and enables identification of cysts, foreign bodies and uterine pathology that may not be detected on transrectal ultrasound examination. Cysts can be treated using a laser at the same time if indicated.

Information from one or all of the above options can be used to formulate a treatment plan.

Another potential cause of infertility is blockage of the oviducts with uterine debris that then stops the early embryo descending into the uterus. Laparoscopic (keyhole surgery) treatment is available for oviductal blockage. It is normally performed 4 to 5 days post ovulation.

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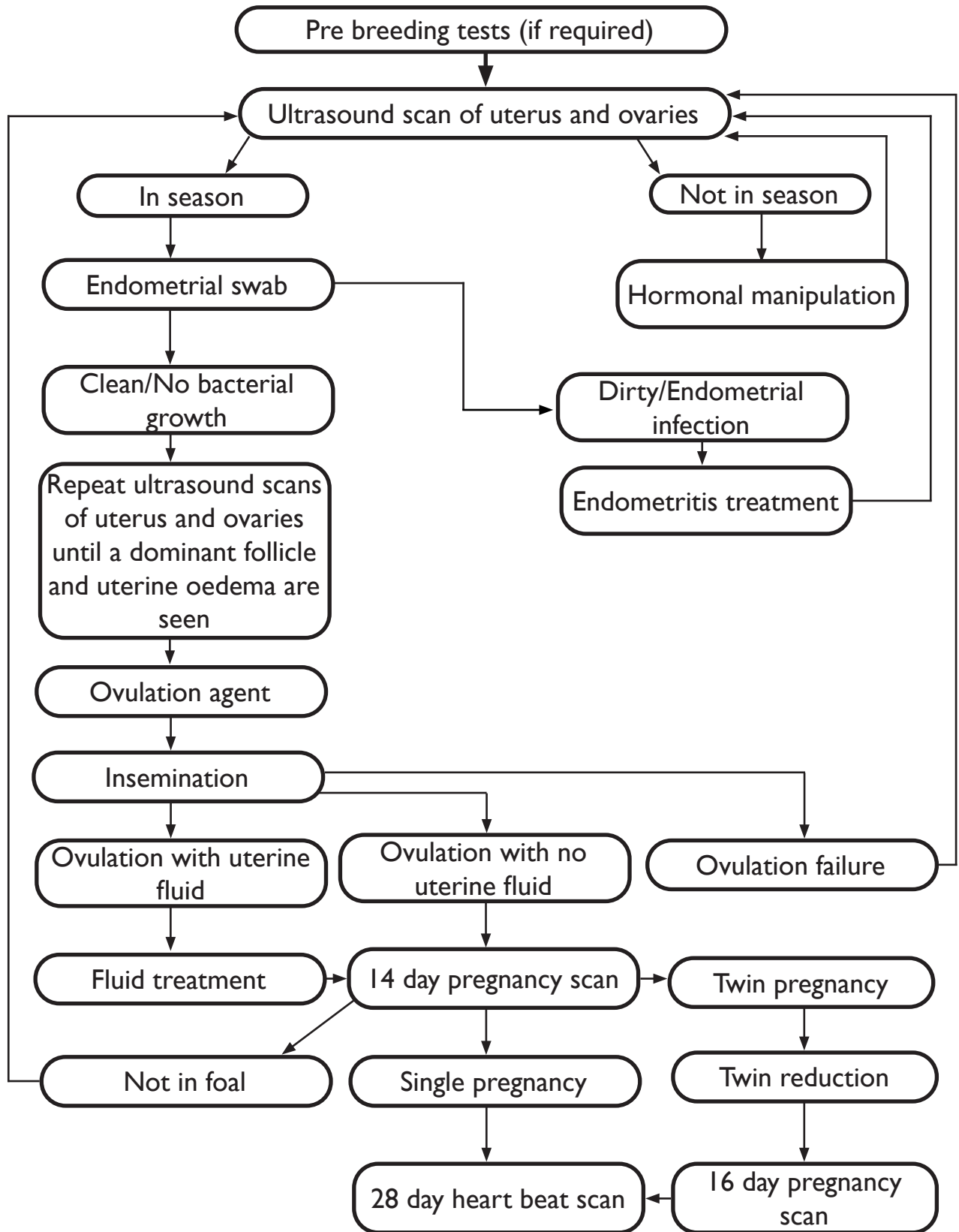
## HIGH RISK AND LATE TERM PREGNANCY MONITORING

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Premature mammary development and milk production, vulval discharge and signs of abdominal pain are all signs of a problem for mares in late pregnancy. Investigation can be performed using rectal and transabdominal ultrasound.

# Routine Insemination

This flow chart outlines the basic sequence of events from when your mare receives her first ultrasound scan to a successful 28-day pregnancy. Every mare is different and there can be a degree of variation in the process.





## OPU/ICSI

Ovum pick-up (OPU)/intracytoplasmic sperm injection (ICSI) is a form of in-vitro fertilization (IVF), now used widely in horses. It is the process by which an oocyte (egg) is harvested from the mare before ovulation, matured in a lab and fertilized by injection of a single sperm into the egg, to produce an embryo which can then be transferred into a recipient mare.

### WHY USE OPU/ICSI?

- It may be particularly useful for mares and stallions with fertility issues such as the inability to produce an embryo naturally, where there is limited sperm availability or poor sperm quality.
- Competition mares: OPU can be scheduled for a single appointment to suit their competition schedule, including outside the breeding season. No hormonal treatment or scanning is required.
- Embryos can be transferred fresh to a recipient mare or frozen for transfer to a recipient when convenient, thereby removing the need to synchronize a recipient.

Rectal ultrasound can assess the combined thickness of the uterus and placenta which becomes thickened if the mare has placental infection. Movement of the foetus can usually be detected at the same time as a confirmation of viability.

Transabdominal ultrasound also allows the thickness of the uterus and placenta to be measured. It can also be used to assess the heart rate of the foetus, its size for age and the volume and consistency of foetal fluids.

A treatment and management plan can be formulated to support the mare through the remainder of her pregnancy and repeat examinations performed as necessary. In addition, milk electrolyte levels and blood hormone profiles can be used to give additional information on the pregnancy.

## GYNAECOLOGICAL MANAGEMENT OF THOROUGHBRED MARES

Most owners and studs prefer not to board their mares at the stallion stud for the period of covering and subsequent pregnancy scanning. Careful gynaecological veterinary management allows the mare to be travelled to the stallion for covering and then to return home for the follow-up examinations and pregnancy scanning.

Pre breeding health tests including clitoral swab, EVA, EIA blood samples and an aerobic endometrial swab will have been taken prior

to visiting the stallion. A negative endometrial CEM swab will also be required by most thoroughbred studs before each covering.

Repeat ultrasound scans at home are required to determine the most appropriate covering day and time. Hormonal treatment with an ovulation induction agent may also be used to promote ovulation no more than 12 to 24 hours after cover. Ultrasound examinations will be performed after covering to confirm that the mare has ovulated as expected and to check for any uterine fluid. Treatment of the fluid will be performed as necessary.

The first pregnancy scan is performed at 14 days after the mare has ovulated. A careful check will be performed to confirm a pregnancy. A twin reduction can be done at this stage if two embryos are identified. Follow up scans will be performed as necessary until a viable heartbeat has been confirmed.

## COMPETITION STALLION MANAGEMENT

B&W is able to offer stallion semen collection facilities at the Willesley clinic. The process is performed by an experienced veterinary team using the on site laboratory to ensure that all semen sent to mare owners is of reliable quality and health status.

Stallions can be trained for semen collections on the dummy over a 2 to 5 day period. An

initial breeding soundness examination (BSE) can then be performed to establish how suitable the stallion is for AI and the most appropriate semen extender to use.

Stallions can be resident at the stud or can be brought into the stud when semen collections are required. The stud has a dedicated stallion block with an adjacent safe and secure turnout paddock.

Semen freezing can be undertaken at the West Kington Stallion Centre for busy competition stallions who may not always be available for fresh semen collections.



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