



WILLINGA PARK
VET HOSPITAL
EQUINE EXCELLENCE



THE UNIVERSITY OF
SYDNEY

Willinga Park Vet Hospital

Advanced Reproduction Service

Ovum Pick Up (OPU) and ICSI



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Client information guide

At Willinga Park Vet Hospital, we are pleased to offer Ovum Pick-Up (OPU) through a collaboration with leading Specialist in Equine Reproduction, Dr Gus Ruiz and the University of Sydney Equine Reproduction team.

This guide explains the procedure and helps you decide if OPU and ICSI techniques are suitable for your mare and breeding program.

What is Ovum Pick Up (OPU)?

OPU is a procedure where small ovarian follicles (5–25 mm) are carefully punctured and aspirated to collect oocytes (unfertilised eggs) directly from the mare's ovaries.

Is my mare suitable for OPU?

Mares (from 3-4 years old) in good body condition score and health with **at least 15 follicles ranging from 10mm to 25mm in diameter can undergo OPU**. The total number of follicles available in the ovaries is crucial to improve chances of success. A veterinary ultrasound 5-7 days prior to OPU is required to confirm eligibility and optimize success while prioritizing welfare.

Why choose OPU and ICSI?

Sub-fertile mares

Mares unable to carry a pregnancy or produce embryos via regular embryo flushing (ET) may still produce viable oocytes for embryo production.

Limited or valuable semen

ICSI requires just one sperm per oocyte (egg) to produce an embryo, allowing a single semen straw to be used across multiple sessions (often 8-10), maximising its value.

Flexibility

OPU can be done all year round and outside the breeding season. In addition, embryos can be frozen and stored until needed and a suitable recipient mare is available, removing the need to synchronize recipient mares.

Performance mares

Mares can continue competing, with only short interruptions to training.

Post-mortem OPU

In some cases, oocytes can be collected after an unexpected death or euthanasia.

How is OPU performed?

Your mare will be assessed first by our team to confirm she is in good health and can undergo safely an OPU session.

An IV (in the vein) catheter will be placed, and your mare will be sedated, given systemic anti-inflammatories and antibiotics. Once restrained in an equine crush, she will be cleaned and prepared for the OPU procedure.

OPU is performed by our experienced team using specialised ultrasound-guided probe attached to a needle and a suction pump. All available follicles in the ovaries are aspirated individually.

The procedure can take between 45 minutes to 1 hour.

Following the procedure, your mare is closely monitored during recovery. The collected follicular fluid is processed in our lab, and oocytes are sent to an ICSI laboratory.

What aftercare is needed post OPU?

Your mare might show **mild discomfort** the following 1-2 days after OPU. In some cases, a follow up analgesic/anti-inflammatory may be recommended. Rest and close monitoring are essential. We recommend avoiding intensive training for at least 7 days after the procedure however light work and walking should be well tolerated.

If you have any questions or concerns about your mare's wellbeing after an OPU procedure, please don't hesitate to contact us at **(02) 4405 5658** and request to speak to our reproduction team.

How often can OPU be performed?

OPU can be repeated **every 3 weeks**, provided your mare recovers well from the previous session and has sufficient follicles on ultrasound (at least 15 follicles ranging from 10mm to 25mm in diameter).

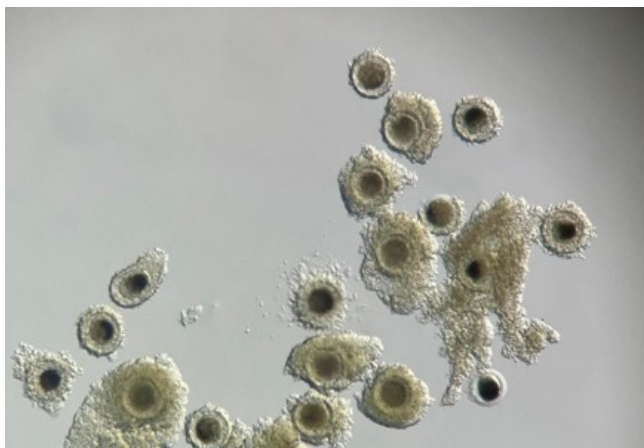


Figure 1. Equine oocytes aspirated by the OPU technique.

What is the risk of OPU for my mare?

Because OPU is an invasive procedure, it carries some risk and complications, though they occur rarely. Possible complications may include: bleeding (vaginal, rectal, or from the ovary), sedation-related risks, rectal tears, abscesses, or peritonitis (inflammation of the abdominal lining). In extreme cases, this could be life-threatening, but such complications are extremely uncommon.

A small number of mares can develop a mild fever, slight discomfort, or a decreased appetite for 1-2 days following OPU. Your mare will be given appropriate preventive anti-inflammatories and antibiotics to minimise risks of complications.

Some maiden young mares may prevent a safe OPU due to tight ovarian ligaments.

Our experienced team will **monitor your mare closely** and the procedure will be stopped immediately if it is deemed too risky prioritising your mare welfare.

Does OPU affect my mare's future fertility?

No, OPU does not harm your mare's long-term fertility.

After OPU, ovaries recover within few days and mares return to have normal cycles with new follicles developing and ovulating as usual. OPU does not affect the uterus or oviducts.

In simple terms, OPU works with your mare's natural cycle and **does not reduce her future fertility**.

The ICSI process - all you need to know

What happens at the ICSI lab?

Recovered oocytes will be placed into special maturation media for approx. 30hs before they can be fertilised. Not all oocytes will mature. A single sperm of your selected stallion is injected into each of the mature oocytes (this technique is called *Intracytoplasmic Sperm Injection* or *ICSI*).

Once injected, these fertilized oocytes are grown under special laboratory conditions for 7-9 days until an embryo is developed.

Not all OPU sessions produce an embryo (see below success rates). Viable embryo/s are frozen for future transfer.

Total timeline: It takes approximately 10 days from OPU to embryo result

What type of semen can be used?

Fresh, chilled or frozen semen. Written permission from the semen owner is required. You must also ensure with the relevant horse society that they can register a foal produced by this technique.

Very important: Semen must arrive at the ICSI lab *before* the OPU session, as timing is critical.



Figure 2. An equine oocyte (egg) being injected via ICSI. A micropipette containing a single sperm cell can be seen on the right side of the picture.

What are the success rates?

OPU/ICSI is a number's game. Outcomes vary and depend on multiple factors:

OPU recovery rates

On average, an oocyte is collected from a follicle in 50-60% of the time, although this can vary from 0% to 100%.

Maturation rates

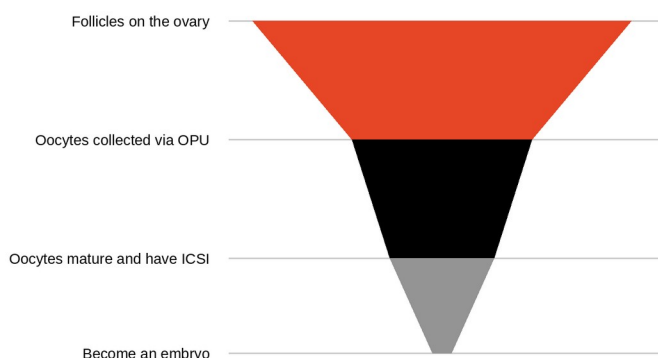
On average, 60% of harvested oocytes are expected to mature and be eligible for ICSI

Embryo production rates

The overall chance of having one or more embryos produced from a single OPU/ICSI session is approximately 60%, although this can vary from no embryo produced to 1+ embryo per session.

In summary, multiple OPU/ICSI sessions may be needed to produce an embryo/s.

For example: if a mare undergoes 5 (five) OPU/ICSI sessions, 2 (two) sessions may be unsuccessful while the remaining 3 (three) may be successful producing one or more embryo per session.



The ICSI Inverted Pyramid

These numbers are based on statistical numbers and averages across all OPU sessions...

But biology is complex and shows great variation between mares.

You can have 15 oocytes and no embryo... and you can have 5 oocytes and 2 embryos in the subsequent OPU session.



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