Dr Chris Berezowski of Moore Equine Veterinary Centre in the Calgary area is certainly well-known in the province for his knowledge and experience in the equine reproduction field. He explains the purpose and methods of embryo transfer to allow competition mares to reproduce while being able to maintain their athletic schedule.

Embryo Transfer For The Performance Mare
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What is Embryo Transfer (ET)?
Embryo transfer is a reproductive technique that involves the collection of an embryo from a donor mare when the embryo is seven to eight days old. The embryo is then transferred into a recipient (surrogate) mare where a pregnancy can be established and carried to term.

What are the benefits of embryo transfer?
One of the main benefits of embryo transfer is that it allows performance mares to have a foal while still remaining in training/competition. Depending on the breed registry, multiple foals from a single mare in a season is possible. Mares that are unable to carry a pregnancy on their own due to physical or reproductive abnormalities can benefit as well. Embryo transfer can maximize the number of foals produced from genetically superior mares during their reproductive lifetime.

How is Embryo Transfer performed?
Embryo transfer involves the use of a donor and recipient mares who must be synchronized in their estrous (heat) cycles. Ideally, two or three recipient mares are needed for every donor mare. This ensures that one of the recipient mares will match the donor mare's stage of the heat cycle. Both mares should be healthy, reproductively sound and cycling regularly. The donor mare is bred normally (AI fresh cooled, AI frozen, live cover) with special attention given to the time of ovulation and to ensure an excellent uterine environment. Seven or eight days after the donor mare has ovulated, the uterus is flushed to recover the embryo. Several liters of flush media are warmed and infused into the uterus through a catheter. The uterus is flushed three or four times, and the fluid is then filtered into a collection bottle. The collected embryo is washed numerous times to remove any contaminants and evaluated for viability based on the size, grade, morphology and developmental stage.

The second stage involves transferring the embryo to the recipient mare. It is important that the recipient mare has ovulated no more than one day before or two days after the donor mare. The embryo is placed in an insemination gun and transferred into the uterus aided by rectal palpation. The initial pregnancy exam of the recipient mare will be conducted 4 days after the transfer.

What makes a good recipient mare?
An ideal recipient mare should be less then 9 years old, be of good physical/reproductive health and temperament.

What are the success rates?
To maximize the success of embryo transfer it is important to use high quality semen from fertile stallions. An important fact to remember is that if the donor mare is not pregnant, there won't be an embryo to transfer! Once an embryo is recovered, the transfer success rate is dependent on the quality of the embryo. High quality embryos will result in a pregnancy in 80% to 90% of cases. Donor mares can also be flushed at a distant veterinary facility with the embryo then shipped and transferred into a recipient mare at a different location. Embryos can even be frozen, stored in liquid nitrogen and transferred at a later date - sometimes years later!

The keys to embryo transfer success are having semen from a good fertile stallion and a young, healthy recipient mare. Embryo transfer may not be a viable option for all mares, so make sure to discuss it with your veterinarian.