Embryo Transfer

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First indication

- Irreversible tubal damage:

  First IVF baby

  "Louise Brown"

  was born to her

  mother who had

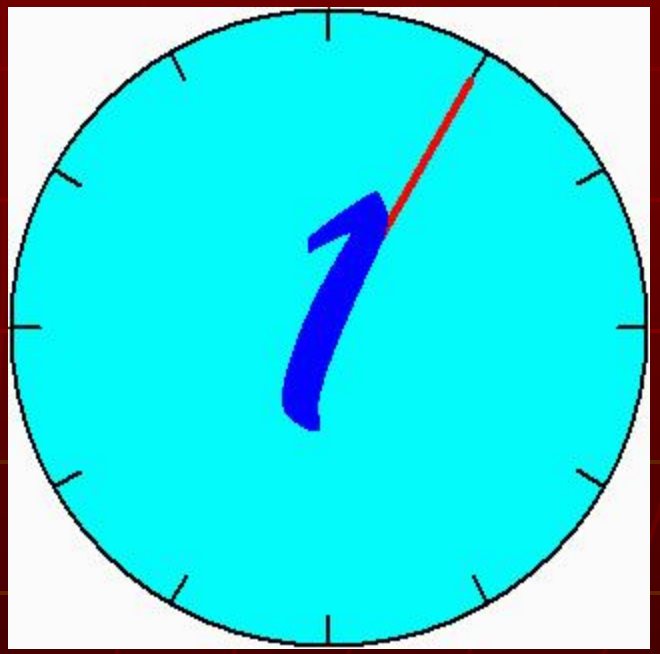
  bilaterally blocked,

  tubes, where

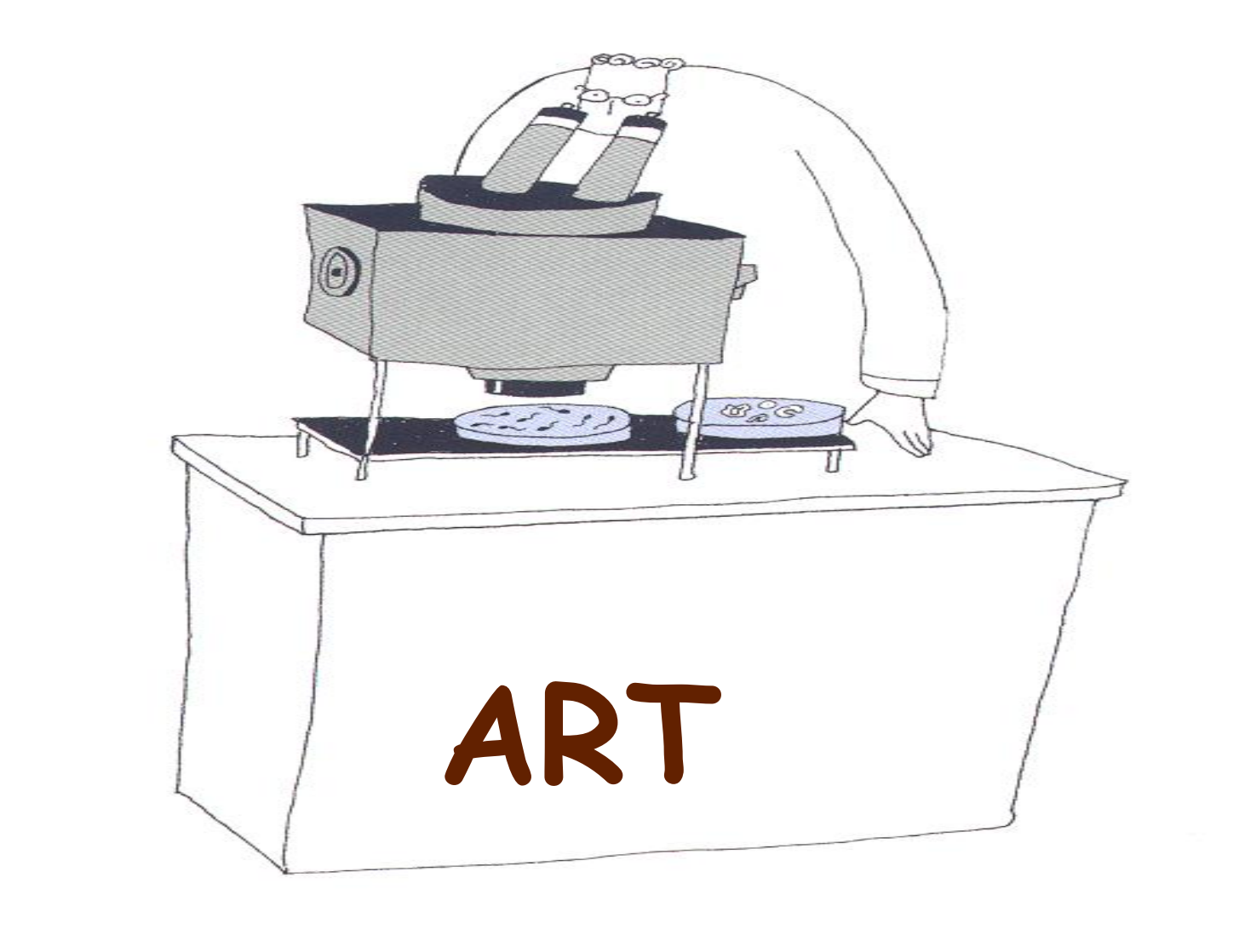
  oocyte retrieval

  was done

  laparoscopicaly.



IN VITRO FERTILIZATION UNDER THE MICROSCOPE



The success of adequate and good ovarian stimulation, optimal oocyte recovery and good embryological workup culminating in making of good embryos can go wasted only because of a poor embryo transfer technique.

Embryo transfer is the last but most essential step towards successful IVF outcome.

Embryo transfer (ET)

Set of instruments to expose the cervix

Embryo transfer catheter with loaded embryos

Embryo transfer table

Ultrasound with abdominal probe

Instruments for ET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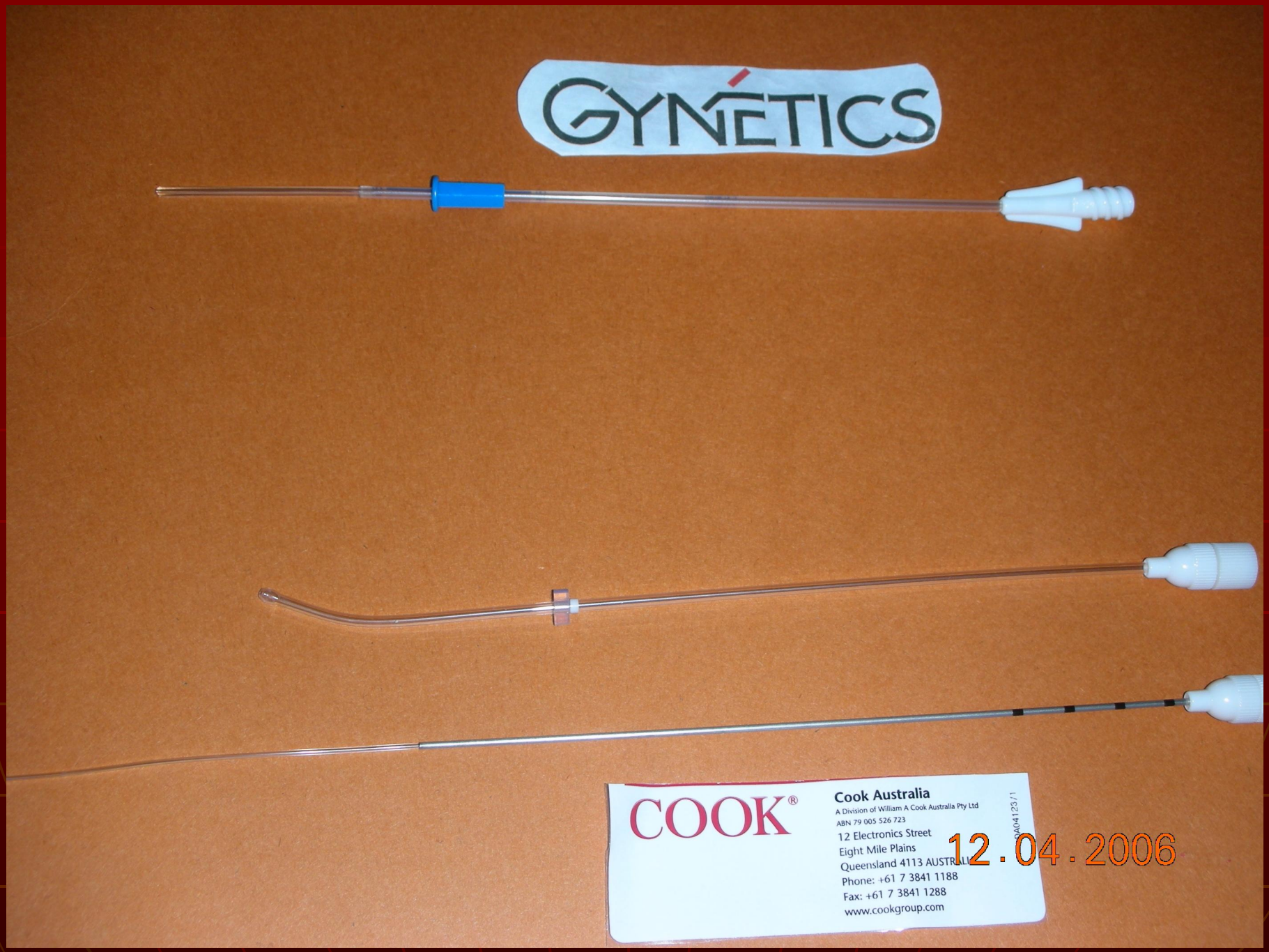
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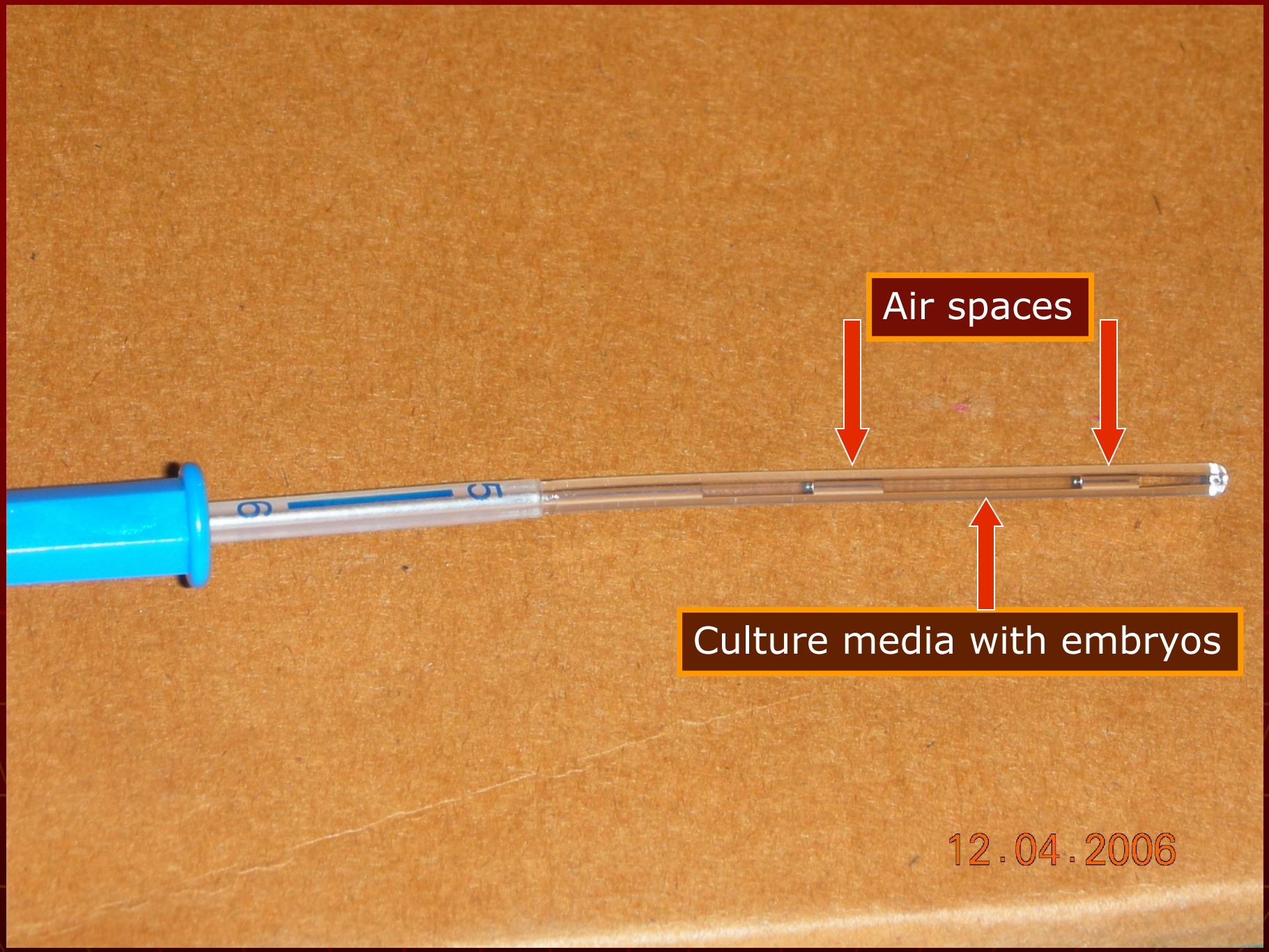

Air spaces
Culture media with embryos
12.04.2006

ET Tables

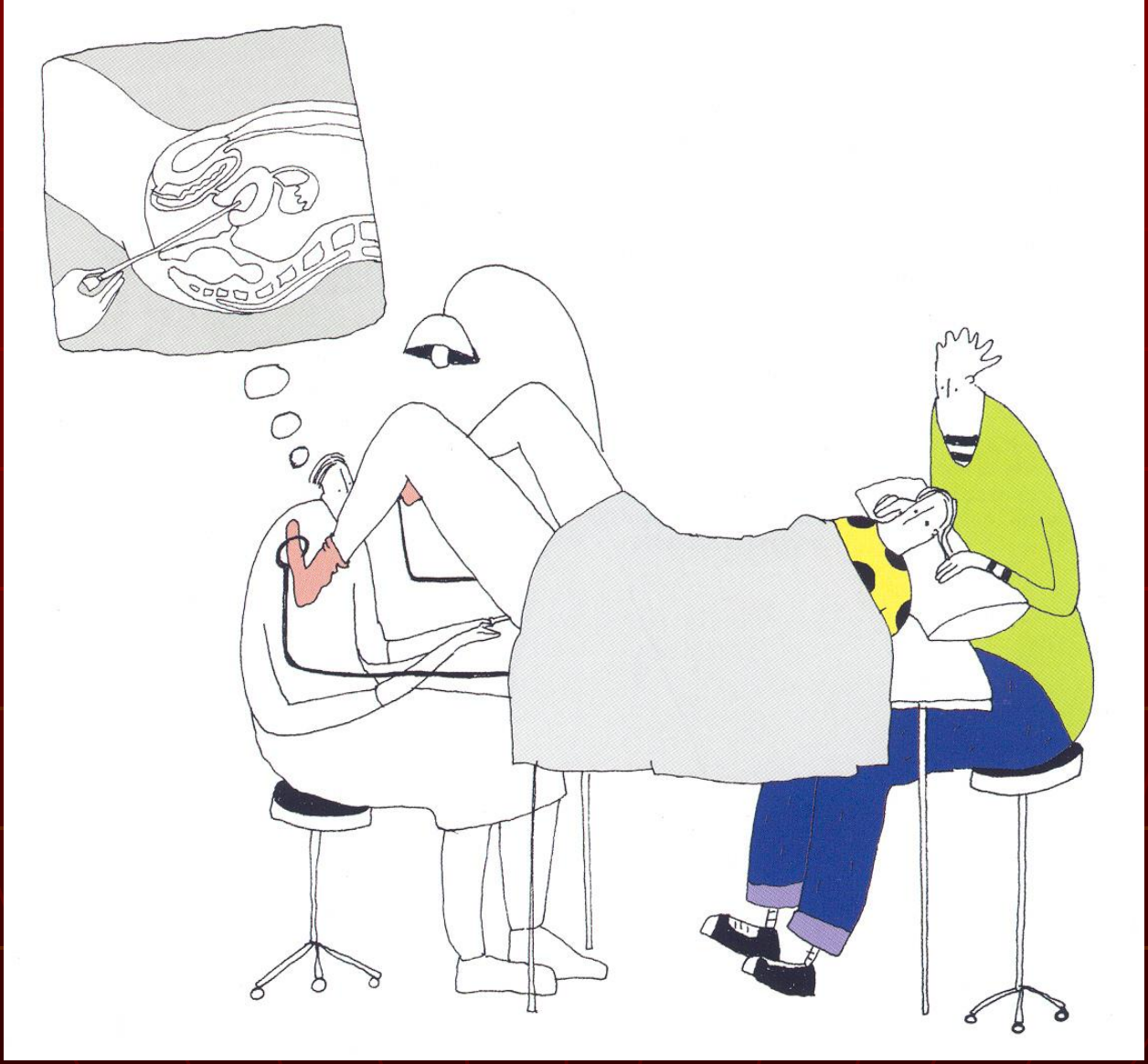
USG Machine

- Ultrasound with vaginal probe & abdominal transducer

6.5 mhz vaginal probe and its director
3.5 to 4 mhz abdominal transducer

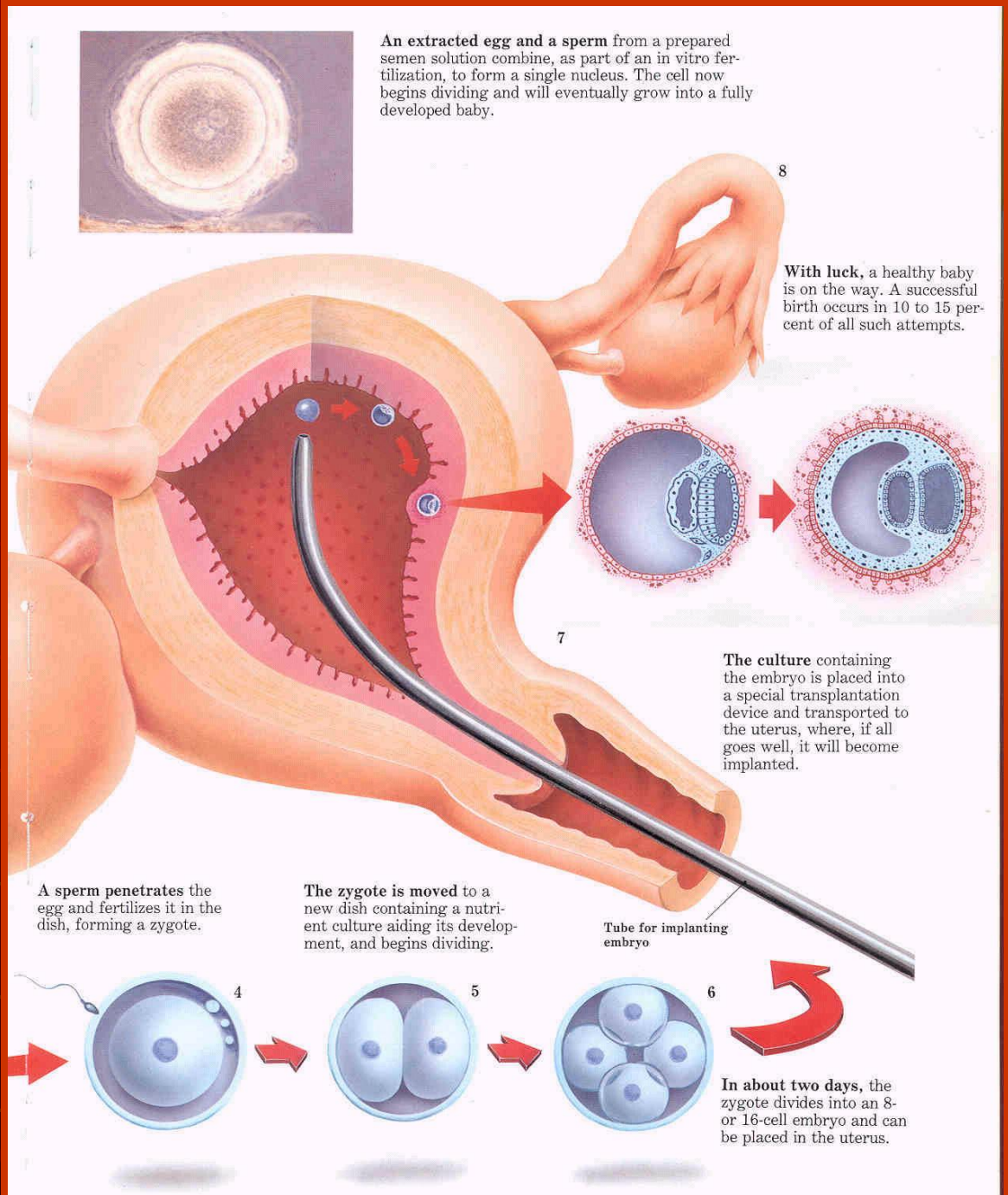
GE PRO series Ultrasound machine

The embryo transfer



Embryo transfer

Sperms entering the oocyte



Factors affecting embryo transfer

Site of embryo deposition

- Best site 5mm to 10 mm below fundus:

Clinical PR:12.4% deep fundal /14.5% mid fundal
Ectopic PR:01.5% deep fundal / 0.4% mid fundal

- Culture medium volume > 15 ul increases incidence of ectopic pregnancy

- High transfer of embryos in uterine cavity also promotes higher incidence of ectopic pregnancy.

Factors affecting embryo transfer

- Use of tenaculum can stimulate uterine junctional zone contraction and reduced implantation

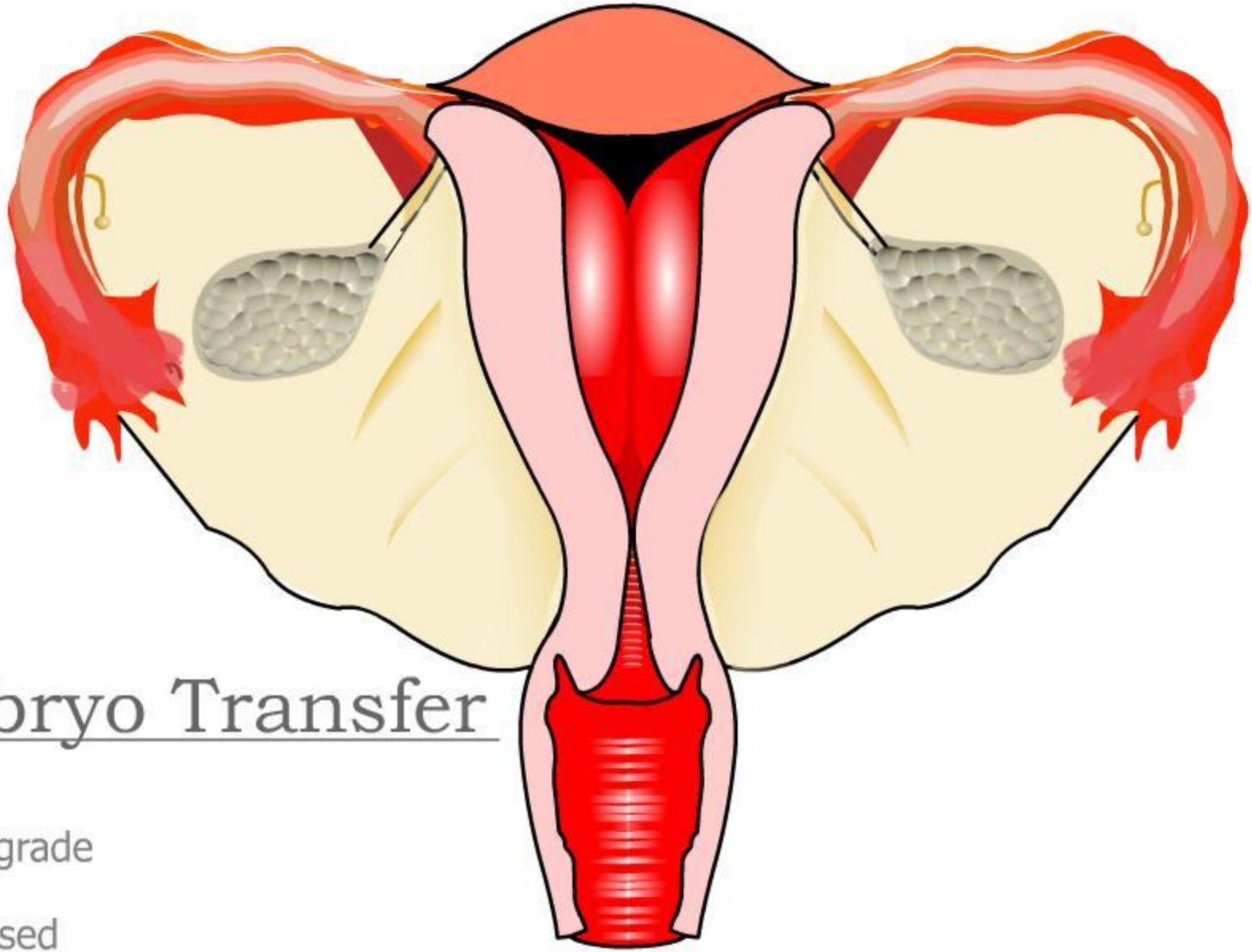
- Slow withdrawal of ET catheter (60.8)% or 30 sec delay before slow withdrawal (69.4%): similar PR as catheter in cervix stimulates uterine contractions.

- Traumatic transfer with blood on ET catheter associated with decreased implantation rate PR (*Goudas et al.1998 Fertil Steril).*

- Soft ET catheters associated with higher PR (soft Wallace 36% vs rigid Tomcat 17%).

Factors affecting embryo transfer

- Blood on inner sheath is associated with increase incidence of retained embryos (*Nabi et al.1997 Hum Reprod 3.3% vs 12%)*
- Removing cervical mucous vs not removing prior to ET (incidence of retained embryos 3.3% vs 17.8%)
- Full bladder Straightens uterocervical angle. (PR 26.8% full bladder vs 16.6% empty bladder; *Lewin et al.1997 J Assist Reprod Genet).*
- Bed rest after ET has no effect on PR (Sharif et al 1995 Fertil Steril 30% no bed rest vs 22.9%



Embryo Transfer

- Retrograde
- Localised
- Laminar

Quit

ET under Ultrasound guidance

- Accuracy achieved in embryo deposition.
- Ejection of transfer bubble can be documented
- Straightening of utero-cervical angle due to full bladder
- Psychological confidence the ultrasound screen generates on the patient and clinician

USG Machine

- Ultrasound with vaginal probe & abdominal transducer

6.5 mhz vaginal probe and its director
3.5 to 4 mhz abdominal transducer

GE PRO series Ultrasound machine

Meta-analysis of ultrasound guided (USET) versus clinical touch embryo transfer (CTET).

McGill University, Montreal CANADA

8 prospective control trials were identified.
Out of these 4 were genuinely randomized and
4 were non randomized.

All studies demonstrated a significantly increased chance of clinical pregnancy and of embryo implantation rate in us guided ET

CTET vs. USET

CONCLUSION: The overall pregnancy rates are increased by the UGET compared to CTET

LAMINAR FLOW of transfer medium detected during UGET correlates with significantly improved biochemical and clinical pregnancy rates over NON LAMINAR FLOW.

It has been speculated that non-laminar flow may be visualizing obstructed flow, possibly related to the catheter tip abutting on the endometrium and this phenomenon can be reduced under US guidance.

CLINICAL TOUCH ET (CTET)

US GUIDED ET (UGET)

The ultrasound guided embryo transfer significantly increases the ongoing pregnancy rates when a "laminar flow" pattern is visualized

UNIVERSITY OF TORONTO, CANADA

Ultrasound guided versus blind tactile ET

IVF unit Barzilai Medical Center, Ashkelon,Israel

Significantly higher positive pregnancy tests were achieved in the UGET group 46.7% as compared to the TAET group 26.3%.
A higher clinical pregnancy rate was also seen UGET 33.3 vs TAET 22.8%

Due to the above trend the study was stopped at that point and all women were offered UGET.

Difficult embryo transfers

- Use of fibrin sealent (Glue) to the culture medium containing embryos appears to be beneficial in women with repeated IVF failures or of advanced reproductive age.

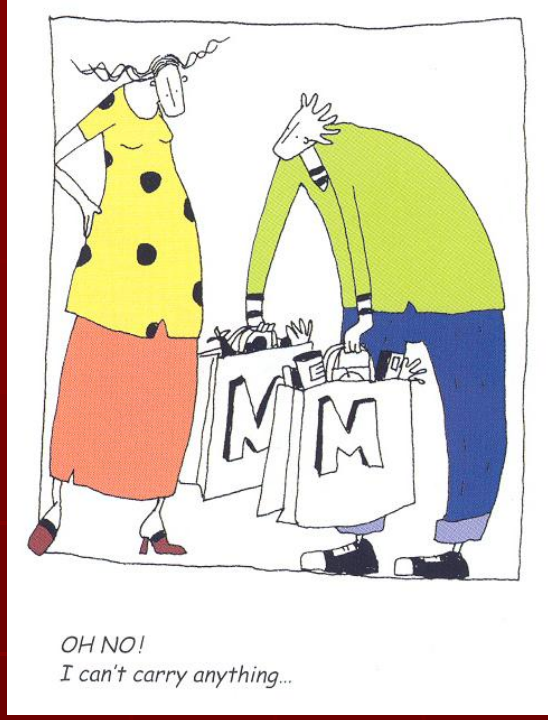
- Trans-abdominal trans myometrial ET has been tried with no benefit in previous failed cycles.

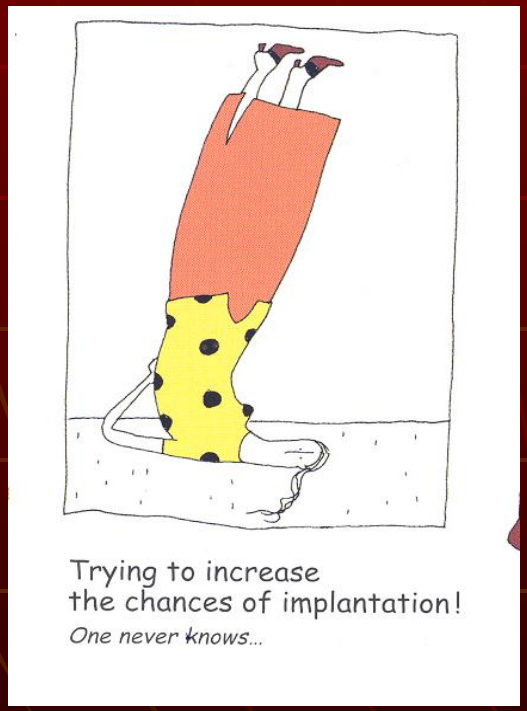
- Trial catheter prior to ET increases PR in difficult cases

- Cervical dilation at oocyte pickup; Laminaria tents tried rarely with good results; Hysterocsopic cervical shaving is option for cervical stenosis.

Leaving the clinic after embryo transfer

OH NO I can't carry anything



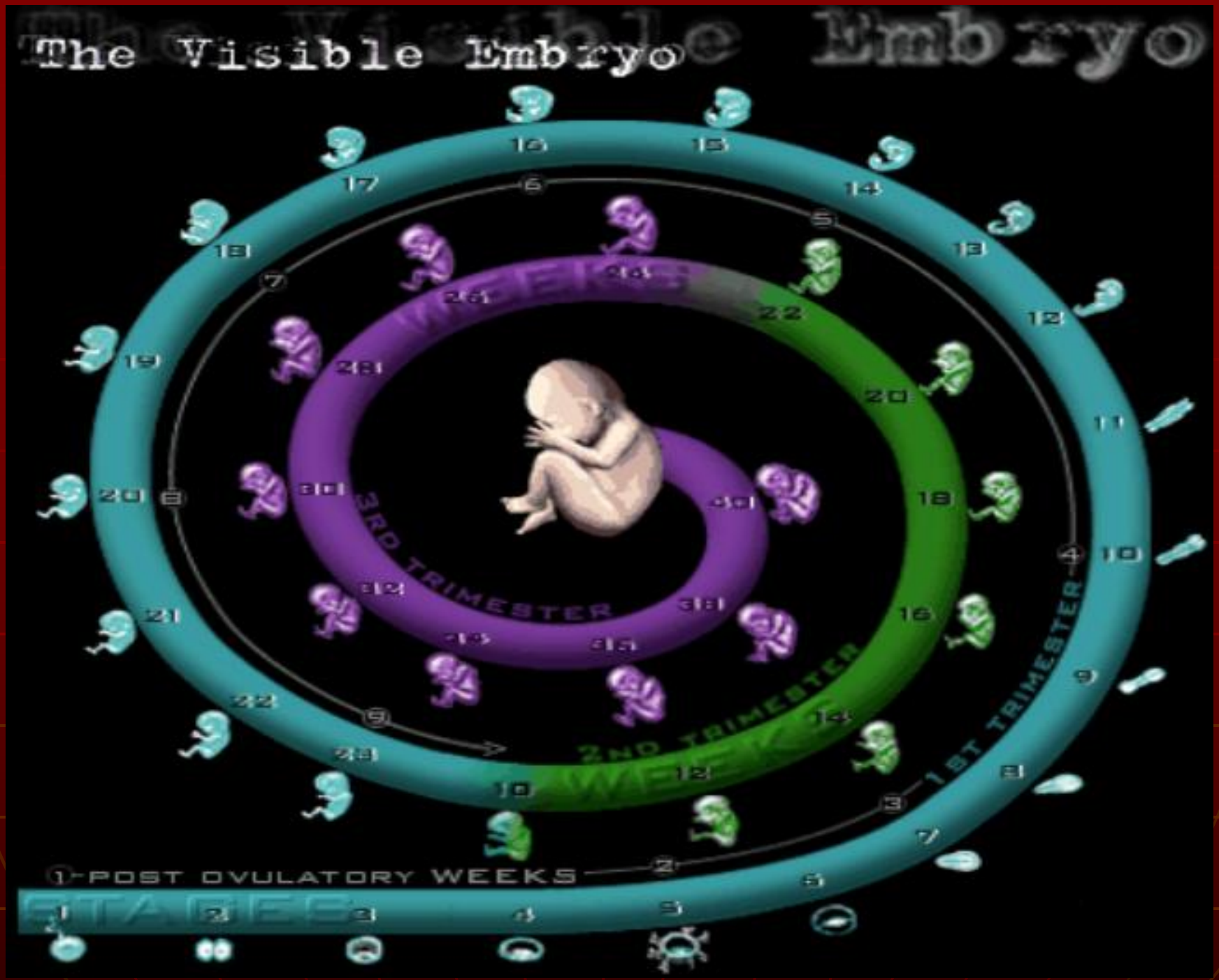


Trying to increase the chances of implantation

The fear of menstruation

Two possible results

success
or
failure


The Visible Embryo
1ST TRIMESTER
2ND TRIMESTER
3RD TRIMESTER
WEEKS
1-POST OVULATORY WEEKS
STAGES