Management of infertility: expectation versus eligibility

Rehan Salim MD MRCOG

St Mary's & Hammersmith Hospital

Infertility

definition

- Failure to conceive after regular unprotected sexual intercourse for 2 years in the absence of known reproductive pathology

Infertility

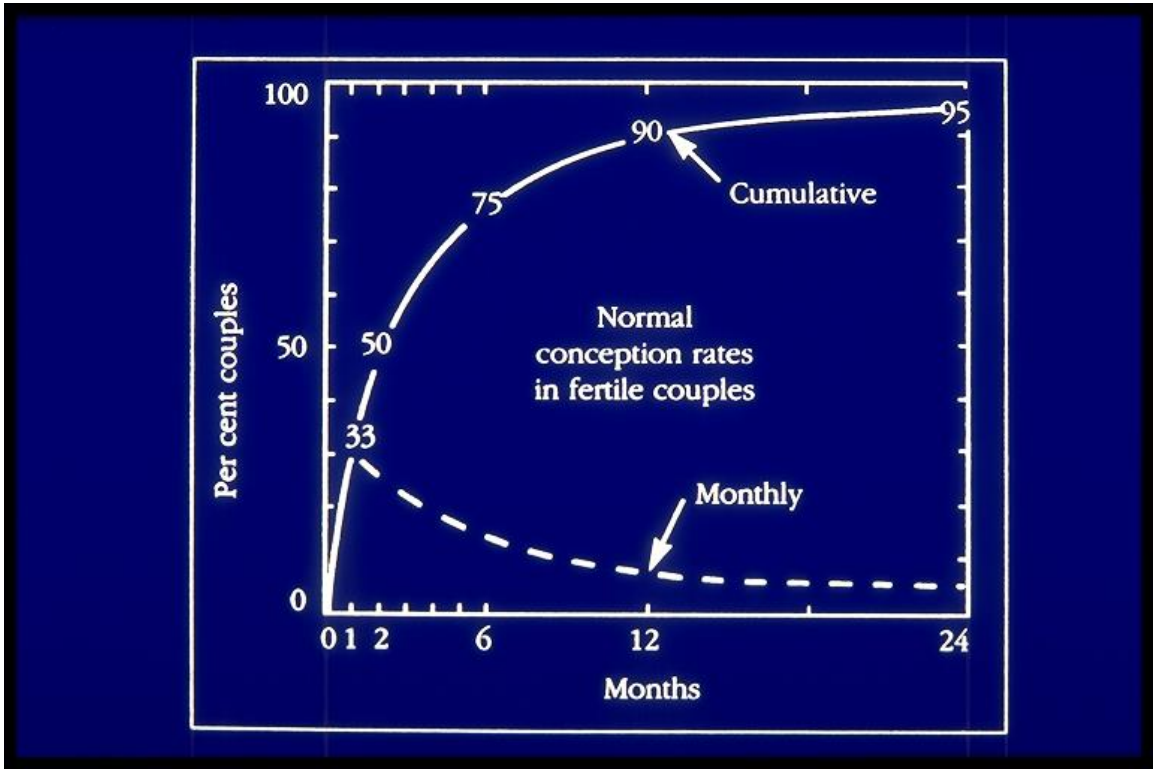
- NICE guidelines
- CCG funding
- Local provision
- Imperial College NHS Trust
  - Full range of fertility investigation and treatment options
  - St Mary's & Hammersmith

Prevalence

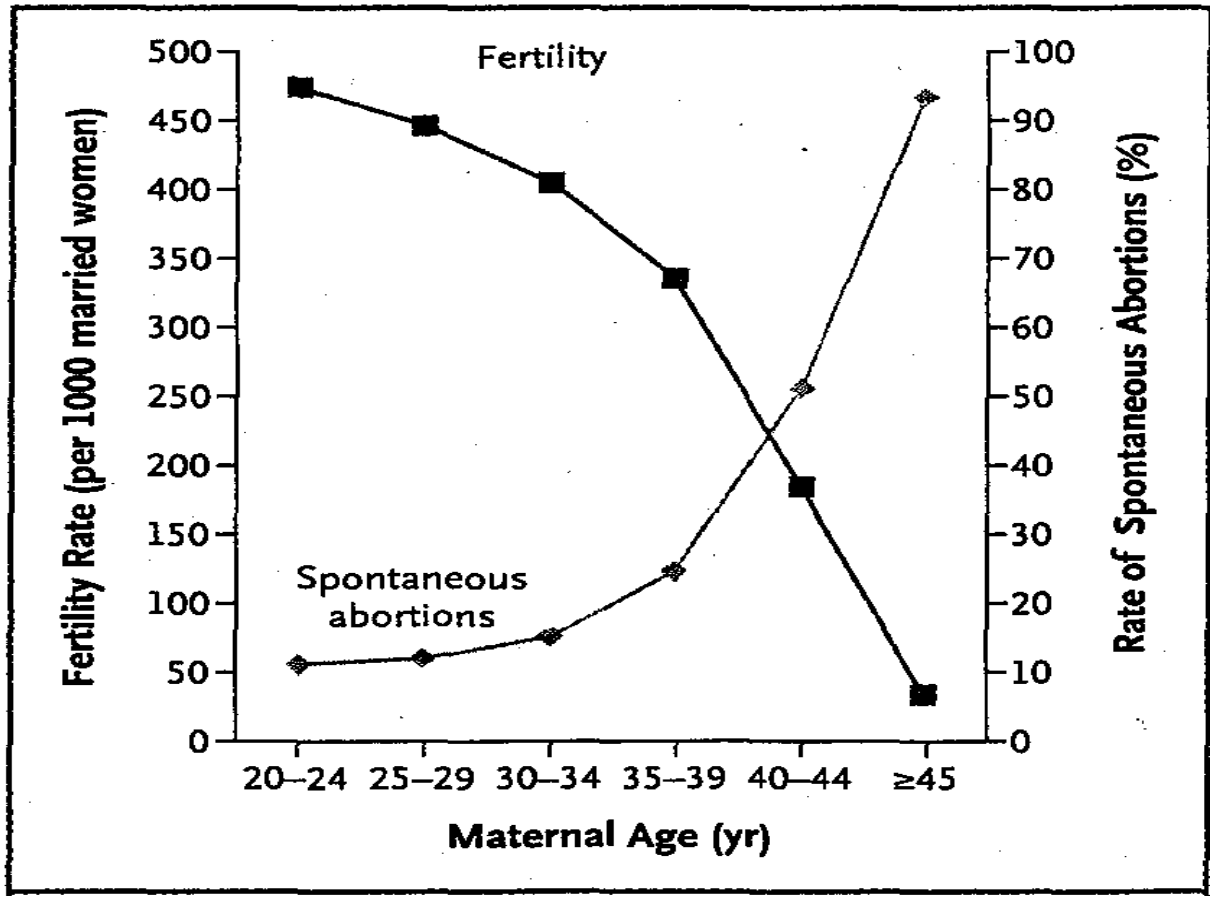
- 15% of couples
  - related to age of female partner
  - related to history of sexually-transmitted disease

Probability of pregnancy

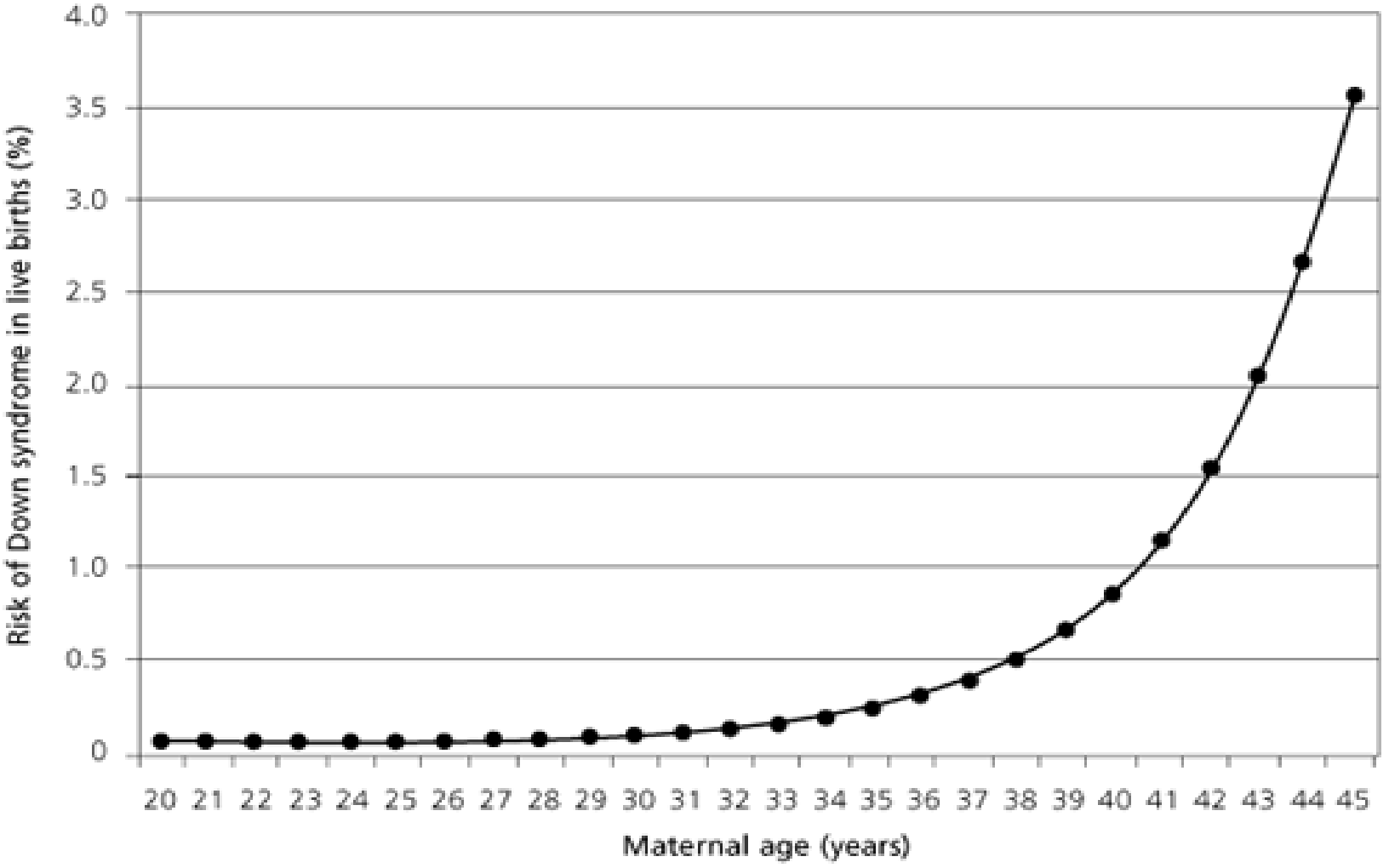
- 84% in 1st year
- 92% in 2nd year



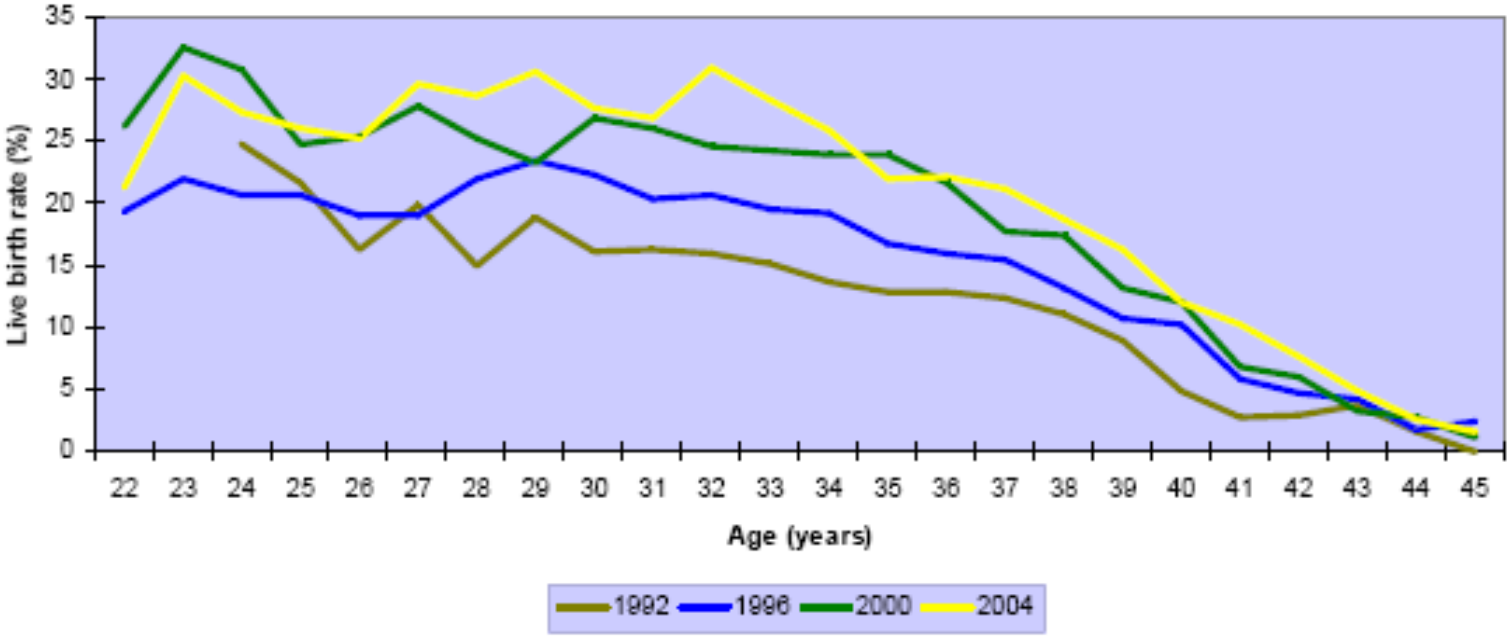
Age, fertility & miscarriage



Risk of Down's syndrome birth by maternal age



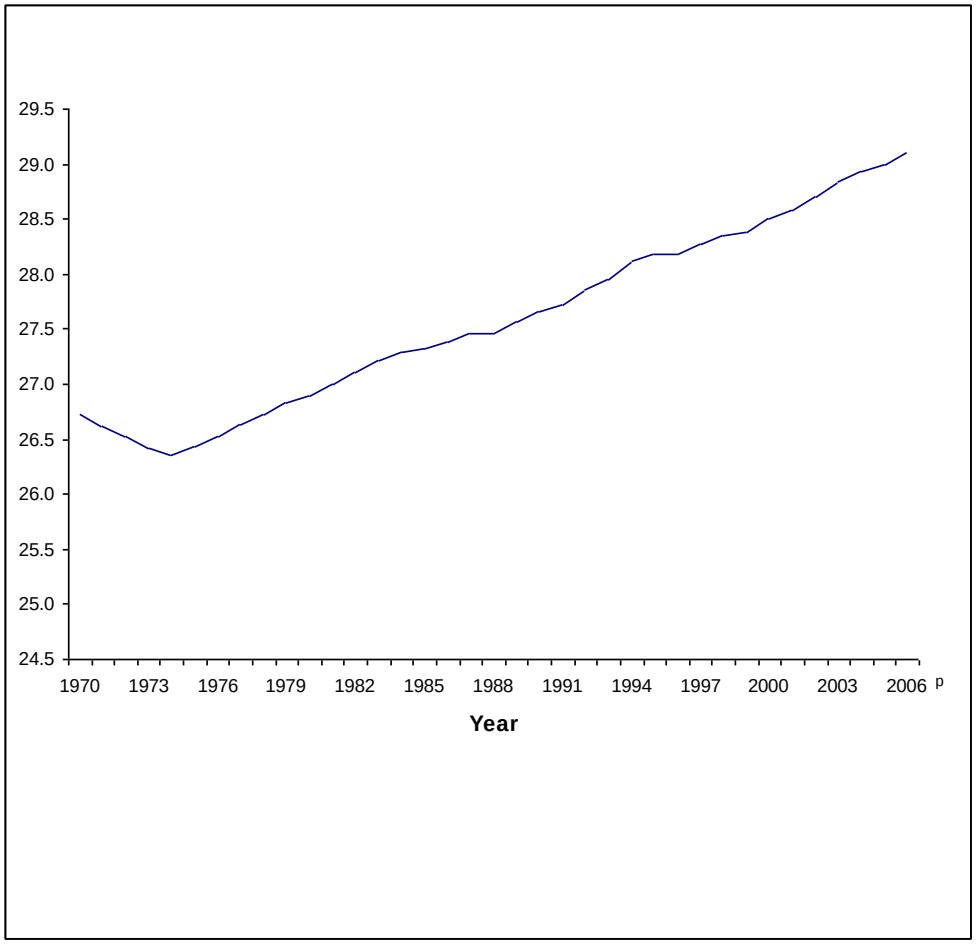
Assisted conception



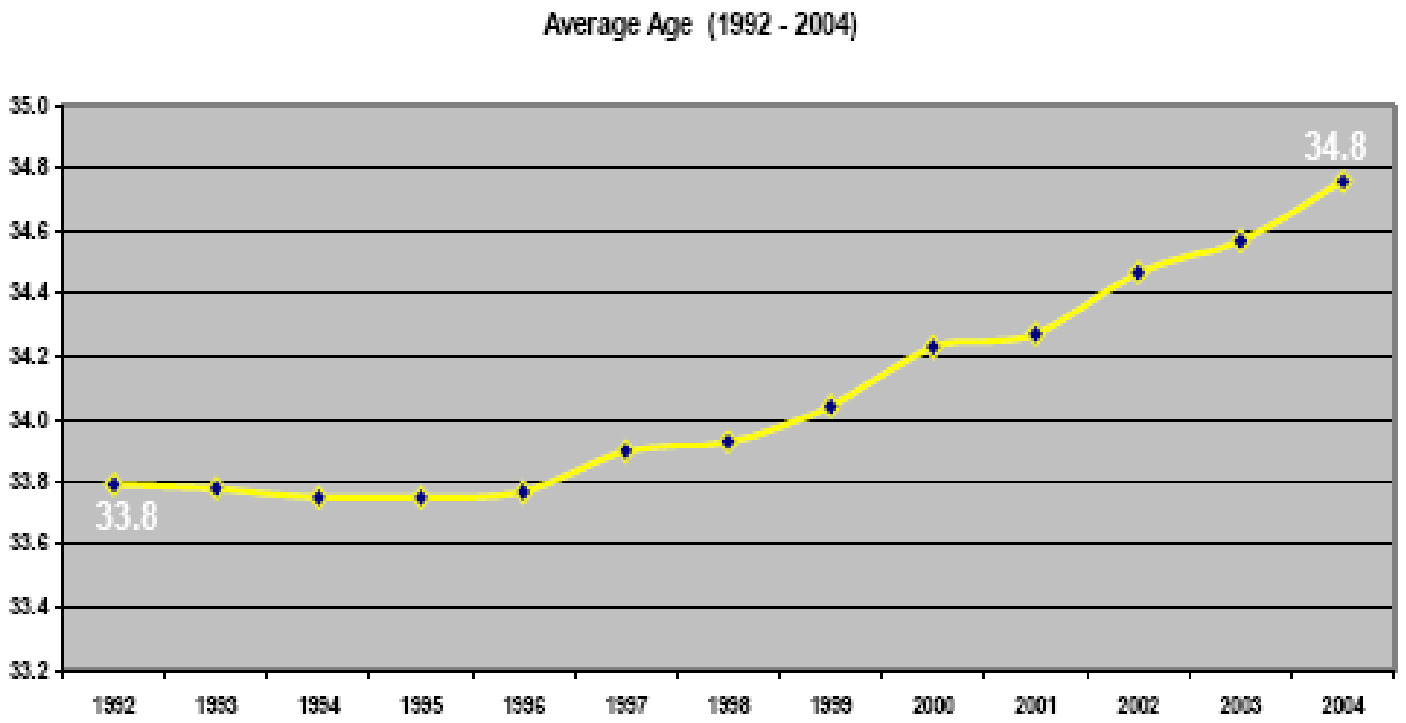
HFEA 2007

Mean age of mother at birth, England and Wales, 1970-2006

office of national statistics

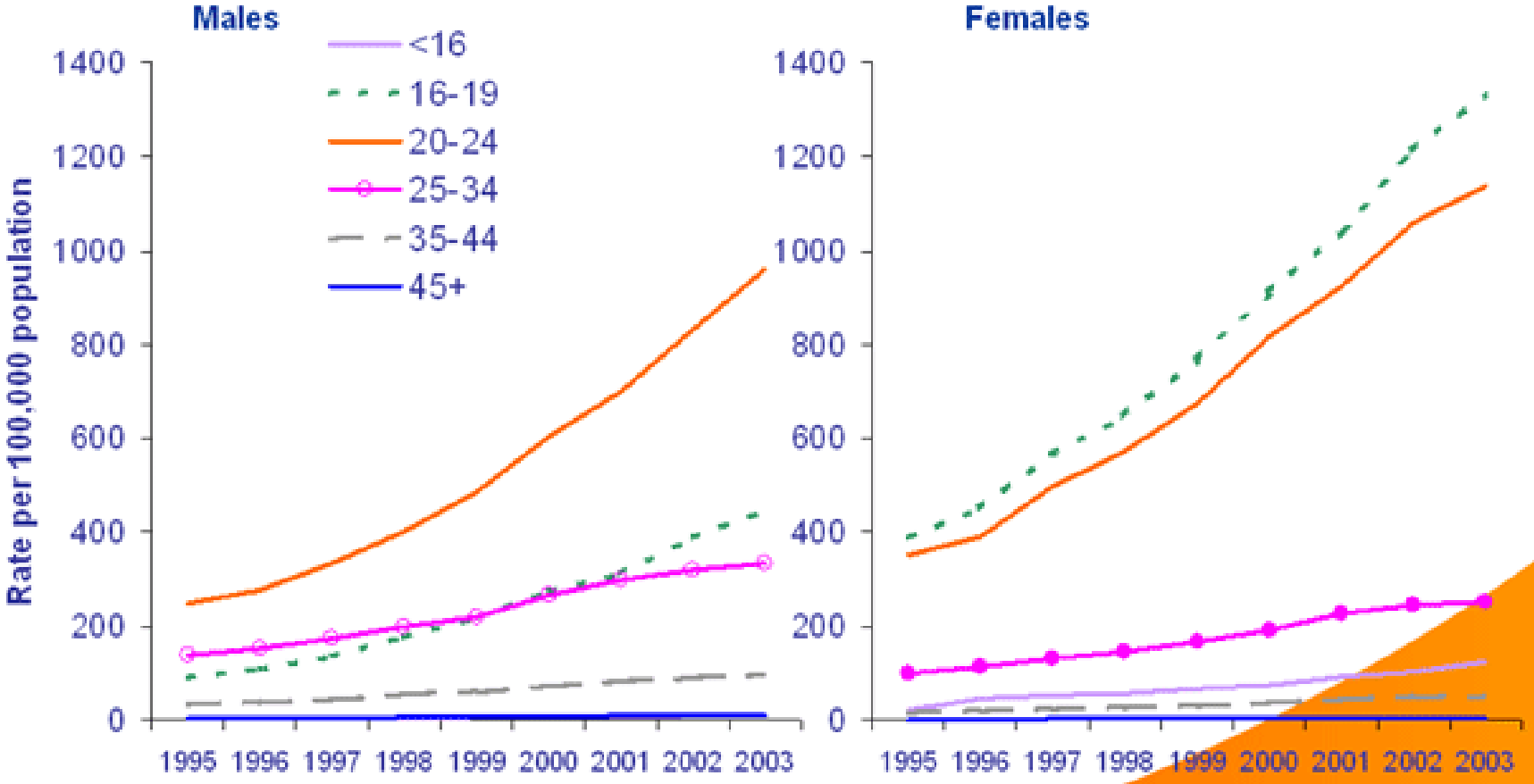


Age at referral



HFEA 2007

Rates of diagnoses of uncomplicated genital chlamydial infection by sex and age group, GUM clinics, United Kingdom*, 1995 - 2003



* Data are currently unavailable from Scotland for 2001, 2002 and 2003
Data source: KC60 statutory returns and ISD(D)5 data.

Infertility

general advice

- Sexual intercourse every 2-3 days
- Stop smoking & reduce caffeine intake
- Alcohol
  - <1-2 units/week for women
  - <3-4 units/week for men
- Folic acid
- BMI 19-29

Obesity

- BMI < 30 (ideal 28) kg/m^2
- Reduces fertility
- Increased risk of
  - Anovulatory cycles
  - Miscarriage
  - Gestational diabetes
  - Hypertension
  - Thromboembolism
  - Obstetric delivery problems

Underweight

- BMI <20
- Anovulatory & Amenorrhoeic
- Increased risk of
  - Miscarriage
  - Preterm delivery
  - Growth restricted baby
  - Fetal programming

Management

- treat couple
- refer to specialist clinic
- systematic investigation
- appropriate treatment
- recognise emotional impact
- Welfare of the child

When to refer

one year unprotected intercourse

earlier if

- woman over 35
- oligo- or amenorrhoea
- significant history
  - eg previous ectopic pregnancy, PID, endometriosis

Investigations

- General health
- BMI
- Rubella immunity
- Hepatitis B,C & HIV
- (cervical screening)
- Triple swabs

Fertility tests: semen analysis

- use lab of referral unit

  operator-dependent
- WHO criteria:

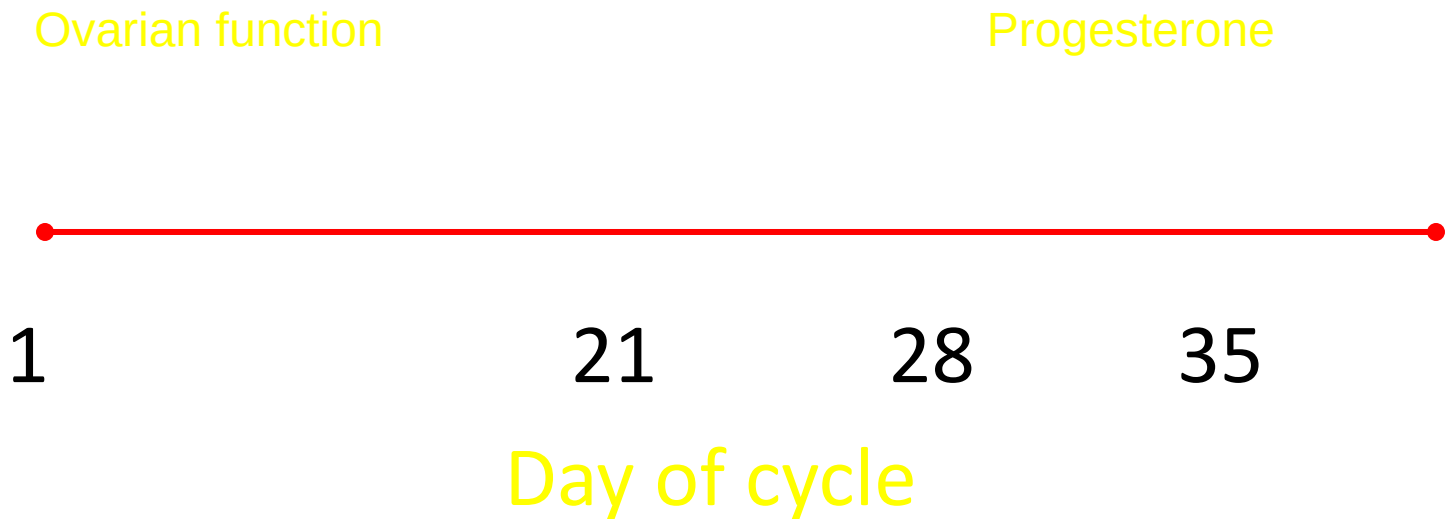
  count >20 million/ml

  motility >50%

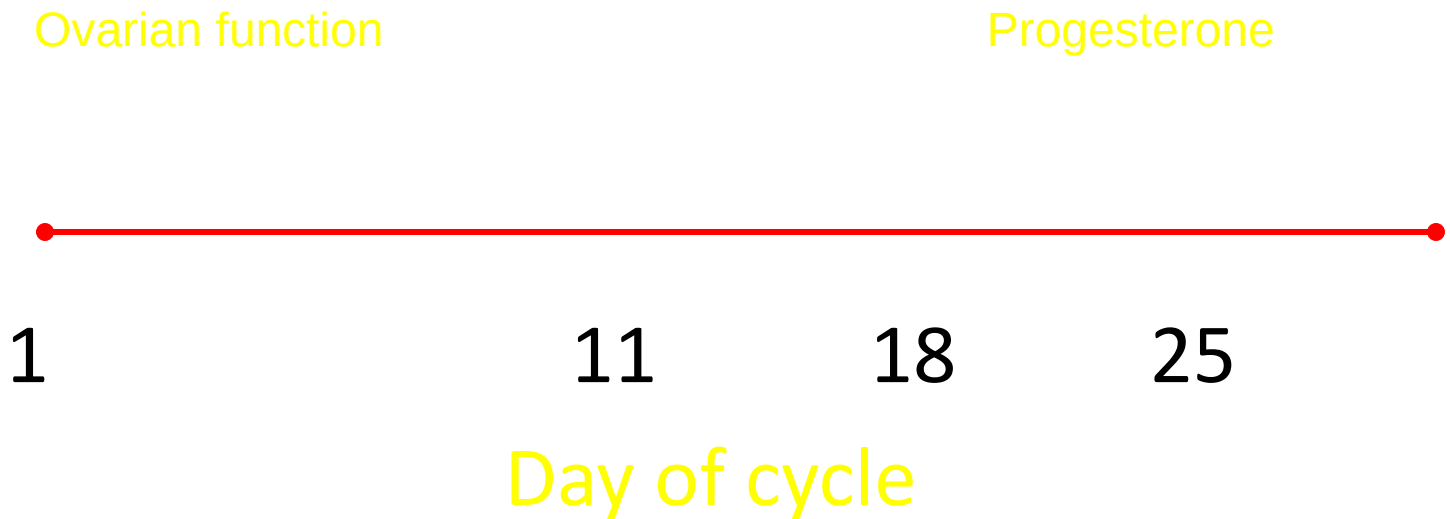
  morphology >50% normal

Investigations

Investigations



Investigations



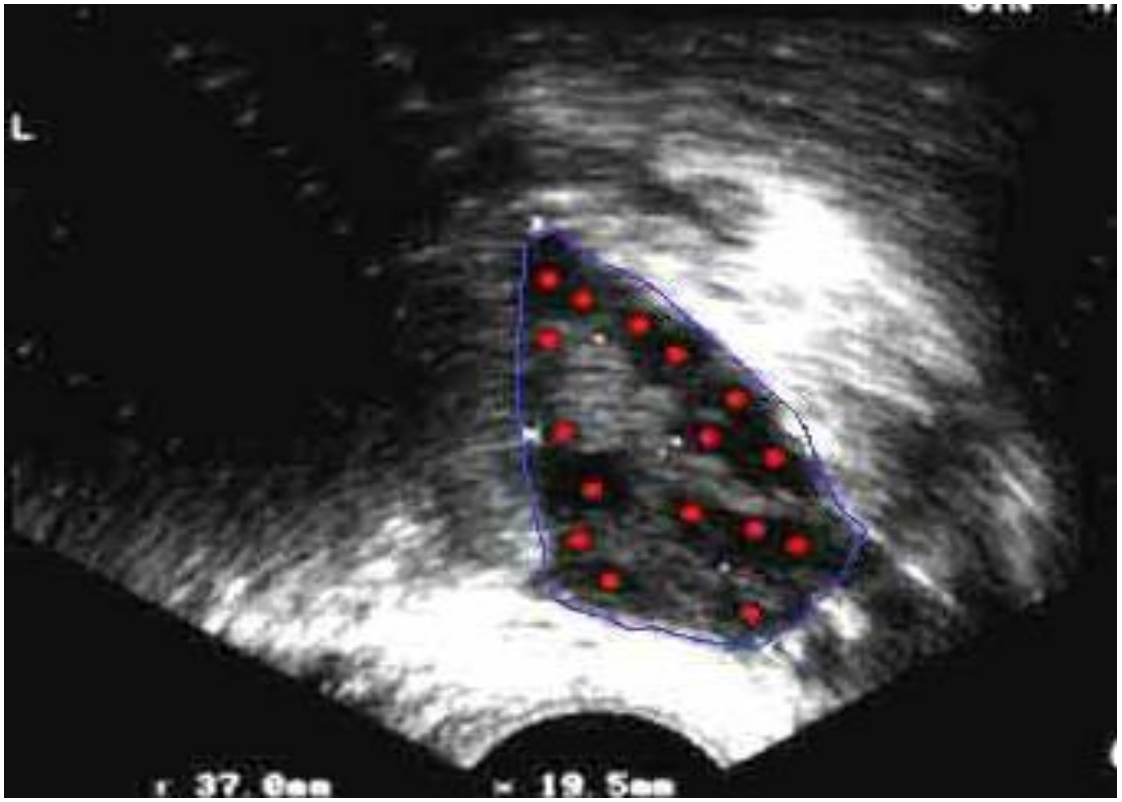
Ovarian function

- Ovarian reserve
  - The capacity of the ovary to provide eggs that are capable of fertilization resulting in a healthy and successful pregnancy
- Measure of
  - Fertility
  - Risk of miscarriage
  - Chances of success with treatment

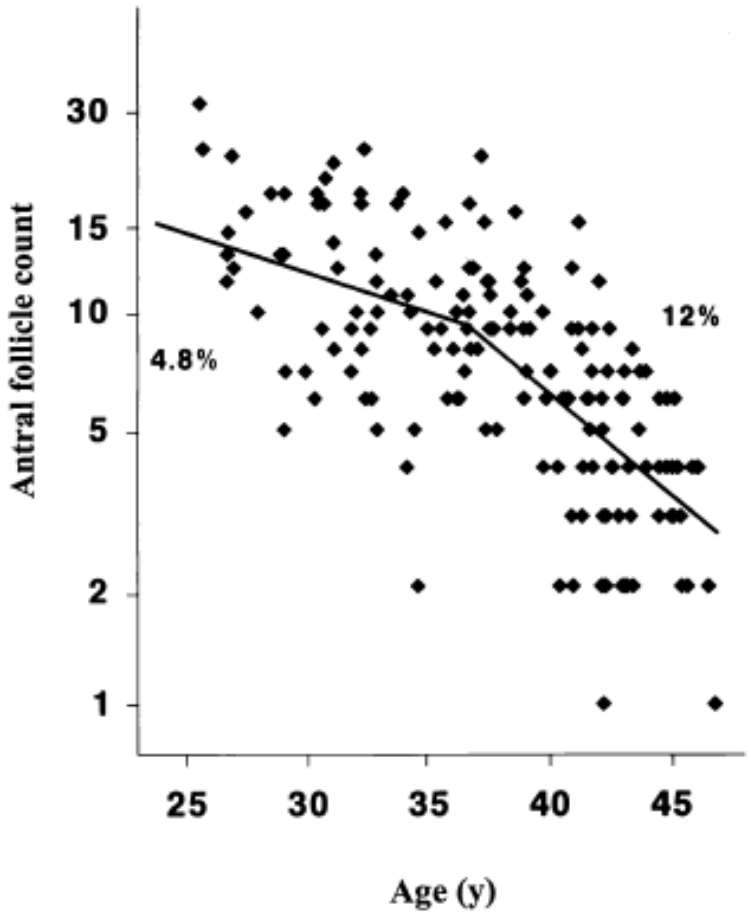
Ovarian function

- FSH and oestradiol early in the cycle
- ovarian ultrasound for antral follicle count

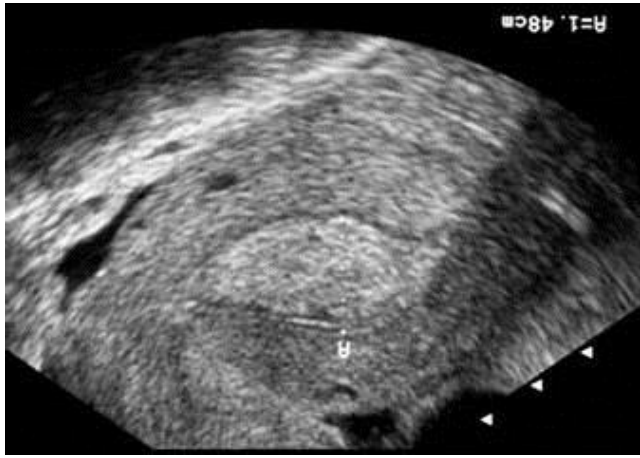
Antral follicle count

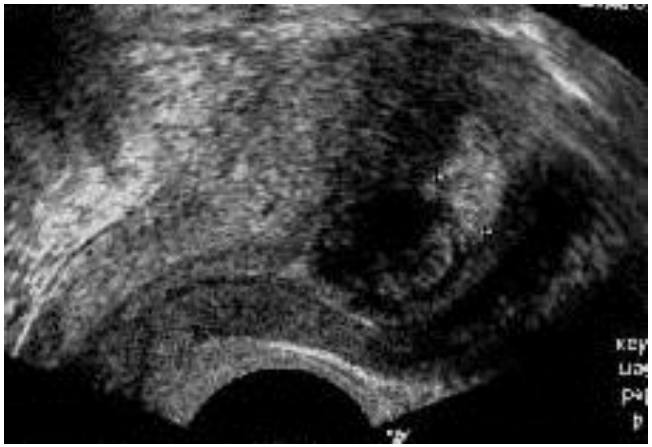


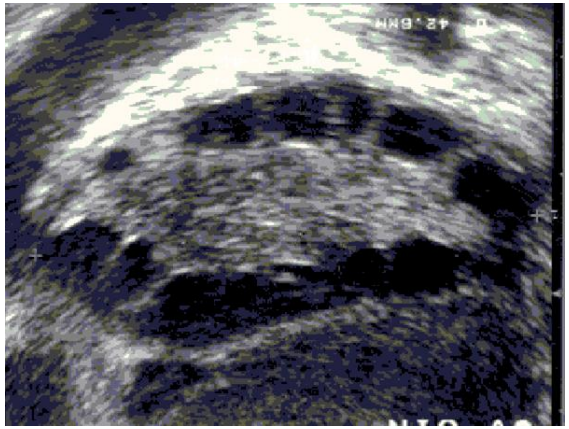
AFC and age

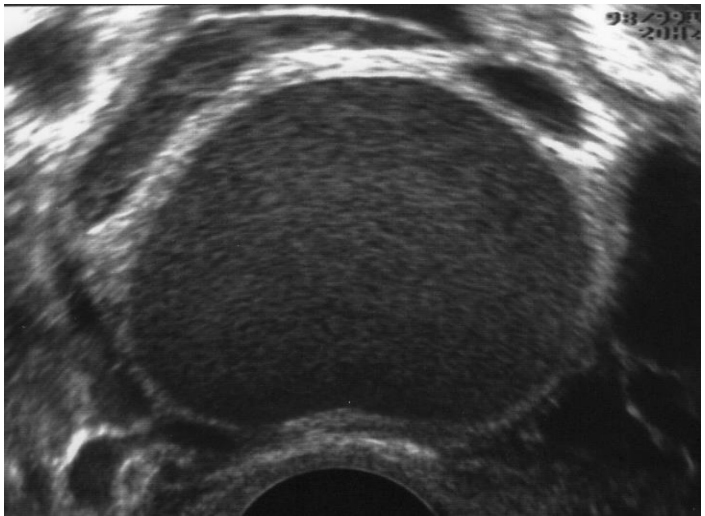


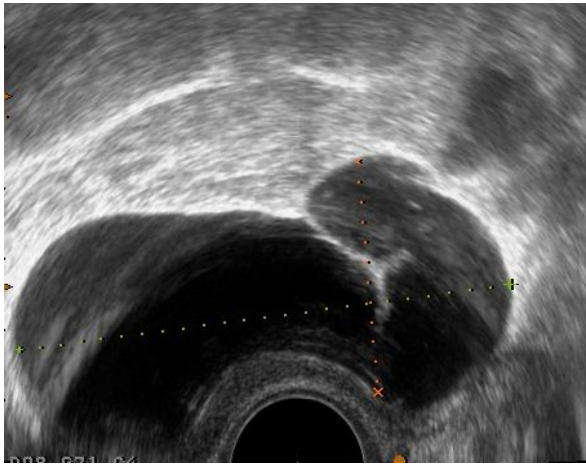
Fertility tests: ultrasound





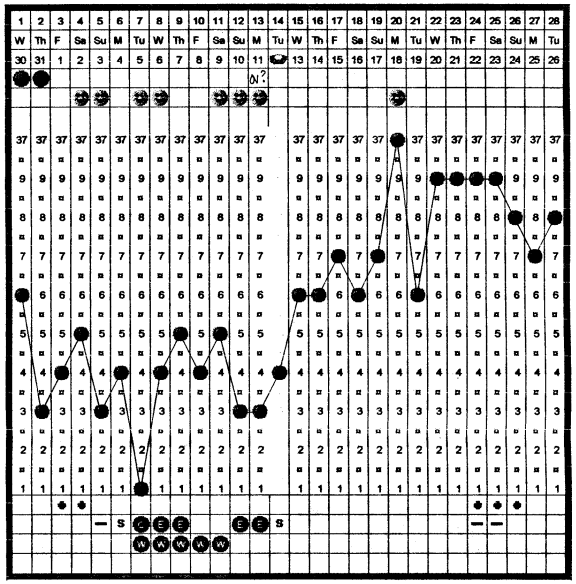




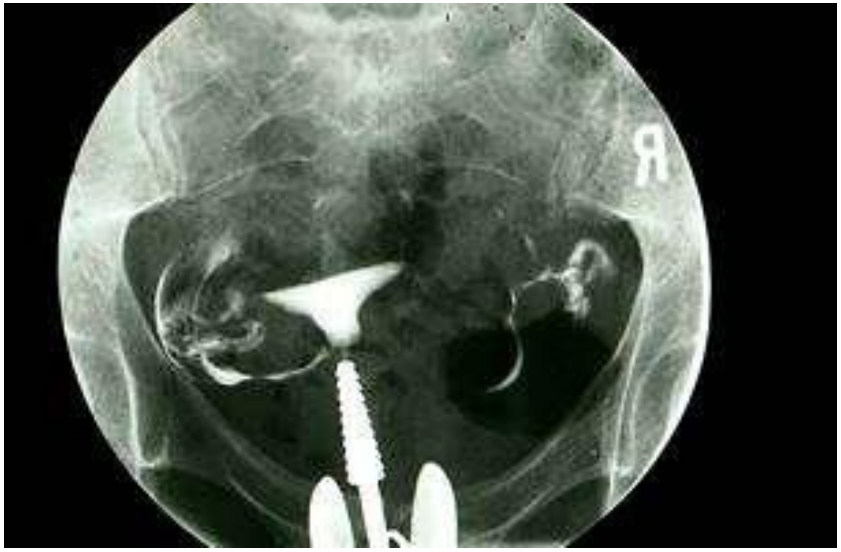


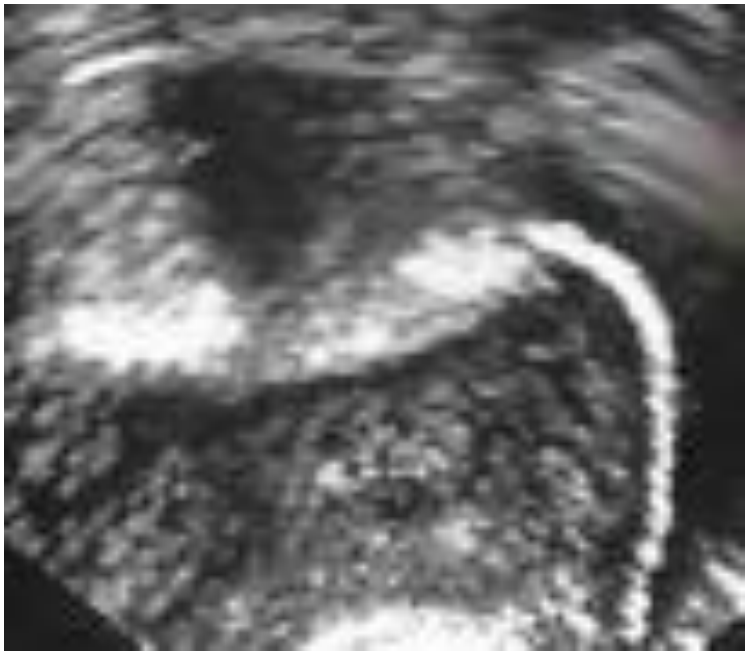
Ovulation

- Mid luteal phase progesterone
- 28 day cycle
  - Day 21



Tubal patency





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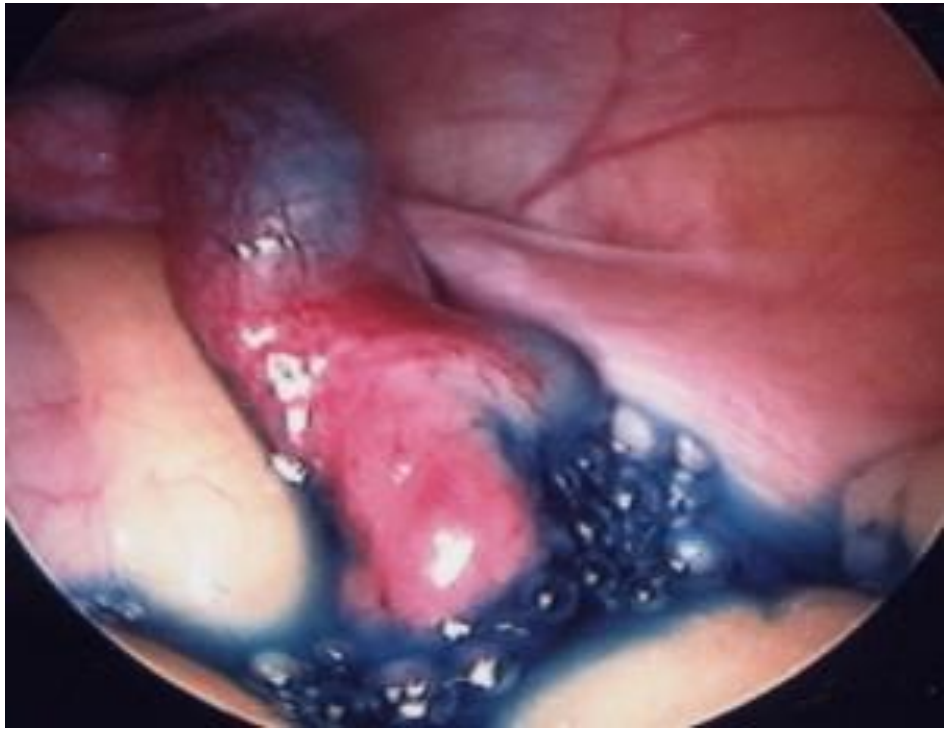
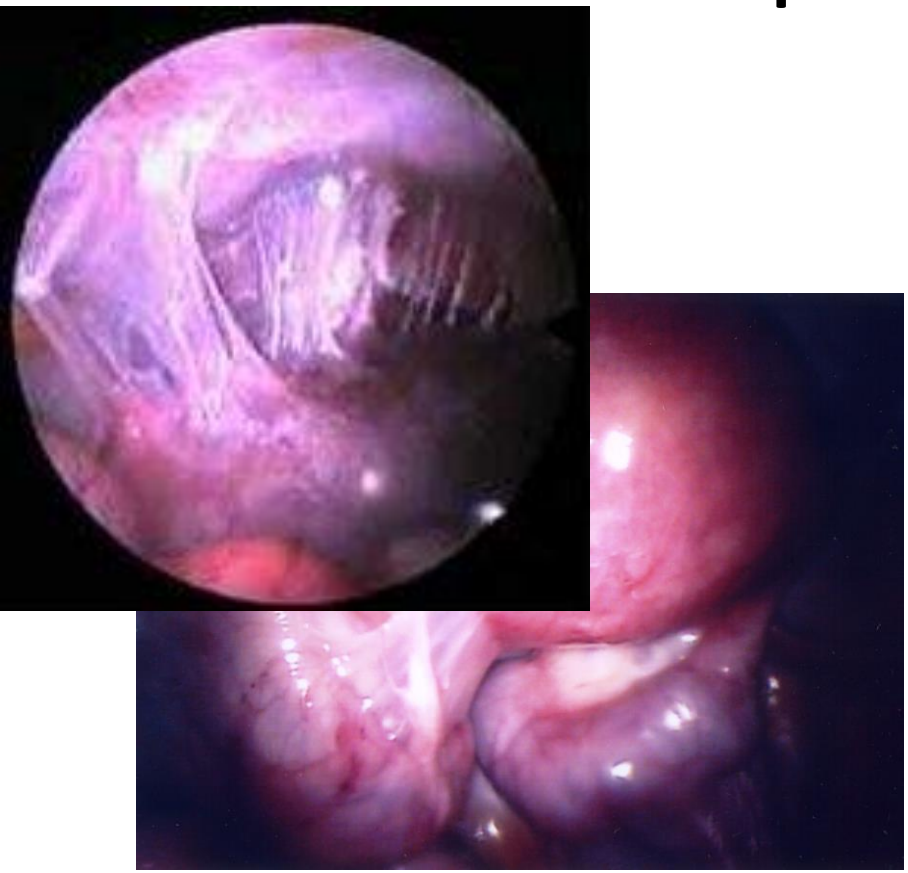
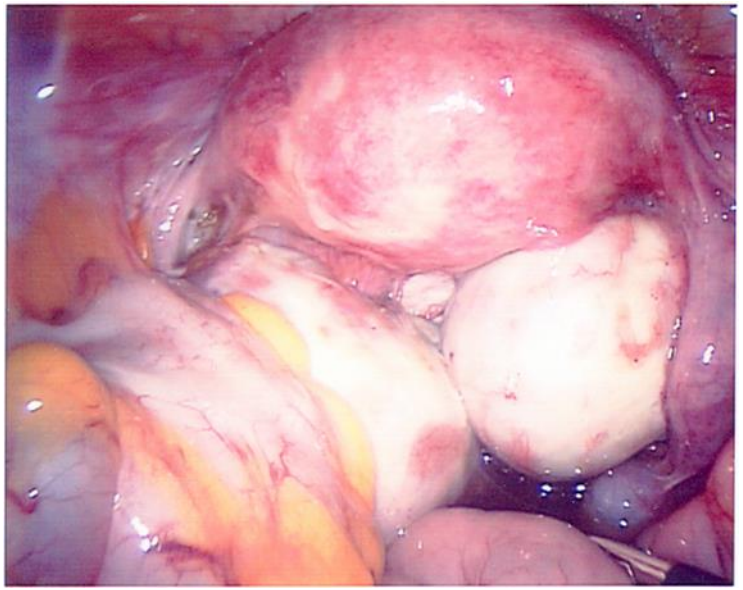


Laparoscopy





Summary of investigations

- Day 1 – 5
  - FSH, LH, Oestradiol
  - Ultrasound
- Day 7-10
  - HSG
  - HyCoSy
- Day 21 (or 7 days after ovulation)
  - Progesterone

Summary of investigations

- Rubella immunity
- Hepatitis B,C & HIV
- (cervical screening)
- Triple swabs

- Semen analysis

Treatment options

- Reassure and wait
- Ovulation induction
  - Anovulation
- Superovulation & intrauterine insemination
  - Only where vaginal intercourse not possible
  - No longer recommended for unexplained infertility/ mild male factor/ mild endometriosis

Ovulation induction

- Anovulation
  - Clomiphene
  - Letrozole
  - FSH
    - All achieve “normal” conception rate per month of appprox 15-20%
  - Laparoscopic ovarian diathermy
    - 70% ovulatory within 3 months

Treatment options

- IVF
  - tubal damage
  - severe male factor
  - severe endometriosis
  - unexplained infertility –

    if prolonged or older woman
  - failure of simple treatment

Eligibility

- No current CCG restrictions on
  - Ovulation induction
  - Fertility surgery
  - Cycle monitoring

Eligibility

- IVF
  - Age : 23-40
  - BMI: 20-30
  - Non smoker
  - No children in current or previous relationship
  - No sterilization either partner
  - Not poor ovarian reserve
    - AMH <5.4 and AFC <4

Eligibility

- Same sex couples & IVF
  - Female same sex
    - 6 cycles of self funded donor IUI
    - Costs of donor sperm to be met by couple
    - Legal parenthood
  - Male same sex
    - Egg donor
    - Surrogacy
    - Legal parenthood

Eligibility

- NWL CCG
  - 6 cycle IUI if appropriate
  - 1 fresh complete cycle
    - From stimulation to embryo transfer
    - Can be split for medical reasons
    - 1 frozen if embryos remain suitable for freezing

Eligibility

- CCG funding exlcudes
  - Assisted hatching
  - Embryo glue
  - Endometrial scratch
  - Embryoscope
  - IMSI & PICSI

Eligibility

- Imperial College NHS Trust
  - See all couples
  - Offer investigations
  - Offer treatment options
  - Offer private IVF & IUI as appropriate
    - Full range of tertiary options
    - All care at Hammersmith IVF

Management of infertility: expectation versus eligibility

Rehan Salim MD MRCOG

St Mary's & Hammersmith Hospital

Uterine Fibroids

Stephen Quinn MD BSc MRCOG
Consultant Obstetrician and Gynaecologist
Honorary Senior Clinical Lecturer, Imperial College London

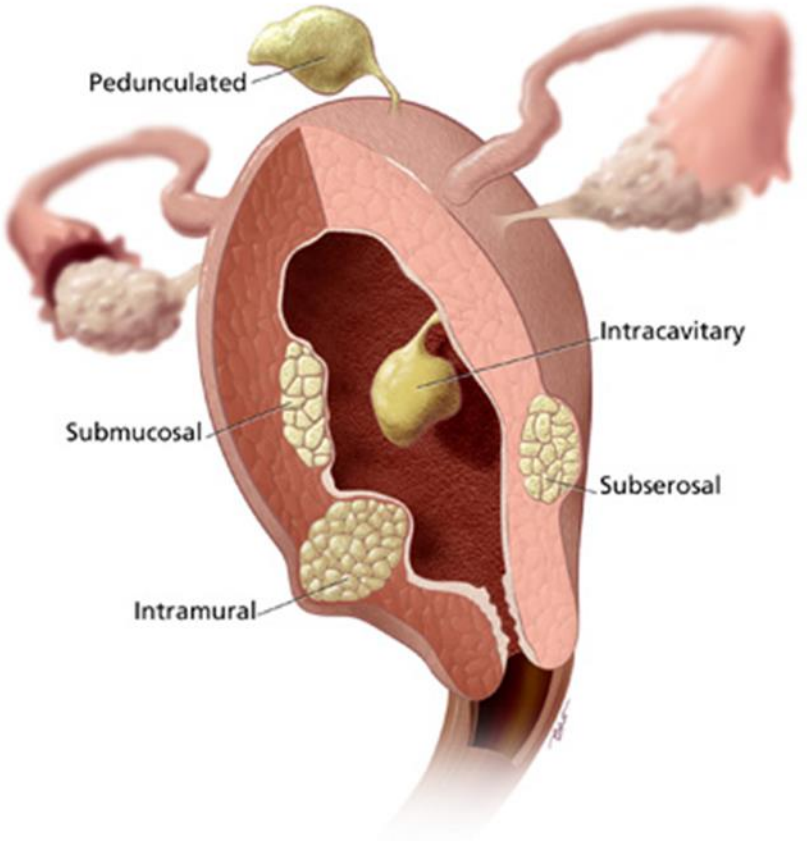
Learning Objectives

Understanding the different services offered by Imperial for fibroid management

- To understand the changes in management
- Understanding the conservative option
- PPwT for MRgFUS
- Fertility and fibroids - managing patient expectation

Uterine Fibroids

- **Benign** tumours of uterine muscle
- Present in 20-50% of women over 30 years
- Lead to symptoms in about 50%



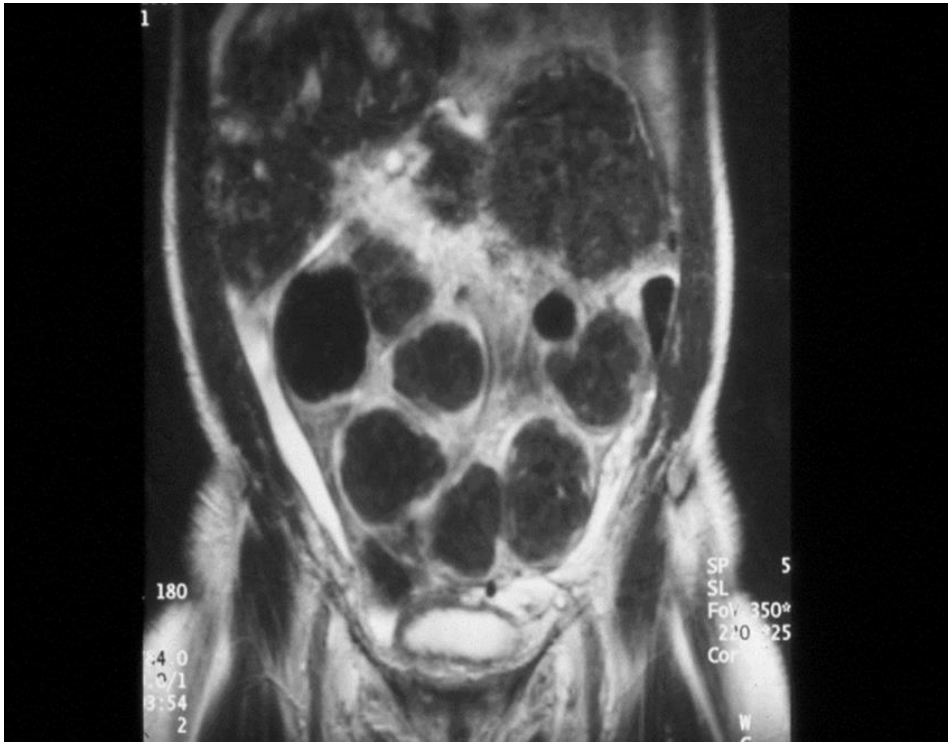
Main Issues:

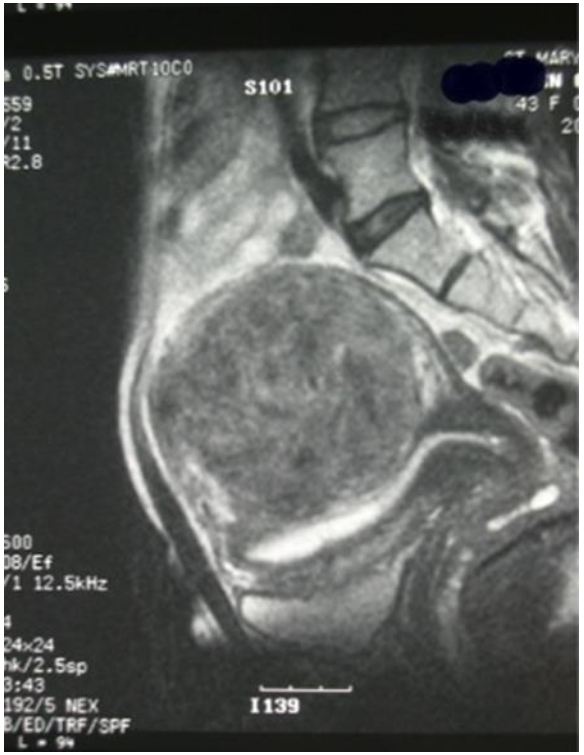
- Quality of life

- Fertility

- Cultural wishes

Different Subgroups of Fibroid Uterus





Quality of Life

- Period problems
  - Heavy bleeding (Menorrhagia)
  - Painful periods (Dymenorrhoea)
- Anaemia
- Pain and pressure symptoms
  - Bladder problems
    - Frequency and nocturia
    - Urgency
    - incontinence
  - Bowel problems (bloating, constipation)

- **Depression**

Reproductive dysfunction

- Infertility
- Early miscarriage
- Late miscarriage
- Premature birth
- Labour complications
- PPH

Other concerns

- Any large mass in the pelvis can increase the risk of a blood clot:
  - Pulmonary embolism (PE)
  - Deep vein thrombosis (DVT)

- These risks are increased further by age, weight, long-haul air travel, family history and oral contraceptive pill use

Medical management

- Tranexamic acid
- Mefanamic acid (reduces pain and bleeding)
- Norethisterone (reduces bleeding)
- Intra-uterine “Mirena Coil” (reduces pain and bleeding)
- Gonadotrophin releasing hormone agonists “Zoladex”
- **SPRMs** e.g. Ulipristal acetate (Esmya) 5mg od for up to 6 months

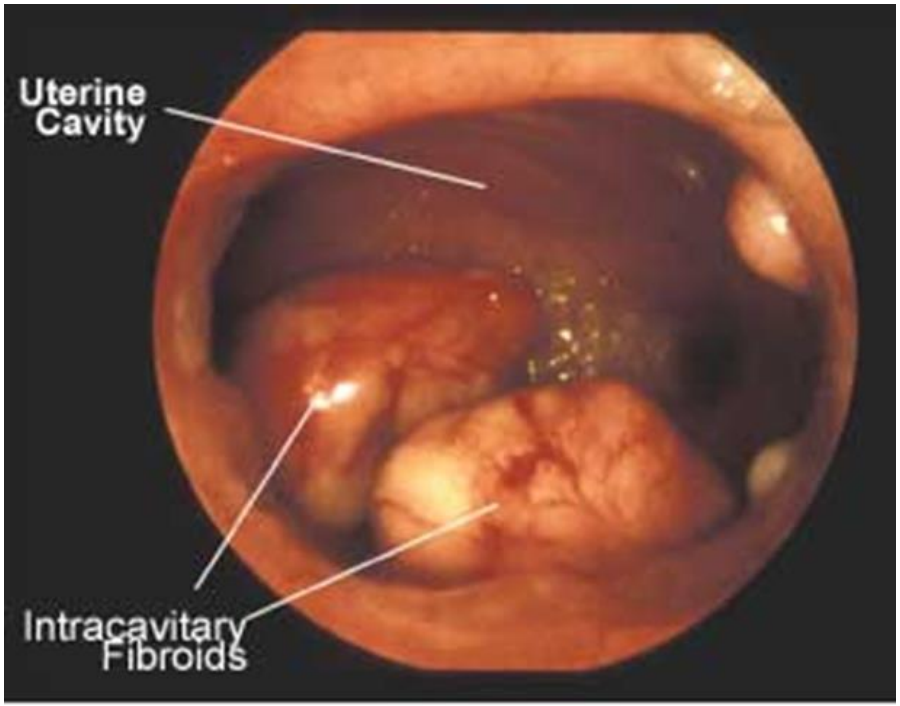
Fertility and fibroids - managing patient expectation

- ↑age ↑ fibroid size ↓fertility

- Fibroids are present in 5-10% of infertile patients, and may be the sole cause of infertility in 1-2.4%

- Distortion of the endometrial cavity→abnormal endometrial receptivity, hormonal milieu, and altered endometrial development

- Best evidence for improving IVF success TCRF or myomectomy
  - Casini et al. women who underwent myomectomy for resection of SM fibroids had ↑pregnancy rates when compared to patients with fibroids that did not undergo surgery (43.3% for operated vs 27.2% for un-operated)



View of uterus through a hysteroscope

Effect of Myomectomy on ART outcome

- ↑Fibroid size prior to ART → lower implantation rates

- IM fibroids > 50 mm, myomectomy before IVF ↑ pregnancy outcomes

- Bulletti et al. in 2004 compared 84 women who chose to undergo myomectomy before IVF with 84 women who started IVF but did not undergo surgery
  - The women who did undergo surgery had a 25% rate of delivery and a clinical pregnancy rate of 33%, compared to 12% and 15% in the nonsurgical group
  - This study suggested that myomectomy before ART is likely to improve pregnancy outcomes in infertile patients with SM fibroids, and with IM fibroids > 5 cm

UAE and Pregnancy

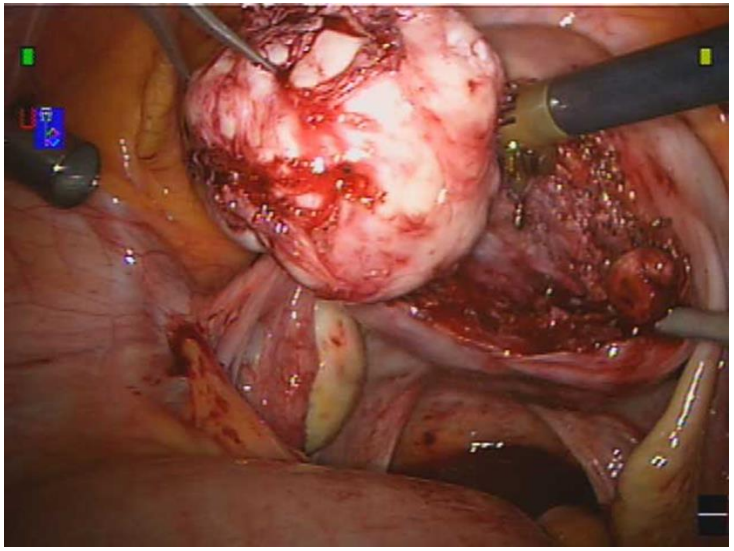
- Myomectomy appears to have a higher pregnancy and delivery rate than UAE or UFE

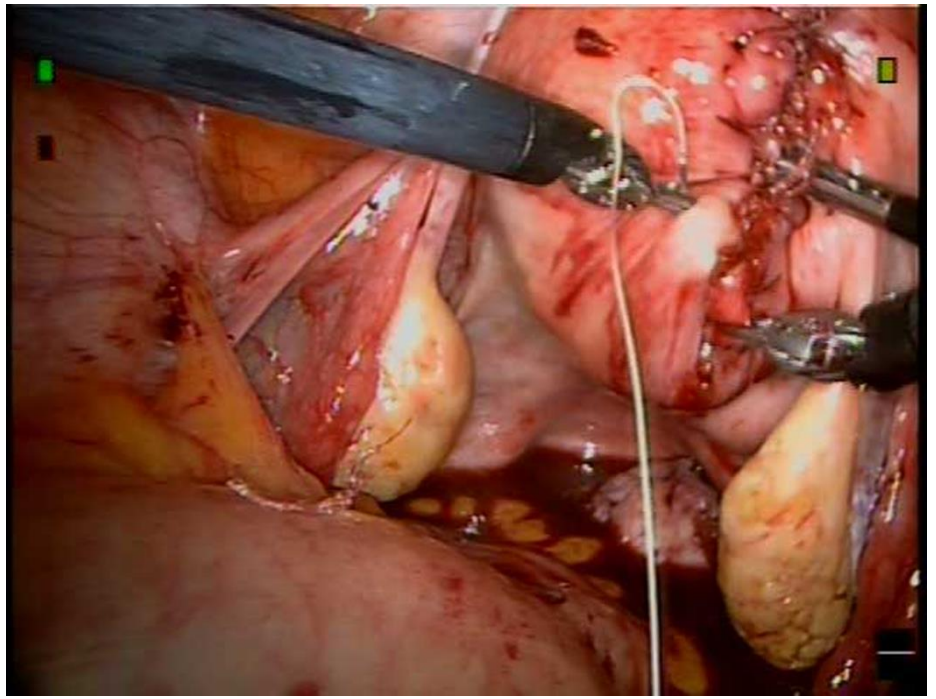
- A randomized trial of 121 women conducted by Mara et al. compared UFE to myomectomy
  - Two years after their procedures, 78% of the myomectomy group and 50% of the UFE group became pregnant
  - The delivery rate was 48% and 19% and the MC rate was 23% and 64%, for the myomectomy and UAE group, respectively

MRgFUS is fertility preserving, NOT fertility enhancing

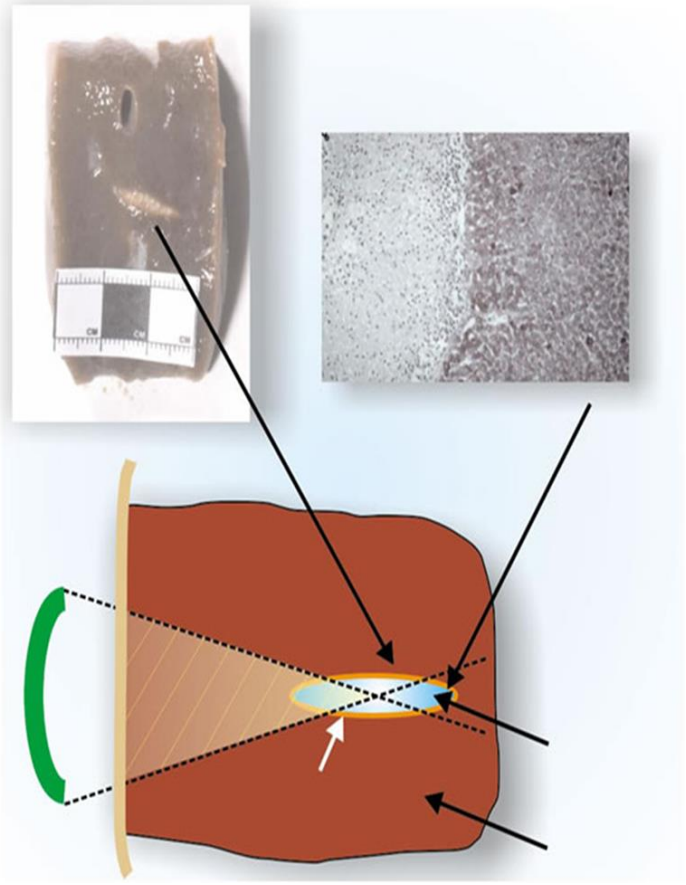
- Rabinovici et al. reported 54 pregnancies in 51 women after MRgFUS, with a mean time to conception of 8 months after procedure with a **41%** live birth rate
  - Of the women who conceived 28% had a spontaneous abortion, 64% delivered vaginally
  - Of the women who delivered, there were 6.7% (1 out of 15) preterm births, 2 cases of placenta previa (9%), and 93% term births

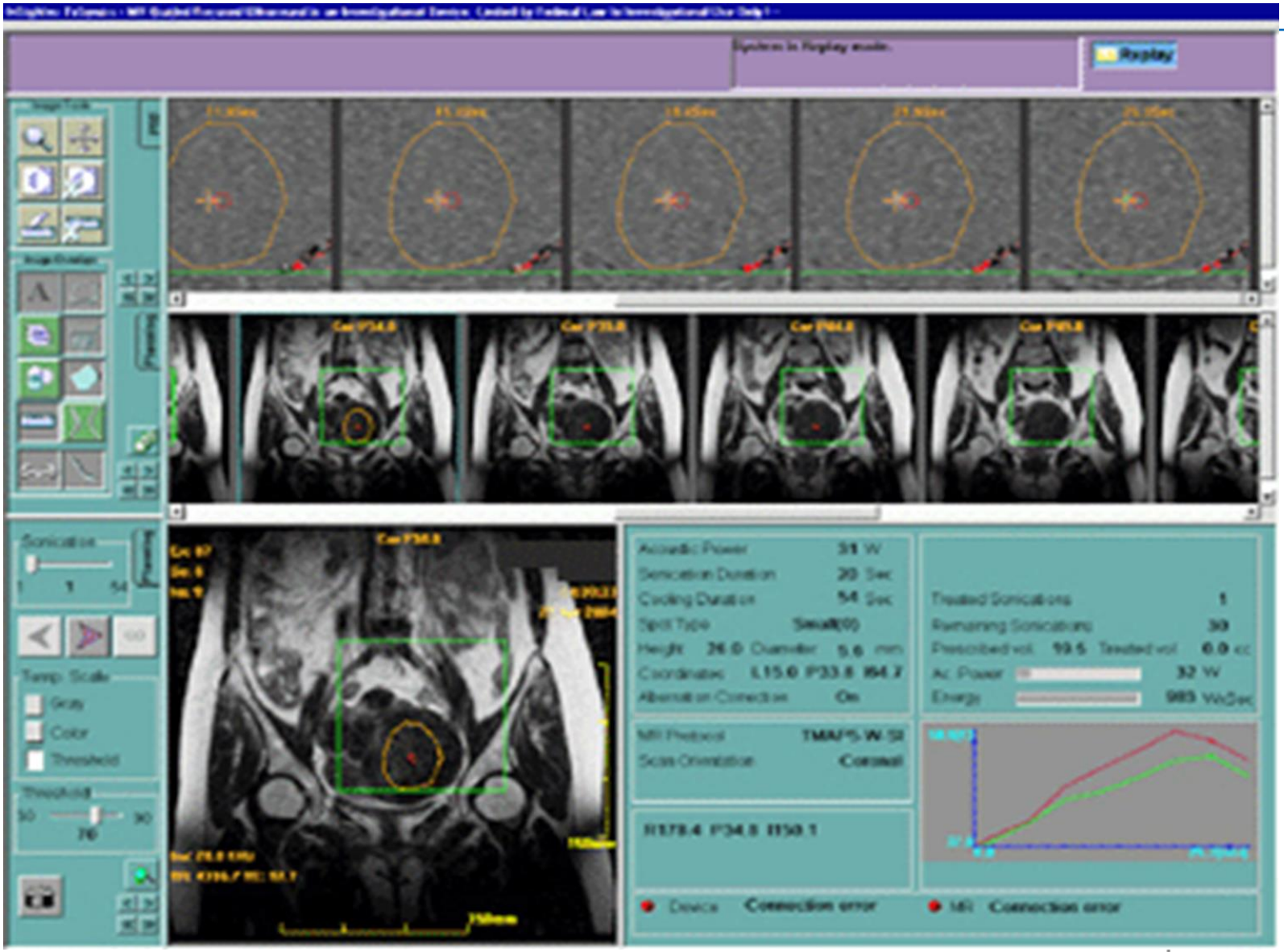
Laparoscopic Myomectomy

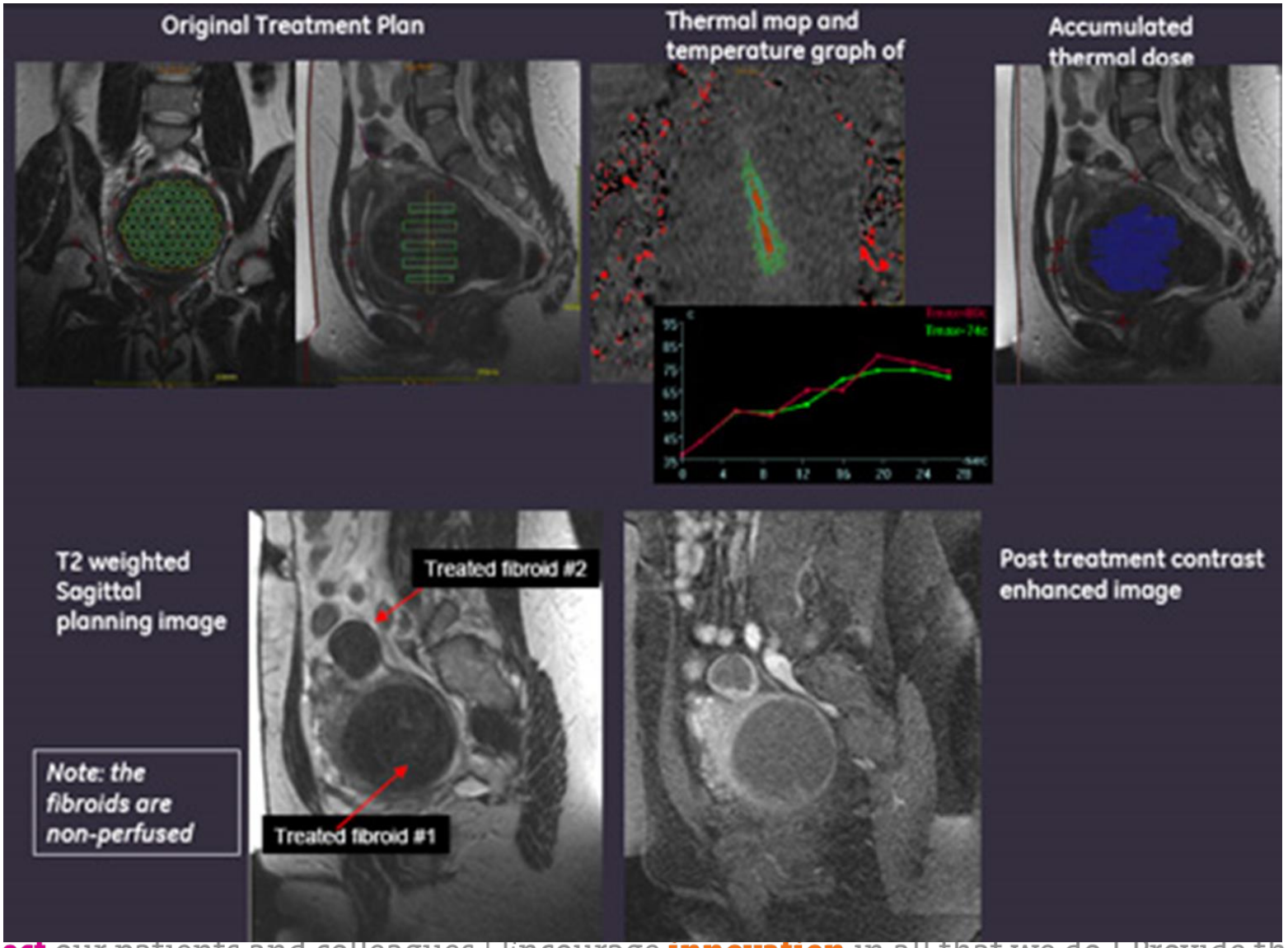




InSightec ExAblate 2000 Focused Ultrasound System




Replay
Connection error
Connection error


Original Treatment Plan
Thermal map and temperature graph of
Accumulated thermal dose
T2 weighted Sagittal planning image
Treated fibroid #2
Treated fibroid #1
Post treatment contrast enhanced image
Note: the fibroids are non-perfused

NHS
North West London Collaboration of Clinical Commissioning Groups

PPwT form – Magnetic Resonance Guided Focused Ultrasound Surgery (MRgFUS)
at St Mary's Hospital, Imperial College Healthcare Trust
(For symptomatic uterine fibroids)

This form is provided for secondary and specialist clinicians to register when a patient meets the North West London CCGs PPwT criteria

All completed forms are subject to validation. Any additional information or queries will be notified within 5 working days. Where the criteria are not met, funding may be considered via the IFR route if there are any clinically exceptional reasons.

TO REGISTER THIS REFERRAL email it to: ppwtnw.london@nhs.net only using your nhs.net email account.

PATIENT CONSENT

I confirm that this Planned procedure with Threshold (PPwT) Form has been discussed in full with the patient.

The patient is aware that they are consenting for the Individual Funding Request Team to access confidential clinical and patient identifiable information held by clinical staff involved in their care about them as a patient to enable full consideration of this funding request

YES ☐ NO ☒ [Please indicate] Date: 17/09/2015

Note for Applicants (GPs and Trust Clinicians)
Please note that the patient identifiable information will not be shared with any other organisation. To ensure confidentiality, patient's details e.g. NHS number will be removed and a unique identifier number will be assigned to all forms before these are reviewed by the clinical Triage. This information will only be used to answer queries from the GP applicant and GP surgery staff regarding this application. IFR team will retain this information in a secure environment to facilitate billing and monthly challenges only.

Applicant (GP / Trust Clinician) is requested to record patients consent within patient's individual health records.

Applicant Details			
Designation (Please mark one):	Trust Clinician ☒	☐ Other, please specify	
Name of Referrer	Dr Stephen Quinn	GP Practice Name	
Speciality	Gynaecology	CCG Name	NW Thames
Name of Trust	Imperial College NHS Healthcare Trust	GMC number of referrer	6028459
NHS net Email address	Gynaecologyadvice.imperial@nhs.net	Telephone	07813154904
Date of decision to treat	17/09/2015 (dd/mm/yyyy)		
Patient Details			
NHS NUMBER: xxxxxxxxxxxxx		**D.O.B. :** xxxxxxx	

Latest version of the form is available at: http://www.hounslowccg.nhs.uk/what-we-do/individual-funding-requests.aspx

Version 3.3 (March 2015)

NHS
North West London Collaboration of Clinical Commissioning Groups

THRESHOLDS FOR TREATMENT:
If there is clinical suspicion of malignancy, please use the cancer referral pathway.

ALL of the following criteria must be met.	
• The patient must have menstrual-related symptoms (heavy menstrual bleeding and dysmenorrhoea)	YES ☒ NO ☐
• The patient must have no more than 5 uterine fibroids	YES ☒ NO ☐
• The largest fibroid should be less or equal to 12cm in diameter	YES ☒ NO ☐
• The patient must have minimal pressure-related symptoms	YES ☒ NO ☐
• Be aged 45 years or over	YES ☒ NO ☐

The approval of this PPWT policy is subject to clinical triage. Supporting information such as a clinic letter will be required

Heavy bleeding despite TCRF and other medical treatments. For MRgFUS.

END OF FORM

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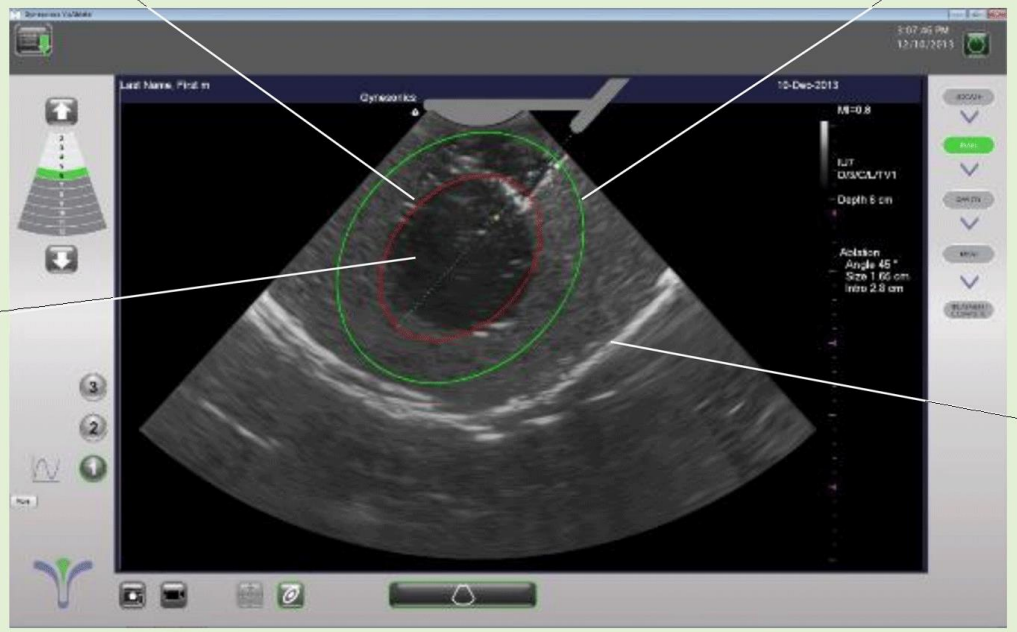
Heavy bleeding despite TCRF and other medical treatments. For MRgFUS.

Future developments

Red oval – Ablation Zone; shows where the ablation will occur

Green oval – Thermal Safety Border - scales with the Ablation Zone and demonstrates that tissue outside of the green oval is safe from ablation



Fibroid

Uterine serosa (delineates the boundary from the uterus to the peritoneal cavity)

highest
r success

H&F Community Gynaecology Service – 6 month update

Debbie Gould, Chief of Service
&
James McKean, Operational Support Manager

- The H&F Community Gynaecology Service is a continuation and expansion of the existing H&F specialist GP led pilot service.

- Imperial College Healthcare NHS Trust took over the running of the service in March 2015.

Clinicians

GPs with a specialist interest in Gynaecology

Dr Clare Jarman

Dr Kate Kelly

Dr Louise Price

Clinicians

Consultant Gynaecologists

Katy Clifford

Debbie Gould - Chief of Service

Deirdre Lyons - Clinical Lead for CGS

Vinita Nair

Stephen Quinn

Clinicians
Specialist Women's Health Physiotherapists

- Christine Barton
- Lucia Berry
- Jodie Hayward

Sites

- H&F North Clinic – Friday AM

  Parkview Centre for Health and Wellbeing

  Bloemfontein Road, W12 7FG

- H&F South Clinic – Monday AM & Tuesday AM & PM

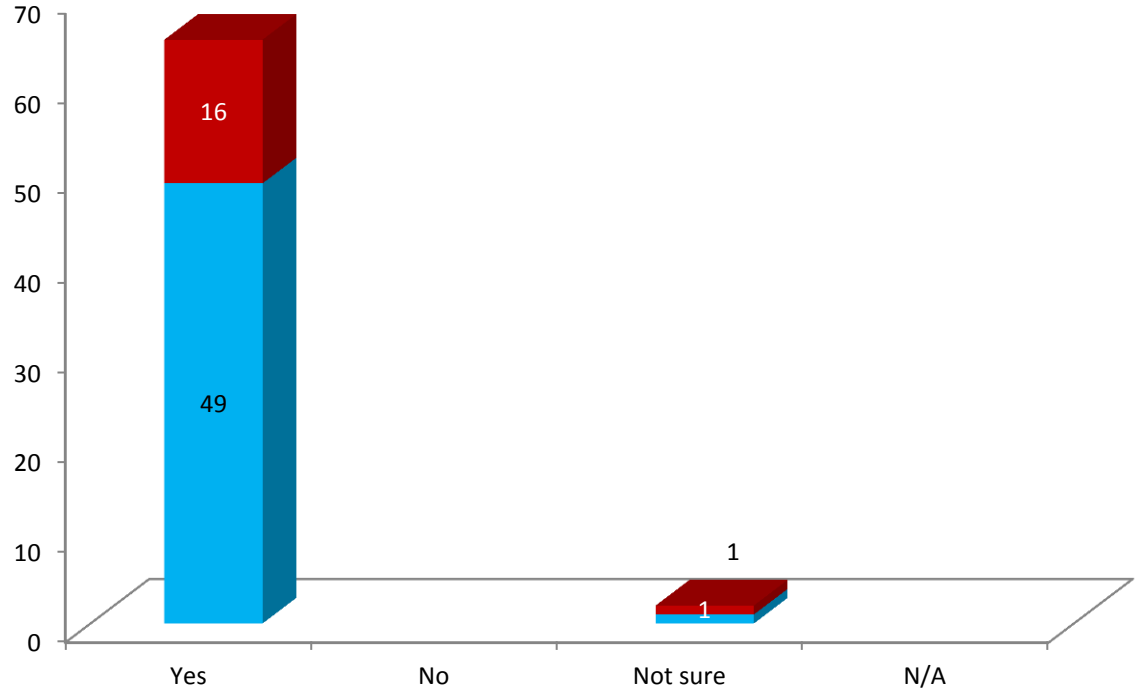
  Pilot Wing, Charing Cross Hospital

  Fulham Palace Road, W6 8RF

Referral to Treatment (RTT)

- Hammersmith and Fulham CCG are monitoring our performance against a six week RTT target.
- Patients should be appointed within 4 weeks.
- Most patients seen in the community will only need to attend a single appointment.

Patient feedback – very positive



SystmOne

- The Patient Administration System (PAS) we are using is SystmOne.
- Closer links between ourselves and GPs, leading to better patient pathways.
- We will shortly be moving to an E-Referral system – quicker for all of us.

Numbers

- **908 new patients / 610 follow up patients.**
- **48 patients seen per week (33 Gynae + 15 Physio).**
- **2500 patients per year.**

Any questions?