



The Leeds  
Teaching Hospitals  
NHS Trust

# Individuals with fertility problems: Primary care assessment and advice Local referral pathways



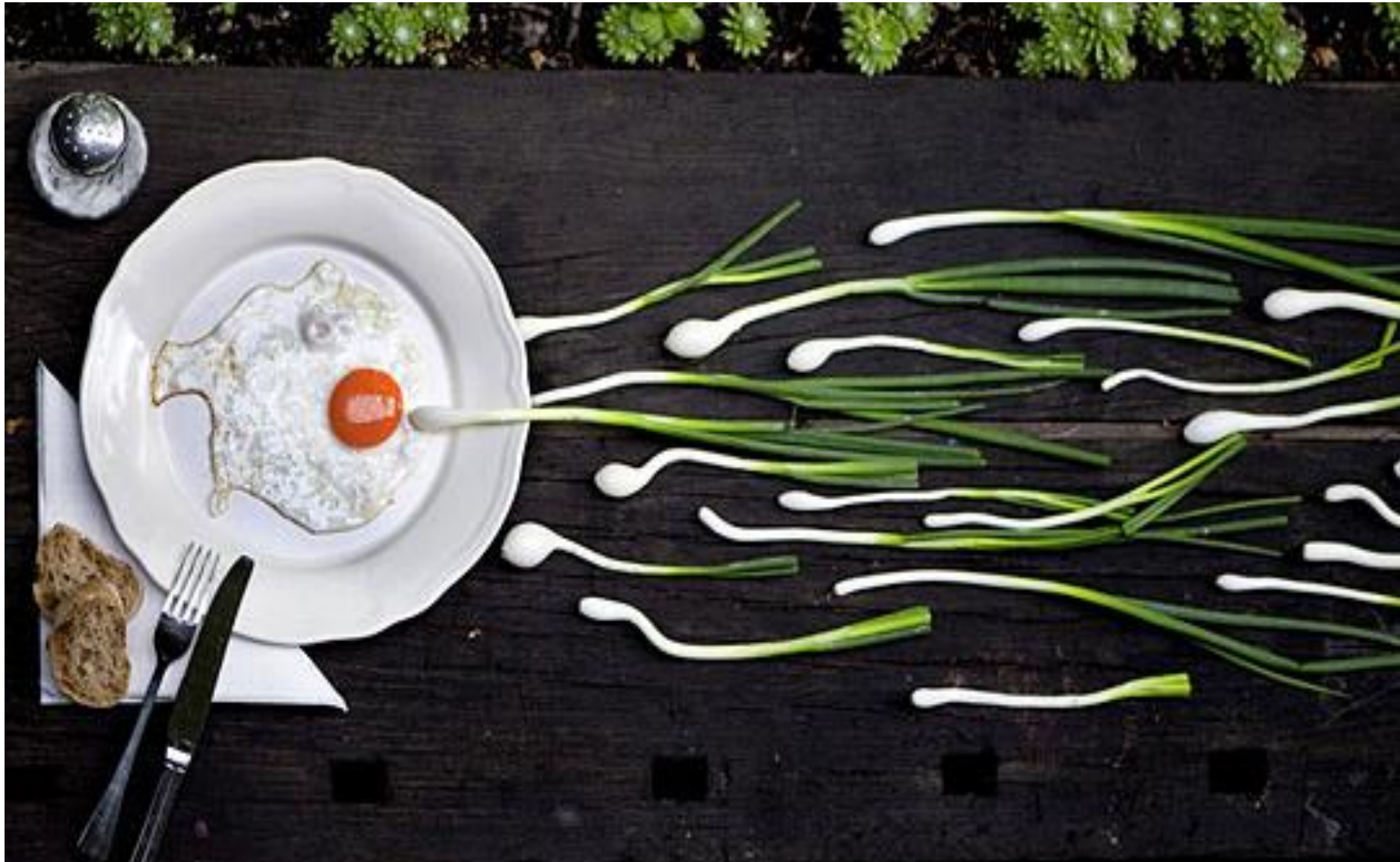
July<sup>2nd</sup> 2019 Vale of York Protected learning time event  
Dr Catherine Hayden MB ChB, MD, FRCOG  
Consultant gynaecologist and fertility specialist

# THE BIOLOGICAL URGE TO REPRODUCE





# WHAT DOES IT TAKE?



# HOW TO MAKE IT HAPPEN?



# EMBRYO LOSS ICEBERG



Live-births  
(30%)

Miscarriage (10%)

Post-implantation loss  
(30%)

Pre-implantation loss (30%)

Conceptions



(Macklon et al, Hum Reprod Update, 2002)

# NATURAL CHANCES OF CONCEPTION OR NOT?

12 MONTHS

85%

6 MONTHS

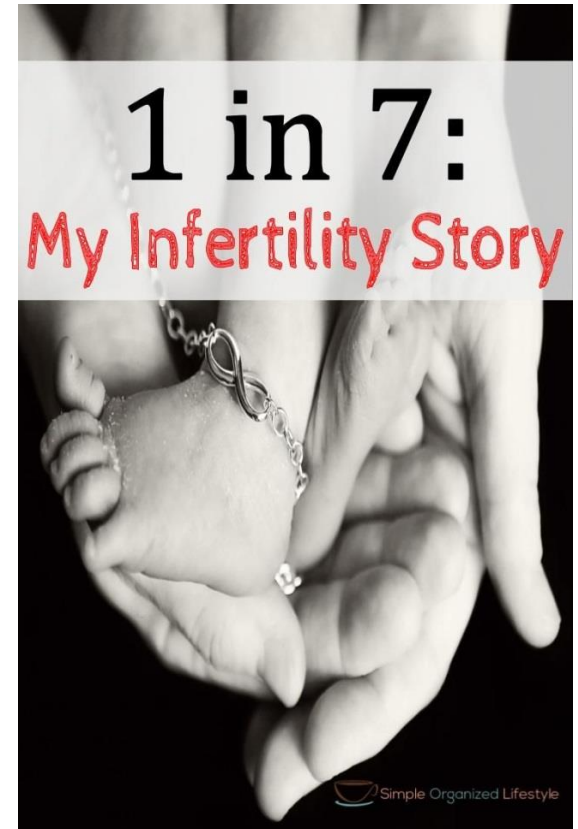
70%

3 MONTHS

40%

1 MONTHS

20%



# OVERVIEW

- Definition of infertility
- Causes of infertility
- The 10 minute consultation – what to advice?
- Investigations in primary care – which tests?
- Local referral pathways – when and where to refer?
- Funding
- Leeds Fertility



# DEFINITION OF INFERTILITY

- A disease characterised by the failure to establish a clinical pregnancy after 12 months of regular unprotected intercourse or
- Due to an impairment of a person's capacity to reproduce either as an individual or with his / her partner
- **PRIMARY:** never had a clinical pregnancy
- **SECONDARY:** delay conceiving again

ASRM PAGES

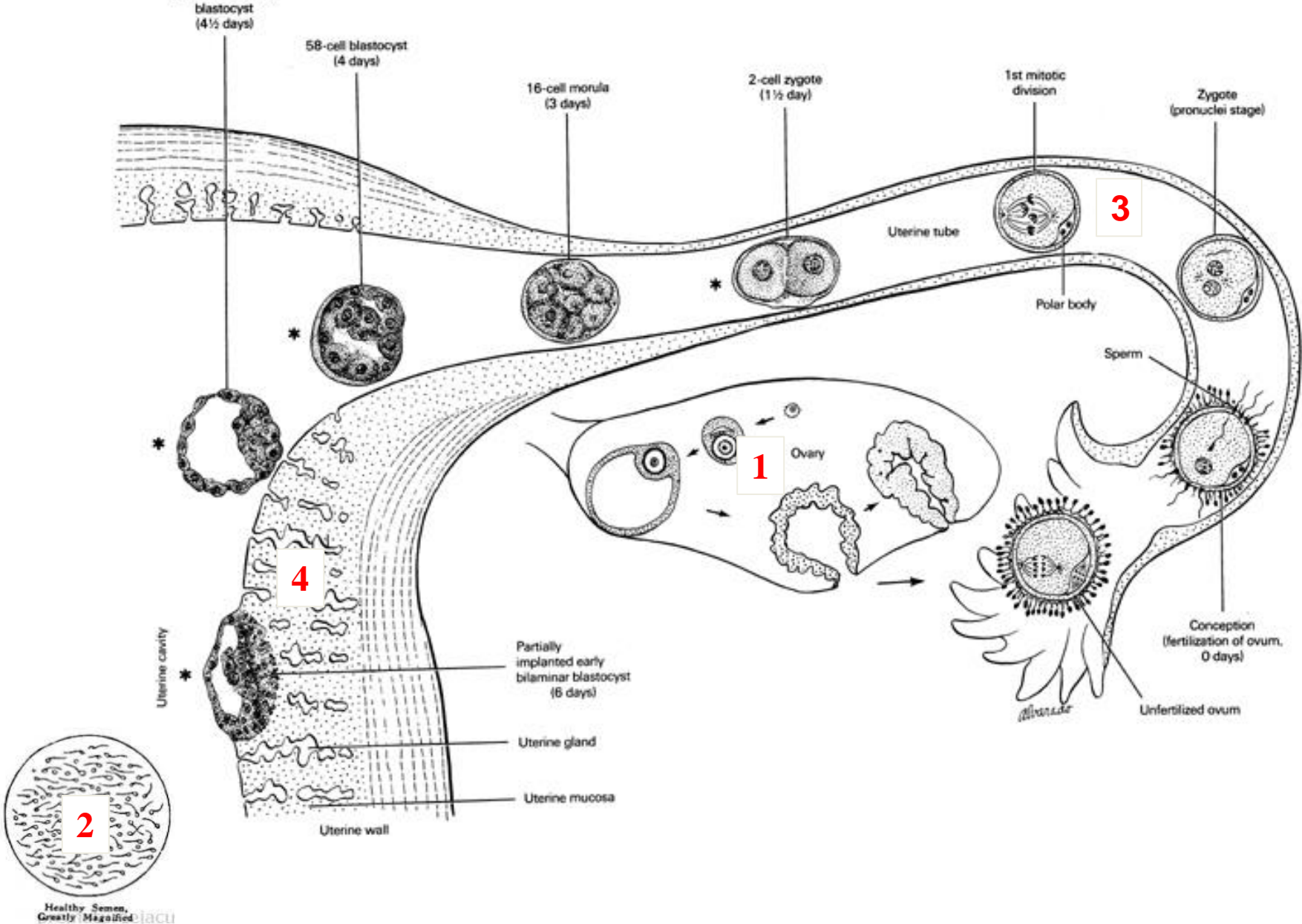
**The International Glossary on  
Infertility and Fertility Care, 2017**

Fernando Zegers-Hochschild,<sup>a</sup> G. David Adamson,<sup>b</sup> Silke Dyer,<sup>c</sup> Catherine Racovsky,<sup>d</sup> Jacques de Mouzon,<sup>e</sup> Rebecca Sokol,<sup>f</sup> Laura Rienzi,<sup>g</sup> Arne Sunde,<sup>h</sup> Lone Schmidt,<sup>i</sup> Ian D. Cooke,<sup>j</sup> Joe Leigh Simpson,<sup>k</sup> and Sheryl van der Poel<sup>l</sup>

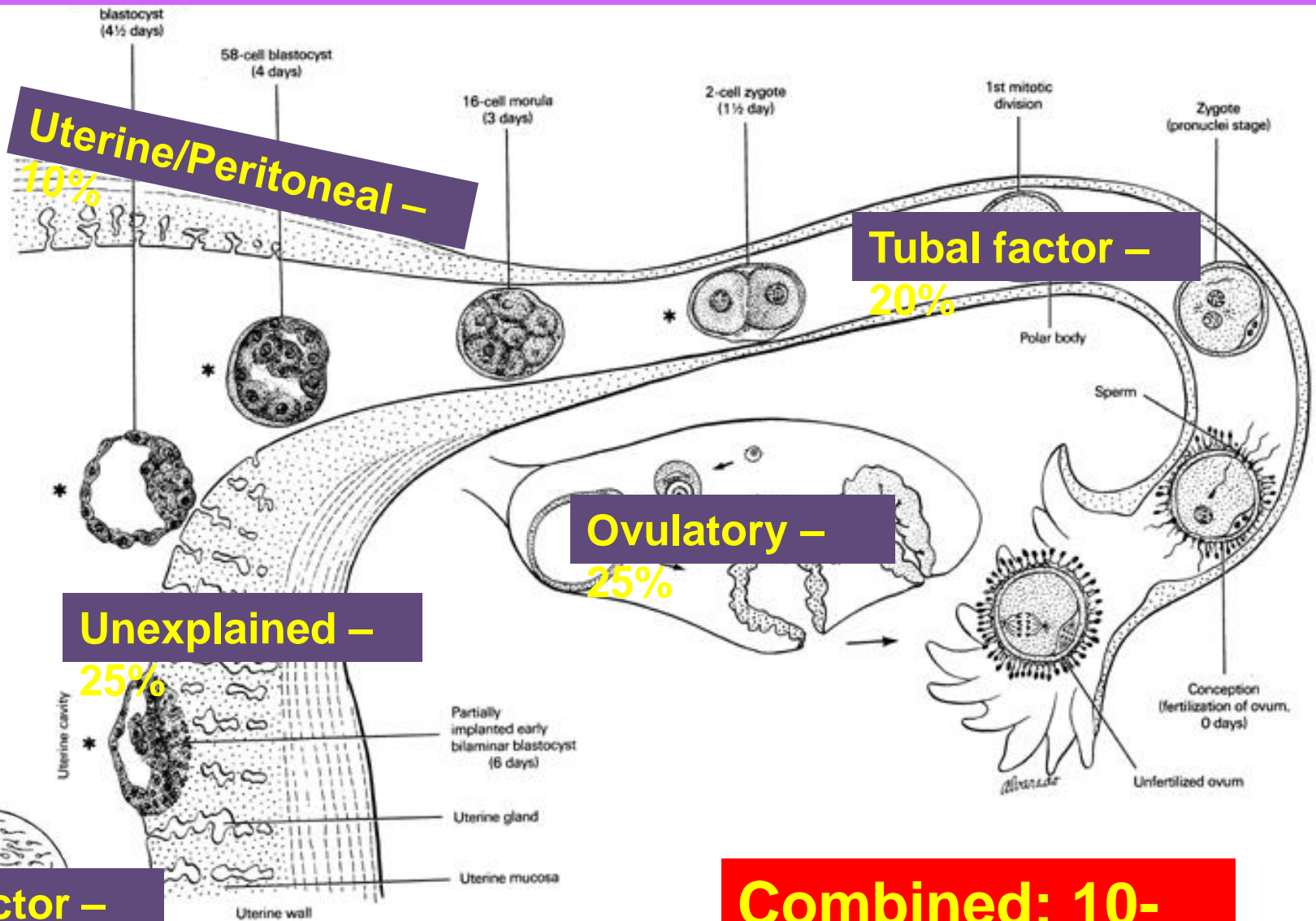




# MAIN CAUSES OF INFERTILITY



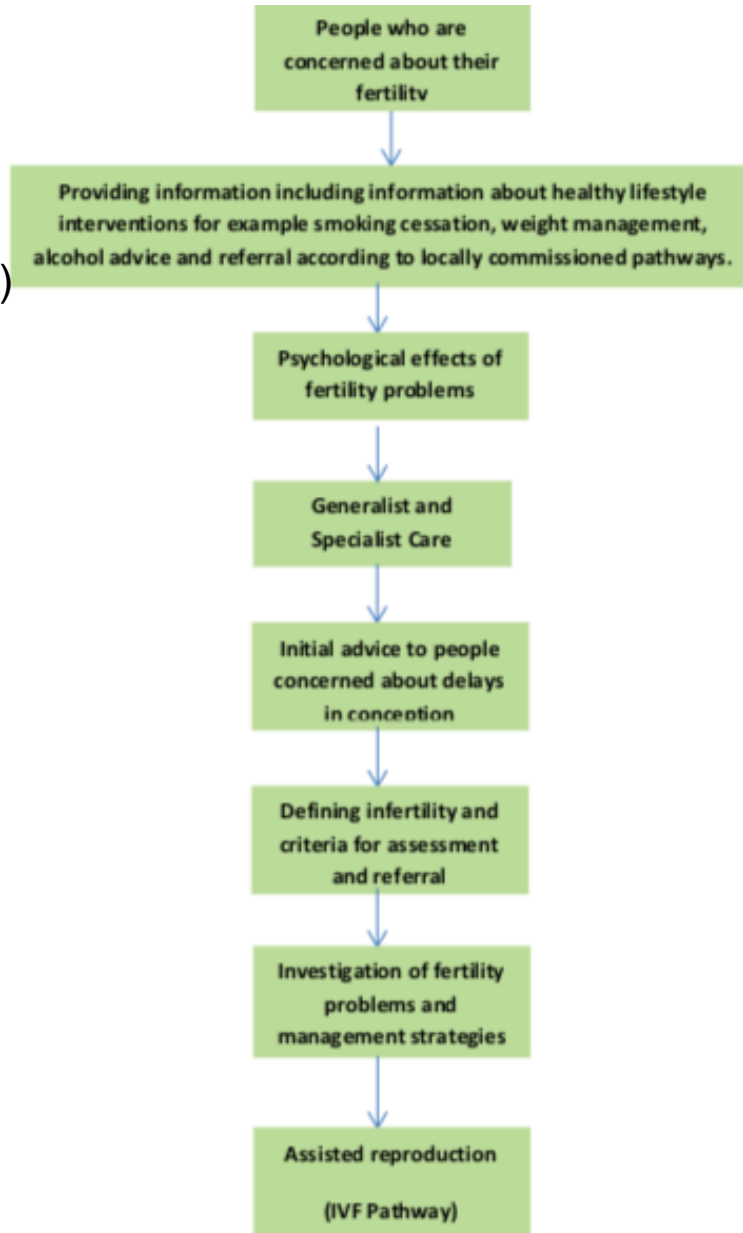
# MAIN CAUSES OF INFERTILITY



Male factor –  
30%

Combined: 10-  
40%

# PRIMARY CARE ROLE & PATHWAY



NICE Public Health  
Guidance  
(49,26, 48, 27, 53, 11, 24)

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Access to  
infertility  
treatment

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Commissioning  
Policy Document  
Yorkshire and  
Humber

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June 2019-April 2022

(NHS Vale of York  
adapted on CCG  
website Feb 2018)

# INITIAL CONSULTATION AND ADVICE



Both partners are affected by decisions surrounding investigation and treatment

Partner – male or female?

Duration of difficulty conceiving

Frequency of SI: every 2-3 days





# HISTORY

- Age
- Previous pregnancies
- Menstrual cycle details
- Gynaecological symptoms
- Past STIs and PIDs
- Medical illness and surgeries
- BMI



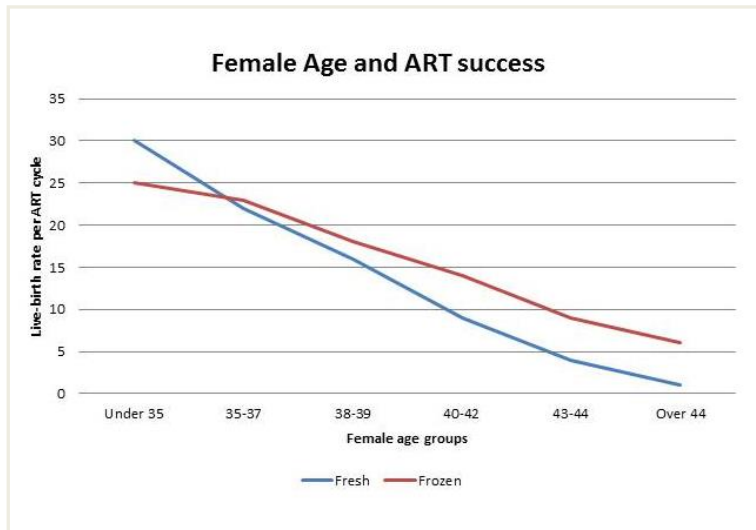
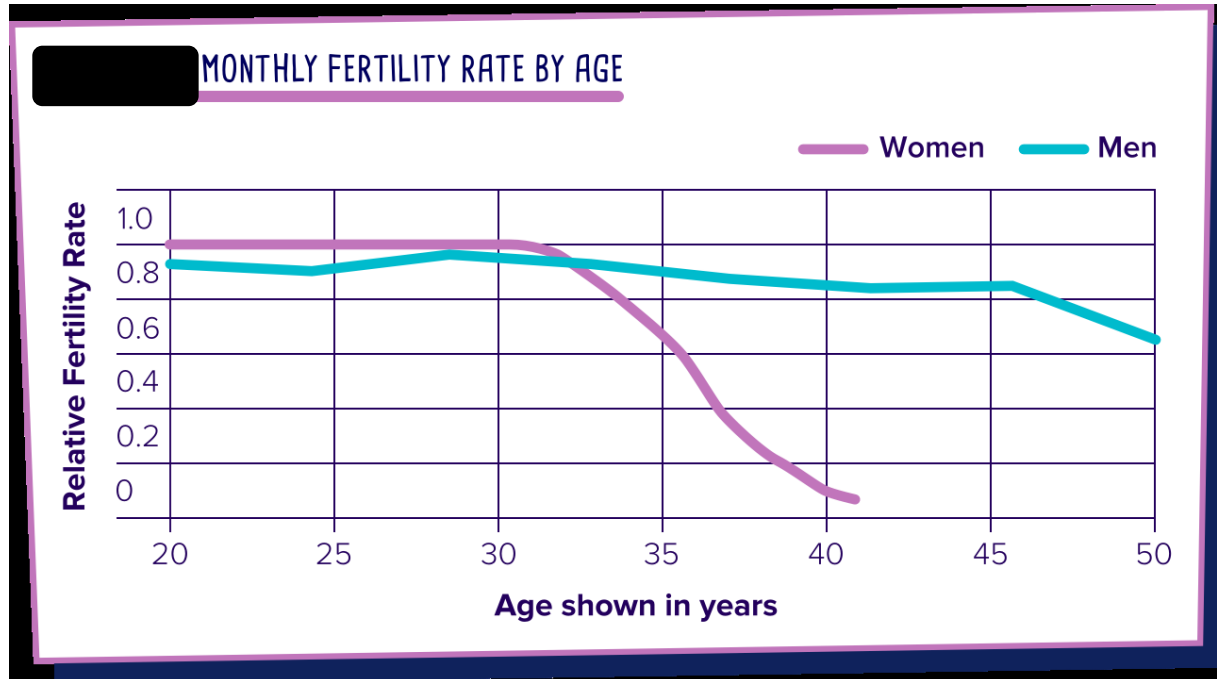
- Age
- Previous pregnancies
- Medical illness and surgeries
- Past STIs
- Steroid supplements and protein shakes
- BMI



- Occupation
- Alcohol
- Stress

- Smoking
- Caffeinated beverages
- Exercise

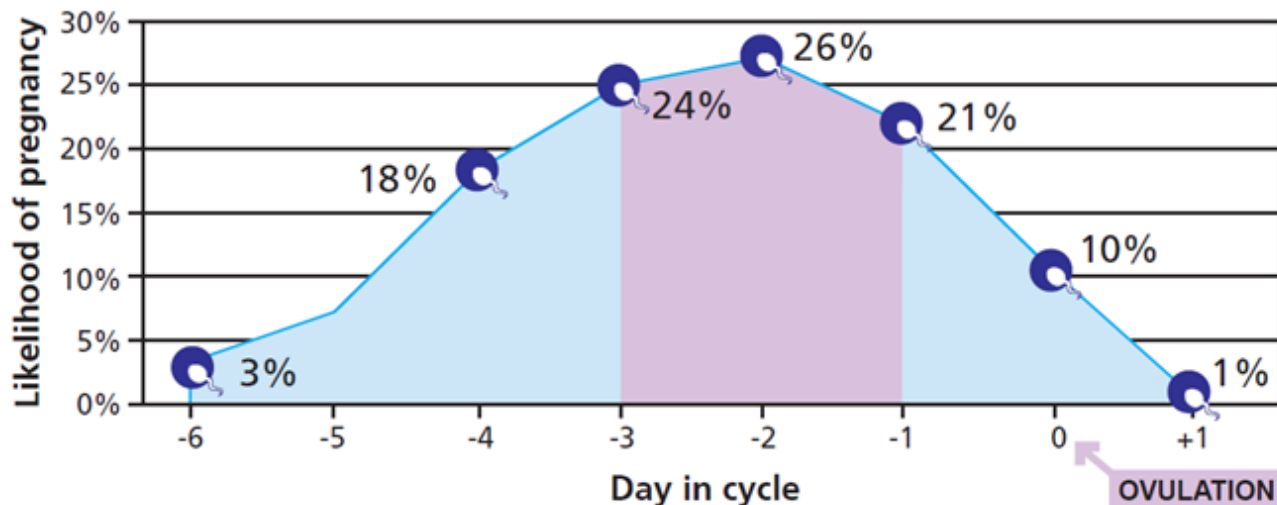
# AGE



# TIMING OF SEXUAL INTERCOURSE

- **NICE:** Timed intercourse is not beneficial, does not increase chance of a natural conception, but can cause stress
- Sexual intercourse every 2-3 days
- Men: Even ejaculation 8 times/week does not reduce fertility

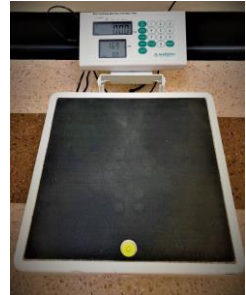
Days in the cycle with the highest chance of getting pregnant



# LIFESTYLE

- **Weight**

- Under / over weight female reduces chance of spontaneous conception and IVF success
- Obstetric complications rise
- NHS funding for BMI 19-30



- **Smoking**

- Toxic to eggs and sperm
- Passive smoking impact similar
- Flavoured e-cigs linked to sperm damage

TRYING FOR A BABY?  
THEN SMOKING  
IS A BIG  
**NO!**



- **Alcohol**

- CMO guide to abstain although evidence of harm from light intake is lacking (<6U /w ; avoid binge)

- **Caffeine**

- Inconsistent association with fertility problems but high intake linked to reduced IVF success





# FOLIC ACID

To reduce the risk of neural tube defects:

400 mcg per day – 3 months prior to conception till 12 weeks

5 mg per day till 12 weeks

BMI > 30

Coeliac disease

Diabetes Mellitus

Anti-epileptic medications,

Personal or family history or

previous baby with NTD

5 mg throughout pregnancy

Sickle cell disease

Thalassemia

Thalassemia trait



# VITAMIN D

- **Male mice bred to lack vitamin D receptors had lower sperm counts & the females had abnormal ovary function.**
- **Women: balance sex hormones & regulate menstrual cycle**
- **Men: increase sperm quality and testosterone levels**
- **Lack of vitamin D is linked to lower birth rates after fertility treatment**



Jul 21 2016



## BFS statement on new guidance on vitamin D supplementation

Today Public Health England (PHE) published new advice on vitamin D supplementation. This advice is based on the recommendations of the Scientific Advisory Committee on Nutrition (SACN) following its review of the evidence on vitamin D and health.

There has been increasing information in recent years about the important role of vitamin D for healthy reproduction. The new guidance from PHE indicates that the general UK population (aged 4y and above) require a daily intake 10 µg/d (400 IU/d) and this includes pregnant and lactating women. It is therefore very important that women attending fertility clinics should be advised to take preconception vitamin D supplements alongside folic acid. Consideration should also be taken for the formal measurement of vitamin D levels, especially in high risk groups.

### Recent

→ BFS Chair responds to Daily Mail investigation into gender selection

8th Oct 2018

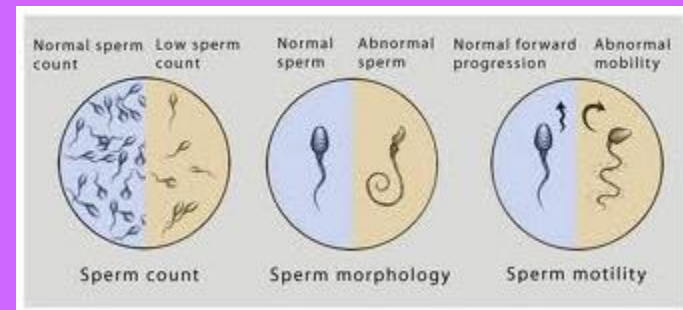
# INITIAL WORK-UP



# MALE WORK-UP

- Early morning urine sample for Chlamydia and Gonococcus

- Volume  $\geq 1.5$  ml
- pH  $\geq 7.2$
- Concentration  $\geq 15$  million / ml
- Total sperm number  $\geq 39$  million per ejaculate
- Total motility  $\geq 40\%$
- Progressive motility  $\geq 32\%$
- Vitality  $\geq 58\%$
- Morphology  $\geq 4\%$



## SEMEN ANALYSIS



# MALE WORK-UP

- Early morning urine sample for Chlamydia and Gonorrhea

- Volume  $\geq 1.5$  ml
- pH  $\geq 7.2$
- Concentration  $\geq 15$  million/ml
- Total sperm count  $\geq 39$  million per ejaculate
- Total motile sperm count  $\geq 26$  million per ejaculate

Confirmatory semen analysis in 3 months

Exception: azoospermia or severe oligozoospermia

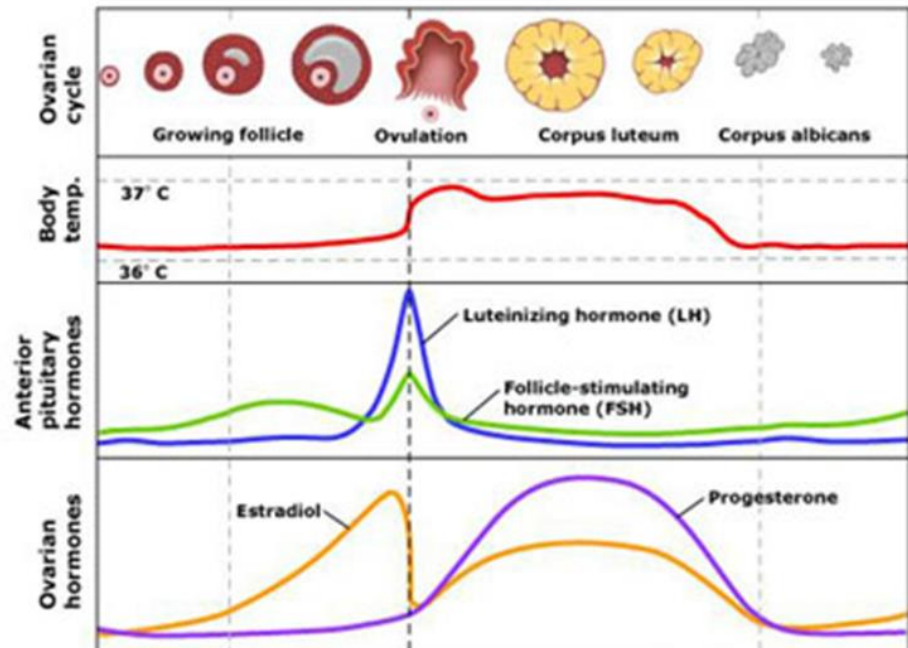
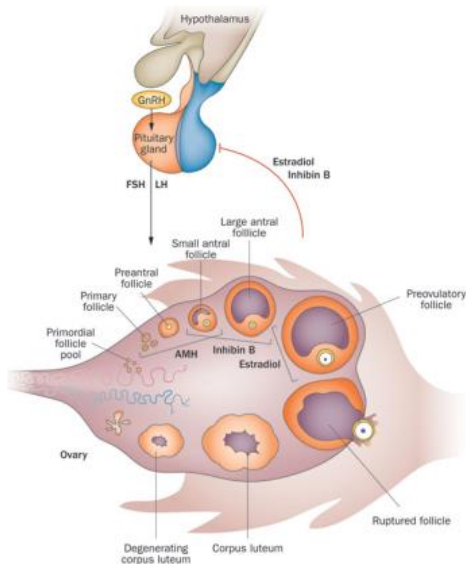
- Morphology  $\geq 4\%$



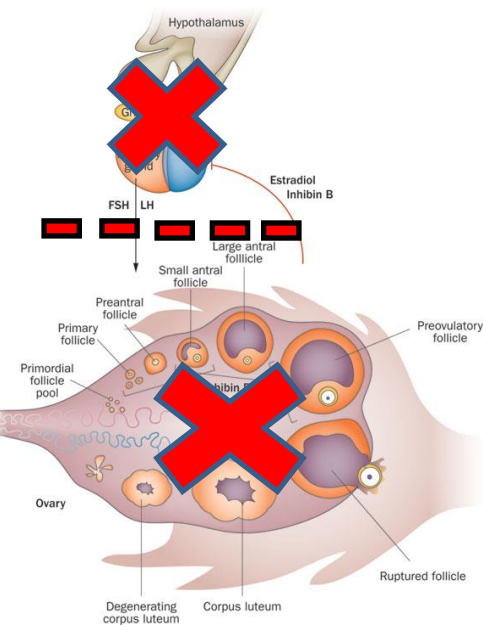
## SEMEN ANALYSIS

# FEMALE WORK-UP

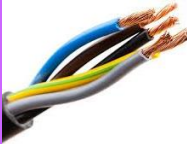
- FSH, LH, Oestradiol (Day 1-5 if regular cycles & random if oligo or amenorrhoea)
- TSH +/- T4
- Serum prolactin, Testosterone/SHBG & HbA1C  
ONLY IF oligomenorrhoea (>35 days) or amenorrhoea
- Serum progesterone (26-35d cycles): 7d before the next period



# OVULATORY DYSFUNCTION



- Group I: hypothalamic pituitary failure (hypogonadotropic hypogonadism)
- Group II: hypothalamic-pituitary-ovarian dysfunction (Polycystic ovary syndrome)
- Group III: ovarian failure

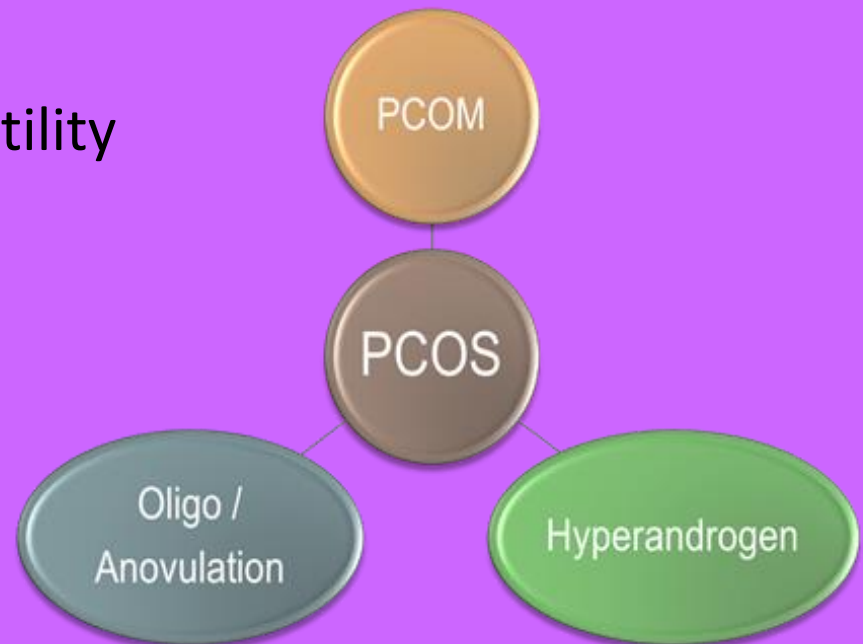
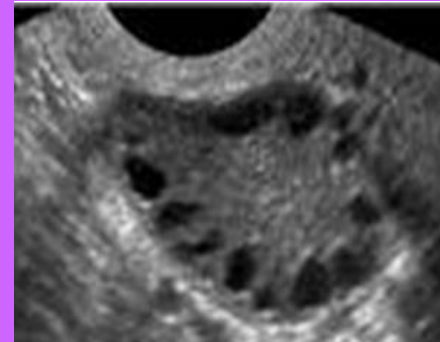


## Group I

FSH/LH	Low / normal
Oestradiol	Low

# POLYCYSTIC OVARY SYNDROME (PCOS)

- Commonest endocrine condition in women
- 10-15% prevalence
- PCOM – 33% of women
- 80% overweight or obese
- 5-10% weight loss restores fertility



# FEMALE WORK-UP

- FBC
- Vitamin D
- Rubella antibodies
- Chlamydia antibodies

- LFT, U&E, HbA1C: co-existing medical disease or risk of occult DM
- HIV, Hepatitis B & C and Syphilis – positive history or high risk

- Swabs for chlamydia and gonococcus
- Cervical smears

- Pelvic scan – pelvic pathology and AFC





# NICE GUIDELINES

- A woman of reproductive age who has **not conceived after 1 year** of unprotected vaginal sexual intercourse, in the absence of any known cause of infertility, should be offered further clinical assessment and investigation along with her partner
- Offer an early referral
  - Women aged  $\geq 36$  years
  - Known clinical cause for infertility
  - History of predisposing factors for infertility
  - Before interventions that could lead to infertility
  - Unable or would find it difficult to have vaginal intercourse



# Funding

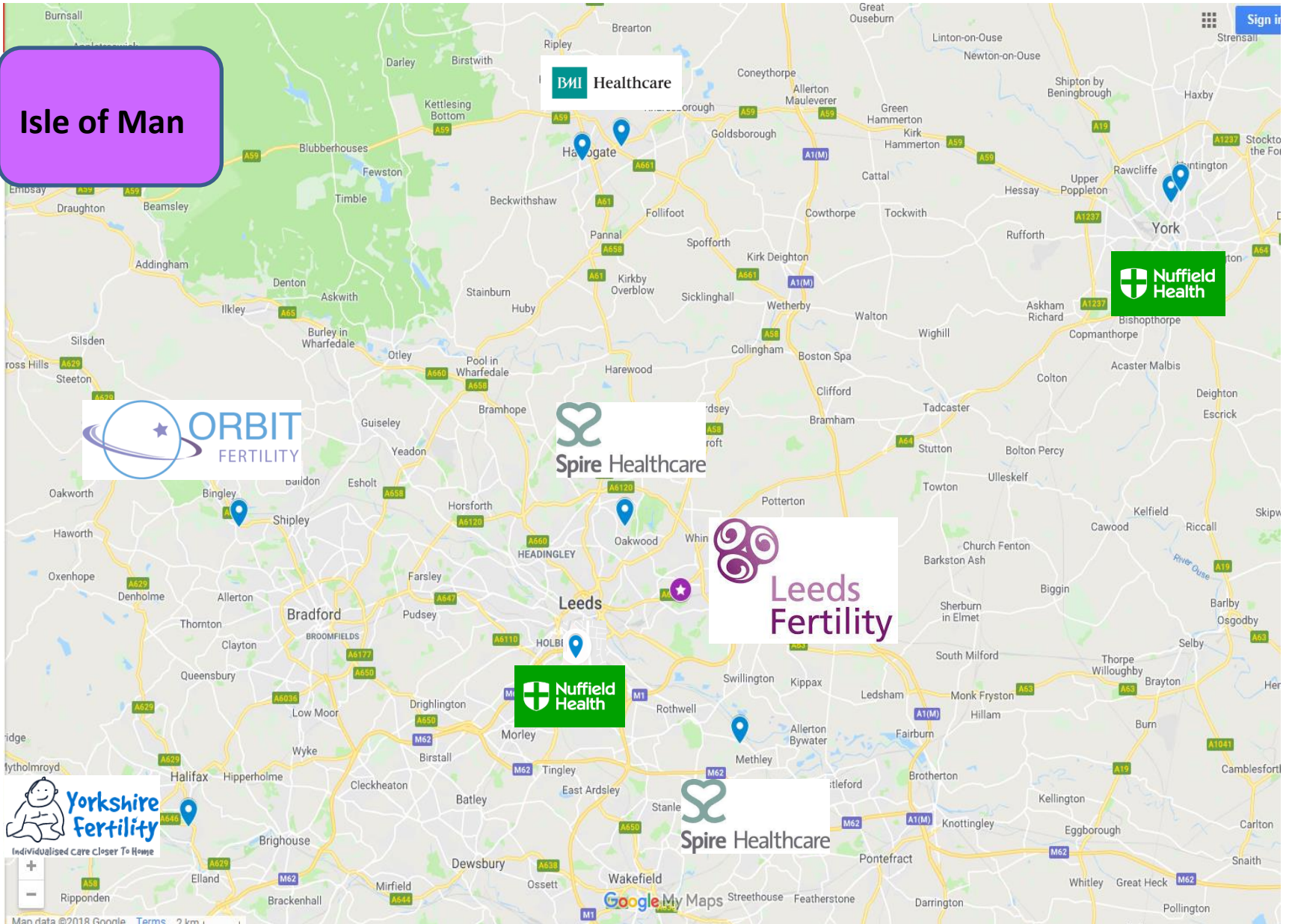
- Yorks and Humber Access Policy
  - Shared Commissioning Policy document updated June 2019 informs CCGs **who is eligible** for specialist fertility services **not how many cycles** of treatment are to be paid for (local decisions)
  - **New** equitable criteria include **same sex** partners from the start (DIUI, then DIVF if needed), **transgender couples**
  - Demonstration of smoke-free status  $x > 3/12$
  - **New** rules for overseas **visitors**: infertility **investigations not covered** (nor treatment)

# Funding VoY

- Feb 2018 updated in line with Yorks and Humber (*expect summer 2019 revision*)
  - After **2y trying** together: **One cycle** (stimulation to egg harvest and transfer of all resulting good embryos until livebirth or exhausted – likely max 4 attempts)
  - **23-42y** 0 days, stable **cohabiting** couple >2y, no living child incl adopted
  - **BMI ≤ 29.0** x 6/12, both **non-smokers** 6/12 confirmed by CO test <5
  - **ovarian reserve in 40-42y olds must be satisfactory**
    - FSH <9IU/l, or AFC >4, or AMH <5pmol/l
  - **No previous NHS-funded IVF** in either partner

# LEEDS FERTILITY HUB

Isle of Man



Individualised care Closer To Home



# LEEDS FERTILITY



Many faces ... one amazing team



- Multi-disciplinary team of 5 reproductive medicine sub-specialists, a consultant andrologist, Scientists, Fertility Nurses, Embryologists, Sonographers and dedicated specialist fertility counsellors, and admin support team

- **One of the largest & comprehensive fertility services in the UK**
  - OI, IUI, IVF, ICSI, FET & SSR
  - Donation of eggs, sperm and embryos
  - Surgery: fibroids, ovarian cysts, endometriosis & tubal disease
  - Fertility preservation (men, women & trans-community)
  - Pre-implantation genetic Testing
  - Surrogacy
  - Outpatient Hysteroscopy
  - 2-D & 3-D scans
  - HyCoSy & Saline-infusion sono-hysterography



[www.leedsfertilityclinic.co.uk](http://www.leedsfertilityclinic.co.uk)