

Women's Health

FAMILY PLANNING

**An Information booklet
For Health Care Professionals
by Dr. Yvonne Rafter**





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Dr. Yvonne Rafter
Family Planning

Dedicated to

The promotion of Women's Health In Ireland

WOMEN'S HEALTH IN IRELAND

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FAMILY PLANNING METHODS: INTRODUCTION

MANY METHODS OF CONTRACEPTION OF GREATLY VARYING EFFECTIVENESS ARE IN USE ?

NATURAL METHODS

Billings
Coitus Interruptus
Rhythm or Safe period
Sympto-thermal

BARRIER METHODS

The Condom
Vaginal spermicides
Female condom
Diaphragm or CAP

URINE TESTING METHODS

Persona

INTRA UTERINE DEVICES

HORMONAL METHODS

Combined oral contraceptive pill
Progestogen only pill
Injectable long acting progestogens
Mirena Intrauterine device

The effectiveness or failure rate of a particular method of contraception is usually expressed by the Pearl Index which states the number of unplanned pregnancies which occur in 100 women using that method for one year. Effectiveness often depends on motivation and on the care taken to use the method exactly as prescribed.

Handwritten notes on the right margin:
NATURAL METHODS
BARRIER METHODS
URINE TESTING METHODS
INTRA UTERINE DEVICES
HORMONAL METHODS

THE COMBINED BIRTH CONTROL PILL

WHAT TYPES OF COMBINED ORAL CONTRACEPTIVE PILL ARE AVAILABLE IN IRELAND?

Combined oral contraceptive pills are a combination of synthetic oestrogen and progestogen. Current combined pills are either fixed-dose or phasic. The ratio of oestrogen and progestogen varies either once per packet with biphasic pills or twice with triphasic pills. ED (Everyday) preparations are not available in this country.

Most of the combined pills contain the synthetic oestrogen Ethinyl Oestradiol. Ortho Novum 1/50 and Norinyl contain Mestranol. Most pills now contain less than or equal to 35 micrograms of oestrogen. A variety of synthetic progestogens are used e.g. norgestimate, levonorgestrol, norethisterone, gestodene and desogestrel. The "first generation" pills were produced in the 1960s and contained high dose oestrogen with a higher incidence of thrombo-embolism. Women taking drugs which induce liver enzymes such as anti-convulsants need preparations containing 50 to 100 micrograms of oestrogen such as Ovran 50. "Second generation" pills contain a much lower dose of oestrogen usually between 30 and 35 micrograms and have been in use since the 1970s. Pills introduced in the 1980s contain the newer synthetic progestogens i.e. norgestimate, gestodene and desogestrel and are referred to as "third generation" pills.

The risk of venous thrombo-embolism has been shown to be increased with the third generation pills containing desogestrel or gestodene. According to recent studies the observed risk was about two-fold in four studies and statistically significant in three of these. Three other studies showed a smaller increased risk and the results only reached statistical significance in one of these. The risk of thrombo - embolism in pregnancy far exceeds that on the pill.

WHAT IS THE EFFECTIVENESS OF THE COMBINED PILL?

The combined pill works by preventing ovulation, altering the cervical mucous to reduce sperm penetrability and preventing changes in the endometrial lining which render the endometrium suitable for implantation. The failure rate is in the range of 0.1 - 3/100 women-years. Factors which reduce the effectiveness of the pill are poor compliance, failure to use extra precautions when pills are missed or with the occurrence of diarrhoea or vomiting, or when there is concomitant use of enzyme inducing drugs or drugs which affect the entero-hepatic cycle such as antibiotics.

WHAT ADVICE SHOULD BE GIVEN TO PATIENTS WHEN STARTING THE COMBINED PILL?

If the pill is started on the first day of the menstrual cycle it is effective immediately. Alternatively if started on the fifth day extra precautions should be taken for the first seven pills. In general, the newer "third generation" pills i.e. Minulet, Marviol, Mercilon, Femodene, Triodene, Triminulet, Cilest are started on the first day of the period. Biphasic and triphasic pills such as Binovum, Logynon, Trinordiol and Trinovum are also started on the first day of menstruation. Apart from Dianette most of the others are started on the fifth day.

In the post-partum period the pill can be started on day 21 when the risk of post-partum thrombosis is diminished. No extra precautions are needed. Post early miscarriage or termination of pregnancy the pill can be started the following day with no need for extra precautions although some gynaecologists still feel that it is best delayed until the next menses because of concern about the increased risk of thrombo-embolism after miscarriage. The pill can only be commenced post trophoblastic tumour when no HCG has been detected for at least one month. When changing from one preparation of combined pill to another patients should be advised to change over to the new preparation without taking a seven day break. When changing from a progestogen only pill patients should also start without taking a break. After post-coital contraception, the woman may start the combined pill on the first day of menstruation if she is sure that the flow is normal. Light spotting may occur a few days after the morning after pill but it is advisable to wait until a normal period occurs.

Women should be instructed to take their pill at approximately the same time each day. They should take a pill daily for twenty one days and then stop for seven days before commencing the next packet. Extra precautions are advised if the woman forgets to take the pill for more than 12 hours, if she experiences vomiting or severe diarrhoea, or if she is taking medication which reduces the levels of the pill. (See table below for list of medications which interact with the combined pill). The "Seven day rule" recommends using extra precautions such as the condom e.g. while the patient has diarrhoea or is on an antibiotic and also until she has taken seven pills afterwards. If she is near the end of a packet and does not have enough pills left she is advised to take one packet directly after the previous packet i.e. to avoid the seven day break.

Studies have shown that when any of the first five pills of a packet are missed that more than 20% of women will have evidence of follicular development. Pill omissions at the beginning or end of a packet effectively lengthen the pill free interval and ovulation may occur. It may therefore be appropriate to prescribe post-coital contraception in this situation.

Women should be advised that minor side effects such as slight nausea, or breast tenderness may abate if the pill is continued. However severe side effects can usually be managed by switching to a different preparation. Breakthrough bleeding often settles. However if it has not stopped by the

end of the second packet a different brand can be prescribed. Sometimes breakthrough bleeding is due to poor compliance and pill omissions.

All women should be informed that there is a small health risk associated with the combined pill because of the increased risk of thrombo-embolism. This is often a good opportunity to reinforce the dangers of cigarette smoking. It should be emphasised that the risk of thrombo-embolism for young, healthy women on the combined pill is extremely small but the symptoms of thrombo - embolism ie. leg swelling or pain, severe chest pain or dyspnoea should be explained.

TABLE: SOME OF THE DRUG INTERACTIONS WITH COCs

<i>Drugs which may reduce COC efficacy</i>	<i>Approved name of examples</i>	<i>Main action</i>
Anticonvulsants	Barbiturates (Especially Phenobarbitone) Phenytoin Primidone Carbamazepine	Induction of Liver Enzymes
Sodium Valproate and Clonazepam do not have this effect.		
Antibiotics	Rifampicin	Marked induction of Liver Enzymes.
	Antifungal Griseofulvin Broad spectrum antibiotics eg Amoxycillins, Tetracycline, Cephalosporins	Enzyme inducer Change bowel flora, reducing enterohepatic recirculation of ethinyloestradiol
Diuretics	Spironolactone	Induction of Liver Enzymes
Hypnotics	Dichloralphenazone	Induction of Liver Enzymes
Tranquillisers	Meprobamate	Induction of Liver Enzymes

Oral contraceptives may diminish glucose tolerance and increase the need for insulin or other anti-diabetic drugs in diabetics.

DRUGS WHICH MAY INCREASE COC EFFICACY

<i>Name</i>	<i>Main action</i>
Ascorbic acid and Paracetamol	Competition in bowel wall for conjugation, causes more ethinyloestradiol to be available for absorption
Co-Trimoxazole	Weak inhibition of Ethinyloestradiol metabolism in the liver
Erythromycin and Ketoconazole	Potent inhibitors of Ethinyloestradiol metabolism

WHAT SHOULD BE INVOLVED IN THE INITIAL VISIT WHEN PRESCRIBING THE COMBINED PILL?

The practitioner should take a detailed past history and gynaecological history. Family history should also be documented. The physical examination should include blood pressure, weight check and urinalysis. Breast examination may not be appropriate at the first visit with younger patients especially teenagers.

An explanation of how the pill should be taken, potential side-effects, what to do when pills are missed, if the patient has diarrhoea or vomiting or if she is prescribed medication which might affect the levels of the pill should be undertaken. It is often a good idea to offer a leaflet on these details as some patients may have difficulty retaining all the facts. All patients should be informed about the small risk of thrombo-embolism and advised to obtain medical attention immediately if they develop symptoms.

HOW OFTEN SHOULD WOMEN TAKING THE PILL BE SEEN AND WHAT SHOULD BE INVOLVED AT EACH VISIT?

Women should be seen three months after starting the pill to check blood pressure, and to answer any queries. Subsequent visits should be six monthly. Breast examination and urinalysis should be done annually. Once a woman has been sexually active for six to twelve months an initial cytological smear of the cervix should be done. Smears should then be performed every 3-5 years unless the woman has other risk factors such as a history of HPV, herpetic infection or C.I.N.

WHAT ARE THE ADVANTAGES OF THE COMBINED PILL?

- Highly effective, convenient and easily reversible.
- Less heavy bleeding, dysmenorrhoea and anaemia.
- May reduce symptoms of premenstrual tension.
- Reduces pelvic inflammatory disease and has been shown to reduce the risk of hospitalisation for P.I.D. by more than 50%.
- Reduces the risk of functional ovarian cysts, cancer of the ovary, and of the endometrium.
- Studies have shown that endometriosis is less common among pill users.

WHAT ARE THE DISADVANTAGES OF THE COMBINED PILL?

- ◆ It increases the risk of circulatory diseases such as deep venous thrombosis, pulmonary embolism and rarely mesenteric, hepatic or retinal thrombosis. There is also a higher incidence of myocardial infarction and thrombotic strokes. There is some dispute as to whether there is a higher incidence of subarachnoid haemorrhage among pill users. The pill causes a slight increase in both systolic and diastolic blood pressure and occasionally causes hypertension particular in women with a predisposition to developing it eg when there is a positive family history or past history of toxæmia. Combined pills tend to reduce HDL cholesterol slightly but this effect is barely detectable with the newer third generation pills.
- ◆ The UK National Case Control Study in 1989 showed that there was an excess of pill use among women developing breast cancer under 36 years. The significant increased risk was duration and dose dependent. The background incidence of breast cancer in this age group is 2 in 1000. Among women using the pill for more than four years the rate is 3 in 1000. This increase in risk falls after stopping COCs and disappears over the next ten years. At present it is not known whether the observed increased risk is due to earlier diagnosis of breast cancer in COC users or the biological effects of COCs or a combination of both.
- ◆ The combined pill may increase the risk of hepatocellular carcinoma although this is extremely rare. Hepatocellular adenoma which is benign and also very rare is 10-20 times more common among pill users.
- ◆ Older high oestrogen oral contraceptives increase fibroid size but this does not seem to be a problem with the lower dose pills.

WHAT ARE THE CONTRA-INDICATIONS TO COMBINED ORAL CONTRACEPTIVES?

- Past or present arterial or venous thrombosis.
- Ischaemic heart disease and cardio-myopathies, severe hereditary lipid disorders.
- Severe coagulation/fibrinolysis disorders including congenital thrombophilias, presence of anti phospholipid antibody, the lupus "anticoagulant" or post splenectomy if the platelet count is greater than 500×10^9 / litre, conditions predisposing to thrombosis such as peri or post-operatively especially after leg surgery or limb immobilisation or varicose veins treatments, severe auto-immune disease such as rheumatoid arthritis, polyarteritis nodosa, scleroderma and SLE may also be contraindications because of the increased risk of thrombosis.
- Focal and crescendo migraine or migraine requiring Ergotamine. Currently there is no information to suggest that the use of Sumatriptan increases risk.
- Previous cerebral haemorrhage due to thrombosis. If there is a history of subarachnoid haemorrhage the combined pill may be used but blood pressure would have to be very closely monitored.
- Valvular heart disease if there is any disturbance of haemodynamics or risk of arterial embolism. This should be discussed with the patients cardiologist.
- Pulmonary hypertension.
- Active liver disease or history of cholestatic jaundice, severe Dubin-Johnson or Rotor syndromes.
- Porphyrias
- Otosclerosis which worsened during a pregnancy.
- Haemolytic - uraemic syndrome
- Stevens-Johnson syndrome if linked to contraceptive pill use.
- Trophoblastic disease.
- Oestrogen dependent neoplasms and a past breast biopsy showing premalignant epithelial atypia.
- Insulin dependent diabetics with any arterial, renal, neurological or retinal complications should not be prescribed the combined pill.

WHAT ARE THE SIDE EFFECTS WHICH MAY BE CAUSED BY THE COMBINED PILL?

- Breast enlargement and tenderness with fluid retention.
- Leg cramps and pains not due to DVT.
- Depression and loss of libido
- Headaches
- Nausea
- Vaginal discharge due to increased mucous production.
- Gingivitis (which is rare)
- Weight gain usually less than 2kgs.
- Chloasma, erythema nodosum
- Galactorrhoea
- Discomfort or corneal damage in women using contact lenses due to corneal oedema. This is much less common with the use of soft contact lenses and the newer low dose pills.

PROGESTOGEN ONLY PILLS (POPs)

WHAT ARE PROGESTERONE ONLY PILLS (POPs)?

Progestogen only pills available in Ireland contain a microdose of one of two progestogens ie Norethisterone or Levonorgestrol.

HOW DO THEY WORK?

The main mode of action is thought to be due to thickening of the cervical mucus which inhibits sperm penetrability. They also reduce the receptivity of the endometrium to the blastocyst and have an effect on ovulation. Ovulation may be abolished completely leading to amenorrhoea.

HOW EFFECTIVE IS THE POP?

Reliability depends greatly on motivation but the overall Pearl Index is 0.3 - 4/100 woman years, the higher rate applying when patient compliance is poor. The lower rate applies particularly during lactation and in older women.

HOW SHOULD THE POP BE TAKEN?

The POP should be taken ideally at the same time each day and is taken on a continuous daily basis. Extra precautions should be taken if a woman is more than two hours late taking her POP. The current recommendation is that she should continue using extra contraception for seven days following the missed pill.

The pill should be started on the first day of the menstrual cycle. It is then effective immediately. Post-partum, it can be started on day 21 in women who are not lactating and about four weeks after delivery when women are lactating. Women should use extra protection for seven days after starting post-partum. It can be started immediately after a miscarriage and when changing from the combined oral contraceptive pill, it should be started without taking any seven day break. No extra protection is then recommended.

If a woman vomits a tablet and fails to replace it successfully within two hours she should use extra protection for the duration of the illness and for seven days thereafter. Ordinary broad spectrum antibiotics have no effect on POP levels but extra precautions are recommended if the antibiotic is an enzyme inducer eg Rifampicin or Griseofulvin. Enzyme inducing drugs do lower the blood levels of progestogens and POPs are probably not a good choice in women taking long term enzyme inducing medications such as anticonvulsants.

WHAT ARE THE ADVANTAGES OF THE POPs ?

- ◆ Acceptable efficiency. The Pearl Index is 0.3 - 4/100 women - years.
- ◆ No epidemiological evidence of increased risk of malignant or circulatory disease.
- ◆ Avoidance of side-effects of artificial oestrogens eg weight gain, nausea, headaches, loss of libido.
- Minimal effect on lactation and negligible levels of artificial steroid in breast milk occur.
- ◆ No increase in the risk of cervical or ovarian cancer.

WHAT ARE THE PROBLEMS ASSOCIATED WITH THE POP?

- The need to take the medication at a regular time each day.
- Menstrual cycle irregularity. Bleeding may be unpredictable. If ovulation is suppressed there may be amenorrhoea.
- A small number of women on the POP develop functional ovarian cysts causing pain.
- Pregnancies occurring on the POP are more likely to be ectopic than pregnancies occurring in the general population.
- Reduces the risk of endometrial cancer.
- Theoretical increase in the risk of osteoporosis in long-term users with amenorrhoea (This is currently being evaluated)

WHAT ARE THE ABSOLUTE CONTRA-INDICATIONS TO THE POP?

- Ischaemic heart disease or history of thrombotic stroke
- Liver adenoma and severe past steroid associated cholestatic jaundice.
- Recent trophoblastic disease
- Undiagnosed abnormal genital bleeding.

WHAT ARE THE RELATIVE CONTRA-INDICATIONS TO THE POP?

- Sex-steroid dependent cancer especially breast cancer. The advice of the woman's oncologist should be sought.
- Current liver disorders
- Interacting drugs or mal-absorption states.
- History of pruritus of pregnancy.

FOR WHOM ARE POPs INDICATED?

- ◆ Women over 35 who smoke cigarettes.
- ◆ Women who have a predisposition to thrombo-embolism including women with a definite past history of thrombo-embolism.
- ◆ Patients with diabetes or obesity.
- ◆ Patients with hypertension if well controlled by treatment.
- ◆ Patients with migraine including women with focal migraine.
- ◆ Women who are lactating.

CONTRAINDICATIONS

INJECTABLE CONTRACEPTIVES

WHAT INJECTABLE CONTRACEPTIVES ARE AVAILABLE IN IRELAND?

The only injectable contraceptive available in Ireland is Depo Medroxyprogesterone acetate (DMPA), available in aqueous microcrystalline suspension and given in a dose of 150 mg every twelve weeks. It is a progestagenic steroid given by deep intramuscular injection. Depo-Provera is currently available for use in more than ninety countries.

WHAT IS THE MODE OF ACTION OF INJECTABLES?

The primary action of the progestogen dose is to prevent ovulation. It also causes thickening of the cervical mucus and renders the endometrium secretory.

WHAT IS THE EFFECTIVENESS OF DEPO-PROVERA?

Effectiveness is greater than with the combined oral contraceptive pill. The Pearl Index is in the range of 0-1/100 women - years.

WHAT IS THE RECOMMENDED ROUTINE FOR ADMINISTERING DEPO-PROVERA?

The first injection should be given before day five of the cycle. The contraceptive effect is immediate but some experts recommend using extra protection for the first seven days if it is started after day two of the cycle.

Post-partum it is best started about five to six weeks after delivery as earlier use can result in heavy irregular bleeding. Post-miscarriage or termination of pregnancy the injection is normally given seven days afterwards. After a later (second trimester) miscarriage it is recommended to delay for a month or so to reduce the risk of heavy bleeding. It should be given by deep intramuscular injection into the upper quadrant of the buttock. The site of injection should not be massaged.

DO INTERACTIONS WITH OTHER DRUGS CAUSE PROBLEMS WITH DEPO-PROVERA?

Drugs which induce liver enzymes may increase the metabolism of Depo-Provera slightly so it is recommended that the interval between injections is shortened to ten weeks with medications like Barbiturates, Phenytoin, Primidone, Carbamazepine. When a very potent enzyme inducer like Rifampicin is used the interval may need to be decreased to eight weeks. Depo-Provera does not seem to significantly affect the metabolism of any other drug.

WHAT ARE THE ADVANTAGES OF DEPO-PROVERA?

- ◆ High effectiveness
- ◆ No effect on blood coagulation, fibrinolysis or on blood pressure
- ◆ Less heavy bleeding, dysmenorrhoea and anaemia.
- ◆ Usually less symptoms of premenstrual tension.
- ◆ Depo-Provera tends to reduce the incidence of aggression, mood swings and epileptic attacks in mentally handicapped patients especially if these problems tend to be worse premenstrually.
- ◆ Lactation is not suppressed.
- ◆ Beneficial effect on patients with sickle cell disease.
- ◆ It does not seem to adversely affect liver function and can be used in women with a history of liver disease.
- ◆ Use of Depo-Provera reduces the risk of endometrial and epithelial ovarian cancer. There is no evidence that it increases the risk of cervical cancer. Its effect on breast cancer is similar to that of the COC i.e. a small increase in the relative risk of breast cancer in women less than 36 years of age who have used the drug in the previous four years. The significance of this is controversial.

WHAT ARE THE DISADVANTAGES OF DEPO-PROVERA?

- Menstrual irregularity may occur. Amenorrhoea often occurs when the injection is used for several months.
- Possible loss of bone density in users with long term amenorrhoea.
- Delay in the return but no loss of fertility.
- Weight gain has been reported although usually no more than 2 kgs.
- Galactorrhoea may occasionally occur.
- Depression, moodiness, loss of libido, fluid retention, headaches are occasionally reported.

WHAT ARE THE CONTRAINDICATIONS TO DEPO-PROVERA?

- Past severe arterial disease and women with very high risk of atherosclerosis eg uncontrolled hypertension, diabetes mellitus or hyperlipidaemia.
- Liver adenoma and severe past steroid associated cholestatic jaundice.
- Recent trophoblastic disease. It should be avoided until HCG is undetectable.
- Undiagnosed abnormal genital bleeding.
- Possible pregnancy.
- Sex steroid-dependent cancer eg breast or ovarian cancer. The advice of the patient's oncologist should be sought.
- Past history of severe endogenous depression.
- Any woman who is planning a pregnancy in the near future as return of fertility is slow after stopping the injections. It is normal for conception to be delayed for about eight months after the last injection and occasionally return of fertility may be delayed for up to eighteen months.

THE CONDOM

WHAT IS THE DEFINITION OF A MALE SHEATH OR CONDOM?

A condom is a closed-ended, expansile, tubular device designed to cover the erect penis and physically prevent the transmission of semen into the vagina. It is generally made of latex rubber which is made as thin as possible whilst still maintaining adequate strength. It is often lubricated.

HOW EFFECTIVE IS THE CONDOM AS A CONTRACEPTIVE?

Successful use of condoms depends very much on the motivation and care taken by the couple so that failure rates vary widely. Failures are more frequent with the young and inexperienced. Figures vary between 10/100 women - years to 0.4/100 women-years. Use of additional spermicide with condoms does reduce the failure rate but accurate figures regarding the increased effectiveness are not available.

WHAT ARE THE ADVANTAGES OF THE CONDOM METHOD?

- Easily obtainable and relatively cheap.
- Highly effective if used correctly.
- Free from medical risks and does not require medical supervision.
- Protects against most sexually transmitted diseases including viruses.
- Possible protection against cervical neoplasia and invasive carcinoma.

WHAT ARE THE DISADVANTAGES OF THE CONDOM METHOD?

- Coitus related and interrupts spontaneity of intercourse.
- Decreased sensitivity for some males.
- Perceived to be messy and may slip off or rupture.
- Users may not appreciate that small leaks of semen may cause a pregnancy so a high degree of motivation and meticulous use is required.
- A small percentage of men are allergic to the rubber in the condom.

WHAT ARE THE COMMON ERRORS IN CONDOM USE THAT MAY LEAD TO PREGNANCY?

- Genital contact, with the condom put on just before ejaculation but not before there is some leakage of sperm.
- Loss of erection so that the condom slips off unnoticed before ejaculation.
- Damage to the sheath eg by sharp fingernails.
- The chemical action of certain lubricants and vaginal and rectal preparations may lead to rupture of the rubber eg baby-oil, vaseline, anti-fungal creams and pessaries, oestrogen vaginal pessaries. Jelly such as KY does not affect the rubber.

WHAT INSTRUCTIONS SHOULD YOU GIVE YOUR PATIENTS PLANNING TO USE CONDOMS FOR CONTRACEPTION?

- ◆ Avoid any chemical or physical damage. Do not use oil based lubricants such as baby oil or vaseline.
- ◆ Put the condom on the penis before any genital contact whatever. If there is no teat make room for the semen by pinching the end of the sheath as it is applied so that it does not track up the shaft of the penis and escape and cause the condom to slip off.
- ◆ After intercourse withdraw the penis before it becomes too soft, holding the base of the condom during withdrawal and taking care not to spill any semen.
- ◆ Use only condoms which are kite marked and check expiry date.
- ◆ Use each condom once only. Inspect it for damage before disposal.
- ◆ To maximise effectiveness the female partner should use a spermicide ie foam, pessary, cream or gel.
- ◆ If the condom ruptures or slips off advise them that emergency (post-coital) contraception is available.

Condoms are not currently on the list of reimbursable items in the GMS scheme but are provided free in drug treatment centres and are for sale in pharmacies and in many restaurants, public houses and night clubs.

SPERMICIDES

WHAT ARE SPERMICIDES?

They are a range of substances which chemically immobilise or destroy sperm. They contain an inert base which forms a partial barrier as well as the active spermicidal agent.

HOW ARE SPERMICIDES USED?

They are inserted prior to intercourse with an applicator and can be inserted just before intercourse with the exception of pessaries which are inserted with the finger and must be inserted at least ten minutes before ejaculation to allow the products to disperse. They are usually used with barrier methods as they have a high failure rate when used alone.

WHAT ARE THE ADVANTAGES OF SPERMICIDES?

- They are easily available and free from major health problems.
- They provide some protection against sexually transmissible diseases.
- They provide some genital lubrication.
- They are a valuable adjunct to other methods.

WHAT ARE THE DISADVANTAGES OF SPERMICIDES?

- ◆ They are not highly effective and have a failure rate similar to the contraceptive sponge which is no longer available.
- ◆ There is a waiting period of ten minutes before some products are effective and they are not effective if inserted more than sixty minutes beforehand.
- ◆ They can cause local irritation or allergy.

VAGINAL METHODS OF CONTRACEPTION

WHAT ARE THE VAGINAL METHODS OF CONTRACEPTION CURRENTLY AVAILABLE?

Methods currently available include the diaphragm or the cervical/vault caps, spermicides and female condoms. The Today contraceptive sponge is not currently available.

WHAT IS THE MODE OF ACTION OF THE DIAPHRAGM AND CERVICAL/VAULT CAPS?

The main functions of the diaphragm or cap is to act as a barrier to sperm entering the cervix from the vagina and to act as a receptacle for spermicide. Cervical/vault caps should stay in place by suction so that the barrier effect is more important to their contraceptive action than is the case with the diaphragm. They should be used in conjunction with spermicide.

HOW EFFECTIVE IS THE DIAPHRAGM?

As with the condom effectiveness depends on motivation and meticulous use. Older women do better with this method and studies have shown failure rates of less than 2/100 women - years in women over 35.

WHAT ARE THE ADVANTAGES OF THE DIAPHRAGM?

- Effective if used with care.
- More independent of intercourse than the condom.
- There is no loss of sensation for either partner.
- No proven systemic effects.

WHAT ARE THE DISADVANTAGES OF THE DIAPHRAGM?

- ◆ It is less effective than hormonal contraception or the IUD.
- ◆ It may be perceived as "messy" due to the spermicide.
- ◆ Vaginal irritation and allergy occur in a small minority of women.
- It is associated with increased incidence of U.T.I.s in women predisposed to cystitis and should not be used if there is urge incontinence.

DIAPHRAGM

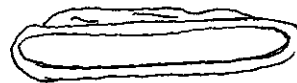
WHAT ARE THE CONTRA-INDICATIONS TO THE DIAPHRAGM?

- Congenital abnormalities such as a septate vagina.
- Utero-vaginal prolapse.
- Inadequate retropubic ledge on examination.
- Poor vaginal or perineal muscle tone.
- Allergy to rubber.
- Recurrent U.T.Is.

WHAT TYPES OF DIAPHRAGM ARE AVAILABLE?

- ◆ The **Flat spring diaphragm** has a firm spring and is easily fitted and suitable for the normal vagina. It is usually tried first.
- ◆ The **coil spring diaphragm** has a spiral coiled spring making it softer than the flat-spring. Because it exerts less pressure it can be more comfortable for some women than the flat spring.
- ◆ The **arc spring diaphragm** consists of a rubber dome with a firm double metal spring. It's main indication is in cases where the length or direction of the cervix, or the woman's own technique are leading to a tendency to squeeze the diaphragm into the anterior fornix.

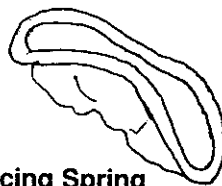
Types of Diaphragm



Flat Spring



Coil Spring



Arcing Spring

Cervical Vault Caps



Vimule



Cervical Cap



Vault Cap (Dumas)

WHAT TYPES OF CERVICAL/VAULT CAPS ARE NOW AVAILABLE?

- The **cervical cap** is shaped like a thimble and is designed to fit snugly over the cervix. The available internal diameters are 22, 25, 28 and 31 mm.
- The **vault cap** is a rubber cap shaped like a bowl with a thinner dome through which the cervix can be palpated. It covers but does not closely fit the cervix. Five sizes are available ranging from 55 - 75 mm in 5mm steps.
- The **vimule** is similar to a vault cap but has a hat shaped prolongation of the dome to accommodate longer cervixes. There are three sizes small (45mm), medium (48mm) and large (51mm).

HOW DOES THE CERVICAL/VAULT CAP WORK?

They operate by suction, not by spring tension as with the diaphragm but like the diaphragm they mainly function as a receptacle for spermicide. They are suitable for patients with poorer muscle tone and can sometimes be used in utero-vaginal prolapse.

HOW IS THE DIAPHRAGM/CAP FITTED?

It is important that the person fitting the diaphragm has adequate training and experience. The Diploma In Family Planning course provides training and instruction and should be undertaken by GPs interested in fitting diaphragms unless they have alternative gynaecological training. The fitting should be performed in a sensitive, unhurried way.

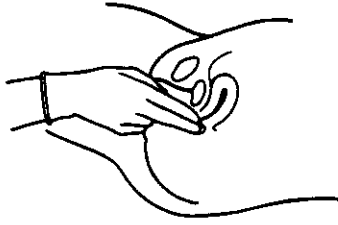
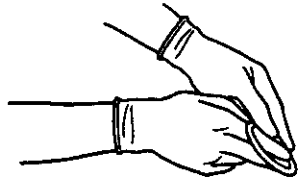
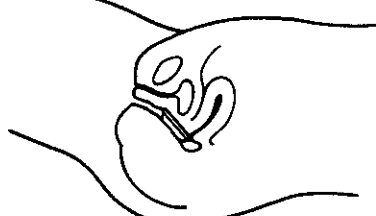
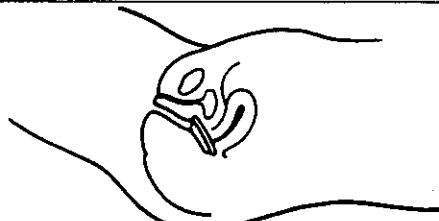
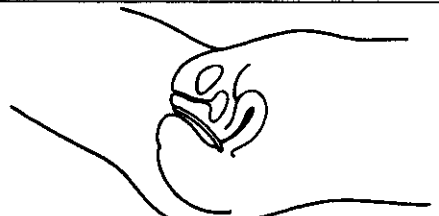
Initially the patient should be examined to determine the health and direction of the uterus and cervix, the type of retropubic ledge and to assess the vaginal musculature and tone. This is often a good opportunity to perform cervical cytology. If the diaphragm is chosen the distance from the posterior fornix to the posterior aspect of the symphysis is measured.

WHAT ARE THE STEPS IN FITTING THE DIAPHRAGM?

The woman should have emptied her bladder. An initial choice of practice diaphragm is made based on the distance measured. To measure for diaphragm size hold index and middle fingers together and insert into vagina up to the posterior fornix. Raise hand to bring surface of index finger to contact with pubic arch. Use tip of thumb to mark the point directly beneath the inferior margin of the pubic bone and withdraw fingers in this position.

To determine diaphragm size place one end of rim of fitting diaphragm or ring on tip of middle finger. The opposite end should lie just in front of the thumb tip. This is the approximate diameter of the diaphragm needed.

MEASUREMENT AND FITTING INSTRUCTIONS FOR DIAPHRAGMS

	<p>1. To measure for diaphragm size</p> <p>Hold index and middle fingers together and insert into vagina up to the posterior fornix. Raise hand to bring surface of index finger to contact with pubic arch. Use tip of thumb to mark the point directly beneath the inferior margin of the pubic bone and withdraw fingers in this position.</p>
	<p>2. To determine diaphragm size</p> <p>Place one end of rim of fitting diaphragm or ring on tip of middle finger. The opposite end should lie just in front of the thumb tip. This is the approximate diameter of the diaphragm needed.</p>
	<p>3. To fit the diaphragm</p> <p>Insert a fitting diaphragm or ring of the appropriate size into the vagina. Try both a larger and a smaller size before making a decision. The proper size will fit snugly in the posterior fornix and behind the pubic arch without undue pressure.</p>
	<p>4. Appearance of too small a diaphragm</p> <p>If the back rim of the diaphragm fits snugly in the posterior fornix and the front rim does not reach the pubic bone then the diaphragm may be too small and a larger size should be fitted.</p>
	<p>5. Appearance of too large a diaphragm</p> <p>If the back rim of the diaphragm fits snugly in the posterior fornix and the front rim will not fit behind the pubic bone or causes pressure on the pubic arch, the diaphragm may be too large and a smaller one should be fitted.</p>

To insert the diaphragm: With the index inside the rim compress the practice diaphragm between the thumb and the remaining fingers. The labia are separated and the diaphragm inserted downwards, backwards to the posterior fornix, tucking the anterior rim beneath the symphysis pubis.

Ensure that the cervix is covered. Insert a finger tip between the anterior rim of the cap and the symphysis. If the cap is too small a wider gap will be felt. If the cap is too large it projects anteriorly and inferiorly and may cause immediate discomfort.

The woman should be asked to stand and walk a few steps. On re-examination anterior protrusion may be due to a small cystocele or a poor retropubic ledge. In this event a vault or cervical cap may be an option.

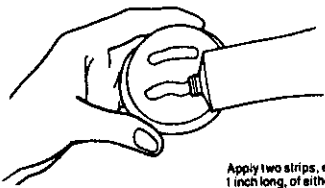
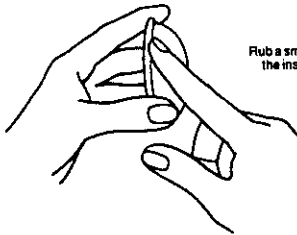



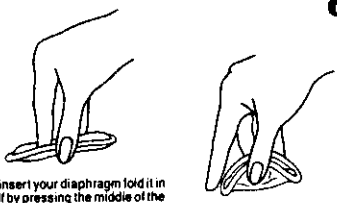
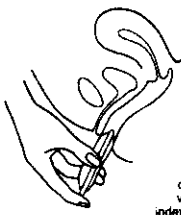
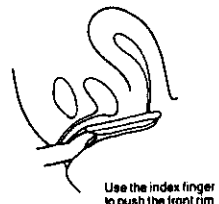

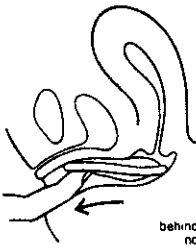
The following patient teaching aid can be useful for instructing the patient.

How to use your Diaphragm

Coil Spring Diaphragm
Flat Spring Diaphragm
Arcing Spring Diaphragm

BEFORE USING THE DIAPHRAGM

Empty your bladder and wash your hands

<p style="text-align: center; font-weight: bold;">1</p>  <p>Apply two strips, each approximately 1 inch long, of either Contraceptive Jelly or Contraceptive Cream to both sides of the diaphragm.</p>	<p style="text-align: center; font-weight: bold;">2</p>  <p>Rub a small amount of this around the inside and outside of the rim with your finger tip.</p>
<p style="text-align: center; font-weight: bold;">3</p>  <p>Get comfortable and relax. A suitable position to insert your diaphragm would be to stand, prop one leg up on a chair (left leg if you are right-handed, and vice-versa). Keep the other knee slightly bent.</p>	<p style="text-align: center; font-weight: bold;">4</p>  <p>Alternatively, you may wish to squat with your knees wide apart.</p>
<p style="text-align: center; font-weight: bold;">5</p>  <p>An easier position, once you have become familiar with inserting your diaphragm, may be to lie on your back with your knees up.</p>	
<p style="text-align: center; font-weight: bold;">6</p>  <p>To insert your diaphragm fold it in half by pressing the middle of the opposite sides together between the thumb and forefinger of one hand. You may find it helpful to place your index finger in the dome between your thumb and fingers to help prevent it springing away.</p> <p>(If you have been given an ALL-FLEX® diaphragm hold it with the arc pointing downwards to ensure that the cervix will be covered.)</p>	<p style="text-align: center; font-weight: bold;">7</p>  <p>Hold the lips of your vagina apart with your other hand. Gently slide the folded diaphragm into your vagina, placing your index finger on the rim to guide it. Aim towards the small of the back as if inserting a tampon. You may feel the rim pass over the cervix.</p>
<p style="text-align: center; font-weight: bold;">8</p>  <p>Use the index finger to push the front rim up behind the pubic bone.</p>	
<p style="text-align: center; font-weight: bold;">9</p>  <p>To check if the diaphragm is in place insert your index finger into your vagina and touch the dome. You should feel the cervix underneath. Move your index finger to the front rim of the diaphragm and make sure it is firmly in place behind the pubic bone. Finally check that the back rim is behind the cervix.</p>	<p style="text-align: center; font-weight: bold;">10</p>  <p>Do not remove your diaphragm for 6 hours after intercourse. Put your index finger in your vagina and hook it behind the rim of the diaphragm under your pubic bone. Gently pull the diaphragm down and out. You may find it useful to bear down slightly especially if it is well tucked up behind the pubic bone. The diaphragm should not be left in place for more than 24 hours.</p>

8 M. I. M. M. 10 J. J. 10 J.

HOW ARE CERVICAL AND VAULT CAPS FITTED?

The correct size cap accommodates the cervix and the rim touches the fornices with no gap. To insert the chosen cap, the rim is compressed between thumb and first two fingers and guided along the posterior vaginal wall towards the cervix. The cap is allowed to open by removing the thumb and then is pushed over the cervix with the finger-tips. Check to ensure that the cervix is palpable through the cap and that there is no gap above the rim.

Cervical and vault caps are removed by inserting a finger-tip above the rim and easing the cap downwards. They are then removed with the index and middle fingers.

WHAT INSTRUCTIONS SHOULD BE GIVEN TO PATIENTS REGARDING DIAPHRAGMS/CAPS?

Patients should be advised to use a spermicidal cream or jelly, applying two strips to each side. Patients should insert the diaphragm after rather than before a bath. The position of the diaphragm /cap should be checked with the index finger or index and middle finger to ensure that they cover the cervix. Should love-making take place more than three hours after the cap is inserted, additional spermicide should be used either cream or jelly with an applicator or a spermicidal pessary. The pessary needs to disperse for about ten minutes before it is safe to have sex. If intercourse occurs more than once more spermicide should be inserted beforehand, leaving the diaphragm in place.

After removal the cap can be washed in warm soapy water. It should be dried and stored in a cool place. Disinfectants, detergents or vegetable oil containing lubricants should not be used as they may damage the rubber. The cap should be checked regularly for holes. Patients should be refitted for diaphragms if their weight changes by more than 3kgs and both caps and diaphragms should be refitted after pregnancy.

WHAT PROBLEMS CAN BE EXPERIENCED WITH THE DIAPHRAGM OR CAP?

- If the size is wrong the partner may complain that he can feel the cap.
- Urinary tract infections are commoner in diaphragm users possibly due to pressure of the rim on the urethra and bladder base. Changing to a smaller size of diaphragm or changing to a cervical cap may be a solution. Women are also advised to empty the bladder both before and just after intercourse.
- Vaginal soreness may be due to coincidental infection with moniliasis or trichomoniasis. Local pressure can cause abrasions or even ulcers. Allergy can also occur due to the spermicide or chemicals in the rubber of the occlusive cap.

FEMALE CONDOMS

WHAT IS THE FEMALE CONDOM?

It is a polyurethane device with a silicone lubricant which looks like an extra large condom. The current version is 17 cm long. There is a 70 mm diameter outer ring at the opening designed to prevent it advancing beyond the vulva and a 60 mm diameter loose ring at the inner closed end helps it's retention within the vagina and is squeezed like a diaphragm for insertion. The best design at present is "Femidom".

WHAT ARE THE ADVANTAGES OF THE FEMALE CONDOM?

- ◆ It is over the counter and does not require fitting.
- ◆ It can be inserted before intercourse.
- ◆ It protects against STDs.
- ◆ It is less likely than the male condom to rupture.

WHAT ARE THE DISADVANTAGES OF THE FEMALE CONDOM?

- Its effectiveness is questionable although there are no current reliable data or failure rates.
- It may be dislodged during intercourse and therefore not function adequately as a barrier.
- Many women find it uncomfortable and it has not proved to be very popular.
- It is relatively expensive.

WHAT TYPE OF VAGINAL CONTRACEPTIVES ARE ON THE LIST OF REIMBURSABLE ITEMS ON THE GMS?

There are only three types of caps currently on the list of reimbursable items in the GMS scheme. They are flex arcing spring diaphragm, sizes 55 - 95mm, Ortho diaphragm coil spring sizes 55 - 100mm, Ortho white flat spring diaphragm sizes 55 - 95mm. Two spermicidal contraceptives are presently reimbursable ie Gyno II contraceptive jelly, Ortho-creme contraceptive creme.

NATURAL FAMILY PLANNING ?

INTRODUCTION

HOW LONG IS THE POTENTIALLY FERTILE PHASE IN THE HUMAN FEMALE?

Traditionally this has been considered to be mid-cycle eg Day 10-17 of a 28 day cycle but recent studies suggest that the fertile phase both starts and finishes earlier. This would imply that under optimal conditions for sperm survival, the fertile phase in a 28 day cycle is between day 7 and 16 with ovulation occurring on day 14 plus a further 24 hours to allow for maximum ovum survival. It is therefore clear that the first phase of the so called "safe period" is very short and eg a woman with a 24 day cycle might conceive if she had intercourse any later than day 3 of her cycle.

WHAT CHANGES OCCUR LEADING UP TO OVULATION WHICH PROMOTE FERTILITY?

The cervical mucus becomes increasingly fluid and receptive to sperm. The position of the cervix also changes leading up to ovulation, gradually moving further away from the introitus until at ovulation it is furthest away from the introitus and is soft and dilated such that it admits a finger tip.

WHAT ARE THE PHYSIOLOGICAL FACTS ABOUT SPERM WHICH PROMOTE CONCEPTION?

There is usually 3-5 ml semen in a man's ejaculate and the normal sperm count is between 20 and 100 million sperm per ml. It has been shown that sperm can survive for up to five days and occasionally seven days. The main implication of this is the likely ineffectiveness of the "safe period" for most couples long term. Factors that may reduce fertility are poor mobility, frequent abnormal forms or the presence of antibodies.

NATURAL METHODS

HOW LONG DOES THE OVUM SURVIVE ?

In vitro fertilisation research indicates that the maximum ovum survival is 24 hours but successful fertilisation generally occurs within 12 hours of ovulation. After fertilisation research has also shown that post-fertilisation wastage is between 30 and 40%.

WHAT IS THE BASIS OF THE CALENDAR OR RHYTHM METHOD OF FAMILY PLANNING?

The woman defines the longest and shortest cycles over the past 12 months. She subtracts 20 days from the length of the shortest cycle to derive the first day of the fertile phase. She subtracts 11 days from the longest cycle to derive the last day of the fertile phase. Even with good compliance this method has a high failure rate and compliance is also difficult because the amount of abstinence required may be intolerable to many couples.

WHAT IS THE BASIS OF THE BASAL-BODY TEMPERATURE METHOD OF BIRTH CONTROL?

The woman must measure her temperature under standard conditions in the morning before getting out of bed, having a drink or smoking a cigarette. A special expanded scale mercury thermometer should be used or an electronic version. The temperature should be taken orally for a minimum of three minutes. The results are plotted daily on a special chart. The rise in temperature in the cycle is caused by metabolites of progesterone hence this method is used to detect the second infertile phase of the cycle when the corpus luteum produces progesterone. Some women have difficulty reading thermometers and interpretation may be impossible when there is coincidental infection.

WHAT IS THE BASIS OF THE MUCUS OR BILLING'S METHOD?

The woman is instructed to observe the quantity, colour, fluidity, transparency and stretchiness of the mucus at each micturition. The characteristics of the mucus are charted each night. The peak mucus day corresponds with the peak secretion of oestrogen in the blood. This is the last day in which the mucus is slippery with an elastic quality allowing it to be stretched for several centimetres like egg-white. After ovulation, the rise in progesterone causes a profound change in the amount and characteristics of the mucus. There may be no mucus at all or it may be thick and sticky and very scant. The second infertile phase of the cycle is defined as beginning on the evening of the fourth day after the peak mucus. Mucus assessment may be confused by the effect of intercourse, the use of spermicidal jellies and lubricants. Vaginal infections and discharges may also cause confusion.

WHAT OTHER CLINICAL SYMPTOMS OF FERTILITY MAY OCCUR?

Some women experience Mittelschmerz or ovulation pain which has been shown to occur about 24-48 hours before ovulation by ultrasound. Occasionally there is mid cycle vaginal bleeding or spotting which is due to the LH surge. Many women experience breast symptoms, changes such as acne and changes in mood post ovulation and pre-menstrually.

WHAT IS THE EFFICACY OF NATURAL FAMILY PLANNING METHODS?

This is variable and depends considerably on the conscientiousness of the user. If only the second infertile phase of the cycle is used, user failure rates of less than 10/100 women- years have been reported. Many women use "multiple-index" natural family planning eg use of the temperature and Billing's or mucus method or the (sympto- thermal) method which involves use of basal body temperature in conjunction with palpation of the cervix. Success of natural methods requires considerable motivation in both partners and expert teaching. Centres specialising in natural methods include;

National Association of the Ovulation Method of Ireland (N.A.O.M.I.)

Telephone: 01-878 6156,
842 0825,
833 1300.

ACCORD: 39 Harcourt Street
Dublin 2.
Tel: 478 0866

All Hallows
Graceville Road
Dublin 9.
Tel: 837 1151

URINE TESTING KITS FOR THE PREDICTION AND DETERMINATION OF OVULATION

WHAT IS AVAILABLE?

One step home ovulation prediction kits e.g. 'Clearplan One Step', 'Response Ovulation' have been available for a number of years. These kits measure changes in LH concentrations in urine by a semi-quantitative enzyme immunoassay and detect levels of 10-15 IU/ml of urinary LH by a visual end-point i.e. a colour change in a dipstick or in liquid. These tests are aimed at women wishing to conceive as they do not predict ovulation sufficiently early enough to enable couples to abstain, or use barrier methods, if they wish to avoid a pregnancy.

A new system using an immunochemical urine test and an electronic monitor has been developed and launched in Ireland recently i.e. 'Persona'. It is based on the measurement of hormone levels in early morning urine to identify the fertile days in the cycle. It defines the beginning of the fertile phase by the oestradiol (estrone -3- glucuronide), E3G rise. The end of the fertile phase is based on detection of the LH surge and then allowing 3-4 days for ovum release and survival.

HOW DOES IT WORK?

A simple test stick is used capable of performing the dual assay of E3G and LH levels. A battery operated, hand-held electronic monitor reads the test stick and uses a predictive algorithm for interpreting the results in terms of fertility status (the algorithm is based on data from thousands of cycles held in the system's database and reported in the literature). The fertility status is indicated by a red light for fertile days, green for non fertile days and yellow denoting that a urine test is required. With use, the system adapts to the individual woman by referring to her stored data for the previous six cycles. The woman checks the monitor daily to determine if it is a fertile or non fertile day or whether a urine test should be done. The yellow test light will shine on 8 mornings each month (16 in the first month) i.e. the woman must do 16 tests the first month and then 8 tests per month subsequently.

WHAT ARE THE ADVANTAGES OF PERSONA?

- No side effects.
- Relatively easy to use.
- Accurately monitors hormone levels so that the number of days women have to abstain or use other contraception is much less than with natural methods of contraception, typically about 6-8 days per cycle with 'Persona'.

WHAT ARE THE DISADVANTAGES OF PERSONA?

- ◆ Its effectiveness is still being evaluated by large scale trials in UK, Germany and Ireland. Some trials have found effectiveness of up to 94%.
- ◆ Cannot be used by women who are breast-feeding or on treatments that affect hormone levels.
- ◆ Cannot be used by women with polycystic ovarian syndrome, menopausal symptoms, or women with liver or kidney disease.
- ◆ Some drugs e.g. tetracycline (not minocin or oxytetracycline) interfere with the system.

COITUS INTERRUPTUS

WHAT IS COITUS INTERRUPTUS?

This is perhaps best defined by its commonest euphemism (withdrawal) ie withdrawal of the penis before ejaculation ensuring that the semen is deposited outside the vagina.

WHAT IS THE EFFECTIVENESS OF COITUS INTERRUPTUS?

The failure rate depends of the age of the woman studied and varies between 10 - 30 / 100 women years of exposure.

WHAT ARE THE DISADVANTAGES OF COITUS INTERRUPTUS?

The main disadvantage is that intercourse is incomplete and may be unsatisfying for the couple. It also has a relatively high failure rate.

COITUS INTERRUPTUS

EMERGENCY CONTRACEPTION

WHAT IS POST-COITAL CONTRACEPTION?

This is contraception which is administered after intercourse has taken place, but has its effects prior to implantation which generally occurs about five days after ovulation.

METHODS OF POST-COITAL CONTRACEPTION CURRENTLY AVAILABLE?

- Insertion of a copper bearing I.U.D. not more than five days following unprotected intercourse. The I.U.D. is usually removed during the next menses but can be left in if the woman desires to use it for contraception in the future.
- Yuzpe Method must be commenced within seventy two hours of unprotected intercourse. The Morning after Pill is therefore a misnomer for this method and might prevent women availing of it. Two tablets of a contraceptive containing 250 micrograms of Levonorgestrel and 50 micrograms of Ethinyl Oestradiol eg Ovran 50 are given at once, followed by a further two tablets in twelve hours. An anti-emetic is recommended with each dose eg Valoid 50 mg orally.
- Use of Levonorgestrel - 0.6 mgs within twelve hours of intercourse. This involves taking twenty Microlut tablets as a stat dose.

METHODS UNDER RESEARCH

RU486 (Mifepristone) is a progesterone blocking agent and is being studied as a post coital contraceptive. It is not licensed for use in Ireland.

HOW DO POST-COITAL CONTRACEPTIVE METHODS WORK?

The I.U.D works mainly by blocking implantation although early in the cycle it may block fertilisation. The hormonal methods may prevent or postpone ovulation and also may make the cervical mucus hostile to sperm. If administered after ovulation has occurred they are likely to prevent implantation and may impair luteal function.

HOW EFFECTIVE IS POST COITAL CONTRACEPTION?

The failure rate with the IUD method is extremely low approximately 1-2/100 women-years. Reported failure rates for the Yuzpe methods vary widely. The failure rate when the woman is mid-cycle is between 2 and 5%. Factors that may reduce the effectiveness are: treatment initiated more than seventy two hours after intercourse, other unprotected intercourse within the same cycle, vomiting within three hours of pill taking.

WHAT ARE THE DANGERS IF POST-COITAL CONTRACEPTION FAILS?

No harmful or teratogenic effects have ever been shown to be caused by post coital hormonal contraception. Very little artificial oestrogen or progesterone is likely to reach the blastocyst as it has not yet implanted. Congenital abnormalities occur in approximately 2% of all pregnancies.

In the extremely unlikely event of continuing pregnancy following insertion of an IUD, management should normally include removal of the device. If it is left in situ it may result in sepsis, second trimester miscarriages, preterm delivery and still-birth. Removal of the device may result in a miscarriage.

WHAT ARE THE ADVANTAGES OF POST-COITAL CONTRACEPTION?

Both methods of post-coital contraception - hormonal and IUD are reasonably effective and can be used after intercourse. When a woman presents for post-coital contraception it facilitates discussion around other issues such as other forms of contraception, cervical smear screening and "safe sex".

WHAT ARE THE DISADVANTAGES OF POST-COITAL CONTRACEPTION?

Yupze method

- ◆ Nausea and vomiting in up to 25% of cases.
- ◆ Failure rate of 1-5%.
- ◆ Should not be used when there is a past history of thrombo-embolism.
- ◆ The next menses may be delayed.
- ◆ Enzyme inducing drugs such as anticonvulsants reduce the effectiveness. In this situation the doses given can be doubled ie 4 Ovrastat followed by four twelve hours later.

IUD Method

- It is an invasive procedure and may be painful. Occasionally serious complications such as perforation of the uterus can occur.
- There is a risk of exacerbating pelvic inflammatory disease.

FEMALE STERILISATION

HOW SHOULD PATIENTS SEEKING FEMALE STERILISATION BE COUNSELLED?

First and foremost patients requesting this operation should be informed that it is intended to be permanent. Reversal can be attempted but cannot be guaranteed and there is also a risk of complications such as ectopic pregnancy. It is highly desirable to counsel both partners before the operation and to obtain the other partner's consent.

WHAT TYPES OF SURGERY ARE AVAILABLE?

The procedure is usually done by laparoscopy. Mini laparotomy may be necessary for obese women or women with a history of previous surgery or peritonitis with adhesions. Female sterilisation can be performed at the time of caesarean section but is associated with a higher failure rate at this time. General anaesthesia is usually employed although occasionally local anaesthesia is sometimes employed. Tubal occlusion may be achieved by coagulation with diathermy, by ligature, by spring clips or elastic bands. Diathermy is less popular recently because of the risk of burns to the bowel or other structures.

The procedure is usually carried out as a day case. Occasionally crampy abdominal pain or shoulder tip pain may be experienced for a few days afterwards. The operation should not have any effect on the menstrual cycle or on the patient's well-being. There is no evidence that it results in the earlier onset of the menopause, menorrhagia or irregular bleeding. Women may be confused because they have been on the pill prior to the procedure which may have masked menstrual abnormalities. Most of the problems associated with this operation tend to occur because of inadequate counselling beforehand.

WHAT ARE THE DISADVANTAGES?

It requires admission to hospital and is usually done under general anaesthesia with the associated risks. Tubal reanastomosis occurs very rarely and could result in an ectopic pregnancy. Occasionally other surgical complications such as wound infection or perforation of viscera can occur.

WHERE CAN I REFER MY PATIENTS FOR STERILISATION IN THE EASTERN HEALTH BOARD AREA?

The Rotunda Hospital

The Coombe Women's Hospital

Tallaght Hospital

National Maternity Hospital

Clane Hospital

Clane General Hospital will accept a referral directly from the patient's family doctor provided a consent form has been signed in the doctor's presence. In the other hospitals the patient must be assessed by a consultant. The waiting period for tubal ligation is similar to that for other gynaecological procedures.

MALE STERILISATION

HOW SHOULD MALE PATIENTS REQUESTING VASECTOMY BE COUNSELLED?

The man and his partner should understand that the operation is intended to be permanent. Operations to reverse the procedure have a low success rate. If either partner has doubts they should be advised against the operation.

The nature of the operation, side effects and post-operative care should be discussed. The man should be reassured that there will be no effect on his sexuality or his ability to perform sexual intercourse. The couple should be advised to continue using contraception until the absence of sperm in the ejaculate has been confirmed by the laboratory.

HOW IS VASECTOMY PERFORMED?

It is usually performed as an outpatient procedure under local anaesthetic. Some patients may request general anaesthetic and should be referred to hospital.

The vas deferens is identified in the scrotum by palpation. A small incision is made. Usually approximately one centimetre of the vas is removed between ligatures and the ends ligated but various methods can be used.

HOW SUCCESSFUL IS THE OPERATION?

Vasectomy must be considered a permanent contraceptive. However, there is a very small failure rate due to reanastomosis of the vas. This occurs in about 1 in 1000 cases in the first four months and 1 in 5000 in the first 3 to 4 years.

WHAT ARE THE DISADVANTAGES?

- ◆ Contraceptive precautions must be used until two semen samples have confirmed the absence of sperm. A minimum of 20 ejaculations are recommended before sending a sample to a laboratory at 16 and 18 weeks after the operation.
- ◆ Superficial wound infections occur occasionally.
- ◆ Scrotal haematoma occurs in about two percent of cases.
- ◆ Epididymo-orchitis is rare post vasectomy and responds well to antibiotic treatment.
- ◆ Sperm granuloma may occur in up to two percent of vasectomy cases and presents as a small mass at the ligated end of the vas. If it is very tender or painful surgical excision may be required.

- ◆ Rarely men suffer from persistent pain in the testicle or at the vasectomy site. Treatment of this problem is often difficult.
- ◆ Psychological problems occasionally occur after vasectomy but are often due to pre-existing relationship or psycho-sexual problems. Adequate counselling prior to the operation should involve discussion of problems of this nature.

WHAT ARE THE ADVANTAGES?

- It is very effective and permanent.
- The operation can usually be performed under local anaesthesia and does not require hospital admission.

WHERE CAN I REFER MY PATIENTS FOR VASECTOMY?

- Tallaght Hospital (small number of patients per annum).
- St. James's (small number of patients per annum).
- Dublin Well Woman Centre.
- Irish Family Planning Association at its branches in Cathal Brugha St., The Square Tallaght and Synge Street.
- Marie Stopes Reproductive Services Dublin
- A new community based vasectomy service is available from the following general practitioners free of charge to G.M.S. patients.

The doctors providing the service are:-

Dr. John O'Keefe, 136 Morehampton Rd., Dublin 4. Tel: 2693921

Dr. Andrew Rynne, The Wood Surgery, Clane, Co. Kildare. Tel: 045-68305

*Dr. William O'Brien, Superquinn Shopping Centre, Knocklyon, D16.
Tel: 4934321*

Dr. Nial O'Leary, 1 McKee Avenue, Finglas, Dublin 11. Tel: 8345302

THE INTRAUTERINE CONTRACEPTIVE DEVICE (I.U.C.D. OR IUD)

An IUD is any solid device which is retained within the uterine cavity for the purpose of preventing pregnancy. There are three types of intrauterine contraceptive devices, inert, copper bearing and hormonal. Inert devices are not currently recommended due to their higher failure rate. These devices are inserted via the cervical canal and have marker threads visible at the external os. The levonorgestrel IUD (Mirena) is not currently licensed for general use in Ireland but is available on a named patient basis. It is basically an intra-uterine system that releases levonorgestrol. The Mirena IUD has a T shaped plastic frame 32mm long, the stem of which is surrounded by a reservoir containing levonorgestrol from which a constant dose is released daily into the uterus. In the U.K. the current licensed contraceptive life is three years.

WHAT IS THE MODE OF ACTION OF IUDS?

The main effect is achieved by blocking fertilisation. Inflammatory cells which appear in the genital tract impede sperm transport and fertilisation. They also inhibit implantation by causing a foreign body reaction in the endometrium. Progestogen releasing IUDs alter endometrial histology with a decidual reaction and glandular atrophy, block oestrogen and progesterone receptors and also reduce the penetrability of mucus to sperm.

HOW EFFECTIVE IS THE IUD?

The failure rate for copper bearing IUDs is low, in the order of 0.3 - 2/100 women - years. The Copper T 380 "Slimline" IUD is thought to be the most effective device available at present in this country. Based on 16,000 women years of use in multicentre WHO and Population Council studies the failure rate with this device is 0.3/100 women years making it at least as effective as the Combined oral contra- ceptive pill. The failure rate for Mirena is 0.09/100 women-years.

WHAT ARE THE ADVANTAGES OF IUDS?

They are highly effective, have no unwanted systemic effects, are independent of intercourse, do not require strict compliance by the user as in the taking of pills. They do not interfere with lactation and are relatively inexpensive. There is no delay in return to fertility after removal of Mirena unlike Depo-provera injection.

WHAT ARE THE DISADVANTAGES OF IUDS?

The device may be expelled after insertion and this may go unnoticed. Expulsion is most likely to occur during the first or second menstruation after insertion. The device may perforate the uterus particularly at the time of insertion with the risk of IUD penetration of the bowel or bladder. The incidence of perforation is about one in a thousand. Menstrual bleeding may be increased in amount, duration and frequency and menses may be more painful.

By contrast the Mirena significantly reduces menstrual loss. Irregular bleeding is common however in women in the first 3 months after insertion. After 3 months, menstrual bleeding loss decreases by more than 75% and the number of bleeding days decreases. After one year of use most women bleed lightly for only one day per month and 15% are amenorrhoeic. Studies have repeatedly shown an increased risk of pelvic inflammatory disease among IUD users. However research has also shown low or absent risk in women claiming only one sexual partner. Malposition of the device can result in pain and bleeding as well as loss of effectiveness. Therefore it is vital that only doctors proficient in insertion ie those with appropriate training, experience and practice should insert IUDs.

If a woman becomes pregnant with an IUD in situ, there is an increased risk of late miscarriage including a risk of septic second trimester miscarriages with haemorrhage and also increased risk of ante-partum haemorrhage, preterm delivery and stillbirth if the IUD remains present. Therefore as soon as the pregnancy is diagnosed attempts should be made to remove the IUD.

Ectopic pregnancies are more common among IUD users. Every woman with an IUD in situ experiencing delayed menstruation and pain should be assessed for ectopic pregnancy. The rate of ectopic pregnancy in Mirena users is 0.02/100 women years (compared with 0.25/100 years for the copper IUD, nova T).

Around 3% of women using Mirena have progestagenic side-effects i.e. headaches, nausea, or depression. A randomised study has revealed that much lower rates of pelvic inflammatory disease occurred with Mirena than with the nova T. It is not known if there are any drug interactions with Mirena.

HOW IS THE DEVICE INSERTED?

- ◆ Perform a thorough physical examination to determine the position and shape of the uterus.
- ◆ Insert a speculum and cleanse the cervix with antiseptic solution. Gentle traction with a tenaculum may assist in straightening the uterine canal during passage of the uterine sound.
- ◆ Gently insert a sterile uterine sound which is an instrument which measures the depth and determines the direction of the uterus. Record the depth of the uterus by moving the flange of the intrauterine sound so that it touches the cervix. Sterile gloves should be used for loading and inserting the device. To avoid perforation, gentleness is very important especially during sounding and insertion.

MATERIALS REQUIRED

- Autoclave or hot air steriliser
- Disposable gloves, lubricant
- Disinfectant eg savlon
- Sterile cotton balls
- Sterile instruments: Sponge forceps, tenaculum, uterine sound, long scissors

WHEN CAN THE I.U.C.D. BE INSERTED?

The device should be inserted during menses preferably between day 3 to day 5, after 8 weeks post-partum and from 4-6 weeks post first trimester miscarriage.

WHAT ARE THE CONTRA-INDICATIONS TO THE IUD?

- Undiagnosed irregular genital tract bleeding
- Suspicion of pregnancy
- Current pelvic infection
- High risk of sexually transmitted disease. Ideally women should be screened for STDs with a high vaginal swab and chlamydia test.
- Distorted uterine cavity or cavity which sounds to less than 6cms.
- Known HIV infection or AIDS
- Wilson's disease (Copper devices)
- History of bacterial endo-carditis or after any prosthetic valve replacement. Women with valvular heart disease but no past history of endocarditis may have an IUD inserted under antibiotic prophylaxis and after discussion with the patient's cardiologist.
- Relative contraindications to Mirena include a past history or current very high risk of severe arterial disease, including ischaemic heart disease or thrombotic stroke.

8th Nov 10 J.D. 14.1.11 J.D.

WHERE CAN I REFER MY PATIENTS FOR I.U.C.D. INSERTION?

Many GPs have special training in IUCD insertion and inter-referral among general practitioners is an area that has great potential for development. Family planning clinics such as The Dublin Well Woman Centre and I.F.P.A also offer this service. The Mirena coil should be inserted by a specially trained doctor. Occasionally in nulliparous women dilation and para cervical block are needed. The device is inserted in the follicular phase of the cycle eg between day one and day nine in a twenty eight day cycle. Exogenous oestrogen is sometimes prescribed beforehand to dilate the cervix.

PRE-CONCEPTION ADVICE

WHAT ADVICE SHOULD GENERAL PRACTITIONERS GIVE TO COUPLES PLANNING A PREGNANCY?

- Maintenance of a balanced diet with special emphasis on the healthy food pyramid advocated by the Health Promotion Unit, Department of Health. Vegetarians or vegans, women with lactose intolerance, or gluten enteropathy (coeliac disease) may require special advice.
- Encourage regular exercise.
- Avoidance of cigarette smoking and alcohol.
- Recommend that women should take folic acid 400 micrograms daily when planning a pregnancy and for the first 12 to 14 weeks of the pregnancy. Women who have previously had a baby with a neural tube defect should take folic acid five milligrams preconceptually and during the first trimester.
- Recommend that Rubella Titre should be checked. Women who are not immune should receive Rubella vaccination. Contraception should be used for three months after the vaccination has been administered. The rubella titre should be rechecked. Very occasionally some women require a second booster.
- Women with medical illnesses such as asthma, hypertension, diabetes mellitus, epilepsy, inflammatory bowel disease, collagen vascular disease, should consult their specialists regarding medication when trying to become pregnant. Some drugs such as anti-convulsants for example, are associated with a higher incidence of congenital abnormalities. This should be discussed with the patient. Most patients are advised to continue with their medication especially those with asthma. Patients often discontinue their medication with a resultant deterioration in the medical condition.
- Women planning a pregnancy can continue to work in most jobs. Women who work with toxic chemicals should be advised to follow the recommended guidelines. This information can usually be obtained from Environmental Health Officers. Known chemical hazards in pregnancy include lead, mercury and copper metals, insecticides, herbicides, solvents for example carbon tetrachloride, drugs during their manufacture and disinfecting agents e.g. ethylene oxide.
- Women who work with ionising radiation, e.g. x-rays and radio-isotopes should follow the recommended guidelines. Recent studies have not supported the notion that visual display units (VDU) increase the risk of congenital anomalies. Women who work in microbiological laboratories should of course follow the regulations for handling toxic materials. Women in contact with animals especially ewes at lambing may be exposed to ovine chlamydia which is associated with miscarriage. Domestic pets particularly cats may be a source of

toxoplasmosis. Overall when the effects of work on maternal and fetal outcome are assessed, after adjusting for environmental and social factors it seems to have very little detrimental or beneficial influence.

- Women over 35 should be advised of the increased risk of trisomies and problems such as pregnancy induced hypertension and diabetes mellitus. Amniocentesis is now available in The Rotunda Hospital. Amniocentesis can be performed at 12 weeks but it is associated with miscarriage in about one per cent of cases. It takes at least three weeks to obtain results from the laboratory. Triple testing using measurements of maternal serum alpha fetoprotein, unconjugated oestriol and human chorionic gonadotrophin is also available in the Rotunda. It is done at fifteen weeks gestation and is about 60 percent accurate in predicting the risk for Down's Syndrome.

TEENAGE PREGNANCY

WHAT ARE THE WAYS IN WHICH GENERAL PRACTITIONERS MIGHT INFLUENCE TEENAGE CONCEPTION RATES?

- ◆ **Availability of Confidential Contraceptive Counselling:** Surgeries can display information and distribute leaflets about contraceptive services. Teenagers often avoid seeking contraceptive advice because of the fear of lack of confidentiality. Some G.P.s may wish to organise specific teenage health clinics.
- ◆ **Sex Education:** G.P.s can facilitate education by encouraging parents and teachers to use them as resource persons. Many G.P.s are organising health promotion meetings for patients. Topics such as pubertal changes, sexual health and contraception could be covered.
- ◆ **Liaison with other health professionals and schools involved in sex education:** G.P.s should be familiar with the programme for 'Relationships and Sexuality Education' in the schools. The Eastern Health Board has appointed a teenage pregnancy coordinator who works closely with second level schools and youth organisations. It also provides training courses for youth workers which deal with issues such as confidence and assertiveness training, peer influence, and responsibility within relationships and for reproductive health.

SPECIAL FOCUS ON THE NEEDS OF TEENAGERS WITHIN THE TRAVELLING COMMUNITY

G.P.s working with the travelling community could facilitate special education programmes for teenage travellers and could provide clinics with an emphasis on sex education and contraception for the community.

WHAT SPECIAL PROBLEMS ARE ENCOUNTERED WITH TEENAGE PREGNANCY?

- Pregnancy and child birth involve greater health risks in young teenagers e.g. pregnancy induced hypertension and toxemia, antepartum haemorrhage, obstructed labour.
- Teenagers often present late and do not avail of proper antenatal care.
- Some teenagers have special problems such as drug abuse and heavy cigarette smoking.

G.P.s who provide services within 'The Mother and Child Scheme' can often play a valuable role in the provision of antenatal care for this high risk group.

for M.H.S.B.

UNPLANNED PREGNANCY

WHAT IS THE ROLE OF THE G.P. IN DEALING WITH A PATIENT WITH A CRISIS PREGNANCY?

- ◆ Confirm the pregnancy and try to establish gestation.
- ◆ Help the woman to make a decision: Explore the woman's predicament and what implications the pregnancy may have for her. This may encompass social, psychological, financial issues, relationship issues between the woman's partner or her family. She may need help assessing her own feelings, wishes and circumstances.
- ◆ Provide information about the options available and the implications of each option. The three courses of action available to women should be discussed i.e.
 - To continue the pregnancy and keep the baby.
 - To continue the pregnancy and to have the baby adopted.
 - To seek an abortion.

G.P.s undertaking counselling should offer an atmosphere without pressure or constraints. If he or she feels unable to discuss abortion, the woman should be informed as soon as possible. If conscience allows the G.P. should then advise the woman as to where she might go for such information. A G.P.'s personal beliefs or opinions should not interfere with the counselling process which should mainly focus on facilitating the woman to reach a decision rather than directing her in any particular way.

WHAT SERVICES ARE AVAILABLE TO WOMEN WITH UNWANTED PREGNANCY IN THE E.H.B. REGION?

- **CURA**
30 South Anne St.
Dublin 2
Phone: (01) 671 0598
- **PACT**
Protestant Adoption and Counselling Trust.
71 Brighton Rd.
Rathgar
Dublin 6
Phone: (01) 690 6438
- **Dublin Well Woman Centre**
35 Lr. Liffey St.
Dublin 1
Phone: (01) 872 8051

■ **Marie Stopes Reproductive Services**

58 Blessington Street
Dublin 7
Phone: (04) 830 0630

■ **Irish Family Planning Association**

36-37 Lr. Ormond Quay
Dublin 1
Phone: (01) 872 5033

■ **Irish Family Planning Clinics**

5-7 Cathal Brugha St., Dublin 1.
Phone: (01) 872 7088

■ **59 Synge St., Dublin 8.**
Phone: (01) 478 0172

■ **Level 3, The Square, Tallaght, Dublin 24.**
Phone: (01) 459 7685

■ **The Adoption Board**

Hawkins House
Hawkins Street
Dublin 2
Phone: (01) 671 5888

■ **Adoption Advice Service**

Barnardos
Harold's Cross
Dublin 6
Phone: (01) 496 0042

Adoption services can also be accessed through the Health Board social worker.

■ **Senior Social Worker**

Child Care Services
Park House
North Circular Rd.
Dublin 7.
Phone: (01) 835 7122

Adoption Board

WHAT TECHNIQUES ARE USED FOR TERMINATING PREGNANCIES IN THE U.K.?

FIRST TRIMESTER ABORTION: VACUUM ASPIRATION

The contents of the uterus are evacuated by suction up to 12-14 weeks of pregnancy. The cervix may need to be dilated.

SECOND TRIMESTER ABORTION: PROSTAGLANDINS

Prostaglandin is instilled through the cervix into the extra-amniotic space. The foetus is expelled in 8-18 hours. If the placenta is not expelled with the foetus, dilatation and evacuation is performed.

General anaesthesia is most commonly used but some private clinics offer local anaesthetic.

WHAT COMPLICATIONS CAN OCCUR FOLLOWING INDUCED ABORTION?

- ◆ Haemorrhage (4%)
- Post operative infection (3.6%)
- Psychiatric Morbidity (2.4%)
- ◆ Operative injury (0.6%)
- ◆ Thromboembolic disease (0.5%)

- Joint Study of the Royal College of General Practitioners and the Royal College of Obstetricians & Gynaecologists.

"Induced Abortion Operations and Their Early Sequelae"

- Journal of the Royal College of General Practitioners 1985; 35: 175-180.

- First Trimester: Vacuum aspiration is safe. Complications are unusual and the mortality rate is 1 per 100,000 compared to maternal mortality of 8 - 10 per 100,000.
- Second Trimester Abortion: Carries greater risks of infection with possible increased risk of subsequent infertility. If there is heavy bleeding and an enlarged uterus post abortion the patient should be admitted to hospital. If there is bright red bleeding associated with mild pain and/or temperature the patient may sometimes be treated at home with a course of antibiotics.

WHAT ARE THE GOALS OF THE POST ABORTION CHECK UP?

- ◆ To establish the physical and psychological well-being of the patient.
- ◆ To ensure that there are no retained products of conception.
- ◆ To give appropriate contraceptive advice.

The check up is usually done about two weeks after the abortion and should include a pelvic examination. General Practitioners are strongly advised to read the 'Training Programme and Information Leaflet for General Practitioners' prepared by the Irish College of General Practitioners in 1995 which is a very valuable resource for dealing with the issues surrounding unplanned and crisis pregnancies.

for M.H.S. & J.

INFERTILITY

WHAT IS THE ROLE OF THE GENERAL PRACTITIONER IN INFERTILITY MANAGEMENT?

As approximately one in six couples will experience infertility problems at some time in their reproductive lives the G.P. is often consulted about such problems. He or she can often play a key role in organising the initial investigations and provide support and counselling during what can be a very difficult period for the couple.

WHEN SHOULD INFERTILITY BE INVESTIGATED?

In general 80-90 percent of couples will have achieved a pregnancy within the first year of trying, therefore it is normal to wait at least one year before commencing investigations. When there is oligomenorrhoea or amenorrhoea and in cases of secondary infertility, tests should be started earlier.

WHAT ARE THE CAUSES OF INFERTILITY?

- | | |
|---|-----|
| ◆ Unexplained infertility | 30% |
| ◆ Ovulatory failure | 25% |
| ◆ Male factor | 20% |
| ◆ Tubal damage | 15% |
| ◆ Endometriosis | 5% |
| ● Other e.g.
cervical mucus problems,
uterine abnormalities | 5% |

These are rounded figures available from epidemiological information in the UK (Data From Effective Health Care: The Management of Infertility, August 1992).

WHAT IS INVOLVED IN THE INITIAL CONSULTATION?

Ideally the initial visit should take place with both partners present. A full medical history is taken from the couple which should include:

- Duration of infertility
- Previous fertility with different partners
- Coital - frequency, satisfaction, difficulties and timing
- Social - cigarette smoking, alcohol consumption
- Medical - endocrine disorder: diabetes, mellitus, thyroid disease.
- Female - previous history of pelvic inflammatory disease, I.U.C.D. use, abdominal, pelvic or cervical surgery, menstrual cycle - length and regularity.
- Male - testicular surgery, trauma, or history of orchitis e.g. mumps.

A full physical examination is done including a pelvic examination and cervical smear test in the female. Testicular examination should be performed in the male to exclude tumours or varicoceles.

WHAT INVESTIGATIONS SHOULD BE ARRANGED FOR THE FEMALE?

Preliminary Investigations

- Rubella Antibody Screening: Immune status should be rechecked even if previously immunised.
- Confirmation of ovulation:
Length and interval of menstrual cycle; if regular, usually ovulatory.
Ovulatory symptoms e.g. mucus changes, abdominal discomfort.
- Basal Body Temperature Measurements are unhelpful for timing intercourse as the temperature rise occurs after ovulation whilst the pre-ovulatory fall may not be clear and can be misleading due to temperature fluctuations.
- Assessment of Serum Progesterone in the luteal phase of the menstrual cycle. Concentrations of 30 nmol/l or more are suggestive of ovulation. A peak level should be reached about one week prior to the expected menses. In a 28 day cycle e.g. progesterone should be measured on day 21.

PREGNANCY

Second Phase Investigations

- ◆ **Endocrine Tests:** Follicle Stimulating Hormone (FSH), Lutenising Hormone (LH), prolactin, oestradiol, thyroxine and Thyroid Stimulating Hormone (TSH) should be measured. Elevated levels of FSH occur in ovarian failure. FSH and LH levels should be assessed in the first five days of the menstrual cycle. Polycystic ovarian syndrome may be suspected by the presence of oligomenorrhoea, acne and hirsutism and is usually associated with elevation of Lutenising Hormone (LH). Ovarian ultrasound may show polycystic ovaries. If the patient has marked hirsutism, serum testosterone and androstenedione should be measured. If the serum testosterone is greater than 5 nmol/l, an Adrenocorticotrophic Hormone (ACTH) test should be done and 17-hydroxyprogesterone measured to exclude late-onset congenital adrenal hyperplasia. Adrenal androgens dihydroepiandrosterone (DHEAS) should be measured to exclude an adrenal cause. The possibility of an ovarian or adrenal neoplasm should be excluded by ultrasound or computerised tomography. Hyperprolactinaemia may be stress related if marginal but if persistently shown to be elevated, a pituitary adenoma should be excluded with a CT or MRI scan of the pituitary fossa. Hypothyroidism is also associated with hyperprolactinaemia.
- ◆ **Progestogen Challenge Test:** is used to assess the oestrogen status of the patient based on the principle that oestrogen primed endometrium will be shed on progestogen withdrawal. Administration of 5 mg medroxyprogesterone for five days will result in a withdrawal bleed if the patient's endometrium is appropriately oestrogenised. Most patients with ovulation dysfunction and polycystic ovarian syndrome will have a positive test whilst those with hypothalamic - pituitary dysfunction will have a negative test.
- ◆ **Laparoscopy:** allows assessment of tubal patency and pelvic pathology such as endometriosis and adhesions. Tubal patency can be checked by passing a dye such as methylene blue through the cervix and observing the passage of the dye through the fallopian tubes. Endometrial Biopsy Sampling conducted after day 21 of the cycle can demonstrate secretory changes in the endometrium suggestive of ovulation.
- ◆ **Hysterosalpingography** may provide additional information regarding the shape and size of the uterine cavity. If there is a history of pelvic inflammatory disease the procedure is usually done under antibiotic cover with a broad spectrum antibiotic.
- ◆ **Follicle Tracking by Ultrasound:** Vaginal ultrasound can demonstrate the development of a follicle within the ovary and its daily increase in size (about 2mm) measured. A sudden reduction is suggestive of rupture and hence of oocyte release. This is usually done as part of ovulation induction.

WHAT INVESTIGATIONS ARE DONE FOR THE MALE PATIENT?

Seminal Fluid Analysis: should be performed in a designated laboratory. Analyses can be done in St. James's Hospital, The Mater, St. Vincent's Hospital - Elm Park and Beaumont Hospital in the Eastern Health Board Region. The sample should be produced after three or four days abstinence and should be processed within one hour of production. A sample produced by masturbation is placed in a sterile container. Spermicide free mylex sheaths are available for men who are able to produce semen only by coitus.

Normal Sperm Parameters include:

- Volume greater than 2 mls
- pH 7.2 - 8.0
- Sperm Concentration greater than 20 million/ml.
- Total sperm concentration greater than 40 million/ejaculate.
- Mobility greater than 50 per cent
- Morphology greater than 30 per cent normal forms.
- White cell count less than 1 million/ml.
- Immunobead test less than 20 per cent spermatozoa with adherent particles.

The post coital test is performed one or two days prior to the biphasic rise in basal body temperature when the cervical mucus is well oestrogenised. The woman is instructed to have intercourse two to four hours before coming to the clinic for the test. A small catheter is placed into the cervical os and a column of mucus obtained. The cervical mucus is inspected under the microscope and examined for motile sperm. A post coital test is considered normal if the cervical mucus demonstrates good spinnbarkeit, normal ferning pattern, and at least five sperm per high powered field at the level of the internal os.

Patients often require considerable support as investigations can be prolonged over several months.

Dr. M. H. S. G. J.

WHAT TREATMENTS ARE AVAILABLE FOR INFERTILITY?

- ◆ Endometriosis is found in up to 25 per cent of women undergoing fertility investigation. Medical treatments include progestogens, danazol, Gonadotrophin Releasing Hormone (GnRH) analogues. Conservative laser surgery or diathermy may be employed during laparoscopy. Ovulation induction, super-ovulation, intrauterine insemination (IUI), GIFT (Gamete Intrafallopian Transfer) and I.V.F. may also be necessary.
- ◆ Ovulation Induction is used when there is ovulatory dysfunction as in polycystic ovarian syndrome and as empirical treatment for unexplained infertility. Clomiphene Citrate (an anti-oestrogen) is normally first line therapy. It binds hypothalamic oestrogen receptors resulting in a rise in FSH and LH which in turn stimulates the ovaries. The dose initially is 50 mg daily starting on the second to fifth day of the menstrual cycle for five days. If ovulation does not occur the dosage is increased to 50 mgs two or three times daily. Some patients develop follicles on clomiphene but fail to ovulate because of the lack of an LH surge. In these cases HCG (Human Chorionic Gonadotrophin) is administered when the follicle is about 18 mm in diameter in order to induce follicular rupture and ovulation. Risks of clomiphene treatment include multiple gestation (a six fold increase in twin pregnancy rates), nausea and hot flushes, occasionally weight gain. It may also sometimes have an adverse effect on cervical mucus.
- ◆ Gonadotrophin treatment is used when there is persistent anovulation with clomiphene, failure to conceive after six months of clomiphene, or as part of the super-ovulation regimen. These are extracted from menopausal urine. Preparations include:

■ Homegon and Pergonal	FSH, LH
■ Normegon	FSH, LH
■ Metrodin Hp	FSH only
■ Orgafol	FSH only

- ◆ Some patients with polycystic ovarian syndrome respond to gonadotrophins following GnRH suppression. GnRH agonists are administered as a nasal spray two or three times daily, or by depot injection every four weeks. This results in pituitary desensitisation and exogenous gonadotrophins can then be initiated to induce ovulation. HCG is given for ovulation induction usually when the developing follicle is 18 mms in diameter.

WHAT ARE THE SIDE EFFECTS AND RISKS OF GONADOTROPHIN TREATMENT?

- ◆ Menopausal symptoms such as hot flushes, excessive sweating, vaginal dryness.
- ◆ Nausea
- ◆ Headaches
- ◆ Mood swings
- ◆ Multiple pregnancy
- ◆ Ovarian hyper stimulation associated with ovarian enlargement. In extreme cases there may be large ovarian cysts, ascites and pleural effusions and emergency treatment may be necessary.
- ◆ Hyperprolactinaemia due to a pituitary adenoma may require surgery or irradiation. If CT or MRI scan of the pituitary fossa does not show an adenoma bromocriptine may be used.
- ◆ Hypothalamic or Pituitary Failure can sometimes be treated with Human Menopausal Gonadotrophin (HMG) or with pulsatile infusion of GnRH.
- ◆ In Vitro Fertilisation is used for couples where the woman has fallopian tube disease or where the man's sperm is considered too poor for IUI, in unexplained infertility, moderate and severe endometriosis, and when conception has not occurred after 12-18 cycles of successful ovulation induction therapy.

ACUTE
PRE-CLINICAL

WHAT IS INVOLVED IN IVF?

- Induction of Super-ovulation by pituitary desensitisation with GnRH agonists and administration of exogenous FSH. HCG is administered to induce ovulation.
- Oocyte Collection is usually done through an ultrasound guided needle passed through the vaginal vault. Occasionally laparoscopy is necessary. The procedure is usually done using intravenous sedation and narcotic analgesics.
- Semen is obtained by masturbation on the morning of the procedure and specially prepared to remove poor quality sperm.
- Insemination is done 40 hours after the HCG injection. The oocyte and sperm are cultured in a salt solution and checked the following morning for fertilisation. Approximately 50-60 per cent of the oocytes fertilise. Embryos are then incubated for a further 48-72 hours.
- Embryo Transfer is done with a fine plastic catheter passed through the cervix into the uterine cavity. A maximum of three embryos are transferred in the U.K. In Ireland, all embryos are transferred but this policy may change.
- HCG or Progesterone is given to maintain the corpus luteum.

THE OTHER METHODS OF ASSISTED CONCEPTION

- Super-ovulation is induction of multifollicular growth with gonadotrophins.
- Intrauterine Insemination: specially prepared and washed sperm are introduced into the uterine cavity to coincide with ovulation. The ovaries are usually stimulated prior to treatment. This method is available in The National Maternity Hospital, St. James's and The Coombe Women's Hospital.
- Artificial Insemination Using Donor Sperm (AID or DI) is offered to couples where the male partner is azoospermic. Frozen donor sperm are placed at the cervix or directly into the uterus. This is available in Dr. John O' Keefe's practice at 136 Morehampton Rd., Dublin 4.
- Gamete Intrafallopian Tube Transfer (GIFT): The procedure is the same as for IVF up to the point of oocyte collection. The oocytes and

sperm are then deposited in the fallopian tubes at laparoscopy.

- Zygote Intrafallopian Tube Transfer (ZIFT): The oocytes are fertilised in the laboratory and the zygotes placed in the fallopian tubes at laparoscopy. This method is used where cervical transfer is difficult.

- Oocyte donation: In some countries e.g. the U.K. women donate eggs to recipients undergoing IVF. The donor undergoes conventional IVF treatment up to the point of oocyte collection. In the meantime the recipient's cycle is coordinated with hormone replacement therapy (HRT) alone (for non functioning ovaries) or GnRH agonists and HRT

(for functioning ovaries). Collected oocytes are then fertilised with

sperm from the recipient's partner and embryos are transferred in the normal fashion. HRT is continued throughout the first trimester, until the placenta can function independently. Screening for oocyte donors includes detailed history and recording of physical characteristics. Investigations include blood group, chromosome analysis, infection screening (TORCH, hepatitis B/C, HIV and syphilis).

- Tubal surgery: When the fallopian tubes are damaged or blocked surgery may be considered before I.V.F.

McDonald

WHAT ARE THE CAUSES OF MALE INFERTILITY?

- ◆ Sexual Factors
 - Erectile impotence: Psychogenic, neurological or vascular disease such as arteriosclerosis, diabetes mellitus, spinal cord injuries or demyelinating disease.
 - Drugs: Antihypertensives, anti-depressants, tranquillisers.
 - Retrograde ejaculation: Prostatic or bladder surgery.
- ◆ Azoospermia (absent sperm)
 - Obstructive azoospermia: Normal testicular volume, normal FSH, normal (low) ejaculatory volume, testicular biopsy - normal spermatogenesis.
 - Testicular failure: Iatrogenic exposure to gonadotoxins such as chemotherapy or radiation.
 - Klinefelters Syndrome: XXY Clinical picture: Bilateral small testes, FSH more than twice upper limit of normal for age, testicular biopsy - absent spermatogenesis.
- ◆ Oligospermia (low sperm count)
 - Idiopathic is the commonest cause.
 - Varicocele: Most studies have shown that correction of varicocele can improve sperm counts.
 - Male genital tract infection such as chlamydia or gonorrhea.
 - Immunological: may be due to previous scrotal or testicular injury or previous vasectomy.
 - Environmental factors such as excess alcohol, cigarette smoking, marijuana, very tight fitting underwear.
 - Congenital abnormalities such as cryptorchidism (undescended testis).

WHAT TREATMENTS ARE AVAILABLE FOR MALE INFERTILITY?

- Repair of Varicocele
- Correction of endocrine anomalies: GnRH infusion or HCG and HMG can be used in hypo-gonadotrophic hypogonadism (very rare). Hyperprolactinaemia can be treated with bromocriptine.
- Cyclical steroid regimens can be used if there are significant anti-sperm antibodies.
- Intrauterine Insemination: Artificial insemination with husband's sperm is of no value in oligospermia. It is used combined with super-ovulation when the woman does not have tubal disease.
- In Vitro Fertilisation (IVF): Oligospermia can be compensated for by high insemination concentration. Sperm washing reduces antisperm antibodies.
- Microassisted Fertilisation (MAF):
Intracytoplasmic Sperm Injection (ICSI): A single sperm is injected directly into the cytoplasm of the egg.

WHAT OTHER TREATMENTS MAY BENEFIT THE INFERTILE COUPLE?

Sexual problems such as vaginismus, erectile dysfunction or premature ejaculation may require therapy. Many of these problems have a psychological basis and counselling may be beneficial. It may be necessary to refer some patients to psychologists who specialise in sex therapy. However, the general practitioner can often counsel patients very effectively providing they are made to feel comfortable and the issue is handled in a sensitive way.

Mechanical devices such as dilators for the treatment of vaginismus have limited usefulness and can sometimes reinforce the misconception that it is a physical rather than a psychological problem.

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RUBELLA IMMUNITY

As a result of the increasing uptake of Rubella vaccination in child-hood in Ireland Rubella in pregnancy is now a rare occurrence. Cases still occur and are preventable. Any woman considering a pregnancy should be advised to have a blood test to determine immunity. A Rubella titre is one of the routine prenatal blood tests. A titre greater than 15 IU/L indicates immunity.

Rubella has serious fetal and neonatal consequences if the mother contracts the illness in the first trimester of pregnancy. Serious consequences occur in 20 percent of fetuses which are infected and can result in deafness, blindness due to cataract, cardiac malformation, hepatosplenomegaly and microcephaly. The likelihood of fetal damage is not related to the severity of the disease in the mother. The likelihood and severity of damage decreases with advancing gestational age.

All women susceptible to Rubella should be offered vaccination. Because the vaccine is a live attenuated virus, there is a theoretical risk of fetal infection should the woman become pregnant within three months and therefore contraception is advised during this time.

MISCARRIAGE

WHAT IS THE INCIDENCE OF MISCARRIAGE?

Miscarriage, defined as the expulsion of the conceptus before viability i.e. before the end of the 24th week of pregnancy occurs in at least 15 per cent of confirmed pregnancies. The most common time for miscarriage to occur is between 8 and 13 weeks. Studies have also shown that 25 to 30 per cent of women experience an early pregnancy loss in their reproductive life-time. Many of the early cases are not diagnosed as they are thought to be due to a delayed menstrual period. Recurrent miscarriage refers to any case in which there has been three consecutive spontaneous miscarriages.

WHAT ARE THE CAUSES OF MISCARRIAGE?

- ◆ Idiopathic
- ◆ Chromosomal abnormalities such as trisomies or XO. If recurrent miscarriage occurs parental karyotype should be performed. However, most trisomies occur spontaneously.
- ◆ The amniotic sac may not contain an embryo on ultrasound examination i.e. anembryonic pregnancy or a missed abortion sometimes referred to as a blighted ovum.
- ◆ Immunological Factors: Some recurrent miscarriages may be caused by aberrations of the normal immunological mechanisms. Women with auto-immune disease such as systemic lupus erythematosus have a markedly increased incidence of recurrent miscarriage.
- ◆ Severe general disease of the mother may result in miscarriage, especially acute fevers such as rubella, malaria, brucellosis, toxoplasmosis, cytomegalovirus and listeriosis.
- ◆ Diabetes: The miscarriage rate in diabetes is above average if the disease is not adequately controlled.
- ◆ Uterine abnormalities such as septate or double uterus may result in miscarriage but more frequently result in premature labour. Leiomyomas (fibroids) of the uterus rarely cause miscarriage but may do so if large and protruding into the uterine cavity. Intrauterine adhesions (synechiae) due to endometritis, may very occasionally cause early fetal losses. Cervical weakness either congenital or due to obstetric damage or damage due to cone biopsy may occasionally result in second trimester miscarriage.
- ◆ Hormonal Problems: Insufficient production of progesterone by the corpus luteum before the placenta is fully functional has been claimed to lead to inadequate development of the decidua. This theory is controversial.
- ◆ Drugs: Cytotoxic drugs or lead poisoning have been associated with miscarriage.

Fig 0100201110
Gynaecology

- ◆ Cigarette Smoking and Alcohol: Studies have shown an increased risk of early pregnancy loss with both alcohol consumption and cigarette smoking.
- ◆ Trauma: Severe trauma to the uterus may cause detachment of the embryo. Miscarriage may also occur during e.g. myomectomy and also any condition complicated by severe peritonitis. The incidence of miscarriage after amniocentesis is about 1 per cent.
- ◆ Cervical incompetence can result in recurrent mid trimester miscarriages.

HOW DOES MISCARRIAGE PRESENT AND HOW IS IT MANAGED?

- **Threatened Miscarriage:** Usually presents with painless bleeding. The cervix is closed and the uterus is the appropriate size for gestation. About 50 per cent of patients presenting with a threatened abortion will have a non-viable embryo. A speculum examination should be performed to outrule non pregnancy related causes (such as a polyp or even carcinoma). Ultrasound examination will determine if the pregnancy is viable as the fetal heart should be detected from 7 weeks onward with trans-abdominal ultrasound and earlier with trans-vaginal ultrasound. If there is an empty gestational sac after 8 weeks the pregnancy is unlikely to be viable. However, the scan is generally repeated in 7 to 10 days to confirm this. Ultrasound will also help to outrule an extrauterine pregnancy and occasionally shows the presence of a twin gestation. Some cases of threatened miscarriage are due to the loss of one twin sac while the other survives. There is no evidence that bed-rest affects the prognosis but appropriate advice and counselling should be given to the patient in this situation who is often extremely anxious.
- **Complete Miscarriage:** All the products of conception have been expelled. There is very slight, painless bleeding and the cervical os is closed. Anti D is administered to Rhesus negative women. The woman should be advised to return if bleeding recurs or if she develops a temperature.
- **Inevitable Miscarriage:** Abdominal pain and bleeding occur. The cervix is dilated and the products of conception can often be felt through the open internal os. Before the 12th week the entire contents of the uterus may be extruded and the abortion is complete. If the abortion is not quickly completed or if the haemorrhage is severe, the contents of the uterus should be removed. Anti D should be administered to all rhesus negative women.
- **Incomplete Miscarriage:** Only part of the products of conception have been passed. The uterus is smaller than expected for the period of amenorrhoea and the cervix is open. Occasionally bleeding can be severe enough to cause hypovolaemic shock. Evacuation of the Retained Products of Conception (ERPC) is performed often manually and then by suction curettage. Anti D globulin is given to rhesus negative women.

In some cases what was thought to be a complete miscarriage may present with prolonged bleeding. An Ultrasound scan may show the presence of retained products. This should be managed by ERPC and sometimes antibiotics.

- **Septic Miscarriage:** The patient is ill with suprapubic pain, pyrexia and tachycardia. The cervical canal may be closed and there may be very little bleeding. Infection may follow incomplete abortion or occasionally termination of pregnancy. Patients should be admitted to hospital in most cases where endocervical swabs and blood cultures should be performed. Treatment is with broad spectrum antibiotics which includes cover for anaerobic organisms. Evacuation of the uterus is often deferred for 12- 24 hours. Gram negative infections and clostridia may occasionally result in endotoxic shock with resultant renal and circulatory failure.
- **Missed Miscarriage:** The embryo dies but the gestational sac is retained within the uterus for several weeks or even months. The uterus is smaller than expected for the duration of the amenorrhoea. Pregnancy tests usually become negative about 10 days after the embryo dies but sometimes remain weakly positive for weeks which can cause confusion. Once the diagnosis has been made by ultrasound ERPC should be performed.
- **Recurrent Miscarriage:** Mid trimester miscarriages may result from incompetence of the internal os of the cervix. Treatment of this problem is cervical cerclage after 14 weeks gestation under general anaesthesia. A purse string suture is inserted in the wall of the cervix at the level of the internal os. The suture is removed at about 36 weeks or when labour starts.

Uterine abnormalities which cause mid-trimester abortions can sometimes be treated surgically e.g. excision of a uterine septum or myomectomy.

COUNSELLING

General Practitioners must be very sensitive to the sense of grief and loss that women experience with a miscarriage. Management should consist of diagnosis as soon as possible so that women with a viable pregnancy can be reassured and in cases where the pregnancy is non-viable the problem should be dealt with efficiently and appropriate counselling given. Many women benefit from the offer of an early scan in the next pregnancy. Some women may require more in-depth counselling and support than others. The three maternity hospitals in Dublin have miscarriage clinics. An important part of their work-load is counselling women regarding the implications of miscarriage.

CERVICAL SMEARS

Cervical cytological screening has been shown to fulfil many of the criteria of a successful screening programme. Cervical cancer is preceded for many years by a pre-invasive condition. If left untreated up to one third of these cases will develop into cancer. If taken properly the smear test will diagnose most cytological abnormalities. Treatment of precancer is simple, safe, often non destructive and usually curative. There are approximately 60 - 70 deaths each year in Ireland from carcinoma of the cervix.



The Papanicolaou smear is obtained by scraping a spatula across the transformation zone of the cervix. The cell sample must be obtained from both the ecto and endocervix, since the transformation zone may extend into the cervical canal. The "transformation zone" refers to the area of columnar epithelium on the ecto-cervix which meets the squamous epithelium at the squamo-columnar junction. Various spatulas are available. The Ayre's wooden spatula should routinely be used. A Jacob's brush is often useful for obtaining a good sample from the endo-cervix but can cause bleeding. Ideally, a cervical smear should be taken in the second part of the menstrual cycle to facilitate optimum cytological conditions.

It is preferable to use disposable plastic specula. If non-disposable specula are used, they should be cleaned with a brush in antiseptic eg Savlon, rinsed well and then sterilised in an autoclave for a minimum of fifteen minutes or in a hot air oven at 180 degrees Celsius for one hundred and twenty minutes.

Write the patient's name and date of birth on the ground glass end of each slide using a lead pencil. Do not clean the cervix or remove any attached mucus until the smear has been taken. The speculum should be warmed and preferably lubricated with a water soluble lubricant such as KY gel. Insert the spatula into the cervical os using the bilobed end unless the cervix is very patulous or scarred, when the spade should be used. Firmly rotate the spatula through 1.5 turns ensuring that the scrape spans the squamo-columnar junction at all points. Spread material thinly on the glass slide using gentle longitudinal strokes rather than a circular motion. The aim is to get a single cell layer on as much of the slide as possible without damaging the cells.

Place the slide on a horizontal surface and immediately apply fixative generously. Pour off any excess after a few minutes and allow to dry for ten to twenty minutes.

MATERIALS REQUIRED

- Bivalve vaginal speculum, (Different sizes)
- Lead pencil,
- Good illumination,
- Water soluble lubricant,
- Request form,
- Slide holder,
- Slide with ground glass,
- Ball Point pen,
- Fixative,
- Disposable vinyl or latex gloves,
- Steriliser.

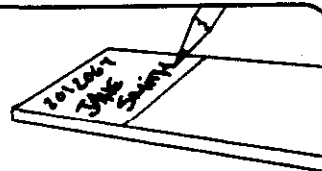
TAKING A CERVICAL SMEAR

MATERIALS REQUIRED

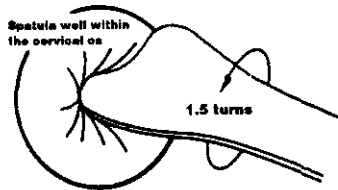
- Bivalve Vaginal Speculum (different sizes)
- Slide with ground glass end
- Spatula - Aylesbury or Ayre
- Lead Pencil
- Ball Point Pen
- Request Form
- Good Illumination
- Slide Mailer
- Fixative

PROCEDURE

- 1 Put the patients name and number on the ground glass end of the slide using a lead pencil (other markers are washed off by processing fluids). If smear is vaginal, mark it 'V'.

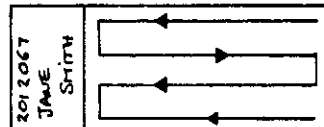


- 2 Do not clean cervix or wipe away any attached mucus until smear has been taken. Position patient, adjust light and insert the warm speculum. Lubricate with minimal tap water or water soluble lubricant. Use no antiseptics or greasy lubricants.

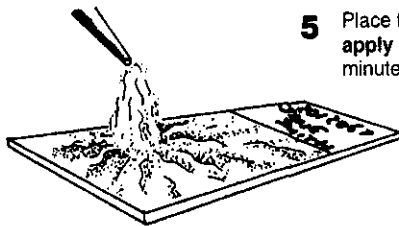


- 3 Insert the spatula into the cervical os using the bilobed end unless the cervix is very patulous or scarred, when the spade should be used. Firmly rotate the spatula through 1.5 turns ensuring that the scrape spans the squamocolumnar junction at all points.

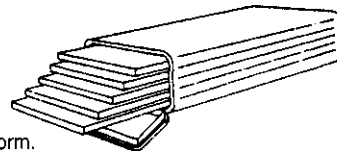
- 4 Spread material thinly on the glass slide. Use gentle longitudinal strokes rather than a circular motion. The aim is to get a single cell layer on as much of the slide as possible without damaging the cells.



- 5 Place the slide on a horizontal surface and immediately apply fixative generously. Pour off any excess after a few minutes and allow to dry for 10 to 20 minutes.



- 6 Complete the request form with a ball point pen, pressing firmly on a hard backing surface. Ensure that all copies are legible.



- 7 Put the slide(s) in a slide mailer for dispatch with request form.

SCREENING FOR CIN AND CERVICAL CANCER

Cervical cancer screening should be offered at least every five years to women between the ages of 25 and 60 years. If a woman has never had a smear, she should have an initial smear which should be repeated in twelve months. If both of these smears are normal a 5 yearly screening interval is then recommended.

The smears should be sent to a laboratory specialised in cytological screening. In the Eastern Health Board area at present St. Luke's Hospital provides this service for general practitioners. It is also available to a limited extent in the Rotunda Hospital, National Maternity Hospital and the Coombe Women's Hospital. A number of private laboratories also provide the service. All abnormal smears must be followed up. The follow up procedure must be explained clearly to the patient and a recall system is desirable.

DEALING WITH RESULTS.

Recommendations may include:

- ◆ Routine repeat cytology for normal smears.
- ◆ Repeat smear because result is unsatisfactory. Reasons for this may include a broken slide, cell fixation inadequate, blood contamination or excessive inflammatory exudate, inadequate cellular content, smear preparation not spread thinly enough. Follow up smears should be taken at least one month apart to provide satisfactory cytological specimens.
- ◆ *repeat cytology twice within twelve months* because of borderline nuclear abnormality or mild dyskaryosis (CIN 1). The woman should be referred for colposcopy if dyskaryosis persists. If the smears remains borderline annual cytology is recommended.
- ◆ *Investigate and treat possible atrophy or inflammation / infection* followed by repeat cytology,
- ◆ *Refer moderate or severe dyskaryosis (CIN II or III), carcinoma or suspected glandular dyskaryosis for colposcopy.*

FOLLOW UP OF CERVICAL SMEARS

It is good practice to inform women of normal results. When a smear is unsatisfactory or abnormal the woman should receive a letter asking her to contact her doctor. The doctor should ensure that all abnormal smears are dealt with appropriately (i.e. referral for colposcopy or repeat cytology).

A record of the attempts that have been made to contact the woman concerned should be kept. A recall system is highly desirable. As many general practitioners now have computerised clinical records and age - sex registers, it has become possible to implement efficient recall systems.

Women who have been treated for CIN should have two or three follow up smears, the first of which should not be before four months. They should then have annual cervical cytology for the following two years followed by three yearly cytology review in those who have negative smears.

WHAT IS THE EPIDEMIOLOGY OF CERVICAL INTRAEPITHELIAL NEOPLASIA (CIN) AND CERVICAL CANCER?

The risk of developing CIN and cancer of the cervix is increased for women who have had intercourse at a young age. The more partners a woman or her partners have had also increases the risk. It is thought that the risk of developing CIN is increased if the transformation zone is exposed to a carcinogen which has been sexually transmitted. Two viruses have been cited as possible carcinogens - the Human Papilloma Virus (HPV) types 16 and 18 and herpes simplex type 2. The most likely virus is HPV although a causal relationship has not yet been proved. Factors such as lower socio-economic groups and cigarette smoking, have been shown to be associated with increased risk of CIN. There is a three-fold difference in the rates of cervical cancer between social classes V and I.

Cervical cancer is the eighth commonest cancer in women. Although only about 15% of cases occur in women under 35, it is the commonest cancer in this age group, accounting for 25% of all new cancers. Since the early 1970s there has been a significant increase in the incidence of both carcinoma in situ and invasive cancer in women under 45, particularly in those aged 25 - 34, but this may partly reflect detection by screening.

The five year relative survival rate for stage I cervical cancer is about 80%, reducing to 7% for stage IV disease. Survival for precancerous lesions is almost 100%.

HOW IS CIN CLASSIFIED?

Pre-invasive cervical neoplasia was previously classified as mild, moderate or severe dysplasia. Currently it is classified as CIN Grade 1 to 3. CIN 3 corresponds to severe dysplasia and carcinoma in situ with nuclear abnormalities, increased mitotic activity and a lack of differentiation of the cells. In CIN 2 the nucleus is less abnormal in appearance and the cells are more highly differentiated. In CIN 1 there may be only slightly abnormal immature cells at the surface of the transformation zone. Some cases of CIN revert to normal and some never progress. The time taken for invasive cancer to develop from CIN 3 is usually in the order of years.

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WHERE CAN GENERAL PRACTITIONERS REFER PATIENTS FOR COLPOSCOPY IN THE EASTERN HEALTH BOARD AREA AND WHAT IS INVOLVED?

Colposcopy Services are available in each of the maternity hospitals in Dublin i.e. National Maternity Hospital, Holles Street, Coombe Women's Hospital and the Rotunda. There are also Clinics in The Mater, Beaumont and St. James's Hospital (Genito - Urinary Medicine Department).

Colposcopy allows accurate localisation of the abnormal epithelium using a low-powered binocular microscope. After application of acetic acid abnormalities in the transformation zone can be visualised eg aceto-white epithelium and abnormal subepithelial capillary pattern. The acetic acid coagulates the protein in the cytoplasm and nuclei, and since abnormal epithelium has a high nuclear density, this prevents light passing through the epithelium which appears white. One cone shaped biopsy is taken from the transformation zone if the colposcopy clinic uses LLETZ (Large Loop Excision of the Transformation Zone). Punch biopsies are taken when local destructive techniques such as laser, cryocautery, cold coagulation and radical diathermy are used.

WHAT TREATMENTS ARE AVAILABLE FOR CIN?

Conservative treatment is possible if the disease is pre-invasive. Treatment for CIN includes carbon dioxide laser, cryo therapy using nitrous oxide or carbon dioxide, the cold coagulator, or loop diathermy (LLETZ). These treatments can be performed in the outpatient setting using local anaesthesia. In the Eastern Health Board region the commonest method of treatment is loop diathermy or LLETZ. This involves excision of the abnormal area in the transformation zone while other methods involve destruction of the abnormal areas.

After treatment for CIN brown discharge can be expected for up to six weeks. Tampons and coitus are discouraged for this time. Secondary haemorrhage occasionally occurs 7 - 10 days after the procedure and needs antibiotic therapy.

A cone biopsy is performed if the whole of the transformation zone is not visualised in an abnormal cervix. Cone biopsy involves the excision of a cone of tissue from the cervix and is usually performed under general anaesthesia. Secondary haemorrhage may occasionally occur after the procedure and mucus production may be reduced which can occasionally affect fertility. Cone biopsy is curative for some forms of micro-invasive disease. Other cases of invasive disease are treated with either simple hysterectomy or hysterectomy and bilateral salpingo - oophorectomy with lymph node dissection where required. Advanced cervical cancer i.e. stages II to IV is treated with radical radiation therapy.

THE MENOPAUSE

WHAT IS THE DEFINITION OF THE MENOPAUSE AND WHAT ARE ARE IT'S EFFECTS?

The menopause is defined as the cessation of periods. It can occur at any age between 40 and 56 but the average age in Ireland is about 51. The cessation of periods may occur suddenly or be preceded by light infrequent periods. If there is heavy or very frequent bleeding it should generally be investigated.

An increased secretion of follicle stimulating and luterising hormones (FSH and LH) from the pituitary occurs in an attempt to stimulate ovulation. Plasma oestradiol levels will usually be low, less than 100 pmol/L. Women may experience the classic climacteric symptoms of hot flushes, night sweats, dryness of the vagina. Quite often they experience other symptoms such as irritability, depression, headache, insomnia, joint pains, urinary symptoms, forgetfulness and difficulty coping. The symptoms may be exacerbated by other factors in the woman's lifestyle such as children leaving home and factors which may alter her role in the home or in the work-place.

The *climacteric* refers to the years of decreasing ovarian function and includes the years prior to the menopause or (peri-menopause), the menopause, and the degenerative changes which occur after the menopause. For some women it can be a time of relief from period pains, heavy bleeding, menstrual migraine or PMT. For others it can be a time of very distressing symptoms which are often most severe in the year or two before the periods stop. The aetiology of these symptoms is poorly understood as there seems to be very little correlation between plasma oestradiol levels and the severity of the symptoms.

Two long-term metabolic consequences of the menopause are osteoporosis and an increased incidence of cardiovascular disease. Peak bone density in women occurs at about the age of 35. Bone density of the spine and hip decreases by two per cent and one percent respectively over the next two decades. There appears to be an age related decline in bone formation, but at the menopause there is a superimposed increase in bone resorption. Osteoporosis is a major health and economic problem and data from many countries has demonstrated an increasing prevalence of osteoporotic fractures that is thought to be due to an aging population. The estimated financial cost to the exchequer in Ireland is thought to be ten million pounds per year.

Factors which increase a woman's risk of osteoporosis include: Physical Factors: Caucasian origin, low body mass, thin body type, positive family history, prolonged breast feeding. Lifestyle: Cigarette smoking, high alcohol intake, sedentary lifestyle, excessive exercise, (athletes), inadequate calcium intake, inadequate vitamin D intake.

Disease: Cushing syndrome, Malabsorption, hyperparathyroidism, hypogonadism, anorexia nervosa, hyperprolactinaemia, multiple myeloma.

Drugs: Corticosteroids, heparin, thyroxine (in excess) GnRH analogues, Premature menopause: familial or surgical or chemotherapy.

Non smoking premenopausal women have a very low incidence of myocardial infarction and stroke. Within ten years of the menopause however they have the same incidence as men. The aetiology of this is poorly understood but may be due to changes in lipid profile ie increases in cholesterol and low density lipoproteins with reduction in high density lipoproteins, due to changes in platelet function or to effects on blood vessels associated with oestrogen deficiency.

Numerous studies have investigated the relationship between HRT and arterial disease risk. The majority have come from the USA and relate principally to the use of conjugated equine oestrogens administered without a progestogen. Most of these studies have suggested a protective effect. A recent analysis of pooled data on the impact of post-menopausal hormone therapy on cardiovascular events does not support the notion that HRT prevents cardiovascular disease (Ref. BMJ vol. 315 July 1997). There is a concern that some of the studies may have been biased due to the unintentional selection of healthy women for HRT therapy which may have influenced the reported beneficial effects of HRT on cardiovascular disease. This obviously requires further evaluation as many studies have concluded that there is a significant reduction in the risk of cardiovascular disease in users of HRT compared to non-users. Prospective, randomised and controlled trials may resolve this issue more clearly in the future. Study designs which minimise selection bias will be needed and which measure factors related to lifestyle and health behaviour, in order to account more fully for confounding in the analyses of the relationship between HRT and cardiovascular risk.

It is not known if the addition of a progestogen negates any beneficial effect oestrogen has on lipid and lipoprotein metabolism and on arterial blood flow. There is good evidence that progestagens which are derivatives of testosterone i.e. norethisterone and norgestrel increase total and LDL cholesterol and reduce HDL cholesterol. There is also some recent evidence that medroxyprogesterone acetate, a progestogen which is a derivative of progesterone has an adverse effect. This does not seem to apply to the other often used progesterone derivative, dydrogesterone. Few epidemiological studies on the effects of combined oestrogen / progestogen preparations are now available. Because of the uncertainties over the effects of progestogen additives upon arterial disease risk and because of their side-effect profile, progestagens should only be combined with oestrogen in HRT for endometrial protection. Progestagens should not be combined with oestrogens in hysterectomised women.

MANAGEMENT OF THE MENOPAUSE

The menopause is an important life event and should be treated seriously by the general practitioner. Management may include counselling about general health, stopping smoking, dietary advice and advice concerning alcohol, exercise and preventative measures for osteoporosis and cardiovascular disease. Hormone replacement therapy should be discussed and offered to women.

Natural oestrogens which contain oestradiol, oestrone, oestriol or equilin are used for HRT. Synthetic oestrogens such as ethinyloestradiol or mestranol are used in the oral contraceptive pill but should not be used for HRT. Synthetic progestagens are used in HRT as natural progesterone is very unstable in the tablet form.

FORMS OF OESTROGEN AND PROGESTERONE PREPARATIONS

Oestrogen	Progestogen
■ Tablets-oral	■ Tablets-oral
■ Patch	■ Combined with oestrogen in patches
■ Implant	
■ Gels	
■ Creams	
■ Pessaries	
■ Vaginal ring	

COMMONLY USED PREPARATIONS

OESTROGEN ONLY

Oral

<i>Premarin</i>	Conjugated equine oestrogens	0.625 mg 1.25 mg
<i>Fematab</i>	Oestradiol	2.0 mg
<i>Estrofem</i>	Oestradiol	2 mg

Transdermal patch

<i>Climara</i>	Oestradiol patches	50 mcgs
<i>Climara forte</i>	Oestradiol patches	100 mcgs
<i>Estraderm</i>	Oestradiol patches	25, 50, 100 mcgs
<i>Evorel</i>	Oestradiol patches	50 mcgs
<i>Fematrix</i>	Oestradiol patches	40, 80 mcgs
<i>Menorest</i>	Oestradiol patches	37.5, 50, 75 mcgs
<i>Epiestrol</i>	Oestradiol patches	25, 50, 100 mcgs

Gel

<i>Oestrogel</i>	Oestradiol	1.5 mg
<i>Divigel</i>	Oestradiol	1. mg

Percutaneous implant

Oestradiol	25, 50, 75, 100 mg
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OESTROGEN AND PROGESTOGEN PREPARATIONS

Sequential combined therapy: Oral:

	Oestrogen	Progestogen	Strengths of Oestrogen
Prempak C	Conjugated equine	Norgestrel	0.625, 1.25mg
Premique cycle 10	Conjugated Oestrogens	Medroxy Progesterone	0.625mg
Femoston	Oestradiol	Dydrogesterone	2mg
Nuvelle	Oestradiol	Levo-Norgestrel	2mg
Menophase	Mestranol	Norethisterone	Varies
Trisequens	Oestradiol	Norethisterone	Varies
Trisequens forte	Oestradiol	Norethisterone	Varies
Femplan Ma	Oestradiol	Medroxy Progesterone	2mg

Patches

Estrapak	Oestradiol	Northisterone(tablets)	50mcgs
Estracombi	Oestradiol	Norethisterone(patch)	50mcgs

Adjunctive Progestogens

Duphaston	Dydrogesterone	10mg tabs (I daily)
Utrogestan	Progersterone	100mgs caps (I-III daily)

Continuous combined therapy

Kliogest	Oestradiol	Norethisterone	2mgs
Premique 5	Conjugated Oestrogens	Medroxy Progesterone	0.625mg

Gonadomimetic

Livial	Tibolone
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VAGINAL PREPARATIONS ONLY

Ortho Dienoestrol	Dienoestrol	Vaginal cream
Ortho-Gynest cream	Oestriol	Vaginal Pessary
Premarin	Conjugated oestrogens	Vaginal cream
Vagifem	Oestradiol	Vaginal tabs

OTHERS

Testosterone Implants 100 mg every six to twelve months

Hysterectomised patients can have unopposed oestrogen treatment. Those with a uterus must have cyclical progestogens for ten to thirteen days each month to prevent endometrial hyperplasia and to avoid the increased risk of endometrial cancer associated with unopposed oestrogen. Women who are more than five years post-menopausal may have progestogen therapy every three months only. In this situation they should be monitored closely to ensure that they do not develop endometrial hyperplasia. Continuous combined therapy e.g. Kliogest or Premique 5 can be used in post-menopausal, non-hysterectomised women who have not had a natural period for one year. The daily dose of oestrogen and progestogen results in most women becoming amenorrhoeic due to endometrial atrophy after an initial adaptive phase of four to six months, during which some bleeding or spotting may occur. Patients may be switched from sequential to continuous treatment if they have received treatment for one to two years, if they were amenorrhoeic before starting HRT, or if they are over 54 years of age.

Tibolone (Livial) is a synthetic steroid which can also be prescribed for post-menopausal women who do not desire periods. It controls vasomotor symptoms but is not currently licensed in Ireland for post-menopausal osteoporosis.

CONTRACEPTION AND HRT

Women who start HRT prior before their periods cease should continue to use contraception. Women under the age of 50 should continue contraception for two years after their last period, women over 50 need to continue contraception for one year.

WHAT ARE THE ADVANTAGES OF HRT?

- ◆ Relief of vasomotor symptoms, hot flushes, night sweats
- ◆ Improved sense of well being
- ◆ Improved skin texture
- ◆ Reversal of genital atrophy
- ◆ May Reduce the risk of cardiovascular disease
- ◆ Reduces the risk of osteoporosis

Fig 0100211.15
Cytology

WHAT ARE THE DISADVANTAGES OF HRT?

- May cause side effects such as nausea, headache, breast tenderness, irregular vaginal bleeding, (allergic skin rashes with patches or gels)
- Increases the risk of venous thrombo-embolism although not to the same extent as synthetic oestrogens used in combined oral contraceptive pills.
- Has been shown to increase the risk of breast cancer when used for longer than five to ten years. However the increased risk ratio is small and women who develop breast cancer while taking HRT appear to be more likely to survive than women not on HRT. Cancers diagnosed in women who have never used HRT tend to be less advanced clinically than those diagnosed never-users.

REF: Lancet, Vol 350. October 1997; 1047-1059.

WHAT ARE THE CONTRA-INDICATIONS TO HRT?

- Cancer of the breast
- Oestrogen dependent cancers such as endometrial cancer
- Pregnancy
- Undiagnosed vaginal bleeding
- Active thrombophlebitis or thrombo-embolic disorders. HRT should be discontinued six weeks prior to elective surgery and during immobilisation causing an increased risk of thrombosis. There is evidence that HRT does increase the risk of thrombosis but not to the same extent as synthetic oestrogens in the combined pill. The risk of venous thromboembolism is greater in women with predisposing factors such as personal or family history of deep vein thrombosis or pulmonary embolism, severe varicose veins, obesity, surgery, trauma or prolonged bed-rest. The benefits of HRT should be weighed against the risks in women with predisposing factors for thromboembolism.
- Severe liver disease
- History of otosclerosis which worsened on the combined oral contraceptive pill or during pregnancy
- Large uterine fibroids
- Hypertension is not a contraindication to HRT provided it has been investigated and treated prior to commencing treatment. HRT can also be prescribed to women known to have ischaemic heart disease and diabetes mellitus.

HOW SHOULD MENOPAUSAL WOMEN BE ASSESSED?

General Practitioners are ideally placed to give opportunistic advice to women approaching and experiencing the climacteric. However, there is a case for organising menopause clinics so that more women are reached by promoting a specific clinic which allows extra time for each patient. There is often a place for the practice nurse in a well organised clinic.

Promotional leaflets and posters, inter-referral from colleagues and identifying and calling patients from age-sex registers are means of attracting patients to these clinics.

The initial assessment should be by the doctor. The patient's reasons for attending and her expectations should be explored. A gynaecological, obstetric and general medical history should be taken. The initial examination should include pulse, blood pressure, weight, breast examination, pelvic examination, cervical smear and urinalysis. If indicated FBC, ESR, urea and electrolytes, LFTS, T4 and serum lipids may be performed to exclude other organic disease. Serum FSH, LH and oestradiol should occasionally be done, especially if menopause is premature or the patient has had a hysterectomy. Mammography screening is advocated two yearly for women aged 50-64 years. Bone densitometry is sometimes advisable. Women with one or more significant risk factors for osteoporosis may benefit from the investigation. It is not yet known whether screening for osteoporosis around menopause and targeting HRT at high risk women will be cost effective. Pilot studies to answer this have been started in the United Kingdom but the results may not be available for some years. Three types of bone density scanning are available:

- ◆ Dual Energy X-ray Absorptionometry (DEXA) is the most widely used as it is very accurate and associated with a low dose of radiation (approximately one eighteenth of the dose associated with a chest X-ray).
- ◆ CT bone density scans are accurate but require a larger dose of radiation.
- ◆ Broad band ultrasound measures bone density at the heel and may be inaccurate as it does not measure bone density at the hip and spine and results can be misleading.

WHERE CAN PATIENTS BE REFERRED FOR BONE DENSITY SCANNING IN THE EHB REGION?

- Trinity College Dublin
- St. Vincents Hospital, Elm Park.
- Rotunda
- Blackrock clinic.

HRT should be discussed in detail outlining the benefits and potential risks. The various treatment options should be discussed. Arrangements are made for follow-up in three months and thereafter every six months unless problems arise. Visits regarding the menopause are an ideal opportunity to give general health education to women on topics such as diet, with particular reference to calcium intake, on cessation of smoking, alcohol, stress management and relaxation. Many general practitioners in addition are organising health promotion clinics for menopausal women. At present general practitioners can claim payment for organising these meetings from their indicative drug budgeting savings.

Women on HRT should be reviewed at least once yearly by the doctor. This assessment should include general review, breast examination, blood pressure check. Pelvic examination and cervical cytology if appropriate should be performed at least five yearly. Patients should be referred for gynaecological assessment if they have persistent irregular bleeding on HRT. Hysteroscopy and biopsy or dilatation and curettage as well as examination under anaesthesia and ultrasound may be necessary to rule out intra-uterine or ovarian pathology.

When HRT is being discontinued, it is usually better to taper the woman off the medication gradually as sudden withdrawal may be associated with an abrupt recurrence of menopausal symptoms such as hot flushes and sweating.

WHAT OTHER TREATMENTS ARE AVAILABLE FOR MENOPAUSAL PROBLEMS?

Women who cannot take HRT may get relief from vasomotor symptoms with the use of clonidine 25 micrograms. The dose is usually two to three tablets morning and evening.

Treatments for Osteoporosis

Calcitonin is available in some countries in a nasal spray. At present it is only available in injectable form in this country.

Biphosphonates such as Didronel PMO, Fosamox have been shown to reduce fracture rates in established osteoporosis.

Sodium Fluoride is not currently recommended for the treatment of osteoporosis.

Calcium supplements

- | | |
|-------------------|---|
| ■ Calcichew | calcium carbonate tabs (500 mg calcium) |
| ■ Calcichew forte | calcium carbonate (1000 mg calcium) |
| ■ Cacit | calcium carbonate (500 mg calcium) |
| ■ Ossopan 800 | calcium phosphorous supplement |
| ■ Calcium sandoz | calcium lactate gluconate (400mg calcium) |

Calcium, Vitamin D supplements

- | | |
|--------------------|---|
| Calcichew D3 | calcium carbonate (500mg calcium, Vitamin D 200 IU) |
| Calcichew D3 forte | calcium carbonate (500mg, Vitamin D 400 IU) |
| Rocalcitrol | Vitamin D analogues (one alpha),
0.25, 0.5 micrograms. |

Stimulants of bone formation

Anabolic steroids, parathyroid and hormone fragments. These are not currently recommended due to the high incidence of side-effects.

HOW LONG SHOULD WOMEN REMAIN ON HRT?

Risk benefit analyses evaluating the effects of hormone replacement therapy have demonstrated positive effects in terms of reduction of the symptoms of menopause and on the prevention of osteoporosis. Data on cardiovascular disease risk reduction requires further evaluation. Use of HRT for more than 5 years appears to be associated with a significant increase in the risk of breast cancer. There are no definitive guidelines as to how long women should remain on HRT at present. Use of HRT for a period less than 5 years does not seem to be associated with any adverse effects on life expectancy.

PREMENSTRUAL TENSION

WHAT IS PREMENSTRUAL TENSION?

Premenstrual tension is probably best defined as an exaggeration of the normal physiological and psychological symptoms which occur in women in their cycle prior to menstruation. Physiological symptoms often include discomfort in the lower abdomen and back, breast tenderness, fluid retention and irritability. Women with severe PMT may experience depression and emotional disturbances. Some women may notice a deterioration in their concentration and very rarely manifest violent behaviour.

Emotional stress often contributes to the symptoms and there is often underlying psychological or emotional problems which the woman has not identified. Medication may be of some help but the most important aspect of treatment is often counselling and helping the woman to gain insight into her problems rather than focusing on physical symptoms.

Pelvic pathology should be excluded by pelvic examination and investigation if indicated. It is important to exclude underlying pathology or psychiatric illness in the assessment of a woman with PMT.

WHAT TREATMENTS ARE AVAILABLE FOR PMT?

Reassurance and psychotherapy may be an important part of the treatment. Identifying work-related and emotional stress in itself may help the woman to deal with her problems in a more effective way. Some women may require more in-depth counselling and psychotherapy.

Many women have tried over-the-counter treatments before they approach their General Practitioner. Vitamin B6 (Pyridoxine) in a dose of 50-100 mg daily premenstrually helps to relieve fluid retention and sore breasts for some women. Evening Oil of Primrose (Gamma Linoleic acid) in a dose of 500-1,000 mgs daily can also relieve sore breasts, fluid retention and mood swings. These medicines must be taken regularly for one to two months to achieve effects.

Diuretics such as Dyazide or Centyl K can be used premenstrually but may cause side-effects and rebound fluid retention. Caution should also be exercised when prescribing these medications to women with distorted body-image or a history of bulimia or anorexia nervosa, as there is a potential for abuse.

Progestagens such as Norethisterone 5mg po bd, Dydrogesterone 10mg bd or Utrogestan 200 mg tid from day 15-25 of the cycle are often used. Natural progesterone in the form of Cyclogest suppositories 200 mg are not available in Ireland but can be obtained on a named patient basis from Shire Pharmaceuticals in the United Kingdom. Oestradiol skin patches with concomitant cyclical progesterone to prevent endometrial hyperplasia can also be of benefit.

Combined oral contraceptive pills are also used. Prostaglandin synthetase inhibitors such as Mefenamic acid 250 mg tid starting 12 days before the onset of menstruation are a well recognised treatment. They can improve symptoms of fatigue, headache, general aches and pains and mood symptoms. Danazol suppresses gonadotrophin secretion and abolishes cyclical ovarian function. The dose is 200-400 mgs daily. Unwanted side effects such as weight gain, hirsutism and acne may occur with the higher doses. Use of gonadotrophin releasing hormone analogues is not warranted for premenstrual tension because of their unwanted menopausal side effects and long term risk of osteoporosis. Bromocriptine (2.5-5 mgs daily) can be used for severe mastalgia. The placebo effect for most treatments is high so that treatment may only be effective for a limited period. Changing to a different medication may be beneficial.

Very severe irritability or violent behaviour may require use of mild tranquilisers e.g. Diazepam 2 mgs bd or Lexotan 1.25 mgs tid pre-menstrually. These should generally be avoided and only used as a last resort. Severe cases may also benefit from anti-depressant treatment such as an SSRI or a tricyclic medication if other treatments have failed.

MENSTRUAL DISORDERS

AMENORRHOEA

Amenorrhoea can be either physiological (pregnancy, lactation, Amenopause or pre-menarchal) or pathological. Pathological amenorrhoea can be further subdivided into primary or secondary.

PRIMARY AMENORRHOEA

CAUSES OF PRIMARY AMENORRHOEA

- ◆ **Abnormalities of the lower genital tract:** causing haematocolpos such as imperforate hymen or other congenital lesions causing poor canalisation of the uterus, cervix or vagina. These are rare.
- ◆ **Gonadal Dysgenesis (Turner's Syndrome):** due to a 45X0 chromosomal anomaly and associated with short stature, webbing of the neck and wide carrying angle.
- ◆ **Adrenogenital Syndrome:** Hyperplasia of the adrenal cortex resulting in excessive production of androgens. Symptoms and signs include hirsutism, acne, enlargement of the clitoris and deepening of the voice.
- ◆ **Pituitary infantilism (Levi-Loran Syndrome):** with low FSH and oestrogen levels is very rare.
- ◆ **Delayed Puberty:** is sometimes due to low GnRH.

INVESTIGATIONS OF PRIMARY AMENORRHOEA MAY INCLUDE:

- Physical examination
- Hormone assays: GnRH, FSH, LH, oestradiol, T4, TSH.
- Chromosomal Studies
- Pelvic ultrasound
- Intravenous pyelogram in cases of uterine or vaginal anomalies to outrule associated renal malformations.
- Laparoscopy and biopsy of the gonads is only done if diagnosis cannot be made by less invasive methods.

Investigations are usually commenced at age 16.

SECONDARY AMENORRHOEA

CAUSES OF SECONDARY AMENORRHOEA

- Emotional stress
- Weight gain or loss, often associated with eating disorders such as anorexia nervosa.
- Strenuous, continued exercise as in athletes.
- Severe illness
- Polycystic ovarian syndrome which may be associated with polycystic ovaries, hirsutism and acne.
- Premature ovarian failure or premature menopause.
- Hyperprolactinaemia due to an adenoma of the anterior pituitary gland. Stress may also cause hyperprolactinaemia.
- Thyroid disease either hypo or hyperthyroidism.
- Cushing's Syndrome due to hyperplasia or less commonly tumours of the adrenal cortex associated with excess glucocorticoids, amenorrhoea, hypertension, polycythaemia, osteoporosis and diabetes.
- Diabetes mellitus which is severe or badly controlled.
- Withdrawal of oral contraceptives may result in amenorrhoea which usually resolves within six months. Occasionally induction of ovulation with clomipene or gonadotrophins is required.
- Surgical procedures such as endometrial resection or pelvic irradiation for malignant disease.
- Depo progestogen injection.

INVESTIGATION OF SECONDARY AMENORRHOEA

- ◆ Exclude pregnancy
- ◆ Take accurate history of menstrual cycle and enquire about environmental factors.
- ◆ General examination including breast and pelvic examination
- ◆ Hormone assays: T4, TSH, FSH, LH, oestradiol, prolactin.

(If pregnancy is not desired and there is no evidence of underlying disease, further assessment may not be necessary provided oestrogen levels are adequate so that osteoporosis is not a concern).

- ◆ Pelvic ultrasound
- ◆ CT or MRI scan of the pituitary is used in the evaluation of hyperprolactinaemia to exclude a pituitary adenoma.

TREATMENT OF AMENORRHOEA

No treatment may be necessary. If the patient wants periods and contraception, the oral contraceptive pill may be prescribed. It is also used in cases of Turner's Syndrome. If a woman with secondary amenorrhoea wishes to conceive, ovulation can be achieved by clomid, gonadotrophins or pulsatile GnRH.

Polycystic ovarian syndrome is often treated with the COC Dianette. Clomid and other ovulation inducers may also be used. Laser drilling or wedge resection of the ovaries is rarely performed.

Hyperprolactinaemia may be due to stress. Hypothyroidism or the effects of drugs such as phenothiazines should also be excluded in cases of galactorrhoea. Radiation treatment may be necessary in cases of pituitary adenoma. Cases of microadenomata may be treated with bromocriptine.

ABNORMALLY INCREASED AND IRREGULAR MENSTRUAL UTERINE BLEEDING

Menorrhagia: Heavy menstrual loss with a normal cycle.

Metrorrhagia: Irregular vaginal bleeding.

Dysfunctional uterine bleeding.

CAUSES OF MENORRHAGIA

- ◆ Uterine fibroids
- ◆ Adenomyosis
- ◆ Pelvic endometriosis
- ◆ Intrauterine contraceptive device except the Mirena (Levonorgestrel I.U.C.D.)
- ◆ Salpingo - oophoritis
- ◆ Thyroid disease
- ◆ Acute Leukemia
- ◆ Thrombo cytopenic purpura
- ◆ Von Willebrand's disease
- ◆ Occasionally emotional stress

IRREGULAR VAGINAL BLEEDING:

- Inflammation or infection (especially post coital bleeding).
- Polyps: cervical, endometrial and fibroid.
- Urethral caruncle.
- Carcinoma of the cervix.
- Carcinoma of the uterine body.
- Oestrogen secreting tumours e.g. granulosa or theca cell tumour of the ovary.

WHAT IS DYSFUNCTIONAL UTERINE BLEEDING?

Dysfunctional uterine bleeding is heavy or irregular bleeding not due to a local disorder. Dysfunctional uterine bleeding is often associated with anovular cycles. In ovulatory cycles excessive bleeding may be caused by *corpus luteum insufficiency* with decreased secretion of progesterone in the second half of the cycle. In *cystic glandular hyperplasia* oestrogen production rises to high levels, with no feedback inhibition of the pituitary gland, so high oestrogen levels continue for up to 6-8 weeks resulting in amenorrhoea for that length of time. The prolonged action of the elevated oestrogen in the absence of progesterone results in endometrial hyperplasia. When the oestrogen levels fluctuate excessive endometrial bleeding ensues.

Menorrhagia commonly occurs after the menarche due to *anovular bleeding*. With prolonged heavy bleeding an ultrasound should be done to exclude an ovarian tumour. Dysfunctional uterine bleeding at the time of the menopause should only be diagnosed after endometrial biopsy with hysteroscopy or curettage to exclude malignant disease of the uterus.

INTERMENSTRUAL BLEEDING

Very slight bleeding may occur at the time of ovulation but only lasts a few hours. Diagnostic curettage or hysteroscopy should be performed in all cases in which a local cause is not found on examination with a speculum in older women.

TREATMENT OF ABNORMAL MENSTRUAL BLEEDING

- Nonsteroidal anti-inflammatories e.g. Mefenamic acid 500 mg bid prn.
- Combined oral contraceptive pill in women under 40 and women under 35 who smoke.
- Progestogen treatment e.g. Primolut N 5 mg bd from day 19-26 of the cycle for a 3-6 month period.
- Anti-fibrinolytics inhibit plasminogen activity e.g. tranexamic acid, Cyclokapron.
- Haemostatic drugs such as Dicyanone (Ethamsylate) have been shown to be of little benefit.
- Danazol is occasionally used in a dose of 200- 800 mgs daily but may have masculinising side effects.
- Endometrial resection or ablation is sometimes used but will not always eliminate pain associated with menorrhagia. It should be preceded by hysteroscopy. The success rate for reduction of menstrual blood loss is about 85% but only 30% become amenorrhoeic. After five years there is a high rate of recurrence of menorrhagia so it is probably most suitable for women in their 40s who are relatively near the menopause. Endometrial resection is performed with a wire loop and enables the gynaecologist to send tissue for histology.

Endometrial ablation is achieved by a number of different methods e.g. heat treatment, cryotherapy, laser or diathermy. The procedures are usually done under general anaesthetic but can occasionally be done under local anaesthetic. Potential complications include uterine perforation, haemorrhage if excess endometrial tissue is ablated or resected and occasionally iatrogenic adenomyosis. Generally the procedures are safe if performed by trained gynaecologists.

- Mirena coil is an intrauterine system that releases levonorgestrol. Irregular bleeding tends to occur in the first three months after insertion. After three months use menstrual blood loss falls by 75% and the number of bleeding days decreases. By 12 months most women bleed lightly for only one day each month and 15% are amenorrhoeic. Some women may experience progestogenic side effects. At the time of writing, Mirena is not licensed in Ireland but is available on a named patient basis. Many gynaecologists feel that the Mirena system will revolutionise the treatment of menorrhagia in the future.
- Hysterectomy is performed when menorrhagia cannot be controlled by other methods. After the age of 45 there is a case for bilateral oophorectomy to eliminate the risk of ovarian cancer.

GENITAL PROLAPSE

WHAT ARE THE COMMON TYPES OF GENITAL PROLAPSE?

- **Cystocoele:** Prolapse of bladder and anterior vaginal wall. Sagging of the urethra alone is a **urethrocoele**.
- **Rectocoele:** Prolapse of the rectum and posterior vaginal wall.
- **Uterine Prolapse:** involves descent and inversion of the vaginal vault.
 - Grade 1: Uterus is retroverted and descends but cervix does not reach the introitus.
 - Grade 2: The cervix appears at the vaginal opening but only protrudes on straining.
 - Grade 3: The uterus lies outside the vulva, also called procidentia.
- **Enterocoele:** Hernia of Pouch of Douglas through the posterior vaginal fornix - which may occur without uterine prolapse. It causes a bulge of the posterior vaginal wall. *It is most common following hysterectomy.*

WHAT SYMPTOMS DO PATIENTS WITH PROLAPSE COMPLAIN OF ?

- ◆ **Local discomfort:** a feeling of vaginal discomfort and dragging and of 'something coming down'. The sensation of prolapse is increased on coughing, standing or exertion and relieved by lying down.
- ◆ **Urinary Symptoms:** Women with a cystocoele usually experience frequency of micturition. Incomplete emptying of the bladder may result in infection causing dysuria. With procidentia the woman sometimes has to push the prolapse up before she can pass urine. Stress incontinence is often associated with prolapse. However stress incontinence and prolapse can occur independently of each other.
- ◆ **Bowel Symptoms:** With a rectocoele the woman may have difficulty emptying her bowel. Straining may cause the rectocoele to bulge into the vagina preventing normal evacuation of faeces unless it is digitally replaced.
- ◆ **Dyspareunia:** Sexual intercourse may be difficult or uncomfortable with significant prolapse.
- ◆ **Back Pain:** Back-ache due to prolapse is worse on standing and relieved by lying down. However in most women with prolapse the back-pain is due to some other cause and therefore will not be alleviated by treatment of the prolapse.

WHAT TREATMENTS ARE AVAILABLE?

- **Avoidance of constipation** as it has been shown to be significantly associated with prolapse.
- **Prevention of obstetrical injury** by avoidance of prolonged labour, not allowing women to push before full dilatation, avoidance of ventouse or forceps during the first stage of labour.
- **Pelvic floor exercises** especially in the early post-natal period.
- **Oestrogen replacement** in post-menopausal women.
- **Surgery**
 - Colposuspension for symptomatic cystocele with bladder neck prolapse.
 - Anterior colporrhaphy for anterior vaginal wall prolapse
 - Posterior colporrhaphy for posterior vaginal wall prolapse which includes excision of the sac of any enterocele and repair of the perineal body.
- **Vaginal hysterectomy** for uterine prolapse with repair of the vaginal wall. If the woman does not want hysterectomy a Manchester repair is an alternative. The transverse cervical ligaments are shortened thus anteverting and elevating the uterus.
- **Vaginal Ring Pessaries** are used for patients who are unwilling or unfit to have surgery. These are made of polyethylene or flexible vinyl. Vaginal irritation and occasional ulceration can occur.

INVESTIGATION OF URINARY INCONTINENCE IN WOMEN

An accurate general and gynaecological history should be taken and a general and pelvic examination done before any investigations are ordered.

URODYNAMICS: TOOLS USED:

Mid Stream Urine: before any invasive studies.

Uroflowmetry: Noninvasive, patient voids over a flowmeter.

Urinary Diary: Simple recording over 3 days.

Perineal Pad Test: Patient drinks a fluid load and pad is weighed before and after exercise.

Renal Ultrasound or Intravenous Pyelography

Cystometry: Measures changes in bladder pressure with changes in bladder volume, with pressure recording catheters in bladder and rectum.

Videocystourethrography (VCU): X-ray of patient when voiding during cystometry. Visualises urethral sphincter mechanism and outlines pathology such as bladder or urethral diverticula, vesico-ureteric reflux and vesical or urethral fistulae.

Electrophysiological: Measurements used to measure striated muscle activity within the urethral sphincter mechanism.

WHAT TYPES OF URINARY INCONTINENCE OCCUR IN WOMEN?

- **Stress Incontinence:** Loss of urine on physical effort.
- **Urge Incontinence:** Involuntary loss of urine with strong urge to void.
- **Overflow Incontinence:** Loss of urine due to overdistended bladder without detrusor activity.

WHAT ARE THE CAUSES OF URINARY INCONTINENCE IN WOMEN?

Urethral Causes:

- ◆ Urethral sphincter incompetence
- Detrusor instability
 - neuropathic
 - non-neuropathic
- ◆ Retention with overflow
 - lower motor neuron
 - upper motor neuron
 - pharmacological
 - urethral obstruction

- ◆ Congenital
epispadias: due to faulty midline fusion of mesoderm and resulting in a widened bladder neck, short urethra, separation of the symphysis pubis and poor sphincter control.
- ◆ Others
Urinary Tract Infection, faecal impaction in the elderly, urethral diverticulum.

Extraurethral Causes:

- ◆ Congenital
bladder exstrophy i.e. failure of development of anterior bladder wall and abdominal wall, ectopic ureter.
- ◆ Fistula
obstetric causes such as obstructed labour, gynaecological causes such as pelvic surgery or malignancy.

WHAT FORMS OF TREATMENT ARE AVAILABLE FOR URINARY INCONTINENCE?

Urethral sphincter incompetence is frequently due to mechanical and denervation injury to the pelvic floor and urethral sphincter during childbirth. A cysto-urethrocele is present in about 50 percent of cases.

TYPES OF TREATMENT INCLUDE:

- Pelvic floor exercises
- Electrical stimulation of pelvic floor
- Oestrogen treatment for women at the menopause
- Vaginal rings
- Surgery:

Anterior repair: elevates the bladder neck through the vagina.

Bladder Neck Suspension: elevates the bladder with suture insertion on other side of the bladder neck.

Burch Colpo Suspension: corrects both urethral sphincter incontinence and cysto-urethrocele. The approach is through a Pfannenstiel incision.

Marshall - Marchetti Procedure: elevates the bladder neck but not the vaginal wall by suturing paraurethral tissue to the periosteum at the back of the symphysis pubis.

Sling Procedures: rectus sheath fascia or inorganic material such as Silastic or Mersilene elevates the bladder and provides support underneath. Incision may be suprapubic or combined vaginal and abdominal.

Collagen peri-urethral injections can increase urethral resistance and are particularly useful in the elderly or those who have had failed surgery previously.

PELVIC PAIN

WHAT ARE THE CAUSES OF PELVIC PAIN?

Pelvic pain may be classified as acute or chronic and as gynaecological or non gynaecological.

GYNAECOLOGICAL CAUSES OF ACUTE PELVIC PAIN

- Ruptured corpus luteum or follicular cyst
- Spontaneous miscarriage
- Endometriotic cyst
- Ectopic pregnancy
- Following perforation of the uterus
 - insertion of IUCD
 - dilatation and curettage
 - termination of pregnancy
- Acute salpingo - oophoritis
- Septic abortion
- Pelvic abscess
- Torsion of ovary
- Haemorrhage into a cyst
- Fibroid degeneration
- Pelvic neoplasms: Pelvic and back pain is usually a late symptom of ovarian and uterine cancers.
- Pyometra due e.g. to carcinoma of cervix or body of uterus
- Ovarian hyperstimulation e.g. by exogenous gonadotrophins used in infertility

GYNAECOLOGICAL CAUSES OF CHRONIC PELVIC PAIN

- ◆ Primary dysmenorrhoea probably due to excess prostaglandin activity.
- ◆ Secondary dysmenorrhoea due to organic disease such as endometriosis, adenomyosis or pelvic inflammatory disease, and often associated with menorrhagia.
- ◆ Mittelschmerz: pain mid cycle due to ovulation.
- ◆ Chronic Pelvic Inflammatory disease
- ◆ Endometriosis
- ◆ Pelvic adhesions
- ◆ Uterine displacement e.g. genital prolapse or uterine retroversion.

- ◆ Cysts and tumours are often painless unless undergoing torsion, degeneration or sudden enlargement.
- ◆ Intra Uterine Contraceptive Device
- ◆ Haematocolpos associated with imperforate hymen or vaginal atresia.

NON GYNAECOLOGICAL CAUSES OF PELVIC PAIN

- Urinary causes such as cystitis, renal calculus, acute urinary retention, urethritis.
- Intestinal causes such as metastatic colonic tumours, ulcerative colitis, Crohn's disease, diverticulitis, irritable bowel syndrome, acute appendicitis, mesenteric vascular thrombosis.
- Musculoskeletal: Lower abdominal and back pain may be due to prolapsed intervertebral disc, spondylolisthesis or osteoarthritis. Low back pain is rarely gynaecological.
- Miscellaneous causes: Porphyria, sickle cell disease, SLE, diabetes, somatization syndrome which should be recognised early to avoid multiple inappropriate referrals and investigations.

WHAT INVESTIGATIONS ARE USED IN THE EVALUATION OF PELVIC PAIN?

After careful history and physical examination (which should include a pelvic examination) the following investigations are commonly used in the evaluation of pelvic pain:

- FBC, ESR, pregnancy testing
- Mid-stream urine
- Endocervical swabs for culture and sensitivity and chlamydia testing.
- Pelvic ultrasound
- Laparoscopy

BREAST DISEASES

WHAT CONDITIONS SHOULD BE REFERRED TO A SURGEON WITH A SPECIAL INTEREST IN BREAST DISEASE OR A BREAST CLINIC?

Lump

- ◆ Any new discrete lump
- ◆ New lump in pre-existing nodularity
- ◆ Asymmetrical nodularity that persists at review after menstruation.
- ◆ Abscess
- ◆ Cyst: general practitioners with the necessary skills may aspirate breast cysts. If the cyst recurs or there is any remaining mass the patient should be referred.

Pain

- If associated with a lump
- Intractable pain not responding to reassurance, simple measures such as wearing a well supporting bra, and common drugs.
- Unilateral persistent pain in post-menopausal women.

Nipple Discharge

- All women aged 50 and over.
- Women under 50 with: bilateral discharge sufficient to stain clothes
- Blood stained
- Unilateral nipple discharge if persistent.

Nipple retraction or distortion, nipple eczema

Change in skin contour

Family History

Request for assessment by a woman with a strong family history of breast cancer

INVESTIGATION OF BREAST DISEASE

Advantages and Disadvantages of Techniques for Assessment of Breast Masses

Technique	Advantages	Disadvantages
Clinical examination	Easy to perform	<ul style="list-style-type: none"> • Low sensitivity in women aged < 50
Mammography	Useful for screening women aged > 50	<ul style="list-style-type: none"> • Requires dedicated equipment and experienced personnel • Low sensitivity in women aged < 50 • Unpleasant (causes discomfort or actual pain.)
Ultrasonography	<ul style="list-style-type: none"> • Same sensitivity in all ages • Useful in assessing impalpable lesions • Painless 	<ul style="list-style-type: none"> • Operator dependent • Less sensitive and less specific than clinical examination or mammography
Fine needle aspiration cytology	<ul style="list-style-type: none"> • High sensitivity • Provides definitive diagnosis in most instances • Low incidence of false positives 	<ul style="list-style-type: none"> • Operator dependent • Needs experienced cytopathologist • Painful

Breast Lump:

Triple assessment: Clinical examination
Imaging (Mammography and/or ultrasound)
Fine needle aspiration (\pm core biopsy)

Breast Pain:

Unilateral persistent mastalgia: Mammography
or
Ultrasonography

Localised areas of painful nodularity: Mammography
or
Ultrasonography

Focal Lesion: Fine needle biopsy

Nipple Discharge

Clinical examination, mammography.

Nipple Retraction

Clinical examination, mammography.

Change in Skin Contour

Clinical examination, mammography, ultrasound.

ASSESSMENT OF WOMEN WITH BREAST SYMPTOMS BY THE G.P..

Patient's History:

Duration of symptoms, risk factors such as family history.

Clinical examination:

Inspection of breasts asking patient to place her arms by her side, above her head, and pressing on her hips, especially looking for skin dimpling, change in contour or nipple changes. Breast palpation is performed with the patient lying flat with her arms above her head and should be repeated with the patient sitting. The breasts are examined with the hand held flat. Abnormalities should then be checked with the fingertips and assessed for deep fixation by tensing the pectoralis major - accomplished by asking the patient to press on her hips. All palpable lesions should be measured. The axillae should be checked for palpable lymph nodes.

BENIGN BREAST ABERRATIONS

- Extra nipples/breasts: 1-5% of men and women have supernumerary or accessory nipples and a much lesser number have accessory breasts. These do not require treatment unless unsightly.
- Absence or hypoplasia of the breast: sometimes associated with chest wall anomalies. True breast asymmetry can be treated with augmentation of the smaller breast or reduction of the larger.
- Prepubertal breast development is common and only requires investigation if associated with other signs of precocious puberty.
- Fibroadenomas: account for about 13% of all palpable breast masses but in women less than 20 account for 60% of masses. There are four types i.e.: common fibroadenoma, giant fibroadenoma, juvenile fibroadenoma and phyllodes tumour.

Fibroadenomas over 4 cms in size should be excised. In women under 40, fibroadenomas diagnosed by clinical examination, ultrasonography and fine needle aspiration may not require excision but should be assessed by a specialist.

- Pain and Nodularity: Cyclical pain and nodularity are very common. Focal breast nodularity is the most common cause of a breast lump. Benign breast change is the preferred terminology and terms such as fibroadenosis, fibrocystic disease and mastitis are now discouraged.
- Cystic Disease: Present as a smooth, discrete breast lump that can be painful and is sometimes visible. The diagnosis is made by fine needle aspiration. The fluid should be sent to the laboratory for cytology if bloodstained. After aspiration the breast should be re-examined to ensure that the palpable mass has disappeared. Any residual mass should be assessed by mammography and fine needle aspiration.
- Sclerosis: Refers to localised areas of excessive fibrosis or sclerosis e.g. sclerosing adenosis. Excision biopsy is often necessary to make a definitive diagnosis.
- Duct Ectasia: Presents with cheesy nipple discharge, slit-like nipple retraction and occasionally a palpable, doughy mass and occurs in older women. Surgery is very occasionally indicated.
- Epithelial Hyperplasia: is an increase in the number of cells lining the terminal duct lobule. If the hyperplastic cells show cellular atypia this is called atypical hyperplasia and is associated with an increased risk of breast cancer.

BREAST INFECTION:

- Neonatal breast infection usually due to E.coli or staphylococcus.
- Lactating breast infection often associated with cracked nipples. Women should be encouraged to continue breast feeding if possible. Broad spectrum antibiotics e.g. flucloxacillin or augmentin should be prescribed. An established abscess should be treated by recurrent aspiration or incision and drainage.
- Periareolar Infection: Presents with periareolar inflammation or with an abscess and is treated with broad spectrum antibiotics. It is commonest in young women who smoke cigarettes. An underlying neoplasm should be excluded if the inflammation does not settle after treatment.
- Mammary Duct Fistula: is a communication between the skin usually in the peri-areolar region and a major subareolar breast duct. Treatment is by excision of the fistula and diseased duct or ducts under antibiotic cover.
- Cellulitis of the breast: most commonly affects the lower part of the breast and occurs in women with poor personal hygiene or who are obese. Sebaceous cysts are common in the skin of the breast and may become infected.

BREAST CANCER:

Breast cancer accounts for approximately 650 female deaths in Ireland each year. One in twelve women will develop breast cancer at some stage in their lives.

WHAT FACTORS ARE ASSOCIATED WITH AN INCREASED RISK OF BREAST CANCER?

- ◆ Advancing Age: The rate of breast cancer increases with age.
- ◆ Developed Countries: Five fold difference between Western and Far Eastern Countries.
- ◆ Early Menarche or Late Menopause is associated with increased risk.
- ◆ Age at First Pregnancy: Nulliparity and late age at first birth increase the lifetime incidence of breast cancer.
- ◆ Family History: A woman's risk of breast cancer is two or more times greater if she has a first degree relative (mother, sister or daughter) who developed the disease before the age of 50, and the younger the relative when she developed breast cancer the greater the risk. The risk increases between four and six times if two first degree relatives develop the disease. Some of the familial cases are thought to be due to mutations on the BRCA1 gene on the long arm of chromosome 17 which has just been cloned.
- ◆ Previous Benign Breast Disease: women with atypical epithelial hyperplasia have a four to five time higher risk of developing breast cancer than women who do not have proliferative changes in their breast. Women with palpable cysts, complex fibroadenomas, duct papillomas, sclerosing adenomas have a slightly higher risk of breast cancer (1.5 -2.0 times).
- ◆ Lifestyle; Diet: There is a correlation between high dietary fat and the incidence of breast cancer in populations.

Weight: Obesity is associated with a two fold increase in the risk of breast cancer in post-menopausal women but with a reduced risk in pre-menopausal women.

Alcohol Intake: Some studies have shown a link between high alcohol consumption and the incidence of breast cancer.

Smoking does not seem to increase the risk of breast cancer.

- ◆ Oral Contraceptive: use of oral contraceptives for four years or more by women in their early 20s increases the risk of pre-menopausal cancer. The longer they remain on the pill the greater the relative risk as illustrated in the following table:

**Relative risk of breast cancer before menopause in relation to
use of oral contraceptives before first time pregnancy**

Length of use (months) interval)	Relative risk (95% confidence interval)
0	1
1-24	1.04 (0.9 to 1.2)
25-48	1.21 (1.0 to 1.5)
49-96	1.34 (1.1 to 1.6)
>96	1.61 (1.2 to 2.2)

(Ref: Delgado-Rodriguez, (1992) *Fertility Reviews* vol. 1 22-3.)

The risk of breast cancer in women under aged 36 is small . There is an incidence of about two in one thousand in this age group. Women who use the oral contraceptive pill continuously before the first full term pregnancy have an incidence of breast cancer of approximately three in one thousand women

There is no increase in risk in women who have used oral contraception in their late 20s for spacing pregnancies. However use of oral contraceptives for 4 years or more by young women almost certainly increases the risk of pre-menopausal breast cancer. Whether such women also have an increased risk of post-menopausal breast cancer will not be known until exposed women reach that age. The extra risk of developing breast cancer due to the combined pill does not seem to persist beyond five years after stopping treatment.

Hormone Replacement Therapy: Studies have shown that women on HRT for more than five years have an increased relative risk of breast cancer. The longer HRT is taken the greater the relative risk. One study showed a greater risk for the combined preparations than for unopposed oestrogen.

Ref: EWERTZ M. Influence of non - contraceptive exogenous and endogenous sex hormones on breast cancer risk in Denmark. *Int. J. Cancer* 1998; 42: 832 - 838.

Ref: BERGKVIST L, ADAMI HO, Persson I et al . The risk of breast cancer after estrogen and estrogen - progestin replacement. *N ENGL J Med* 1989; 321: 293 - 7.

Ref: BERAL ET AL, *Breast Cancer and Hormone Replacement Therapy: Collaborative Reanalysis of Data from 51 Epidemiological Studies of 52,705 women with Breast Cancer and 108,411 women without breast cancer*, *lancet*, 350, 1047 - 1058. (Oct 1997)

Breast Cancer

SCREENING FOR BREAST CANCER

Studies have failed to show that clinical examination, breast ultrasonography or teaching self-examination of the breast are cost effective in population screening for breast cancer.

Screening by mammography has however been shown in randomised clinical trials to reduce mortality from breast cancer. Reduction in mortality is greatest for women in the 50-70 age group. The best frequency for screening is probably between eighteen months and two years.

A significant proportion of screen detected abnormalities are shown to be unimportant on further investigation. It is also important to be aware that false negatives commonly occur. Any patient with a clinically palpable mass, uniductal or bloody nipple discharge, or recent nipple retraction should be referred to a specialist.

INVESTIGATION OF BREAST LUMPS

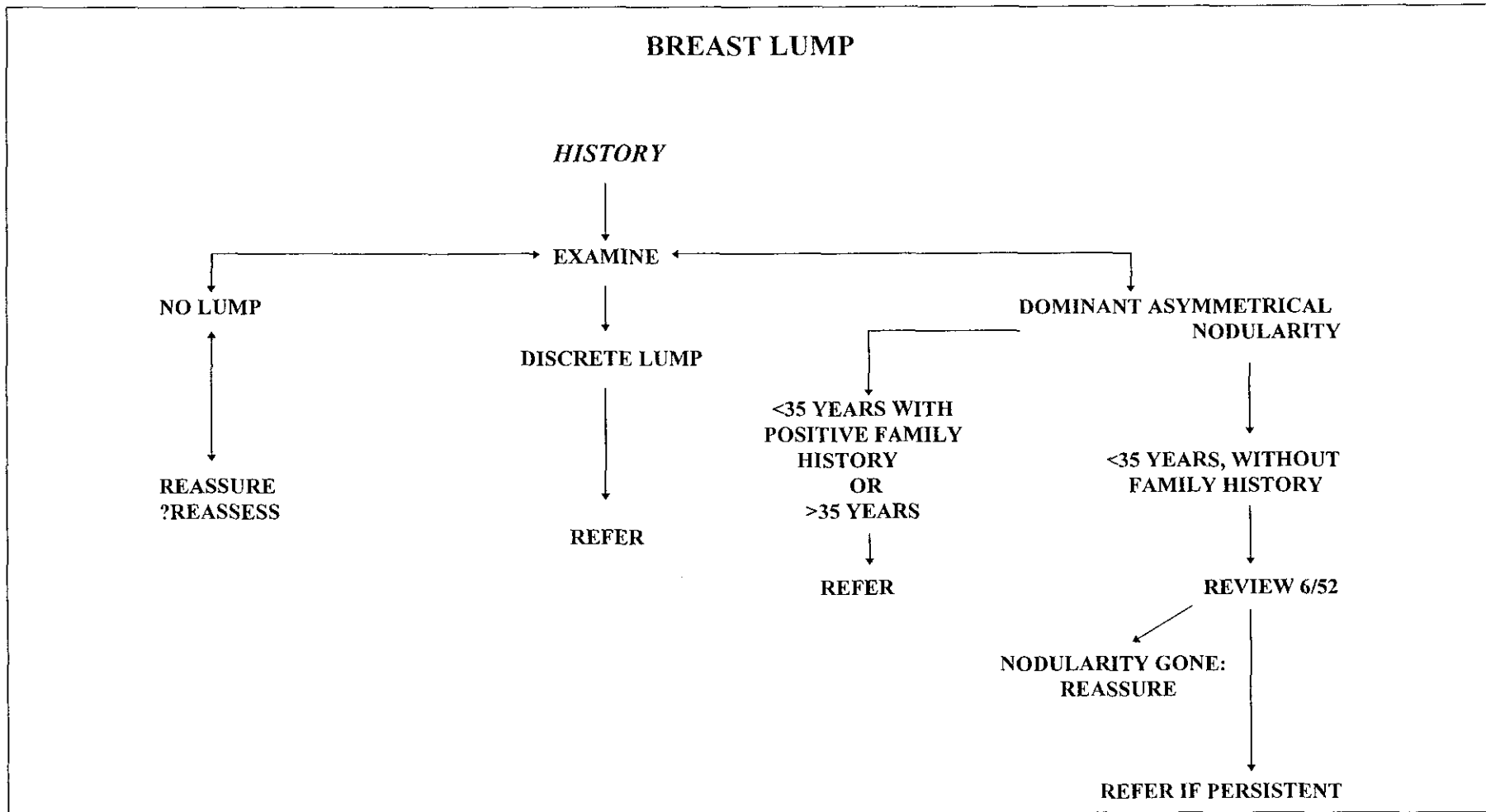
Mammography: requires compression of the breast between two plates and is uncomfortable. Single views of each breast can be taken obliquely, or two views - oblique and cranio-caudal. Mammography can detect mass lesions, areas of parenchymal distortion and microcalcifications. Because breasts are relatively radiodense in women aged under 35, mammography is rarely of value in this age group.

Ultrasonography: is less sensitive and less specific than mammography or clinical examination. It has the same sensitivity in all age groups and is often used for evaluation of masses in younger women and is also useful for assessing impalpable lesions which are demonstrated on mammography. It is a painless procedure.

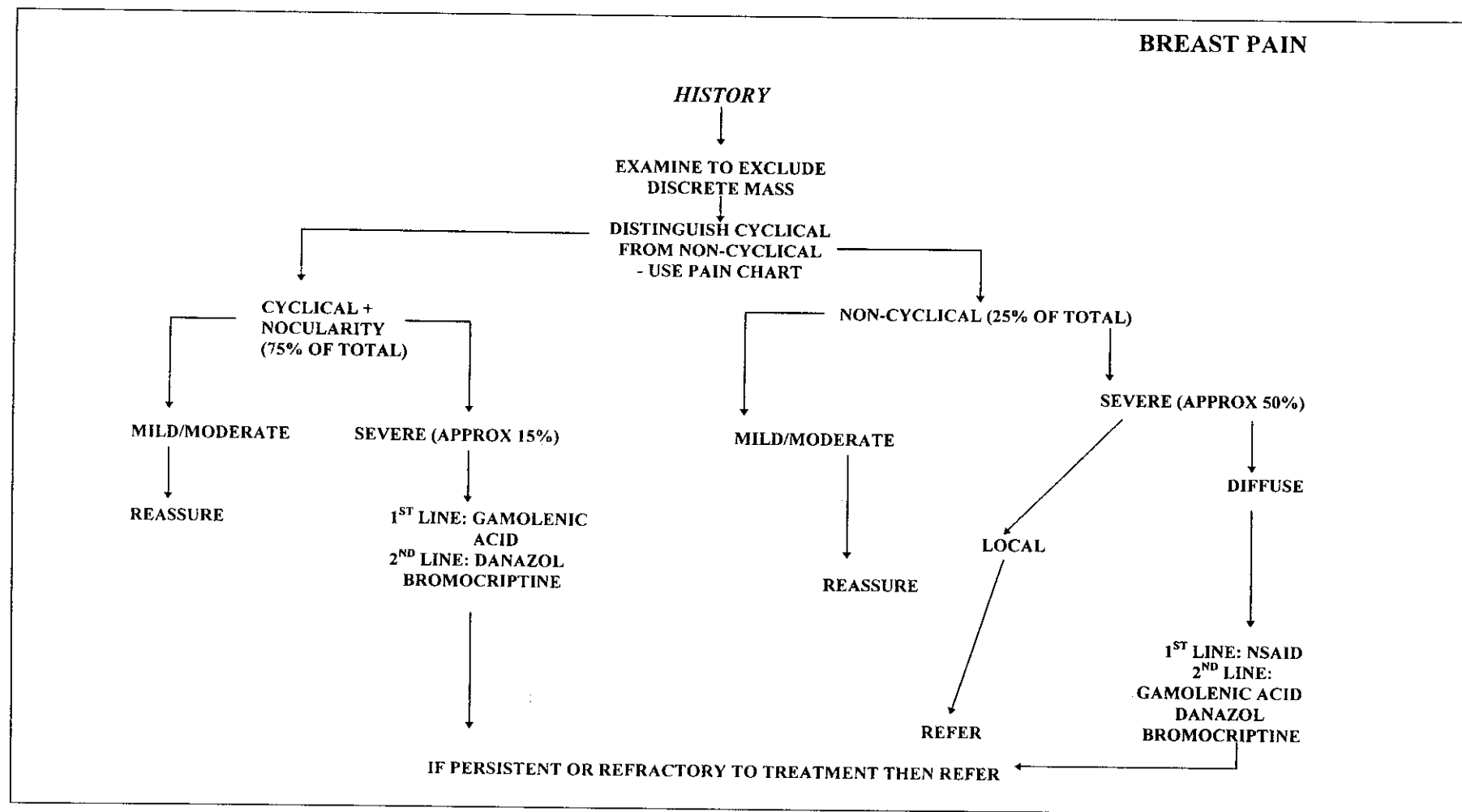
Fine needle aspiration cytology can differentiate between solid and cystic lesions. Aspiration of solid lesions requires skill to obtain sufficient cells for cytological analysis. It is cheap, highly sensitive and provides definitive diagnosis in most cases. There is a low incidence of false positives. The procedure is painful and samples must be interpreted by experienced cytopathologists.

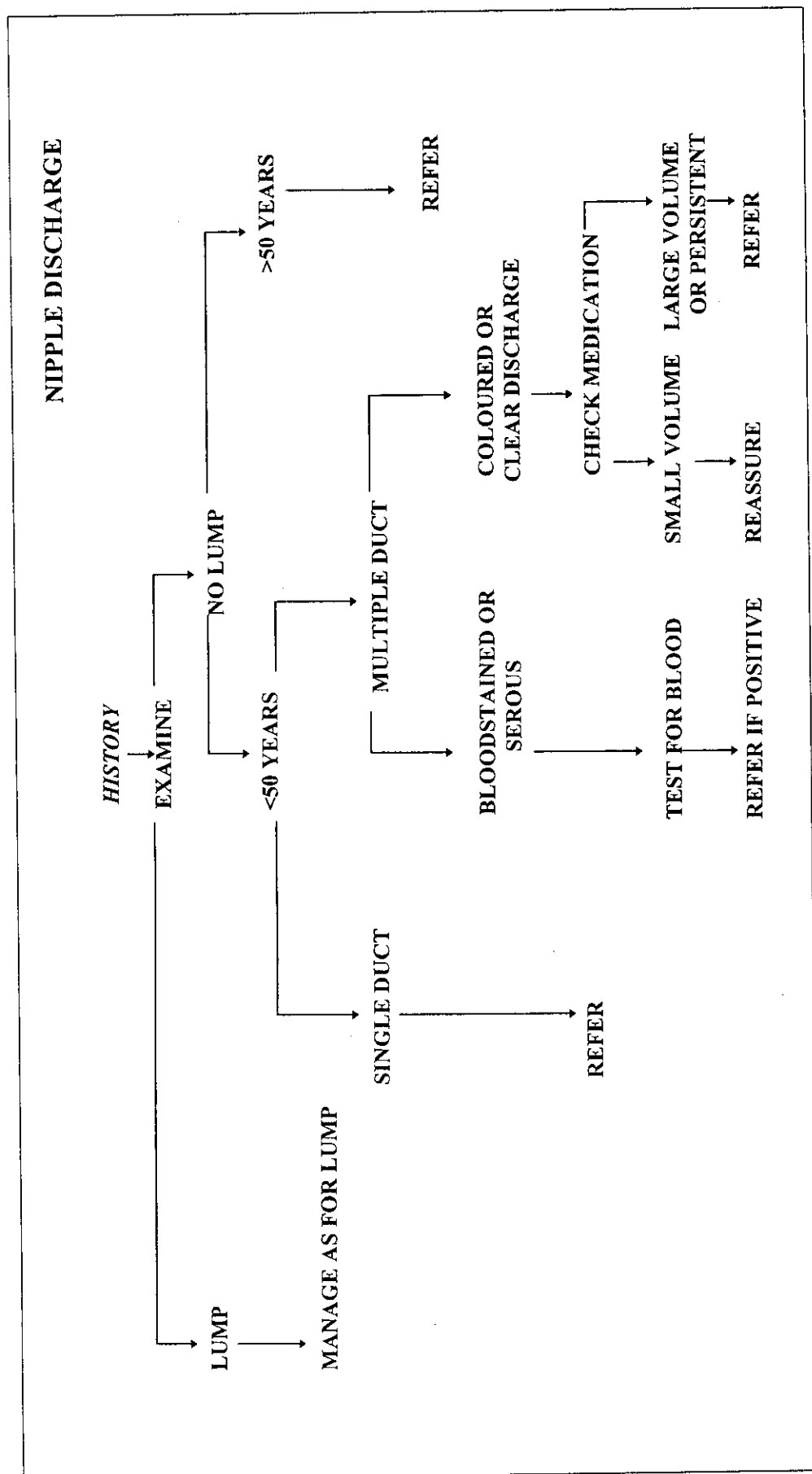
Core biopsy: A small core is removed from the mass by means of a cutting needle technique.

Excision biopsy is performed only in patients who have been appropriately investigated by imaging, fine needle biopsy and sometimes core biopsy.



Breast Diseases





BREAST-FEEDING

WHAT IS THE INCIDENCE OF BREAST-FEEDING IN THE EASTERN HEALTH BOARD REGION?

About 30 percent of women leaving the maternity hospitals are breast-feeding at present and this has remained static over the last decade.

WHAT CAN GENERAL PRACTITIONERS DO TO PROMOTE BREAST FEEDING?

- **Education** of women regarding the benefits during surgery visits, via the mother and child scheme, antenatal classes, health promotion clinics and presentations, encourage appropriate reading material e.g. The Royal College of Midwives publication 'Successful Breast-Feeding' (2nd Edition 1991), 'The Breast-Feeding Answer Book' (La Leche League International, 2nd Edition 1992).
- **Liaison** with hospitals, Public Health nurses and voluntary breast feeding support groups such as La Leche League and the Irish Childbirth Trust.
- **Provision** of advice and support for breast-feeding mothers by telephone advice, home visits or surgery visits.

WHAT ARE THE BENEFITS OF BREAST-FEEDING?

- Human milk contains: nutrients, active hormones, enzymes and immunoglobulins suited to the needs of the infant.
- Protects against gastrointestinal disease.
- Protects against respiratory tract disease and reduces the incidence of secretory otitis media.
- Enhances cell mediated immunity to BCG vaccine and to conjugate Haemophilus Influenza type b (HIB) vaccine.
- May reduce the risk of developing ulcerative colitis, Crohn's disease, coeliac disease, insulin dependent diabetes and lymphoma in later life.
- Possibly prevents asthma, eczema and allergic rhinitis.
- Some case control studies have shown that breast fed babies are less likely to succumb to sudden infant death syndrome.
- Premature infants tolerate their own mother's breast milk better than formula but often require supplementation. Because of the risk of infection only a baby's own mother's breast milk is given to infants. Premature breast fed babies have been shown to have a higher mean development at 18 months and also higher I.Q.s between the ages of 7 and 8.

WHAT ARE THE BENEFITS OF BREAST-FEEDING TO MATERNAL HEALTH?

- Possible protective effect of breast-feeding on the risk of breast cancer in pre-menopausal women.
- Contraceptive effect. Effectiveness of up to 98% has been quoted in the first six months post-natally.
- May reduce the risk of ovarian cancer.
- Promotes bonding between mother and infant.

WHAT ARE THE PROBLEMS THAT BREAST-FEEDING MOTHERS MAY ENCOUNTER?

- ◆ **Maternal anxiety** about whether the baby is getting enough or not. This anxiety can often interfere with the 'let down' reflex, thus inhibiting lactation. It may be compounded by misinformation from well-meaning relatives or friends. For breast-feeding to be successful the mother should be relaxed, well hydrated and eating a balanced diet of around 2,500 kilocalories per day.
- ◆ **Sore or cracked nipples.** Mothers should be advised to ensure that the baby is latching on properly. They should avoid perfumed soaps and can use emollients such as lanolin or E45 for cracked nipples. Nipple shields are occasionally necessary. Women with inverted nipples may require nipple shells and occasionally may be unable to breast-feed.
- ◆ **Engorgement:** mothers should be advised to avoid breast engorgement by having the baby suckle frequently on the affected breast. The breast may also be emptied by manual expression or by breast pump.
- ◆ **Leaking Breasts:** this problem usually settles after the first few weeks. Breast pads can be used to avoid embarrassment.
- ◆ **Mastitis or Breast Abscess:** puerperal mastitis is usually associated with staphylococcal infection. Breast-feeding from the affected breast should not be discontinued. The mother may express milk and discard it from that side. Treatment is with erythromycin or a penicillinase resistant antibiotic and non-steroidal anti-inflammatories. Incision and drainage of a loculated abscess may be necessary under general anaesthesia.

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