Injectable Contraceptives
Topics to be Covered

- Overview
- Progestin-only injectables
- Combined injectables
- Providing injectables
## Types of Injectables

<table>
<thead>
<tr>
<th></th>
<th>Progestin-only</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hormones</strong></td>
<td>Progestin</td>
<td>Progestin + estrogen</td>
</tr>
<tr>
<td><strong>Duration of effect</strong></td>
<td>2 or 3 months</td>
<td>1 month</td>
</tr>
</tbody>
</table>
Use of Injectables

*Injectables are safe, highly effective and easy for providers and clients to use*

- Percent of all contraceptive users using injectables (1994)
  - 2% worldwide
  - 17% in sub-Saharan Africa and southeastern Asia

- Use is increasing rapidly
Injectables: Effectiveness

- Spermicides
- Periodic Abstinence
- Diaphragm
- Condom
- COCs
- IUD (TCu-380A)
- Female Sterilization
- INJECTABLES
- Male Sterilization
- Norplant

Pregnancies per 100 women in first year of use (U.S. data)

correct and consistent use

Injectables: Mechanisms of Action

- Suppress hormones responsible for ovulation
- Thicken cervical mucus, blocking sperm
Progestin-only Injectables

DMPA:
Depot-medroxyprogesterone acetate
administered every 3 months

NET-EN:
Norethisterone enanthate
administered every 2 months
DMPA: Most Widely Used Injectable

- Best known as Depo-Provera
- Used by 14 million women worldwide
- 150 mg every 3 months
DMPA: Advantages

- Safe
- Highly effective
- Easy to use
- Long-acting
- Reversible
- Can be discontinued without provider’s help
DMPA: Advantages (cont.)

- Can be provided outside of clinics
- Requires no action at time of intercourse
- Use can be private
- Has no effect on lactation
- Has noncontraceptive health benefits
DMPA: Noncontraceptive Health Benefits

DMPA use reduces:
- risk of endometrial cancer
- risk of ectopic pregnancy
- risk of acute pelvic inflammatory disease (PID)
- frequency and severity of sickle cell crises
- frequency of epileptic seizures
- symptoms of endometriosis
- risk of vaginal yeast infections
DMPA: Disadvantages

- Causes side effects, particularly menstrual changes
- Action cannot be stopped immediately
- Causes delay in return to fertility
- Provides no protection against STDs, including HIV
DMPA: Side Effects

- Menstrual changes
  - prolonged or heavy bleeding
  - irregular bleeding or spotting
  - amenorrhea (absence of menses)
- Weight gain
- Headaches, dizziness and mood changes

*One third of users discontinue in first year because of side effects*
DMPA: Menstrual Changes

- Percent of users (approx.)
  - Amenorrhea
  - Prolonged or irregular bleeding

Months of use
DMPA: Management of Bleeding Through Counseling

Counseling is the most important tool for managing bleeding irregularities

- Before first injection counsel that bleeding changes are normal and expected
- Provide ongoing counseling and reassurance
- If client is concerned, or bleeding is severe, treatment or discontinuation may be necessary
DMPA: Management of Bleeding Through Treatment

Treatment options

- Combined oral contraceptives (COCs) for 7 to 21 days
- Ibuprofen (600 to 800 mg/day)
- Next DMPA injection earlier

Iron supplements help prevent anemia
DMPA: *Management of Bleeding Through Treatment* (cont.)

- Uterine evacuation not indicated
- With very heavy bleeding, rule out pregnancy or gynecological problems
DMPA: Management of Amenorrhea

- Medical treatment not required
- Counsel and reassure that amenorrhea is normal
- Pregnancy may need to be ruled out in some cases
DMPA: Weight Gain

- Average gain of 1.5 - 2.0 kg in first year
- Age and parity could be factors
- 2% of users discontinue because of weight gain

DMPA: Return to Fertility

Percent of women having conceived

Oral Contraceptives (0=last pill taken)
DMPA (0=15 weeks after last injection)

Months after stopping contraceptive

DMPA: Safety Concerns

- Relationship to cancer
- Fetal exposure
- Exposure of breastfeeding infants
- Effect on bone density
No Overall Increased Risk of Breast Cancer with DMPA

- No effect on overall risk of breast cancer
- Study found a somewhat increased risk during first 5 years of use
  - possibly due to detection bias
  - possibly due to accelerated growth of pre-existing tumors
  - tend to be young women in whom risk is very small

No Increased Risk of Invasive Cervical Cancer with DMPA

- No increased risk of invasive cervical cancer
- Small increase in risk of carcinoma *in situ* (noninvasive)
  - possibly due to detection bias

DMPA Protects Against Endometrial Cancer

- Protective effect at least as strong as with combined oral contraceptives
- Reduces risk by 60%

No Link Between DMPA and Other Cancers

- Ovarian cancer
  - no protective effect
  - no increased risk
- Liver cancer
  - no association

Fetal Exposure to DMPA

- No harmful effect on fetus
- No effect on later development of child

Exposure of Breastfeeding Infants to DMPA

- No effect on:
  - onset or duration of lactation
  - quantity or quality of breast milk
  - health and development of infant

- When to initiate:
  - after child is 6 weeks old (preferred)
Effect of DMPA on Bone Density

- DMPA users have lower bone density than non-users, in most studies
- Those initiating as adults regain most lost bone
- Long-term effect in adolescents unknown
  - concern that osteoporosis may develop later
  - long-term studies are needed
  - generally acceptable to use
## WHO Eligibility Criteria for Contraceptive Use

<table>
<thead>
<tr>
<th>Classification of Known Conditions</th>
<th>With Clinical Judgment</th>
<th>Without Clinical Judgment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>no restriction on use</td>
<td>can use</td>
</tr>
<tr>
<td>2</td>
<td>benefits generally outweigh risks</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>risks generally outweigh benefits</td>
<td>should not use</td>
</tr>
<tr>
<td>4</td>
<td>unacceptable health risk</td>
<td></td>
</tr>
</tbody>
</table>

DMPA: WHO Eligibility Criteria

Category 4: Unacceptable health risk
- Breast cancer
- Suspicious unexplained vaginal bleeding, until evaluated

Category 3: Risks outweigh benefits
- Blood pressure over 180/110
- Vascular diabetes
- Active hepatitis
DMPA:
WHO Eligibility Criteria (cont.)

Category 2: Benefits outweigh risks
- Moderate hypertension
- History of hypertension
- Nonvascular diabetes

Category 1: No restriction
- Heavy smokers
- Deep venous thrombosis
- Biliary tract disease
- STDs, including HIV
Initiate DMPA When Reasonably Sure Woman is Not Pregnant

She has no symptoms or signs of pregnancy, and:

- is within first 7 days after onset of menses, or
- has not had intercourse since last menses, or
- is correctly and consistently using contraception, or
- is within 7 days postabortion, or
- is within 4 weeks postpartum (non-breastfeeding), or
- is within 6 months postpartum, is fully breastfeeding and is amenorrheic

DMPA: *When to Begin*

- Any time during menstrual cycle
  - backup recommended if given after day 7
- Postpartum:
  - not breastfeeding: immediately
  - breastfeeding: delay 6 weeks
- Postabortion: immediately
DMPA: Injection Schedule

- Injection every 3 months
- Can be up to 4 weeks early or late
NET-EN

- Known as Noristerat or Norigest
- 200 mg every 2 months
NET-EN: Similarities to DMPA

NET-EN and DMPA share similar:

- effectiveness
- safety
- mechanisms of action
- advantages and disadvantages
- eligibility criteria
NET-EN: Differences from DMPA

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<thead>
<tr>
<th></th>
<th>DMPA</th>
<th>NET-EN</th>
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</thead>
<tbody>
<tr>
<td>Injection schedule</td>
<td>3 months</td>
<td>2 months</td>
</tr>
<tr>
<td>Menstrual changes</td>
<td>More</td>
<td>Less</td>
</tr>
<tr>
<td>Cost per month of use</td>
<td>Lower</td>
<td>Higher</td>
</tr>
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</table>
NET-EN: Side Effects

Similar types of side effects as DMPA

- Less effect on bleeding in first 6 months
- Amenorrhea is less common
NET-EN: *When to Begin*

- Any time during menstrual cycle
  - backup recommended if given after day 7
- Postpartum:
  - not breastfeeding: immediately
  - breastfeeding: delay 6 weeks
- Postabortion: immediately
NET-EN: Injection Schedule

- Injection every 2 months
- Can be up to 2 weeks early or late
Combined Injectable Contraceptives

*Contain progestin and estrogen*

- Used by 1 million women worldwide
- Administered monthly
- Provide more regular bleeding cycles
- May result in estrogen-related side effects
Combined Injectables: *Older Products*

- Deladroxate: used in Latin America
  - safety concerns due to estrogen dose
- Chinese Injectable No. 1: used in China
  - less effective, with more frequent bleeding
Combined Injectables: Newer Products

- Cyclofem (or Cyclo-Provera):
  - 25 mg DMPA
  - 5 mg estradiol cypionate

- Mesigyna (or Norigynon):
  - 50 mg NET-EN
  - 5 mg estradiol valerate
Combined Injectables: Advantages

- Safe, highly effective, easy to use
- Reversible
- Can be discontinued without provider’s help
- Can be provided outside of clinics
- Require no action at time of intercourse
- Use can be private
- May have noncontraceptive health benefits
Combined Injectables: Disadvantages

- Cause side effects, including bleeding irregularities
- Provide no protection against STDs, including HIV
- Action cannot be stopped immediately
- Require more frequent injections than progestin-only injectables
Combined Injectables: Menstrual Changes

Combined Injectables: Less Common Side Effects

- Weight gain
- Headaches
- Dizziness
- Breast tenderness

Can result in discontinuation
Combined Injectables: Management of Menstrual Changes

**Bleeding**
- Usually can be managed through counseling
- Ibuprofen or short course of COCs can be administered, if necessary

**Amenorrhea**
- Counsel and reassure, as needed
Combined Injectables: Return to Fertility

Cumulative pregnancy rate

Percent of users

0 20 40 60 80 100

Months after discontinuing Cyclofenom

0 = 1 month after last injection

Combined Injectables: Safety

- Safety of progestins is well established
- Daily dose of estrogen is small
- Long-term safety information not yet available
- Contraindications based on those for COCs
Combined Injectables: WHO Eligibility Criteria

Category 4: Unacceptable health risk
- Breast cancer
- Blood pressure over 180/110
- Deep venous thrombosis

Category 3: Risks outweigh benefits
- Moderate hypertension
- Heavy smokers over 35 years of age
Combined Injectables: 

**WHO Eligibility Criteria (cont.)**

**Category 2: Benefits outweigh risks**
- Nonvascular diabetes
- Biliary tract disease
- Women over 40 years of age

**Category 1: No restriction**
- Varicose veins
- Thyroid disorders
- STDs
Combined Injectables: When to Begin

- Any time during menstrual cycle
  - backup recommended if given after day 7
- Postpartum:
  - not breastfeeding: delay 3 weeks
  - breastfeeding: delay of 6 months recommended
- Postabortion: immediately
Combined Injectables: Injection Schedule

- Injection every month
- Can be up to 3 days early or late
Providing Injectables

- Counseling
- Injection procedures
- Programmatic issues
Counseling About Injectables

Factors for client to consider

- Other available contraceptive options
- Advantages and disadvantages
- Side effects including menstrual changes
- Timing of return to fertility
- Need for regular, timely injections
Counseling About Injectables (cont.)

Messages for clients who choose injectables

- Do not massage injection site
- Expect bleeding 12-15 days after injection
- Return if problems arise
- No protection from STDs, including HIV
Counseling Reduces Discontinuation

- Menstrual changes most common reason for discontinuation
- Women receiving appropriate counseling more likely to continue using injectables
Injection Technique

Upper arm
(Deltoid)

Buttocks
(Gluteus maximus)
Sterile Injection Procedures

- Wash hands
- Clean injection site
- Use sterile needle and syringe
- Dispose of waste properly

*Needles and syringes: single-use must be disposed of safely; reusable must be sterilized*
Programmatic Issues: Delivery Options

- Alternative sites
  - pharmacies
  - private homes
- Alternative providers
  - nurses
  - midwives
  - pharmacists
  - community-based workers

Reminder mechanism needed to ensure return visit
Programmatic Issues: Program Requirements

- Adequate training in injection technique and counseling
- Supervision of providers
- Referral system when needed
- Dependable supply of injectables, needles and syringes
- Adequate storage facilities
- System for timely distribution of product
Programmatic Issues: Training

- Characteristics of injectables
- Key counseling points
- Sterile injection technique
- Management of side effects
- Recognition of problems
- Referral procedures
- Record keeping
Injectables: Conclusion

- Safe, effective, easy to use
- Nonclinical provision possible
- Appropriate counseling essential

World Bank