



Supplement for

Medroxy Progesterone Acetate-Subcutaneous Injectable Contraceptive (MPA-SC)



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Family Planning Division
Ministry of Health and Family Welfare
Government of India

1. Overview

Intramuscular injection of Medroxy Progesterone Acetate (MPA) is being widely used as a three monthly Progestin only Injectable contraceptive for over 50 years. A lower dose MPA is also available for subcutaneous use; called **MPA-SC**. Recently it has been registered in India for use after approval by the DCGI. This lower dose MPA (104 mg/0.65 mL) administered by subcutaneous (SC) route is therapeutically equivalent to the intramuscular formulation. Clinical studies indicate that the product effectively suppresses ovulation for at least 13 weeks regardless of race, ethnicity, BMI and return of fertility is no longer than MPA-IM.

2. Composition

The composition of MPA-SC is same as MPA-IM, which is 17 alfa – hydroxyprogesterone derivative progestine, medroxyprogesterone acetate.

3. Mechanism of Action

Subcutaneous MPA acts in similar way to Intramuscular MPA by:

- Inhibiting Ovulation
- Thickening of cervical mucus
- Thinning of endometrial lining

Refer to chapter 2 of 'Reference Manual for Injectable Contraceptive DMPA 2016'

4. Uniject System for Subcutaneous MPA

Subcutaneous MPA is available as a single dose in prefilled auto disable injection device (Uniject system).

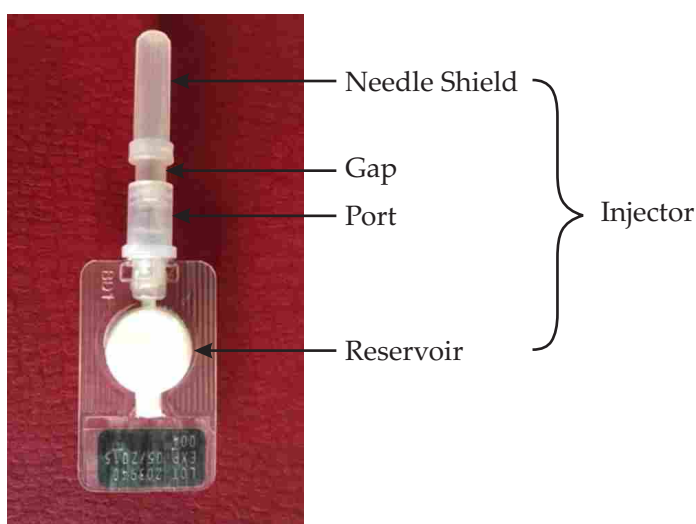


Fig 1: Subcutaneous Medroxy Progesterone Acetate in Uniject system

4.1 Key Features of Uniject Injection System

This Uniject system has a thermoformed plastic laminate reservoir with ultra-thin needle attached by a polyethylene port. It is designed for single use and immediate disposal as it has a one-way valve and collapsible reservoir that cannot be re-filled.

4.2 Advantages of Uniject Injection System

- It is easy to use because it is prefilled and very easy to inject as squeezing the bulb pushes fluid into the needle.
- It is non-reusable, hence one to one transmission of blood borne pathogens through needle reuse is eliminated.
- It provides logistical benefits because Uniject is compact and smaller than a syringe and vial, it is easier to transport and store. A study commissioned by PATH found that MPA-SC in Uniject is 62 percent lighter and 25 percent less voluminous than MPA-IM packed with vial and syringe.
- The formulation for subcutaneous injection provides slower and more sustained absorption of the progestin than intramuscular MPA. This enables a 30 percent lower dose of progestin (104 versus 150 mg) and reduces peak blood levels by half, but with the same duration of effect as intramuscular MPA.

A waste management assessment showed that SC- MPA in Uniject generates 70 percent less waste by volume than the standard auto-disable syringe with an empty MPA vial.

5. Safety and Efficacy

Based on a systematic review of the evidence, the World Health Organization's (WHO) Medical Eligibility for Contraceptive Use confirms that both Subcutaneous and Intramuscular MPA have a similar safety and efficacy profile. Medical Eligibility Criteria (MEC) is identical to those for MPA-IM.

Effectiveness is similar to MPA-IM and is 99.7%. (Refer to chapter 2 of 'Reference Manual for Injectable Contraceptive DMPA 2016')

6. Benefits and Limitations, Return of fertility, Medical Eligibility and Client Assessment, Counselling, Storage

is similar to MPA-IM. (Refer to Reference Manual for Injectable Contraceptive DMPA 2016).

7. Time of Initiation

same as for MPA-IM. Refer to (Reference Manual for Injectable Contraceptive DMPA 2016)

7.1 Switching from other methods is same as for MPA-IM. (Refer to Reference Manual for Injectable Contraceptive DMPA 2016).

7.2 Switching from MPA- SC to MPA- IM or Vice Versa

As the active ingredient in the IM and SC is identical, it is safe to switch back and forth between IM and SC every three months with the same level of contraceptive protection. This switching is safe and it does not decrease effectiveness, though switching should not be a routine practice. If switching is necessary, the injection of the alternate mode should be administered on the due date and duly recorded. Clients need to be explained and told about

changed mode of administration i.e. SC to IM or vice versa and the scheduled date for next injection.

MPA-SC should not be used for IM administration and similarly MPA-IM should not be used for MPA-SC administration.

7.3 Comparing MPA Subcutaneous with MPA Intramuscular

Features	MPA-SC	MPA-IM
Packaging	Available in single dose prefilled auto disabled injection device (Uniject)	Available in single dose vials
Dosage	Single dose contains 104 mg / 0.65 ml of Medroxy Progesterone Acetate, to be administered every 3 months.	Single dose contains 150 mg / ml of Medroxy Progesterone Acetate, to be administered every 3 months.
Site of Administration	Administered subcutaneously in outer anterior portion of thigh, abdomen or upper outer portion of arm.	Administered intramuscularly in upper arm, hip or outer side of thigh.
Mode of Administration	<ol style="list-style-type: none"> 1. Pierces the epidermal and dermal layers of the skin and delivers drug in loose subcutaneous tissue. 2. Short needle 3. Ease of administration-more surface area available & fewer landmarks needed for SC injection. 	<ol style="list-style-type: none"> 1. Given deep intra muscular 2. Longer needle 3. Ease of administration-less surface area and particular landmarks needed to locate specific muscle.

8. Administration of MPA-SC

8.1 Pre-Injection Preparation

8.1.1 Site Selection and Preparation of Site of Injection

- The injection site is subcutaneous fat of anterior outer part of thigh, abdomen (Below Umbilicus) or upper and outer part of arm. The preferred, easily accessible and acceptable site should be taken into consideration before administration of injection. Avoid bony areas and the umbilicus. Change the injection site with each injection. The area of skin must be free from scars and skin conditions such as eczema or psoriasis.

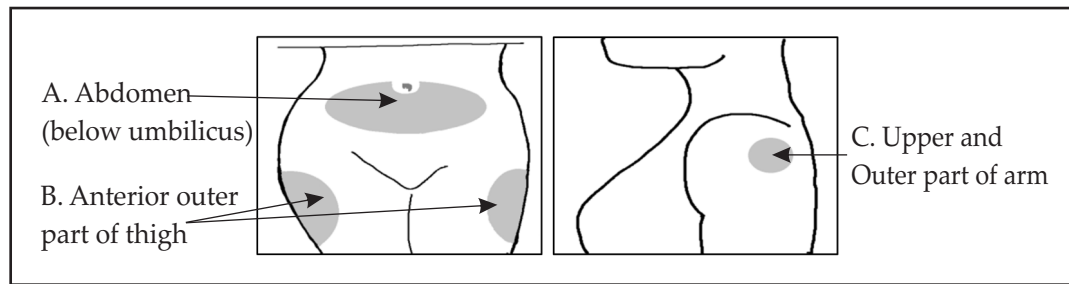


Fig 2: Sites of administration of MPA- SC: A. Abdomen; B. Anterior Outer part of thigh; C. Back of Upper Arm

- Use an antiseptic swab to wipe the skin in the injection area, chosen by the client.
- Allow the skin to dry.

8.1.2 Preparing the Injector

When provider is ready to administer the injection, carefully tear open the foil pouch and remove the injector. Do not remove the needle shield at this stage.

Check the injector as follows

- The needle shield should be in the position shown in the diagram below (Fig 3).
- There should be a gap between the needle shield and the port.
- If there is no gap discard the injector and use a new one.
- If the needle shield has come off the needle or is missing altogether, discard the injector and use a new one.

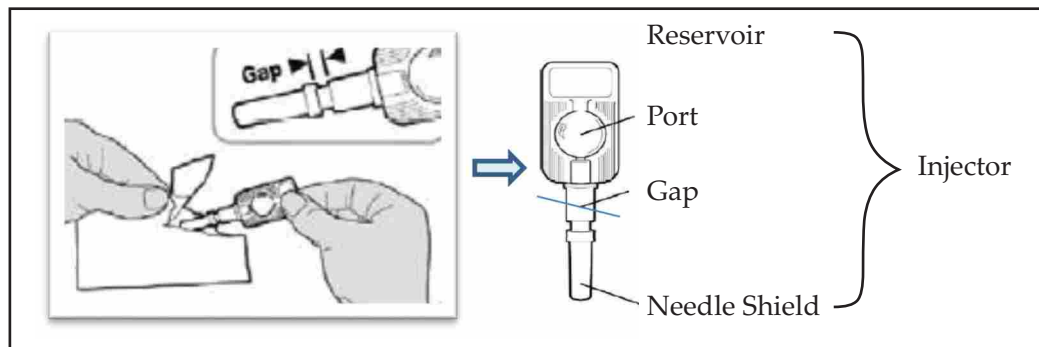
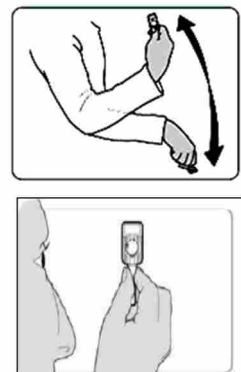


Fig 3: Diagrammatic representation of parts of Uniject

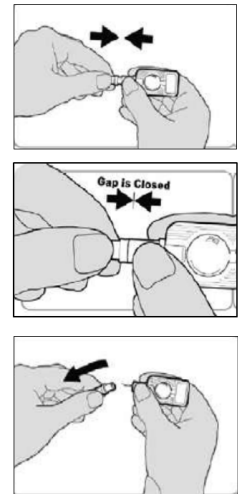
8.1.3 Mixing MPA-SC in Reservoir

- Hold the injector firmly by the port.
- Shake the injector vigorously for 30 seconds to mix the medicine thoroughly.
- If there is any delay between mixing the medicine and proceeding through the next step, repeat the mixing procedure as above.
- Check the injector. The liquid contents should appear white to off white and uniform. There should be no leakage from any part.
- If any problem is observed discard the injector and use a new one.



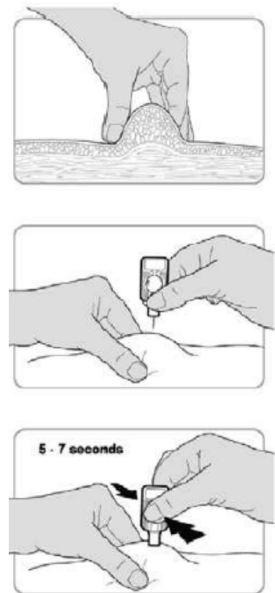
8.1.4 Activating the Injector

- Hold the injector firmly by the port with one hand. Take care not to squeeze the reservoir.
- Hold the needle shield with other hand. Gap will be visible between the port and the end of the needle shield.
- Push the needle shield towards the port. Continue to push firmly until gap is closed between needle shield and the port. The injector is now activated.
- Continue to hold the injector firmly by the port.
- Pull the needle shield away to remove it from needle and discard.



8.2 Administering/Injecting the Dose

- Gently grasp and squeeze a large area of skin in the chosen area between thumb and fore finger, pulling it away from body.
- Hold the injector by port. Keep it as upright as possible with needle pointing downwards.
- Insert the needle into the skin so that the needle tip is in the subcutaneous tissue and the port just touches the skin.
- Hold the reservoir firmly between the thumb and the forefinger. Squeeze the reservoir slowly to inject the medicine. It should take 5-7 seconds.
- After the dose has been completely injected and the reservoir has collapsed, gently pull the needle out of the skin.
- It is important that the full dose of medicine is given, however small traces of white liquid may remain visible inside the edge. This is normal.



8.3 Post Injection Care:

- Check whether any medicine has leaked out of the injector or has appeared on the skin.
- If complete dose has not been administered then additional dose should not be given. Advise client to use back up contraceptive method.
- Do not replace the needle shield after use.
- Use a clean cotton swab to press lightly on the injection area for a few seconds. Do not rub or massage the injection site.
- Follow safe practice for disposal of used injector and needles. The MPA-SC Uniject syringe, after use, should be placed in the container/box for disposal of sharps. The injector is for a single injection only. It should be never reused.

8.4 Post Injection Instructions: same as MPA- IM

- Instruct client that she must come after 90 days for a repeat injection and give her the scheduled date. Hand over the MPA Client Card to her after explaining its content to her.
- Inform the client that the effect of injection is immediate if given between 'day one' to 'day seven' of her menstrual cycle or abortion. But if given after 'day seven' a backup contraceptive method (e.g. condom) should be used for 7 days.
- Assure the client that she is welcome to come back any time, if she has any problem, wants another method, has a major menstrual change, has a major change in health status or thinks might be pregnant.
- Ensure post injection counselling.

9. Follow Up Care, Management of Side effects, Special Issues on MPA

is similar to MPA- IM. Refer to 'Reference Manual for Injectable Contraceptive DMPA 2016'

10. Infection Prevention Practices

Follow standard guidelines of GoI as mentioned in chapter 9 of 'Reference Manual for Injectable Contraceptive DMPA 2016'

Frequently Asked Questions on Subcutaneous Injectable Contraceptive Medroxy Progesterone Acetate (FAQ on MPA-SC)

1. How is MPA-SC different from MPA-IM?

- A. There is no difference between MPA-SC and MPA-IM in terms of composition, mechanism of action, safety, efficacy, benefits and side effects, except for the amount of drug and route of administration. However, Uniject injection system of subcutaneous injectable contraceptive Medroxy Progesterone Acetate provides ease of administration which minimizes chances of infection transmission and the potential to benefit system-level logistics in terms of storage, transport, distribution and waste management.

2. Is there any difference in duration of effectivity of MPA-SC and MPA-IM?

- A. No, there is no difference as they both are 3 monthly contraceptive injections.

3. Is MPA-SC as effective as MPA-IM for contraceptive protection?

- A. Yes, MPA-SC is as effective as MPA-IM. Studies have demonstrated that subcutaneous injectable contraceptive Medroxy Progesterone Acetate (MPA-SC) provides efficacy, safety and immediacy of contraceptive effect equivalent to the MPA-IM. In clinical trials, it effectively suppressed ovulation for at least three months in all subjects regardless of ethnicity, race and body mass index.

4. Can MPA-SC be administered to those women who cannot be given MPA-IM and vice-versa?

- A. No, SC-MPA cannot be administered to those women who are not eligible to take MPA-IM and vice versa.

5. Are the menstrual changes with MPA-SC different from those of MPA-IM?

- A. No, both MPA-IM and MPA-SC cause similar menstrual changes as the hormonal level in blood is same.

6. Can a woman switch between MPA-IM and MPA-SC?

- A. Yes, if necessary, because the active ingredient in the IM and SC formulations is identical, it is safe to switch back and forth between these two formulations on a regular dosing schedule (i.e., every three months) with the same level of contraceptive protection. Switching injectable is safe, and it does not decrease effectiveness. If switching is necessary, the first injection of the new injectable should be given when the next injection of the old formulation was due. Clients need to be informed and explained about the name of the new injectable, and its injection schedule.

- 7. What will happen if subcutaneous injectable contraceptive Medroxy Progesterone Acetate is administered intramuscularly?**
- A.** To ensure three months of contraceptive protection, Subcutaneous Injectable Contraceptive Medroxy Progesterone Acetate must be administered subcutaneously only. If MPA is given in a muscle, it may not provide protection for full three months. However, the needle of MPA-SC is smaller (3/8 inches) than the MPA-IM needle, so it is not likely to reach the muscle hence giving MPA-SC by IM route is practically not possible.
- 8. Does MPA-SC have a different effect on Bone Mineral Density compared to MPA-IM?**
- A.** No, the effect of MPA-SC on bone density is similar to MPA-IM. Most studies have found that women lose BMD while using MPA but regain all or partial BMD after discontinuation. According to WHO, for women aged 18 to 45 years, there should be no restrictions on the use of MPA, including no restrictions on the duration of its use; and the advantages for adolescents younger than 18 years of using MPA generally outweigh the theoretical or proven risks, so they can also be given MPA.
- 9. Does Body Mass Index (BMI) affect the efficacy of MPA-SC?**
- A.** No, Clinical studies to date demonstrate that the contraceptive efficacy of the active ingredient in MPA-SC is not affected by body mass index (weight-to-height ratio).

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