

## PHARMACY

Drug Information

### Erythropoiesis Stimulating Agents



## What are Erythropoiesis Stimulating Agents?

- Erythropoiesis Stimulating Agents (ESAs) are injections used for the treatment of low red blood cell count (anaemia).
- Erythropoietin is a hormone (a chemical substance) that stimulates the bone marrow (soft tissue in the centre of the bone) to produce red blood cells. Due to kidney failure or cancer treatment, production of erythropoietin may be reduced. Some medications can result in anaemia as well.
- With anaemia, one may experience tiredness, dizziness, paleness, shortness of breath or headache. It also increases the risk of getting a heart attack.
- Examples of ESAs injections include:
  - **Recormon®** (Epoetin Beta)
  - **Mircera®** (Methoxy Polyethylene Glycol-Epoetin beta)
  - **NESP®** (Darbepoetin Alfa)
- Your doctor will prescribe and adjust the dose and frequency of ESAs depending on your red blood cell count and response to treatment.
- **ESAs do not work immediately. It is important you use the medication regularly. It takes a few weeks before your red blood cell count will increase and for your symptoms of anaemia to improve.**

## How are Erythropoiesis Stimulating Agents Administered?

- **Please refer to the respective annexes in this booklet for the administration technique for each ESA.**
- ESAs are available in pre-filled injection syringes for administration under the skin (subcutaneous administration) or they are injected directly into the blood vessel (intravenous administration) during a haemodialysis session by the dialysis nurse.
- If you miss a dose or forget to inject your medication, inject it as soon as you remember. After that, adjust your injection schedule based on the new date that you administered the missed dose. Do not double your injections to make up for a missed injection.
- Do not reuse the needles or syringes. Pre-filled syringes are for single-use only.

- Disposal: all used needles should be discarded into a puncture-proof container. Keep this container out of reach of children.

## Can Erythropoiesis Stimulating Agents be Administered / Taken With Other Medications?

- Please inform your doctor, pharmacist or nurse, if you are taking other medications - including over-the-counter medications, supplements, and traditional or herbal remedies.

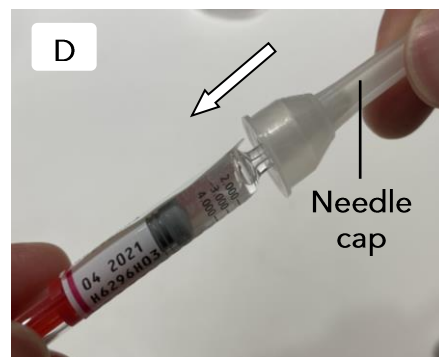
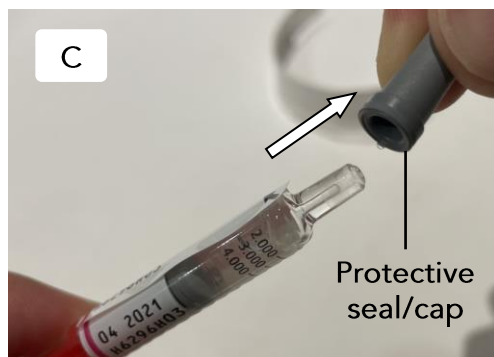
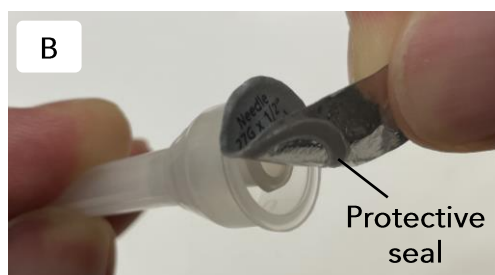
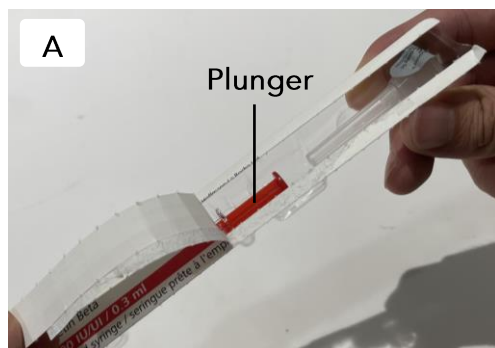
## What are the Important Side Effects of Erythropoiesis Stimulating Agents?

- Medications prescribed by your doctor should be beneficial for your condition even though they may result in some side effects.

Side effect	Management
Increase in blood pressure (warning signs: severe headache, dizziness, nose bleeds, blurring of vision)	Monitor your blood pressure regularly. Your doctor may prescribe or adjust your blood pressure medications if necessary. If you experience any of the warning signs, consult a doctor immediately.
Pain or swelling at injection site/area	Regularly change the site/area of injection to reduce pain or swelling.
Blood clotting disorders (warning signs: painful swelling or redness of legs, slurred speech, one-sided facial drooping or arm weakness, visual changes, chest pain, breathlessness, irregular heart beat)	If any of these signs and symptoms occur, consult a doctor immediately.
Pure red cell aplasia (rare bone marrow disorder that causes severe anaemia)	If you develop unusual tiredness or lack of energy, consult a doctor immediately.
Severe or serious skin reactions (warning signs: reddish patches on skin, blisters, skin peeling, ulcers on mouth / throat / eyes / genitals)	If any of these signs and symptoms occur, consult a doctor immediately.

## Annex A – Recormon® (Epoetin Beta) Subcutaneous Administration Technique

1. Wash your hands thoroughly before starting.
2. Check the dosage strength of the injection and ensure that you are using the correct strength. Check the expiry date and ensure that the injection has not expired.
3. Remove one syringe from the packaging by peeling back the paper strip, as shown in image A.
4. Inspect the solution inside: check that the solution is clear, colourless and does not contain any particles. Avoid shaking the syringe.
5. Pick up the needle cap. Peel off the protective seal of the needle cap but do not remove the needle from the cap, as shown in image B.
6. Pick up the syringe. Remove the grey protective seal/cap covering the tip of the syringe, as shown in image C below.
7. Attach the needle with the needle cap firmly onto the syringe, as shown in image D below.

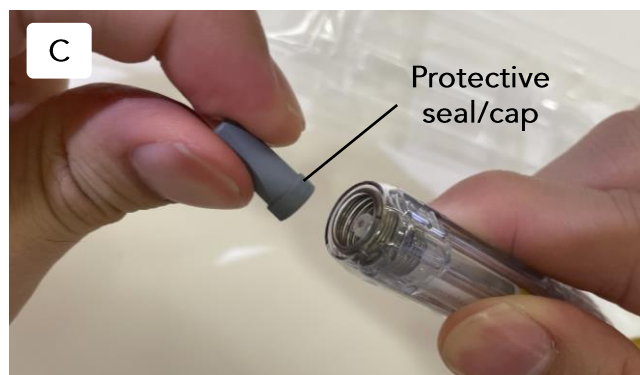
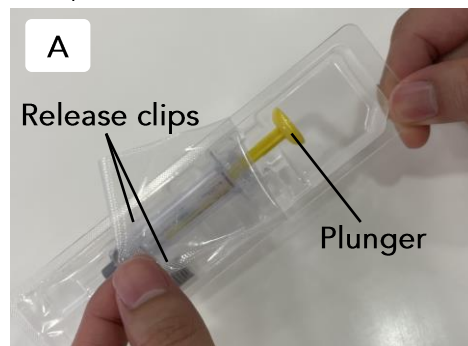


8. Hold the syringe with the needle pointing upwards. Gently tap the syringe to allow air bubbles to travel to the tip. See image E for reference.
9. Remove the plastic needle cap. See image E for reference.
10. Remove the air bubbles by gently pressing the plunger of the syringe until a small drop of solution appears at the tip of the needle.
11. Clean the site/area of injection with an alcohol swab. This may be around the abdomen (two fingers away from the belly button), upper thigh or upper arm.
12. Form a skin fold by pinching the area of administration with your thumb and index finger. See image F for reference.
13. Holding the syringe 90 degrees above the skin fold, push the needle in and press the plunger slowly to inject the full dose of Recormon®. See image F for reference.
14. Wait for a few seconds before removing the needle and releasing the pinched skin. Apply light pressure over the injection site/area with an alcohol swab. Do not rub the injection site/area.
15. Discard the entire syringe with the needle into a puncture-proof container.

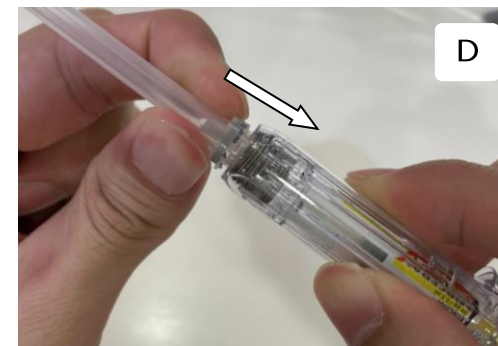


## Annex B – Mircera® (Methoxy Polyethylene Glycol-Epoetin Beta) Subcutaneous Administration Technique

1. Wash your hands thoroughly before starting.
2. Check the dosage strength of the injection and ensure that you are using the correct strength. Check the expiry date and ensure that the injection has not expired.
3. Open the box and remove the plastic packaging containing the syringe.
4. Peel off the protective seal from the plastic packaging and remove the syringe. Hold the syringe by the device body. Do not touch the plunger or release clips yet. See image A for reference.
5. Inspect the solution inside: check that the solution is clear, colourless to slightly yellowish and does not contain any particles. Avoid shaking the syringe.
6. Pick up the needle cap. Break the seal on the bottom of the needle using a twisting motion and remove the seal. Do not remove the needle from the cap. See image B below for reference.
7. Hold onto the grey protective seal/cap covering the tip of the syringe, and remove it by firmly bending and pulling it from the syringe. See image C below for reference.



8. Attach the needle with the needle cap firmly onto the syringe. See image D for reference.



9. Remove the needle cap from the needle. See image E for reference.



10. Clean the area of injection with an alcohol swab. This may be around the abdomen (two fingers away from the belly button), upper thigh or upper arm.

11. Form a skin fold by pinching the area of administration with your thumb and index finger.

12. Holding the syringe 90 degrees above the skin fold, push the needle in and press the plunger all the way down to inject the full dose of Mircera®.

13. DO NOT release the plunger halfway before the end of the injection. The needle guard will not activate until the entire dose has been given.

14. Remove the needle from the skin WITHOUT releasing your thumb from the plunger.

15. Release the plunger AFTER removing the needle from your skin. The syringe will move back until the needle is completely covered by the needle guard. See image F for reference.

16. Apply light pressure over the injection site/area with an alcohol swab. Do not rub the injection site/area.

17. Discard the entire syringe with the needle into a puncture-proof container.



## Annex C – NESP® (Darbepoetin Alfa) Subcutaneous Administration Technique

1. Wash your hands thoroughly before starting.
2. Check the dosage strength of the injection and ensure that you are using the correct strength. Check the expiry date and ensure that the injection has not expired.
3. Open the packaging and remove one syringe. Hold the syringe by the device body.
4. Inspect the solution inside: check that the solution is clear, colourless and does not contain any particles. Avoid shaking the syringe.
5. Before opening the protective seal/cap, give the injection a "one-push" motion as shown in image A. This will help ensure a smooth injection later on.
6. Remove the film wrapping and the protective seal/cap from the tip of the syringe by turning it at the same time as shown in image B.
7. Take the needle that is provided separately from the syringe, and attach the needle firmly onto the syringe while rotating the lock adapter as shown in image C. Be careful not to touch the tip of the syringe while doing this.
8. Gently remove the needle cap from the needle. Do not twist the needle cap to avoid bending the needle.



9. Clean the site/area of injection with an alcohol swab. This may be around the abdomen (two fingers away from the belly button), upper thigh or upper arm.
10. Form a skin fold by pinching the area of administration with your thumb and index finger.
11. Holding the syringe 90 degrees above the skin fold, push the needle in and press the plunger all the way down to inject the full dose of NESP®.
12. Wait for a few seconds before removing the needle and releasing the pinched skin. Apply light pressure over the injection site/area with an alcohol swab. Do not rub the injection site/area.
13. Discard the entire syringe with the needle into a puncture-proof container.

**If you develop rashes, facial swelling or shortness of breath after taking the medication, you could be allergic to the medication. Please seek medical attention immediately.**

Are There Any Special Precautions that I Need to Take?

- It is important to inform your doctor if you intend to conceive or breastfeed while using this medication.

What Else Can I Do to Help My Condition?

- For ESAs to work, you need to have adequate/sufficient iron in your body. Your doctor may prescribe oral iron supplements or iron injections if required.

How Do I Store Erythropoiesis Stimulating Agents?

- Store your medication in a refrigerator between 2°C to 8°C. Do not freeze your medications.
- Keep the medication away from light and inside its packaging until the dose is ready for administration.

**If you have any problem with your treatment, please contact your doctor, pharmacist or nurse.**

**Please keep all medications out of reach of children.**



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