

Training Others in Administration of Adrenaline Auto-injector Devices

Compiled by members of the BSACI Nurses in Allergy Committee

The following standard operating procedures outline how to train patients or carers to administer adrenaline auto-injectors: Epipen® and Jext®.

Adrenaline auto-injectors available in the UK and prescribing guidelines¹:

Drug generic name	Proprietary name	Prescribed for	Dosage/weight	Route
Adrenaline/Epinephrine	Epipen®	6 years and over (body weight 26kg and above)	300 mcg	Intramuscular injection
	Epipen Jr®	Children 1 month- 5 years (body weight 15-25kg)*	150 mcg	
Adrenaline/Epinephrine	Jext 300®	6 years and over (body weight 31kg and above)	300 mcg	Intramuscular injection
	Jext 150®	Children 1 month- 5 years (body weight 15-30kg)*	150 mcg	

*NB Children of body weight <15kg can be prescribed 150mcg Jext® or Epipen® (unlicensed)

Standard operating procedures for training patients and carers in the use of adrenaline auto injectors will be outlined for Epipen® and Jext® in sequence. Before each procedure the following steps are applicable:

Procedure	Rationale
1. Gather equipment required (relevant auto-injector training device and corresponding written patient information for the chosen device).	To prevent unnecessary delays
2. Give an accurate and appropriate account of the training you are about to provide to the patient and/or carer	To ensure the patient and/or carer are informed and happy to proceed with the discussion.

How to train a patient (and/or carer) how to administer an Epipen® adrenaline auto injector²

Procedure	Rationale
<p>1. Provide a practical demonstration of how to administer the Epipen® (as per manufacturer's instructions, using a training pen device):</p> <p>Step 1: Hold the device in a firm grip of the dominant hand, ensuring the thumb is wrapped around the fingers (not over the end of the device), and the blue safety cap is facing upwards.</p> <p>Step 2: Remove blue safety cap.</p> <p>Step 3: Hold orange tip 10cm from outer thigh, jab into thigh firmly at 90 degrees, until a 'click' is heard.</p> <p>Step 4: Hold the Epipen® in place for 3 seconds</p> <p>Step 5: Advise that after giving the device, 999 should be dialled, ask for an ambulance and say the word 'anaphylaxis'.</p>	<p>To reduce the risk that the device may be accidentally administered into the thumb.</p> <p>Unless cap is removed, device cannot be activated. The 'click' confirms activation of the device.</p> <p>3 seconds will enable adrenaline dose to be given into the muscle.</p> <p>Important to seek urgent medical help to monitor recovery or provide further treatment.</p>
<p>2. Ensure the following important information is communicated to the patient/carer:</p> <ul style="list-style-type: none"> - The clear window on the device allows you to see the solution, it should be clear and colourless, if not the device should be replaced. - The real device from the pharmacy will come in a clear protective case, the yellow lid should be flipped and device removed prior to use. - The expiry date on the device should be checked regularly, it should be replaced if expired. If in an emergency there is only an expired device available, it can be used. - It is not necessary to remove clothing to administer the device, but thick seams, buttons or zips should be avoided. - The device should never be administered whilst the patient is standing up. They should be lying flat with legs slightly elevated to encourage blood flow, or can be sitting up with legs outstretched if breathing is difficult. - The orange tip will cover the needle before and extend to cover the needle after use. Used pens can be given to ambulance crew to dispose of safely. - Patient should keep a copy of their Allergy Action Plan with their Epipen® - Epipen® should be carried on the patient at all times and should not replace allergen 	<p>Discolouration or particles in the solution could indicate an issue with the medication, even if the device is within its expiry date it should be replaced.</p> <p>Expired adrenaline may be less effective.</p> <p>The needle length is 15mm (Epipen®) or 13mm (Epipen Jnr®) and the needle must reach the muscle, administering through 1 layer of clothing is usually safe. Pocket contents, zips, buttons may block the needle completely.</p> <p>Giving IM adrenaline whilst standing can result in cardiac arrest. Lying flat with legs raised is recommended to encourage venous return, or sitting with legs outstretched is preferred where there are breathing difficulties</p> <p>To give appropriate expectations for the process and to reassure patient/carer around device safety. Written instructions can support decision making during an allergic reaction.</p> <p>Must be equipped to administer emergency treatment promptly in the event of anaphylaxis,</p>

<p>avoidance, this is still the primary treatment to prevent anaphylaxis</p>	<p>earlier treatment of anaphylaxis leads to better outcomes.</p>
<p>3. Allow time for the patient and/or carer to practice with the training device until correct technique can be observed. Advise how a training device can be obtained (via www.epipen.co.uk) if one is not able to be given at this visit.</p>	<p>To assess understanding and ability to administer Epipen® safely.</p> <p>Patients/carers who practice with a training device retain their skills better than those who do not have a training device.</p>
<p>4. Provide written information regarding how to use an Epipen®. This can be in the form of the literature provided in the training device box, in the Allergy Action Plan, or other trust specific leaflet/document.</p>	<p>To provide written reinforcement of training received.</p>
<p>5. Direct patient/carer to www.epipen.co.uk for further information and training videos which may be useful when disseminating training to other members of the family e.g. grandparents, siblings, partners. Website also has an expiry alert service.</p>	<p>Anyone who cares for the child should be trained in administering their Epipen® as they may need to administer in an emergency. Likewise for adults, close friends or family may need to support the patient in an emergency.</p>

How to train a patient (and/or carer) how to administer a Jext® adrenaline auto injector³

Procedure	Rationale
<p>1. Provide a practical demonstration of how to administer the Jext® (as per manufacturer's instructions, using a training pen device):</p> <p>Step 1: Hold the device in a firm grip of the dominant hand, ensuring the thumb is wrapped around the fingers (not over the end of the device), and the yellow safety cap is facing upwards.</p> <p>Step 2: Remove the yellow safety cap</p> <p>Step 3: Place the black injector tip against the outer thigh at a 90 degree angle. Push firmly until a 'click' is heard</p> <p>Step 4: Hold the injector firmly in place against the thigh for 10 seconds, then remove.</p> <p>Step 5: Massage the injection area for 10 seconds</p> <p>Step 6: Advise that after giving the device, 999 should be dialled, ask for an ambulance and say the word 'anaphylaxis'.</p>	<p>To reduce the risk that the device may be accidentally administered into the thumb.</p> <p>Unless cap is removed, device cannot be activated. The 'click' confirms activation of the device and the start of the injection.</p> <p>10 seconds will enable adrenaline dose to be given into the muscle.</p> <p>This can help disperse adrenaline into the muscle and soothe any discomfort.</p> <p>Important to seek urgent medical help to monitor recovery or provide further treatment.</p>
<p>2. Ensure the following important information is communicated to the patient/carers:</p> <ul style="list-style-type: none"> - The clear window on the device allows you to see the solution, it should be clear and colourless, if not the device should be replaced. - The real device from the pharmacy will come in a clear protective case, the yellow lid should be opened and device removed prior to use. - The expiry date on the device should be checked regularly, it should be replaced if expired. If in an emergency there is only an expired device available, it can be used. - It is not necessary to remove clothing to administer the device, but thick seams, buttons or zips should be avoided. - The device should never be administered whilst the patient is standing up. They should be lying flat with legs slightly elevated to encourage blood flow, or can be sitting up with legs outstretched if breathing is difficult. 	<p>Discolouration or particles in the solution could indicate an issue with the medication, even if the device is within its expiry date it should be replaced.</p> <p>Expired adrenaline may be less effective.</p> <p>The needle length is 15mm (Jext 300®) or 13mm (Jext 150®) and the needle must reach the muscle, administering through 1 layer of clothing is usually safe. Pocket contents, zips, buttons may block the needle completely.</p> <p>Giving IM adrenaline whilst standing can result in cardiac arrest. Lying flat with legs raised is recommended to encourage venous return, or sitting with legs outstretched is preferred where</p>

<ul style="list-style-type: none"> - The black tip will cover the needle before and extend to cover the needle after use. Used pens can be given to ambulance crew to dispose of safely. - Patient should keep a copy of their Allergy Action Plan with their Jext® - Jext® should be carried on the patient at all times and should not replace allergen avoidance, this is still the primary treatment to prevent anaphylaxis - Device should be stored below 25°C and above freezing. 	<p>there are breathing difficulties To give appropriate expectations for the process and to reassure patient/carer around device safety.</p> <p>Written instructions can support decision making during an allergic reaction. Must be equipped to administer emergency treatment promptly in the event of anaphylaxis, earlier treatment of anaphylaxis leads to better outcomes. To ensure efficacy of medication is not affected by extreme temperatures.</p>
<p>3. Allow time for the patient and/or carer to practice with the training device until correct technique can be observed. Advise how a training device can be obtained (via www.jext.co.uk) if one is not able to be given at this visit.</p>	<p>To assess understanding and ability to administer Epipen® safely.</p> <p>Patients/carers who practice with a training device retain their skills better than those who do not have a training device.</p>
<p>4. Provide written information regarding how to use a Jext® device. This can be in the form of the literature provided in the training device packaging, in the Allergy Action Plan, or other trust specific leaflet/document.</p>	<p>To provide written reinforcement of training received.</p>
<p>5. Direct patient/carer to www.jext.co.uk for further information and training videos which may be useful when disseminating training to other members of the family e.g. grandparents, siblings, partners. Website also has an expiry alert service.</p>	<p>Anyone who cares for the child should be trained in administering their Epipen® as they may need to administer in an emergency. Likewise for adults, close friends or family may need to support the patient in an emergency.</p>

References

1. Paediatric Formulary Committee. BNF for Children (online) London: BMJ Group, Pharmaceutical Press, and RCPCH Publications. Accessed at www.medicinescomplete.com on 14.05.2021.
2. Mylan (2020) *Epipen® explained*. Accessed at <https://www.epipen.co.uk/en-gb/hcp/epipen-explained> on 14.05.21.
3. ALK Abello (2018) *Jext®: Instructions For Use*. Accessed at www.jext.co.uk on 14.05.2021.