

Can transdermal patches be halved?

Sometimes it is necessary to give a lower patch dose than is available. This problem has become more frequent with supply issues for some patch doses. Manipulation of a dose form can affect pharmacokinetics and stability, although there are very few studies involving patches. Cutting or occluding a patch in order to administer a lower dose may be unavoidable. This bulletin discusses preferred methods for halving patch doses, and the risks and benefits of this practice.

To cut or not to cut?

Whether a patch can be cut depends on how the medicine is stored within the patch, which is either a 'matrix' or a 'reservoir'. This information can be found in the medicine's [Medsafe](#) datasheet (go to 'Pharmaceutical Form' section).

✓ Matrix patches can be cut

These medicines are embedded in a solid adhesive matrix and release is proportional to the surface area of the patch on the skin. By halving the surface area, we expect the dose rate to be approximately halved.

Cut the patch diagonally from corner to corner. For round patches, fold in half and cut along the folded line. Ideally discard the remainder of the patch, folding the adhesive layers together first. However, the cut half could be used for the next dose if stability data exist or if supply is limited, by storing in an airtight bag. One study¹ found cut estradiol patches are stable when stored in an airtight plastic bag at 21 degrees Celsius for up to one month.

Examples of matrix patches	Brand
Buprenorphine	Norspan [®] , BuTrans [®]
Estradiol	Climara [®] , Estraderm MX [®] , Estradot [®] , Mylan [®] , Estalis [®] , Sandoz [®] , Lyllana [®]
Fentanyl*	Fentanyl (Sandoz) [®]
Nicotine	Habitrol [®] , Nicotinell TTS [®]
Oxybutynin	Oxytrol [®]
Rivastigmine	Exelon [®] , Rivastigmine BNM [®] , Rivastigmine (Generic Partners)
Rotigotine	Neupro [®]

* Opinion is conflicting - some sources suggest cutting patches is not reasonable

⊖ Reservoir patches CANNOT be cut

The medicine is in a liquid reservoir with a rate-limiting membrane to control release of the medicine. Cutting will cause liquid to leak, potentially releasing the full amount of medicine.

Examples of reservoir patches	Brand
Clonidine	Catapres TTS [®] , Clonidine Viatrix/Mylan [®]
Glyceryl trinitrate	Minitran [®] , Nitroderm TTS [®] , Nitro-Dur [®]
Hyoscine*	Scopoderm TTS [®]
Testosterone	Androderm [®]

*Opinion is conflicting - some sources suggest cutting patches is reasonable

Two alternative methods for halving the release rate of reservoir patches (but can also be used for matrix patches):

1. Fold the patch in half with the non-adhesive sides together and apply the adhesive part to the skin. Secure the patch with tape. OR
2. Apply an occlusive (waterproof) dressing on the skin or on half of the patch and apply the patch so that only half of it is in contact with the skin.

Other considerations:

- Cutting or halving a patch is not precise: consider potential consequences if slightly more or less of a prescribed dose is administered. This is particularly relevant for narrow therapeutic index medicines, such as opioids, where it may be preferable to avoid cutting.
- There are very few studies that have investigated the pharmacokinetics or stability of cutting or occluding a patch. Therefore, only halve a patch when the prescribed strength is not available.
- Not all patients may be able to manipulate patches, such as those with poor vision or dexterity, and an alternative route or medicine may be required.

For further information on the use of transdermal patches:

- Medicines Information Service: Feel free to contact [our service](#) for specific enquiries.
- Specialist Pharmacy Service, NHS bulletin: ['Using transdermal patches safely in healthcare settings'](#).

Reference: Ankarberg-Lindgren C, et al. Estradiol matrix patches for pubertal induction: stability of cut pieces at different temperatures. *Endocr Connect.* 2019;8(4):360