

TOURNIQUETS

a user's guide

Most injecting drug users are aware that tourniquets are important pieces of equipment used to inject.

However, staff working at the Medically Supervised Injecting Centre (MSIC) in Kings Cross have noticed that a lot of people put them on too tightly, apparently based on the general idea that "the tighter the better". This can be counter productive, however, as putting them on too tightly cuts off the circulation of blood into the arm altogether so that veins will then not dilate (get bigger). The other thing that has been observed is that some people do not release the tourniquet before pushing on the plunger to inject the drug into the vein. So it might be timely to review how tourniquets work and how they can be used most effectively.

The reason why tourniquets are recommended is because they make it easier to inject and easier injecting usually means safer injecting. There are two ways tourniquets help. First of all, tourniquets are used to dilate veins, making them bigger so they are easier to find and inject into. Secondly, dilating the veins helps to "anchor" them so they don't roll around as much when you're trying to insert the needle.

We understand that some people, particularly those with large veins, choose not to use tourniquets as it removes one step from the injecting process and they find it unnecessary. It is still worth developing good tourniquet practice, however, because veins can become more difficult to find over time. Also, as mentioned above, tourniquets can help anchor the vein during insertion of the needle.

Some people don't like using tourniquets because they have difficulties releasing them, which is an important consideration. However there are ways to use tourniquets that can be easily removed with a one-hand action. Alternatively, some people find substitutes for tourniquets such as twisting their shirt sleeves above the elbow and holding the twist under their arm.

While loose tourniquets are not much help at all, putting them on too tightly cuts off the circulation of blood into the arm altogether so that the veins don't dilate, which is completely counter-productive.

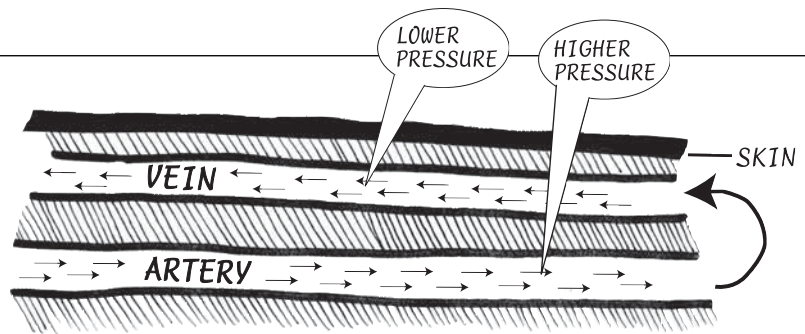
To understand how tourniquets work and why things can go wrong it's important to know a bit about your blood circulation.

Blood carrying oxygen from the lungs is pumped around the body by your heart in vessels called arteries, and because it is being pumped away from the heart, the pressure of the blood in your arteries is relatively high compared to the pressure in your veins. People who have accidentally injected into an artery will know this, because bright frothy red blood tends to spurt out and needs a long period of firm pressure to make it stop bleeding, whereas after injecting into veins blood oozes out much more slowly.

The (arterial) pulse you can feel in your wrist is the pressure wave that coincides with the pumping action of the heart. When a doctor takes your blood pressure by pumping up the blood pressure cuff, he/she is measuring how much pressure is needed to cut off the blood flow in the arteries to the arm; that is the pressure needed to stop the pulse in your wrist. This pressure reading is the upper measure of your "blood pressure", which is normally about 120 mmHg.

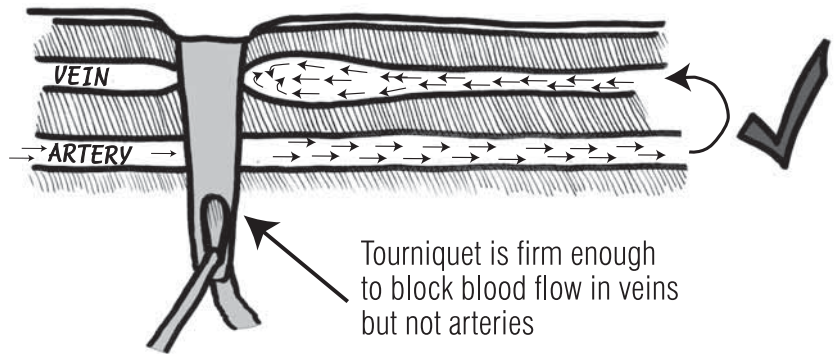
As blood flows through the body from the arteries, to the capillaries where the oxygen is delivered to the nerves and tissues, then on to the veins (that take blood back to your heart and lungs for more oxygen), its pressure falls. By the time it gets to the medium sized veins in the arm, the pressure is only about 10mmHg, which is much, much lower than the arterial pressure.

The aim of applying a tourniquet is to block the blood flow in the veins going back to the heart. This makes the blood that is entering the arm via the arteries build up in the veins behind the tourniquet, so that they will dilate and can be more easily seen and felt. To do this you only need to apply enough pressure to block the veins, which as stated above, is only about 10mmHg: equal to a "light squeeze".



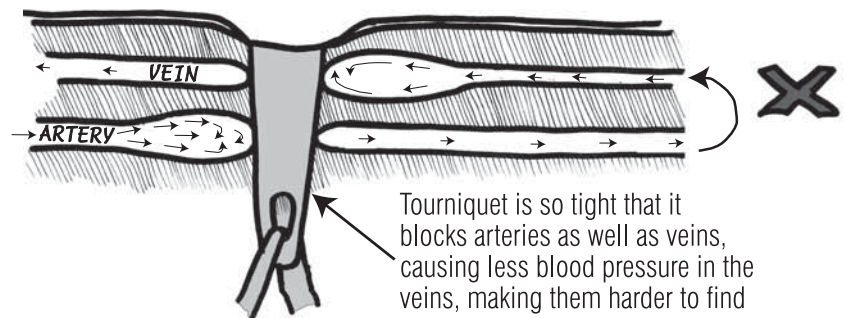
Blood is carried from the heart through the arteries and back to the heart through the veins

The tourniquet does not need to be any tighter than this; it should definitely not be more than 120mmHg pressure because this will block the arterial blood flow into the arm altogether. This is a problem, because then there won't be enough blood continuing to flow into the arm to then build up in the veins behind the tourniquet, necessary to dilate them, which of course defeats the entire purpose of the exercise!



There are a number of ways of recognising that the tourniquet is too tight.

1. First, you'll notice that your veins don't dilate like they should.
2. Because the blood's oxygen supply to nerves and tissues in the arm has been cut off, you may feel some tingling, or pins and needles, in your hand. Your arm will become heavy and start to ache, then become painful and eventually numb. It will also look pale and then bluish.

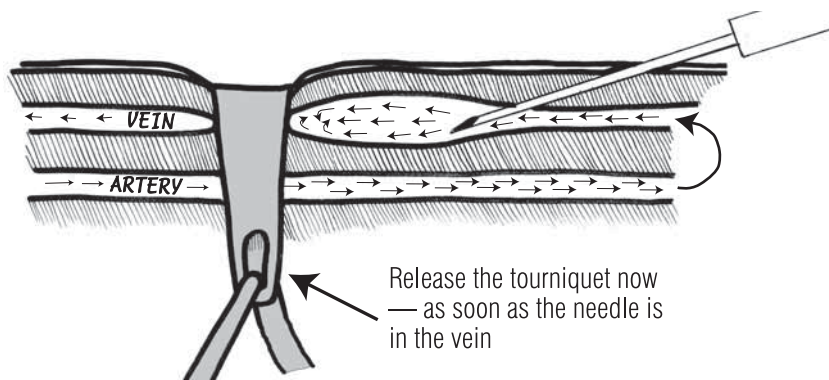


3. When you let the tourniquet off, you'll feel a surge of warmth as the blood rushes back into the arm through the arteries. Not good signs.

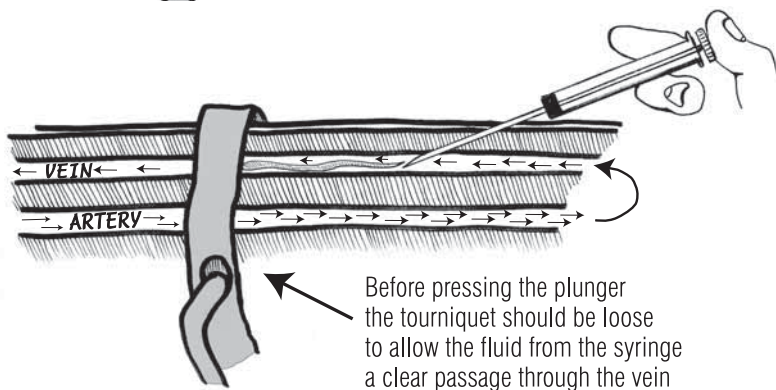
Using a tourniquet can be a great help for safer injecting, but there are a few things to remember to make them work effectively.

1. Place the tourniquet above where you're trying to inject, and tighten it gently. Tighter is NOT better; make sure you can still feel your pulse at all times!
2. Squeeze your hand a couple of times. Sometimes tapping or rubbing the skin over the vein a few times also helps but there is no value in turning your arm around like a helicopter blade... remember, less can be more!
3. Be patient; give your veins a few minutes to fill up with blood and dilate.
4. If you're having trouble finding a vein in one arm, try the other. Stay calm — especially hard when you're hanging out, but try to keep it together.
5. Take breaks in between unsuccessful attempts. Stopping the bleeding from each puncture wound before moving on to the next injecting site is important from a blood-borne infection perspective and a good way to pace yourself so that you don't psych yourself out.

6. Make sure the vein “bounces” when you press it. If it’s more like a solid cord it is probably a collapsed or clotted vein, which is no good for injection.
7. Once you’ve found a usable vein, swab the skin above with an alco wipe. When the skin is dry, insert the needle into the vein at a 45-degree angle, beville upwards.
8. You know you’re in the vein when you get a small “flash-back” of blood into the syringe. A large, pulsating flash-back of blood suggests you may have hit an artery.
9. While drawing blood back into the syringe is a way of checking that the needle is still in the vein, don’t draw back too much blood before injecting as it can clot while still in the syringe, which may block it. If the needle accidentally comes out of the vein before you have injected, a syringe full of blood will also make it harder to know when you’re in the next vein.
10. Once the needle is in the vein, **RELEASE THE TOURNIQUET**. Otherwise, when you push the plunger your shot may burst the vein or cause backflow of the drug into the surrounding tissues, which is no fun at all.



Release the tourniquet now — as soon as the needle is in the vein



Before pressing the plunger the tourniquet should be loose to allow the fluid from the syringe a clear passage through the vein.

Tim Shortus, Craig Rodgers, Ingrid van Beek from the medical team at KRC

TIPS

If you have tips around finding veins, or anything else involving injecting technique, *User's News* wants to hear from you. We want to start publishing a regular column of readers' tips about injecting practice. Send us your ideas and experiences. See p. 20 for contact details.