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# Transfusion Medicine for Veterinary Techs

micro drip study guide

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## WHAT STUDIES HAVE THERE BEEN?

- There have been limited veterinary studies on the delivery methods used for RBC transfusion.
- 2011 a study looked at the survival of RBCs using volumetric pumps (pumps that have a roller system where the line goes), syringe pumps and gravity flow after 24 hours.



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So what studies have been-- very limited veterinary studies on the delivery method. There was really only one study, very, very limited data, and I'll show you that to you. It's a 2011 study, so it's an older study. And it looked at the use of volumetric pumps, pumps that have this roller system where the lines go that crushes the line. So some of you have those Baxter pumps, you know what they look like. You take the line out and it's all completely flat. It also looked at syringe pumps and then gravity flow.



## AFTER 24 HOURS

Delivery Technique	Detected	Not Detected	# of patients
Gravity Flow	8	0	8
Volumetric Pump	4	4	8
Syringe Pump	1	6	7

And so this is what they detected. In gravity flow, after 24 hours, eight of the patients-- so this is a very small study again-- eight patients had detected red blood cells. Not detected was zero. So number of patients that they went into the study was eight. After 24 hours, they still had eight of them had detectable red blood cells that were transfused.

Volumetric pumps, the ones that crashed the lines, 50% of the patients already had destroyed all the red blood cells that were transfused after only 24 hours. And what about syringe pumps? That was the worst. I know, this is where your eyes got really big. Look at this. So out of seven patients-- they had to actually get one of them out of the study. So seven patients, after 24 hours, six out of seven patients that had been transfused on a syringe pump that's pushing the red blood cells, squeezing it in through the catheter, six out of seven had no more red blood cells, they had lysed all the red blood cells and hemolyzed all the red blood cells. Only one patient actually had red blood cells that were still-- that had

### END RESULT...

- Gravity: 100% chance of survival to 49 days
- Roller Pump: 50% chance of survival to 49 days
- Syringe Pump: 0% chance of survival after 24 hours



The end result is that gravity pump, what they found was a 100% chance of survival after 49 days; roller pumps, only 50% chance; syringe pumps, 0% chance of survival. So for all of you who are syringe pumping your blood, please stop, don't do that. I know it's the only one study, but it's still an important one.