

The Science Behind the Infant Heel Stick

Where Tools, Technique, and Science Meet!

by M. Gail Stotler, B.S.N., R.N., Vein Access Technologist

Abstract Every newborn in the United States gets a heel stick. Performing that heel stick correctly is important. If the infant is sick, at anytime during its infancy, multiple heel stick blood collections are going to occur. Doing the heel stick right is important.



**In 1637, Isaac Newton presented the Law of Gravity –
EVERYTHING falls DOWN.
What dose this have to do with the 21POC Infant Heel Stick?
Everything!**

The **21POC Infant Heel Stick** is the **21st** century **Point-Of-Care** blood collection procedure for infants - where a lancet/cutter is used to cut the heel of the infant and blood is collected for testing purposes.

Again, you ask, what does Newton's Gravity have to do with heel sticks?

The **21POC technique** uses GRAVITY to bring the blood to the site. Because gravity takes everything down, the baby's foot must be DOWN – so that gravity can take the blood to the heel. [The current medical culture lifts the baby's foot UP - and fights gravity.]

With the **21POC**, the baby's foot, softly cradled in the healthcare worker's hand, is left in the dangling DOWN position, with the heel facing the floor - with the foot, ankle, and Achilles tendon in the proper natural position. [The current medial culture pinches the baby's foot back to its shin.] With the foot in the down position and the heel facing the floor, gravity can now take blood to the lowest point - to the heel - exactly where we need for the blood to be.



Leaving the heel facing the floor, a singular tiny cut is made in the fleshy part of the heel to the side of the Achilles tendon (not in the middle, over the tendon, where it inserts on the foot). [With the current medical culture, multiple cuts are made into the baby's heel.]

Immediately, a drop of blood appears. And the bleeding will continue as long as the foot is in the DOWN position.

Now the blood collection can begin, whether drops are being placed on a paper collection device (for blood typing or PKU testing), or a larger sample is being collected for testing because the baby is sick. If the larger sample is collected, the small plastic tube-like

structure with a wide mouth (like your detergent bottle) is placed to the skin (without scrapping or scooping of blood). As the heel bleeds, the blood runs down the inside of the back of the container, and the worker can see the filling from the front.

If the worker needs to encourage bleeding, the worker's support hand that is on the infant's foot, gently compresses the foot and ankle - no squeezing at the site. [The current medical culture squeezes the site – causing a crush injury to the tissue and crushing the red blood cells, falsely elevating the lab result.]

And when the collection is done, a dry gauze pad is used to apply gentle pressure to the site for 1-3 minutes, to promote clotting - to prevent bruising. [The current medical culture does not apply pressure – because there is no bleeding when they stop squeezing, because gravity took blood away from the site – but when the baby's foot falls back down when it is picked up – gravity brings blood back to the site, bleeding beings, and so does the bruise.]

When the procedure is completed, apply a tiny dot bandaid to protect that site from infection. [The bandaid is NOT applied to absorb bleeding, that is not what it was designed for.]

And in 2 hours, the puncture site that was sealed with clot is now healed with a scar and there is no bruising, no pain, no Achilles Tendon injury, and no crush injury. Everyone is happy - the baby, the mom, the healthcare worker who performed the procedure, and the lab.

The **21POC Technique** produces a

1. Quantity sufficient sample of blood.
2. A Quality sample of blood, non-hemolyzed and non-diluted.
3. Without compromise, complication, injury, or failure.

[The current medical culture produces an **insufficient quantity** sample of blood, that is **hemolyzed** (crushed cells) and **diluted**, and causes **Achilles Tendon injuries, tissue crush injuries**, crushed cells that **falsely elevate the laboratory values, pain, and bruising**.]

**Use SCIENCE when performing medical procedures,
in this case, GRAVITY.
Who knew?**

**Isaac Newton! But he wasn't drawing blood back in 1637, he expected us
to apply the SCIENCE to whatever we do in life,
including the Infant Heel Stick.**

Vein Access Technologies
a division of The Nurses' Station
2018