

Tip of the Month



They're Called Stress Balls for a Reason

Do your outpatient drawing stations have stress balls, stress relievers, or other devices patients can squeeze while you search for veins or draw their blood? If so, send out a memo to all your physicians telling them not to trust your lab's potassium results.

Better yet, throw your stress balls away.

When a tourniquet constricts blood flow and the patient is told to squeeze and relax his fist repetitively, the muscles involved release a flood of potassium. The patient's beating heart moves blood through the active muscles where it picks up the potassium, increasing its concentration in the bloodstream dramatically. The potassium-rich blood tries to return to the heart through the veins, but runs into a traffic jam where your tourniquet has stopped the flow. Instead, it takes a detour up the needle and into the syringe or tubes you are filling.

When the blood is tested by the laboratory, those with a low potassium level are reported as normal, and those within normal limits are reported as elevated. The physician manages—actually, mismanages—the patient accordingly.

If you dismiss this preanalytical variable as insignificant, consider that published studies have found fist pumping causes:

- one-third of panic-level potassiums;
- half of all elevated potassiums;
- an elevation in the patient's reported potassium by up to 20 percent;
- an increase in potassium of up to 2.7 mmol/L.

Clenching and holding the fist is acceptable; pumping it is not. Many patients might instinctively pump their fist as they have been trained to do when donating blood. However, drawing blood for clinical testing is different. Instruct your patients not to pump their fist and tell them why. The next person who draws their blood might not know the effect, leaving laboratory managers to spend their day doing damage control.

Fist pumping is one of the primary reasons physicians question a laboratory's potassium results. It leads to a loss of credibility in the lab, and places every test performed under suspicion. Patients get mismanaged, physicians get irate, and laboratory managers get chewed out, making these so-called stress relievers more like stress generators.

So put the squeeze on any device you might be using to facilitate fist pumping. By removing them from your outpatient draw stations and blood collection trays, the stress they relieve just might be your own.