

STANDARD DEVIATIONS: Safety Check

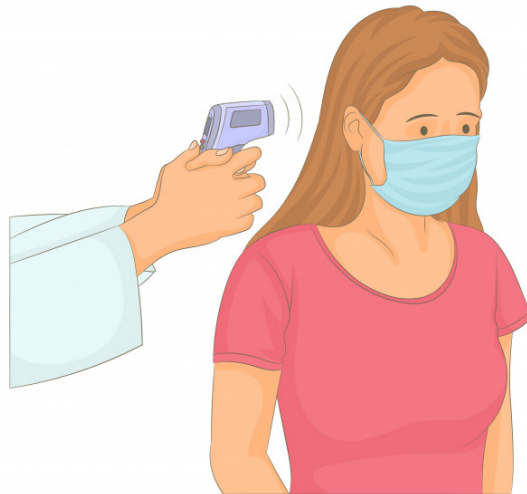
Greetings,

The ray gun-like devices you're seeing aimed at people's foreheads everywhere you go are infrared thermometers. They estimate the body's internal temperature, and their scans are **generally considered reliable if they're used correctly**.

Unfortunately, **the accuracy of the thermometer is beside the point**: Experts say temperature checks simply aren't very effective at identifying people with the coronavirus.

A study of 5,700 patients who were hospitalized with COVID-19 in New York City (<https://jamanetwork.com/journals/jama/fullarticle/2765184>) illustrates how we fool ourselves. When patients were assessed at triage, only 30.7% of them had a fever. Some did develop fever later in the course of their illness — but the simple checking of their temperature when they arrived at the hospital would not have flagged them as sick.

There are potentially grave consequences for thinking that temperature scanning is effective at identifying people who are infected. A number of studies have found that people who are not yet showing symptoms of COVID-19 are likely playing a significant role in its spread. A model published in Nature Medicine last month (<https://www.researchgate.net/publication/284020346>) estimated that 44% of secondary cases were infected by virus carriers who were pre-symptomatic at the time.



{Peripheral thermometers do not have clinically acceptable accuracy}

Another factor that raises questions with temperature screening: It's possible to reduce a fever with drugs such as acetaminophen, ibuprofen, aspirin and naproxen.



So checking someone's temperature isn't a foolproof method for identifying infectious people. It's possible that we may be missing nearly 70%!? The ray gun is telling us one thing (temperature), when our perception is telling us something completely different (the health of the person being checked). The temperature falsely persuades us a patient is fine and, in fact, they may be transmitting disease.

During the Ebola epidemic of 2014-16, hundreds of thousands of travelers were screened by infrared thermometers. No cases were detected in flights leaving Guinea, Liberia and Sierra Leone, which all had big Ebola epidemics.



{I am wearing a mask!}

Millions of temperatures have been taken at border crossings in the last DRC outbreak. We're still waiting to see if the checks made any difference.

Public health specialists believe that temperature checks at airports or workplaces may make us feel as if adequate precautions are being taken — without actually accomplishing much.

We may think something is perfectly safe and be terribly wrong. Can this happen in the lab?

The way we practice safety in the lab may not always provide the protections we think. The safety measures we utilize in the lab are **generally considered reliable if they're used correctly**. How often are we changing gloves that have been compromised? How often are we sending dirty lab coats to be cleaned? Are we doing the best we can to prevent transmission to our co-workers, patients, and other departments (housekeeping, nursing, food services, etc.)? How well do we observe our protocols when it comes to biosafety?



How often are we putting ourselves or someone else at risk with our behaviors that are counter to our intent? We practice safety measures that are supposed to provide protection, but are we fooling ourselves?



{Who's protected with gloves, who's at risk?}

Just as checking temperature may not tell us the truth about infection, the practices we observe in the lab may not be keeping everyone safe.

Not changing gloves for that little splash, re-using that soiled lab coat, working on the open bench instead of in the biosafety cabinet, putting off cleaning that bench, pipette, centrifuge, and myriad other steps we take for granted or side-step occasionally are the little lies we tell ourselves. Even small lapses put ourselves and others at risk.

Just as a normal temperature does not rule out infectivity with coronavirus, gloves and a lab coat alone don't make us safe. It's how we use the tools and our behaviors that keep us safe. We always believe we are safe and yet we often find an excuse or simply disregard our conscience. Looks, like the ray gun temperature, can be deceiving.





{Have you worked with this guy?}

Unfortunately, biohazard waste containers, bleach, wearing all that PPE, and **good intention is beside the point**. We must have an attitude towards protection that guides our behavior.

We're living in a world of heightened awareness when it comes to transmission and infectivity. It's imperative to observe the same diligence in our laboratory work that we encourage in our public and social realms; or even more so.

Have a great week and be safe,

Bryan

The most accurate way to measure temperature is rectally — but that's probably not the most convenient or comfortable way to check for fever.

