

# REACT-2 Commentary – Corduroy Pants

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The topic of Whole Body CT (WBCT) is a sensitive one for me. I try as much as possible to be objective when making decisions in the ED but this particular decision seems to be marred by emotional baggage. Whenever I cross this topic it is a reminder that I am probably older at heart than my stated age. I should be wearing corduroy pants and using a cane. I must blame someone, so I blame my parents, why not they are not here to defend themselves.

In addition to having a window into my psyche, I also want to state before we embark, that I do not have a clear answer. I have my biases but the best approach will be up to you and your trauma colleagues. Let us start with the positives. Whole Body CT will, without doubt, find more pathology. It is fast, which has a dual benefit of rapid intervention (if needed) and rapid disposition if there is no significant pathology. This has other positive downstream effects of freeing a bed (or trauma bay) for other patients to be seen, and freeing up nursing to tend to the next patient. The cost analysis is complex, to be sure, but most facilities will profit off the imaging study obtained and profit further off the faster throughput. In addition, it spreads liability to the radiologists and minimizes the risk of missing an injury.

The ideology that drives my dislike of whole body CT is divided into three reasons. Firstly, I am not sure that it is always right for the patient. This is where we would discuss the radiation burden versus the injuries found. It is important to analyze the clinically significant injuries, and whether or not a good exam would have predicted them. Secondly, screening usually replaces thinking with testing, in this case imaging. I still believe that we are diagnosticians at heart and that role is being stripped away. We do not need an x-ray of the hip, femur, knee, tibia/fibula, ankle and foot when there is a knee abrasion. My exam rules out a fracture just as well. We are the gatekeepers of the hospital and much of the medical testing performed. If we relinquish critical thought then there is no need for physicians, less-trained providers can order x-rays of the entire extremity and order a pan scan just as well as we can. Thirdly, resources are limited. This one is a balance between bed utilization and cost of profuse scanning to the system. When we are performing a WBCT on an individual that perhaps did not need it, another patient in dire need of the scanner may be waiting. There is no radiation burden to the plain films mentioned above but we have used 23 minutes of the x-ray tech's time to get films we could have done without by performing a 2-minute examination. From an even more global stance, the cost of health care in the US is astronomical and the more we utilize advanced imaging the higher it will climb.

The main question is what percent of clinically relevant pathology is found on WBCT that would have otherwise been missed by selective testing. The other main question is whether or not there is a mortality benefit. Prior to the REACT-2 trial the studies were observational. In the Caputo et al. meta-analysis which concludes that, in fact, WBCT does incur a mortality benefit, five of the seven studies are retrospective. The two prospective studies have conflicting results (granted the more robust study leans towards mortality benefit). Either way causality cannot be deduced. Then came the REACT-2 trial which

is the first RCT. This should give us the answers we are looking for but like most clinical medicine trials, the question is only partially answered. The bottom line is that there was no mortality difference, but there are caveats. Patient selection is of great import here. In the REACT- 2 trial the patients are fairly sick, with an average injury severity score 20 and polytrauma present in 61-67% of patients. These patients likely had pathology noted on physical exam and would have been pan scanned twice in our shop. Many of them required the pan scan and, in fact, nearly 50% of the selective imaging group was pan scanned as well, minimizing the difference between groups. So, while there was no mortality benefit the intervention was not that different.

This brings us to the final point. There is clearly a group that should receive the pan scan. I am hesitant to accept that all trauma activations deserve this because not all are equally sick. If we are complacent the WBCT will continue to creep to the less sick patients. It is easier to turn off the brain, do a cursory exam and send the patient through a donut that provides us with beautiful objective images. More incentives are aligned with this approach than not. I am not a fan of what is easiest, however, I wear corduroy for God's sake.

## References

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