

Redistribution of Radiation Protective Apron Weight for Musculoskeletal Health, Fatigue, and Improved Ergonomics: The G-LIFT

CLD talks with W. Lance Lewis, MD, FACC, FSCAI, New Hanover Regional Medical Center, Wilmington, North Carolina.

Can you tell us about your practice?

I am an interventional cardiologist and have been in practice since 2004. I perform coronary and peripheral vascular interventions, as well as structural procedures.

How did you notice that you were having musculoskeletal issues?

When I was reading at night, my hands would be a little numb and tingly. I thought maybe it was due to the way I was exercising on the bike, because I was training for a triathlon. At that time, I didn't really put it together that my issues were from wearing lead all day. Certainly, as interventional cardiologists, we are always worried, because we have seen our mentors, who we work with

throughout our training, suffer neck pain and back discomfort. When I heard about the G-LIFT, I had just returned from a 12-day Boy Scout backpacking trip with my son. Bill Buchanan, who is one of the interventionalists who came up with the G-LIFT after an injury, suggested I give it a try. I had just been wearing a hiking backpack for 12 days, so I had experience with the concept behind the G-LIFT. Thinking it would be more preventative, I tried it, but I noticed my hand numbness and tingling went away, even though I had been attributing it to my exercise routine. Since then, I have been a believer. I have been wearing the G-LIFT for about four years. Now I just simply won't do a case without it. It just makes life easier. In these long structural cases, I'll be scrubbed in with somebody else who is not wearing it and I see them bending over and slightly groaning, and it is clear that their back is sore. They are not saying it, but you know the movements from having done them yourself. Meanwhile, I am feeling pretty good. I am carrying the same extra weight, but it is all transferred to the hips. I find long cases don't bother me like they used to.

What have you seen with lead apron ergonomics over the course of your career?

Generally speaking, not a whole lot has changed, except that my lead is probably lighter than it has ever been. The lead seems like it gets a little thinner each year and companies are trying to cut down on the weight, but there is a return on investment

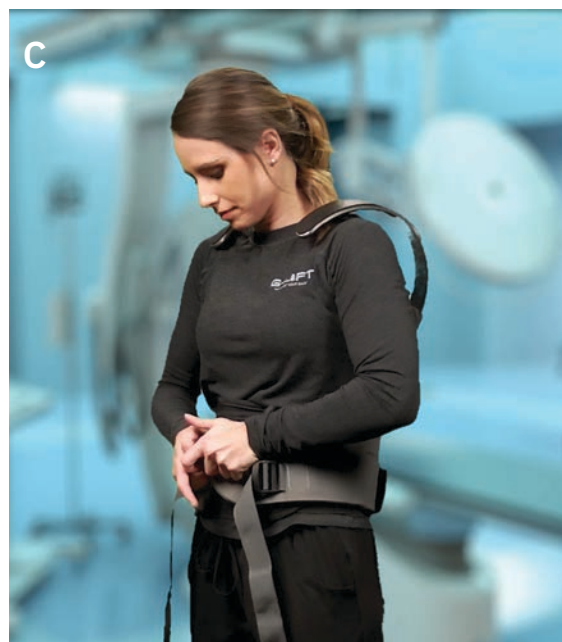
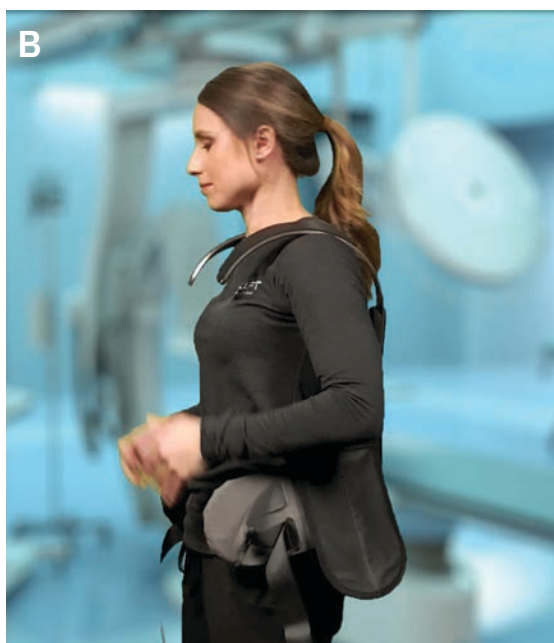
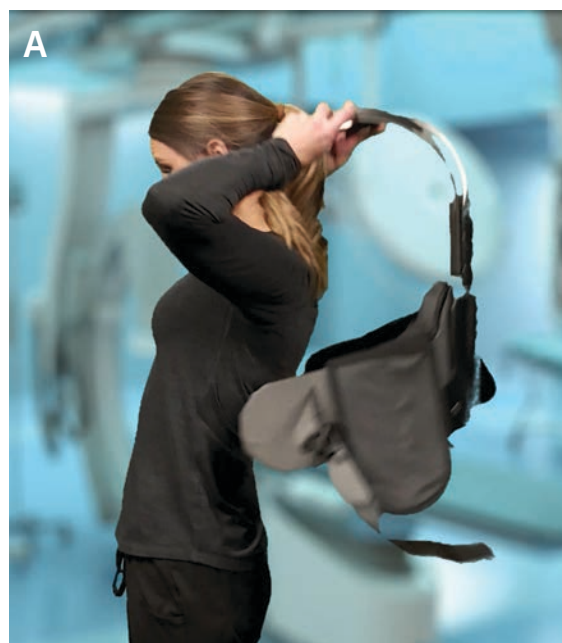


Figure 1A-E. The G-LIFT is for all healthcare personnel wearing radiation protective aprons. It is designed to be put on quickly and easily, and fits comfortably right under your protective apron.

as to how thick your lead is and how much you are protecting yourself. At some point, it becomes a game where you can't get much lighter in lead, if you will. We have tried one of the lead suspension systems. It gives you an otherworldly feeling; it doesn't feel like you are doing the case. I don't know how to put it better, but you have this thing in front of your face, you hear yourself speaking, and you are tethered to this thing above you as though it is a leash.

You mentioned seeing what some of your mentors experienced after years in the lab. Are there common complaints for interventionalists in general?

It seems to be mostly cervical spine issues, from the weight pulling down on the shoulders and stretching the brachial plexus. Some musculoskeletal areas get arthritis and then rub up against those nerves, which can cause pain or numbness, but cervical spine issues seem to be first and foremost. Certainly, low back issues occur as well. Again, I didn't think I had back problems. Once every couple of years I might have thrown my back out, but I never really thought of myself as somebody with back issues.

What are some of the remedies people try?

Core strengthening and stretching. Most folks go to physical therapy first to try to avoid surgeries, and of course I have seen some ultimately end up with a surgical repair, from arthritis, cervical disc impingement, or something like that.

How does the G-LIFT work?

It redistributes weight off of your shoulders and puts it on your hips. The key is to place it just above the hip bones where they flare out. When you tighten the G-LIFT and it is cinched down on those hip bones, it lifts all the weight off of your neck and shoulders, redistributing it to the hip area where you can carry more weight. You are not putting the spine in danger by weighing it down or putting stresses on the spine that it shouldn't have to handle. When you turn to the side, if you have weight pulling on your neck at a certain area, it puts stress and strain on the nerves and also on the bones, leading to arthritis or nerve issues or damage over time. The G-LIFT takes off all of that weight so you can move your neck around, you don't feel the weight at all, and it is redistributed to your hips, just as if you were going for a long hike and needed to carry a hiking backpack.

Have you noticed a difference in how you feel after wearing the G-LIFT?

You are not as tired at the end of the day. The fatigue you get from carrying everything on your shoulders in long cases is not there. Wearing the G-LIFT is also a little cooler, because it carries the lead off your body, so air can circulate. We are a fairly busy lab and have almost 500 ST-elevation

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Is putting the G-LIFT on or taking it off any more time-consuming than with a regular lead apron?

No, it just becomes part of your routine. You put it on, rest your lead on top of it, and strap it on behind you. The first couple of times, it feels a little funny, as anything that is different does. Right now, it doesn't slow me down when I am getting ready for a STEMI or called in urgently to do a case, or even if I have plenty of time. It is just part of the routine of putting on your lead.

What about range of motion?

The G-LIFT doesn't impact my range of motion. I can move around and it has not been a problem. My range of motion is not restricted at all.

It is interesting how you also consider the G-LIFT preventative.

Yes, wearing lead is a setup for having a problem down the road. All you have to do is know some people that have worked in the lab for a long time. That doesn't mean everyone is going to have problems, but certainly anyone working in a lab runs into someone who has had a problem with lead. We are putting on this extra weight, and even if we wear a skirt and a top versus a full lead apron on the front, we are carrying some weight on our shoulders. We try to mitigate that any way we can, but there is no perfect way to do that — or at least there hasn't been. The G-LIFT redistributes that weight and puts it on the hips, an area that is more well built to handle it. A backpacking and hiking analogy is perfect. You can't hike all day long with a 50-pound backpack hanging on your shoulders, nor should you walk around and do a case in lead with that amount of weight hanging on your shoulders. We haven't had a way to avoid

this until the G-LIFT fortuitously arrived.

Any final thoughts?

The G-LIFT was borne out of someone's experience with an injury, but I wouldn't say I had an injury or really knew I had a problem. While I look at use of the G-LIFT as preventative, particularly after seeing how my mentors have experienced issues from wearing lead for so many years, the impact is not only in the long term. Once you wear it, you realize, "Wow, I really feel better at the end of a long case day." While you are putting on another piece of equipment, the G-LIFT hasn't slowed me down. It is just a small thing to get used to that brings a big reward at the end of a long case day. I am an early adopter. We also have two other physicians and two staff members with musculoskeletal issues who have used the G-LIFT, and they swear by it. Once somebody starts wearing the G-LIFT, it seems to be impactful and they want to continue to wear it. ■

Find more information about the G-LIFT. Contact us at: sales@theglift.com

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Disclosure: Dr. Lewis reports... (please advise).

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