

Oh, Their  
Aching  
Backs!  
This Helps  
Reduce  
Injuries



## Teaching people to prevent back problems

### Oh, their aching backs! This helps reduce injuries

A study confirms something about workplace injuries you've probably suspected.

Employees who injure their back at work are most likely to reinjure themselves. One year after a back injury, 25.8% are reinjured.

The U.S. Bureau of Labor Statistics reported 142,230 back injuries in 2018.

These statistics add up to one thing: the need for more strategies for workplace back safety.

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Here's a typical workplace conversation:

"How'd you hurt your back?"

"I was bending over to pick up a screwdriver, when I felt a pop, then some really bad pain in my lower back."

Did that one bend and the light load of a screwdriver really cause the worker's injury?



It depends on how you look at it. To use a variation on an old saying, it was the screwdriver that “broke” the worker’s back.

But what about all the bending and lifting that the worker had done previously? Like the straw and the camel, there were many previous straws (screwdrivers/lifts) before the one that caused the injury.

As a society, we haven’t taught people to prevent cumulative micro-trauma (CMT) – the small damages that turn into big problems over time – in the spine, according to Dennis Downing, CEO of Future Industrial Technologies.

People don’t want to be in pain.

However, CMT usually manifests in discomfort rather than pain, otherwise people would easily buy-in to safety training on protecting the back.

So you have to help employees come to the realization they’ve been doing things incorrectly, and you have to design a program specifically around the type of work they do.

If you don’t nail the specific movements of their particular jobs, they are not going to buy in.

Downing says they create obstacle courses specifically for the profession they’re training. If they’re training truck drivers, they have

## Assessment tool accounts for cumulative loading

trucks involved. If they're training warehouse workers, they have boxes on hand. That's how you can really show employees what's going on.

This is where the realizations set in for employees. They'll say, "Oh my gosh, I had no idea I was doing that," and you break down the old habit and replace it with the proper motion that reduces CMT.

To eliminate back injuries, implement this type of training, train your supervisors so they can ensure employees continue to follow the program then conduct periodic refresher training on the obstacle course.

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What type of CMT do your employees face?

To help quantify that, a lifting assessment tool calculates the cumulative damage that leads to low back pain (LBP).

The Lifting Fatigue Failure Tool (LiFFT) is a "practitioner-friendly" tool, according to one of its developers, Sean Gallagher, an Auburn University professor in the College of Engineering.

Gallagher says other lifting assessment tools don't take cumulative loading into account, despite it being a key factor in developing LBP.



During lifting, the spine is compressed. With continued loading of the spine, the area of damage becomes larger – more than the amount that can be healed in a day.

## Only 3 factors needed

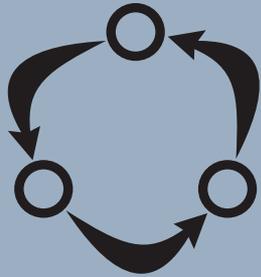
To use LiFFT, only three factors are required:

- weight of what's lifted
- peak horizontal distance from spine to the load, and
- the number of repetitions.

LiFFT also allows measurement of variable tasks. For example: A warehouse picker may be lifting items with different weights and distances.

If some of the lifting involves items up to ten pounds, those lifts can be grouped together. Let's say there is also lifting of items weighing between 10 and 20 pounds. Those lifts can also be grouped, and then the effect of both types of lifting can be added together.

A version of LiFFT is available at <http://liff.pythonanywhere.com/en/unit/english/>



## Is job rotation effective?

Gallagher says using LiFFT, companies can now begin to understand what the impact of job rotation is.

If you divide low, medium and high-risk tasks evenly among workers, now all of them are exposed to high risk tasks.

Compared with having separate sets of workers perform the low, medium and high-risk tasks, you've now exposed more workers to high risk. Sure, you've reduced the risk a little bit for the workers who previously did all high-risk tasks. But now all the workers are exposed to some amount of high-risk tasks, effectively increasing their risk because loading is cumulative.

Job rotation is often recommended as one way to reduce certain types of injuries. In the case of lifting, a more effective way to reduce injuries, according to Gallagher, might be to buy equipment that will make the lifting easier.

Gallagher and his colleagues published a paper that validates LiFFT in the journal *Applied Ergonomics*.

He presented his findings at the 2017 American Industrial Hygiene conference and expo in Seattle.

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