

Recent Success Stories Regarding the Linear Spine® Flexion and the Rotary Torso Machines

*by Ken Hutchins of Serious ExerciseSM, LLC
(Augmented and Updated on July 10, 2019)*

As many serious SuperSlow® practitioners and instructors are already acquainted, both the Linear Spine Flexion (LSF) and the Linear Spine Extension (LSE) machines are some of the most unique and valuable trunk machines ever designed and produced by me, Ken Hutchins. Originally sold by SuperSlow Systems, LLC, they are now available through my new company, Serious ExerciseSM, LLC.

An exercise equipment design historian ranked the Linear Spine machines as the most original idea in exercise equipment since the designs of Jonas Gustav Vilhelm Zander (1835-1920)...adding that even Arthur Jones' Nautilus® Pullover was not quite as original, since it was based on a composite of several pre-existing exercises. (Actually, I believe that the Hip & Back machine was Arthur's most unique and revolutionary machine.)

In the past several years, I have made several breakthroughs while supervising thousands of bouts with the Linear Spine machines. As these machines were very expensive—costing about \$20,000 each—I now produce scaled-down versions for people who need the critical stretch that is only obtained in the LSF. New patents are being filed.

In the months of May and June of 2019, I racked up several case studies regarding dramatic back pain relief. I hope that these stories will help many other people to obtain relief.

Story #1

My upholsterer (Caroline) came in Thursday (May 30) morning to deliver a new back pad for the iTE (iTrunk Extension) prototype. She was slumped over and barely able to walk due to back pain. Although, I have used her upholstery service for nearly 20 years, I was unaware that she suffered from a back complaint.

Continued on Page 3....

The Linear Spine Flexion Machine (LSF):

This is the bottomout (spine-extended, trunk flexor muscles stretch) position of the Linear Spine Flexion exercise. Note that this position is a *true stretch* (passive stretch) as compared to the *pseudo stretch* (active stretch) observed in the exercises of the iTE (also available from Serious Exercise, LLC). This true stretch beneficially and safely decompresses the inter-vertebral discs of the lower and middle spine *a la* Robbin McKenzie. A pseudo-stretch only somewhat decompresses the discs, because of its active muscular limitation.



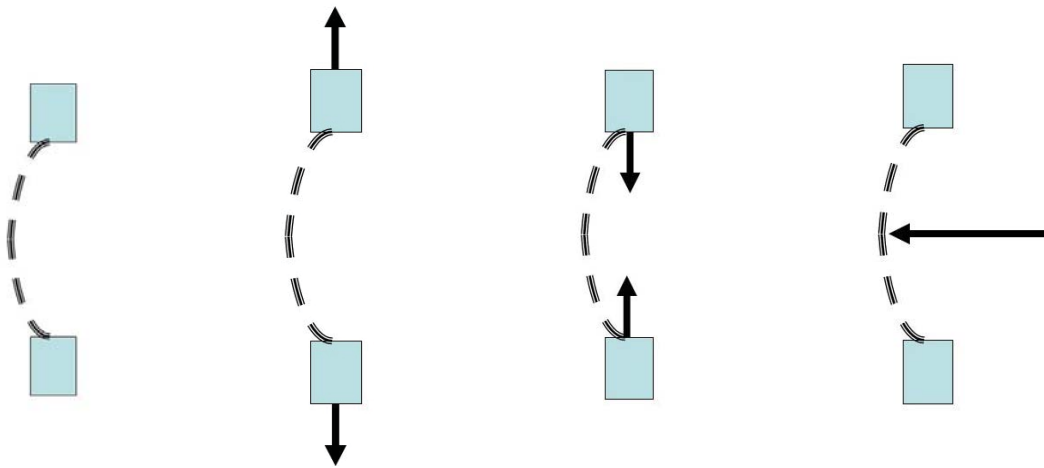
Frames Below: This is a schematical representation of how I envision the mechanics at work to relax the spinal extension structures. It is an oversimplification, but it does help to explain our experiences with the LSF.

Going left to right, the first frame depicts, as in a left lateral view of the trunk, the scapular area (shoulder girdle) represented by the upper box and the pelvis by the lower box with a dashed connecting arc between them. Of course, the concavity of this arc is mostly the one of the lumbar, not of the thoracic section. The white spaces in the dashed arc represent the inter-vertebral discs... the black segments of the arc represent the vertebral bodies.

The second frame depicts the action on the trunk by traction devices (Vax D, inversion, etc). This force works to pull the scapular area (shoulder girdle) away from the pelvic girdle in a more-or-less straight line, thus tending to straighten (often not good) the natural curve of the lumbar (connecting arc) and thus increase compression on the inter-vertebral discs (not good) and decrease compression on the facets (sometimes good). Note that the distance between the blocks is *ASSUMED* to increase.

The third frame shows the action on the trunk of the subject's muscular contraction when using the iTrunk Extension (iTE) by Serious Exercise, LLC. Note that while the distance between the blocks decreases, the length of the connecting arc remains the same. Also, the facets compress moderately while the inter-vertebral discs decompress moderately. After the intense contraction of the trunk extensors during this exercise, the imposed tension (due-to-the-exercise tension) leaves and the residual tension decreases to a level slightly below that before the exercise.

The fourth frame shows the action on the trunk of the passive stretch in the LSF. The distance between the blocks decreases AND the length of the connecting arc increases. Thus the discs are maximally decompressed while the facets are also decompressed OR perhaps only slightly compressed.



I sat her in the LSF and meticulously found her pain-free stretch limit.

Then she sat in this position for a one-minute stretch. She performed no dynamic exercise. She was pain-free for the first time in twenty years....

She came in again today (June 1) at 06:45 to repeat the procedure... she said it was the first time she had not winced when driving over the speed bump at the front gate to my complex...This has a history since she once had an office in my complex and still has this address on her invoices although her shop is now elsewhere and has been for many years.

On the evening of June 28, Caroline phoned saying she had so much work to do that she was unable to make our weekly meeting to sit in the LSF. She was behind in her business because her truck had been disabled. And her back was extremely bad from bending over to work on her vehicle. I strongly persuaded her to get to my office the following morning.

She arrived the following morning with her back at a 10*—yikes! I scolded her to, “... never sleep on such a problem as it would merely lock-up during the night. Next time we must get to my office no matter the hour!”

[*I closely questioned her with, “Now a 0 on ten-point scale represents *zero pain* and a 10 is, ‘please give me a gun so I can end this now.’ So, that said and understood, what is your pain level?” She corrected with, “Well if it is not a 10, it is a 9+++.”]

After she entered and sat in the LSF, she had difficulty lifting her knees into the leg nest—a common sign of intense back pain. The hip flexors pull on structures that must be contained by the musculature in pain.

She then required far longer than usual to straighten her arms to attain her full stretch (trunk extension). After a minute in the LSF at full stretch (about three minutes total in the LSF), she walked around and reported the pain level to be at a 3—not the zero we had been accustomed to achieving.

Caroline had not been interested in performing the Rotary Torso (RT) during previous meetings. She just did not see the need. The LSF had completely cleared out her pain. And her memory of it from many years ago was that it had increased her pain while the LSF had decreased it.

I told her of Artie’s experience (Story #3), and she consented to give it a try. I warned her that it would initially increase the pain before repeating the LSF to completely (probably) remove it.

Unlike Artie’s experience, the Rotary Torso was not pain-free for Caroline to perform.

However, her pain was more tolerable after the first repetition in each of the two directions of load. After exiting the machine—true to expectation—her pain was somewhat worse (a 5). We proceeded directly to the LSF. With this second set, she had no issues mounting the machine or lifting her knees into the leg nest or casually locking out her arms to assume her full stretch.

She sat for one minute at full stretch and exited. After test-walking around the room for a moment, she reported that there was only a slight presence, but that she was reluctant to term it as “pain.”

I then explained to her that after the nervous system had been on the fritz for hours at a 10, that quietening it down to zero in less than the 10 minutes was extremely unlikely. A *ghosting* of the pain was to be expected for a while. She was greatly pleased that—as it now existed—she was completely functional.

I phoned her about three hours later to check in on her pain level. She was just arriving home and sitting in her recliner—something she had been unable to do before seeing me earlier that morning. She thanked me profusely.

Then Caroline stated that after doing her upholstery business for 35 years she was thinking she was about ready for retirement. Her back pain had brought her to this. But after finding that her back can be so easily corrected, she has changed her plans. She now knows that she can work another 10 years.

Getting results like this for my clients is what keeps me going. Giving them more life gives me life!!!

At 13:30 Sunday (June 30), Caroline texted me the following:

Because of my back feeling so good... I was a powerhouse ALL day... I feel like Superwoman. It started out at 1-2 [pain level] and feels about the same. After what I did working... I should be dead... I still feel great. You are my hero.

Story #2

Today, Wednesday, June 12, I interviewed a new model for my equipment photography. She's 5'11", 57 years old, an electrical engineer, blonde, slender and apparently healthy. Her only drawback is that she's had three back surgeries...all for disc issues and fortunately not for major reconstruction like laminectomy or rods or cages.

She arrived in my office just fresh from her chiropractor's office.

She asked about the Linear Spine Machine as it sat two feet from her, but she was not wanting to try it as she feared disturbing her chiropractor's handiwork—an understandable and reasonable response.

I then asked if she had any residual pain after her treatment—she admitted she still had a low-grade sharpness.

When someone is about to try the LSF, I like to hear that they are in some back pain. It's not that I want them to be in pain, but if they have zero pain, the LSF will not evoke nearly the contrast for them as when starting the bout with a little to begin with.



The RenEx Rotary Torso Machine. This approach to the trunk rotators incorporates active and internal stabilization and immobilization of the pelvic girdle. The hip adductors must be actively engaged throughout this exercise to provide the required control and protection of the iliosacral and innominant alignments.

The MedX Rotary Torso—with its passive and external immobilization—does not adequately stabilize the pelvic and sacral structures for safe trunk rotation. Its leg-pinning apparatus is more impressively complex and expensive, but fails to provide the needed active protective forces internally.

Yes, almost no rocking and tilting of the pelvis (as some is witness in the RenEx) occurs in the MedX design. This lures the subject and instructor into a false sense of security. It also reinforces an assumption that the lower half of the body can be ignored during the exercise.

The harmonic lever of the RenEX RT provides a 15:1 resistance fall-off. This is required for obtaining the deep contraction so effective for relieving the tension associated with back pain. At my request, the MedX engineers faithfully tried to adapt the cam-and-follower in their device for SuperSlow protocol and failed to enable my sister to use it with the least possible resistance. (Demonstrated by Anastasia Koretskaya)

I coaxed her into trying a shallow, passive stretch. She was very tentative and guarded and would not allow me to impose much of a meaningful stretch. This is also an understandable and reasonable response since she did not know me nor know what to expect from my bizarre device. She held her position for one minute before I guided her exit the machine.

Her pain was completely gone.

I asked if the pain had been more profound sitting or standing or walking. She responded sitting. So she sat and talked a while with me and the pain did not return.

I told her that I expected the pain to return before day's end, but it did not.

I asked her to jot down the exact time when (if) her pain returns so that we might see the LSF stretch-to-pain interval (hopefully) extend.

Story #3

On Friday, June 14, my friend Artie showed with back pain. His routine chiropractor had adjusted his spine about three hours before with no relief of pain. Artie denoted the pain level as a 7 on a 10-point scale.

After finding his safe extensional limit on the LSF, I instructed him to sit at that position for one minute. After exiting the machine he stated the pain was at 2. I opted to do no more and wait out his response.

By the time Artie arrived home (20 minutes), his pain had returned to a 6. I was regretting not trying the Rotary Torso (RT) machine.

Early the following morning, Artie started a 63-mile bicycle ride with his pain still at a 6. His pain was completely gone within pedaling one block. The only time it returned was when he stopped to put his feet on the ground.

22 hours later (on June 15) we repeated the process. This time the pain lessened from a 6 to a 1.

Then I asked him positional questions. His pain was much worse—perhaps back up to a 4—when arising from a chair, though sitting was pain free. His pain after standing and walking around the room was then a persistent 1.

I then elected to apply the SuperSlow Rotary Torso (RT)(The RenEx and Serious Exercise versions are almost identical to the SuperSlow). This is a specially-designed machine using the required *active and internal stabilization* of the pelvis and thighs. The MedX Rotary Torso provides *passive and external immobilization* of this area. Thus, it inadequately stabilizes the area and is absolutely worthless and dangerous for the control required in the exercise.

A rotary torso exercise is often feared for back safety and rehabilitation. This fear is completely justified within the context of its ubiquitous usage in the rambunctious fitness industry: violent speed and acceleration.

Due to concerns expressed by my personal chiropractor, I avoided using and instructing the RT for many years. Then, on a lark, I found it to be surprisingly beneficial for the relief of back pain for myself as well as for others.

Used properly, I have found the RT to be both safe and remarkably pain-relieving for some back sufferers. With some subjects this is true with the application of only this exercise; however most back-pain sufferers require the LSF (alone or in conjunction with the RT).

Another caveat: the RT is never to be used as a progressive resistance device. Once the resistance is found that the subject can easily and competently perform with SuperSlow-RenEx protocol, it never is to be increased. The point of this motion is *not* to exercise, i.e., inroad the muscle to produce a growth mechanism toward strengthening. There are many other suitable and safer exercises to meaningfully load the trunk rotators (primarily the latissimus).

After warning Artie of the possibility that rotary torso might temporarily increase his pain and that I expected to relieve it momentarily with a repeat of the LSF, he performed it in both directions with no issues in the process. (Note that exercise machine names are capitalized while an exercise by the same name is in all-lower case.)

Then upon exiting the machine his pain increased to a 4.

We proceeded directly to the LSF and held his extensional (passive stretch) limit for another minute.

He then exited the LSF completely pain free and demonstrated pain-free sitting, standing, rising from a seated position, and walking.

So what is going on here? What did the Rotary Torso *undo* of the effect of the first bout of the LSF that the second bout of the LSF subsequently corrected?

And how did the LSF render him pain-free after the Rotary Torso seemingly *set up* a *correctional situation* for the LSF to act on?

And how does the 63-mile bike ride figure into the equation earlier that morning?

By the way, I have witnessed the process of relief using the LSF and/ or the RT with scores of clients over the past thirty years. This is just the second of two that have occurred immediately after “chiropractic treatment.”

Since I did not know how to provide a model of what might be going on here, I told this story to New Jersey chiropractor and friend, Bill Baumann, who has and uses all my equipment in his clinic—including the LSF, LSE, and Rotary Torso. Here are his reactions:

This shows that the primary cause of low back pain is compression. The LSF decreases compression apparently very well. However compression has an

effect on all aspects of the lumbar spine mechanism so I would say the pain could come from the disc compression and inflammation, however the Rotary Torso will help release the lumbar facet joints (also effected by compression) but rotation could aggravate the disc in the process. This would be why the LSF had a greater effect post Rotary Torso because of the facet release and added decompression.

A note on chiropractic: Adjustments are not for pain relief which many people think is a magic relief. They only free fixations and subluxations, allowing normal motion and nerve flow. The pain is secondary to a prolonged restriction, and inflammation has occurred at this point. Adjusting can aggravate the pain in the corrective process.

Chiropractic is better as a preventive treatment. Hope this helps.

Dr. Baumann also noted that the bike ride falls into the same category of providing tension relief. Of course, such an event is extremist activity that most people would never attempt. And this is not an indication that bike riding is efficacious for the relief of back pain. In fact, it merely leads to more irritation and pain afterwards—in addition to denying the body its needed rest to heal—although its immediate effect was to relieve the all-important tension. I did not advise Artie to avoid his bike ride because I knew it would fall on deaf ears.

Story #4

Jack—an air conditioning contractor and long-time client—came in on July 3, 2019 with back pain at a 4.

Jack beats his body up incessantly by crawling around in attics, on roofs, under houses, digging drain lines through root systems, etc. His back is in perpetual pain.

After doing the LSF Passive Stretch>>>Dynamic-RT>>> LSF Passive Stretch sequence with little apparent effect, he performed his usual workout and concluded it with the LSF, except this last LSF bout was dynamic. He seemed a little better. I encouraged him to go to his or my chiropractor, but he wanted to wait it out.

The following day, he phoned me to report that his back was much better after resting it for 24 hours.

Story #5

Andrea is a new client. She is 75 years old, petite, and moderately scoliotic. She travels frequently and is prone to back pain when traveling—especially as it relates to packing and moving luggage.

Andrea started workouts with me on April 10, 2019. She encountered moderate back pain (probably garden variety muscular soreness) immediately following the introduction of the new iTrunk Extension (iTE) on April 20. She subsequently adapted to it very well.

On June 24, I introduced her to the LSF Stretch (only).

On June 27, she reported some “back pain” (similar to that experienced after her iTE introduction) that was probably due to her LSF introduction. Since Andrea was leaving for Europe on July 10 and we did not want unforeseeable issues, I elected to drop the LSF until after her return in August. Her back was fine by the time we had completed this day’s workout, hence her “pain” was the usual *new-exercise* soreness.

Then on July 4, after days of packing, she arrived with significant back pain—at a 4. I explained to Andrea, that despite my earlier decision to hold off on the LSF until after her return, we now had an imperative reason to immediately apply it. It was now much more probable that the LSF could relieve her pain rather than cause pain.

Andrea performed the LSF Stretch with the same settings as determined on June 24. After one minute, she was pain free. She performed her usual workout and left, seemingly pleased to be able to continue packing and having a method to fix herself if she incurs back trouble again.

Story #6

On July 8, Marilyn—a client of about a year and an electrical engineer—arrived with back pain at about a 2. I had helped her with back pain before by applying the LSF and the RT, but now with better information (LSFS>>>RT>>>LSFS) and avoiding the dynamic mode on LSF altogether, I believed that I could obtain a much better result.

Earlier this morning I had chatted with Dr. Bill Baumann again. He emphasized that when backs were really acute it’s important to avoid the dynamic mode on LSF altogether. I was resolved to stick by this dictum as I have been of late.

After a minute on LSFS, Marilyn supposed that she was at 0, but had a slight doubt that things were really right.

I put her in the iLELC and instructed her to do a creepy slow knee extension with both legs while in front of and free of the movement arm. Aha...! She noticed a slight tugging on the posterior of her thigh and buttocks on the left side where she had had the pain before.

I explained to her that the posterior thigh and buttocks pain during knee extension was the positive sign for classic sciatica. That nerve runs around the buttocks and down the posterior thigh and behind the knee. Those who are most-severe sciatica sufferers experience burning in the bottom of their feet. And this pain is provoked and exacerbated by stretching the sciatic nerve around the buttocks during leg extension, especially if the seatback is at a

90-degree angle with the seat as is the case in most commercial and medical devices made for this exercise.

The iLELC, of course, has the proper seat angle, and what's more, is design for performing a static exercise at mid-range whereby the knee is not completely straightened to stretch and set off the nerve.

After exiting Marilyn from the iLELC, I told her of our recent successes with the LSFS>>>RT>>>LSFS. We then performed the RT and her pain—as predicted—increased.

Then we performed the second bout of LSFS. Not only was the pain gone again, but upon performing the knee extension test in the iLELC, she could no longer detect any difference between her non-affected and affected sides.

Story #7

Also on July 8, Debbie showed with chronic pain at about a 5. As an esthetician, this pain has been hampering her work as well as her private life. I have not seen Debbie as a client for about a month, because she was wanting to test if our workouts had anything to do with her malady. Also, she was having tests to rule out kidney and other possible causes—all negative.

As she has been reading my drafts of this article, Debbie was anxious to try our new approach. We performed everything as Marilyn did earlier in the day—including the knee extension test. She went from 5 to 0 with the LSFS.

Exiting the LSFS, she remarked that the wonderful tension relief in the lower back reverses as soon as she lets off with her hands, but that the pain does not return.

She tested positive with the knee extension test.

The RT was painful but not as painful as Artie had reported.

After RT she was back up to a 2 or 3.

After another bout on the LSFS, she was 0 and tested negative on the knee extension test.

She still remarked about the tension relief she experienced on the LSF and that she wished it would remain relieved after she exited the machine. I talked to her about the fact that the fascia wants to return to its normal state. Hopefully, when it returns, it does not quite return to be as tight as before we stretched it. If she remains pain-free, our hopes are apparently rewarded. Also note, that this stretching, although dramatically pain relieving, does not

completely replace what is often needed via a chiropractic adjustment.

She left my office about 7 p.m. and, by text, confirmed that her pain remained at 0 throughout the evening.

The following morning, Debbie reported a 3, but also noted that it was usually a 5 or 6 most mornings until she moves around to bring it down somewhat. She has mentioned before that her new high-tech bed seems to cause her back problems.

Story #8

As has occurred on several occasions, Brenda moved strangely in the kitchen last night (July 8) and set into spasm the intrinsic muscles around her artificial hip. She told me about this this morning and I got her to my office. We performed all her usual leg, hip, and rotary torso exercises including a bout on the LSF in dynamic mode.

She was noticeably better in how she moved although still slow and guarded. The best test that she was better was my question about the speed bump coming into our complex:

Going out of our complex and over the speed bump I asked, "Did the speed bump hurt you just now?"

Reply, "No."

Did it hurt your hip on your way into the office 45 minutes ago?"

Reply, "Yes."

Update on Artie

I saw Artie today (July 9) and was able to bring his pain down to 0 in the usual fashion. I performed the leg extension test on him, and we both agreed that his problem is not classic sciatica.

We also discussed the mystery of his pain relief resulting from his long bike rides. He volunteered that the pain leaves as a result of the reduction in tension, but that the long-range effect is that his pain is worsened due to the ride. This is exactly as Dr. Baumann and I had supposed.

The New iTrunk Extension (iTE)

Please read *Announcing! The New iTrunk Extension Machine* at seriousexercise.com.

Where in the scheme for relief of back pain does the new iTE fit?

I built the iTE to address back strengthening, not so much for relief of back pain... although it's obvious that, indirectly, strengthening the musculature targeted by the iTE should result in a more protected, secure, and pain-free back. Also, the act of the TSC exercise performed on the iTE will reduce the tension in the lumbar and associated structures. So, although the iTE might not be immediately performed to reduce or to eliminate back pain, such relief may, indeed occur.

And there's always the possibility that we find—like we so often do—that the iTE is a great direct tool for pain relief. This is exactly what occurred with the LSF to a great extent and the RT to a lesser extent.

But I see another role for the iTE. We may learn that it is a reasonable substitute for the Rotary Torso (RT) in the LSF Passive Stretch>>>RT>>>LSF Passive Stretch (*LSFS>>>RT>>>LSFS*) sequence that I highlight in this article.

The RT is fraught with several impediments that may exclude some subjects from use. First, it is dynamic—an aspect that raises our concern for control right off. Another is that it requires a high-level of expertise on the part of the instructor as well as excellent focus on the part of the subject. Part of the expertise on the instructor's part is to avoid its use with recalcitrant or unfocused subjects. Don't even try....

And, of course, the RT may prove to be pain provoking and, hence, ruled out of usability with certain subject's complaints. I don't encounter this often, but it is always a possibility.

Please read, *Twist on a Theme: Introduction the RenEx Rotary Torso machine* by Gus Diamantopoulos at ren-ex.com. Reading the included sub-protocol one gets an idea of the detail required to instruct and to perform this exercise. As the author recently mused, "The Rotary Torso almost requires a certification program just for it."

The new iTE may require much the same expertise, but the subject should have a somewhat reduced performance challenge.