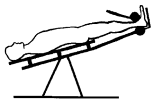
Mas-t-e-r-c-a-r-e®
The Swedish Back Care System



Back-A-Traction®
The Swedish Back
Care System

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Good evening ladies and gentlemen,

Thank you for the introduction, I'm honored to be here and share some of our experiences regarding the Mastercare back-a-traction with you.

We're using the Mastercare device for more then 2 years now in our Backcare center with more then encouraging results.

As you've probably noticed, the Mastercare back-a-traction is a gravitational traction device with a unique moving backrest.

When we take a look at the essential points of therapeutically effective lumbar traction on this device, we find that, due to the moving backrest, with an inclination of 15°, the traction force is big enough to effect a structural change at the spinal segments, because the moving backrest eliminates friction. When we compare it to other inversion systems, a much bigger inclination would be necessary to effect the same traction force.

This 15° we work in, is a very comfortable position and can be safely used for nearly all patients.

As you know spinal traction is a time honored method for the treatment of nuclear disc protrusions, degenerative disc disease and joint dysfunction. Traction has the same effect on the intradiscal pressure as prolonged bed rest, but much more strongly. A few hours traction achieves as much or more then rest in bed for weeks. In addition, the patient remains ambulant, greatly preferred to rest in bed for some weeks, which is not only bad for moral and stability of the trunk but also increases the cost in lost working days and the payment of sickness benefit. Although it must be emphasized that spinal traction is only a part of the total management treatment regime. Therefore, this Mastercare system is unique as in 15° we can combine traction, mobilization and stabilization techniques on one single device so that it becomes very practical in a today's physiotherapy practice.

A lot of physiotherapists have rediscovered the benefits of traction on this device. At the moment several hospitals and more than 50 physiotherapists in Belgium are already using this device.

What's very important patients are able to relax in this position, and muscle tensions and pain will decrease quiet fast.

It's not the amount of force alone which determine the effectiveness of the traction treatment. Patients comfort is of utmost importance.

If patients are unable to relax during treatment, the treatment will probably be ineffective (think about the discomfort of a harness, which is often a limiting factor).

This 15° inclination position permits us to combine traction with other useful manual techniques, mobilizations and/or manipulations or other soft tissue techniques. So as for instance in most cases of nucl. Protrusion or prolaps where we can use the Mc Kenzie principles under traction (the extension exercises).

The moving backrest also permits us to do some more exercises to relieve pressure on the joints and realign the pelvis with a few simple stretching movements as to increase mobility.

Of course we'll improve circulation and nutrition towards discs and joints.

When we're able to let the patient relax, sometimes move, separate or realign the segment in such a way as to relieve impingement . When we're able to increase mobility, a third and important step is to start as soon as possible with the stabilization of pelvis and lumbar segments. When working on the table we have the advantage of working in an unloaded, re-aligned position, so we can start in a very early stage with stabilization training to increase muscle-balance.

We also experienced that under traction when the global muscle system (the large and more superficial muscles of the trunk) are stretched (external oblique) (erector spinae) the inhibition towards the local muscles, including deep muscles such as TA and the lumbar MF that are attached to the lumbar vertebrae and sacrum and are capable of directly controlling the lumbar segment is far less then normal which implicates that it's much easier to activate these deeper muscles.

The active co contraction of these muscles is completed at a very low level of muscle activity and is forming a deep muscle corset or performing self-bracing which is very important to prevent relaps.

It's this combination of traction, mobilization and stabilization in a very early stage that we use on the Mastercare back-a-traction and what was the subject of a small study we did at the beginning of this year by order of the University department of Physiotherapy in Antwerp.

15 chronic low back patients were treated daily on the Mastercare back-a-traction during 2 weeks. We will take a more closer look to the protocol we used for the study.

The study-protocol was approved by the medical ethics committee of the University department of physiotherapy in Antwerp. The entrée criterion was chronic low back pain. Patients were recruited sequentially as they presented at the center.

Some of them already had surgical interventions, others were treated in pain clinics, all of them were treated before by manual therapy, conservative physiotherapy, back schools, etc. Patients with sciatica were not excluded from this trial.

Exclusion criteria were :
- spinal disorder demonstrable on plain radiograph (spondilolysis, listesis);
- all contra-indications of traction-therapy : cardiac insufficiency, abdominal surgery, discodural and discoradicular interactions with a high degree of inflammation;
- painful reactions : if traction increases pain in the back or in the legs, if we can't find a position in which the pain is not increased as soon as traction starts, the patient is unsuited to it.

After receiving information about the goal of the study and their right to redraw at any time patients gave their written consent to participate. None of the patients left the study.

Before and after treatment, disability was measured using the Oswestry LBP disability index and pain was measured using a 100 mm Visual Analogue Scale (or VAS-scale) with a score of 0 (= no pain) to 100 (= unbearable pain).

We took functional status and pain scale because these are the two parameters patients are interested in.

1. to be free of pain
2. perform their daily activities.

Both VAS and Oswestry are repeated after 5 and 9 weeks.

Patients were completely tested. As for patient position, prone or supine, as both positions are possible on the table, it is our experience that prone position is a more comfortable position for most patients. So in the study all patients were treated in prone position.

Prone position on the Mastercare back-a-traction is not comparable with prone position on a common massage table or bed; the construction of the table allows knees and hips to stay in a light flexion during traction. The use of support pillows allows us to flex the hips even more to facilitate lumbar traction by flattening the lumbar spine. Also when stepping into and out of the Mastercare back-a-traction, especially when there are disc problems involved, prone position shows to be a better position because we keep the neutral pelvic position, avoiding flexion of the lumbar spine when stepping out. Is it though for one or another reason impossible to put the patient on the stomach, then certainly use the knee-support for the initial treatments (the knee-support is to be adjusted individually).

Now I would like to have a volunteer to demonstrate some of the exercises.

First make sure to adjust the right body-height. Pull the height and balance-adjustementknob and slide the bar according to the guideline-markings provided. When we unlock one safetycatch, this will allow us as a therapist to make al adjustements from one side and to assist while inverting the table. During the first treatment the patient should get used to traction.

We bring the patient gently to the horizontal position and start with some breathing or relaxation exercises for optimal relaxation. As our organ of equilibrium is not used to this movement, the horizontal position won't be registrated correctly and the patient feels like inverted yet.

The support leg allows us to increase the inclination angle (and thus the traction) very slowly (from 0° to 15°) in case of severe muscle spasm. On the other hand the support leg is used to stabilize the table when using mobilizations and or manipulations or other soft tissue techniques.

Day 1 : We kept the patient for at least 5 minutes in the same position, except when the patient felt uncomfortable or was in pain.
5 minutes in horizontal position, positioned pain free if possible, correct breathing.
5 minutes in 5° inclination using the support leg, breathing within the pain limit.
3 minutes in horizontal position, making walking movements with the legs.
Then we increase the inclination angle progressively 5 minutes traction 10°, 3 minutes horizontal till we had our patient in 15° using some times manual techniques if necessary to relieve pain and to take muscle spasm away.

We followed the degree of relaxation on a scale as the motion result of the movable backrest gives us a good idea of the muscle spasm of our patient. We noted this motion result in the beginning and at the end of every treatment.

The average length of treatment, counting the non-continuous character of traction during first sessions is more or less 45 minutes. Patients received also a limited back schooling during first treatment.

Day 2 we've built up traction progressively, same as day 1 and start mobilization exercises on the table. Breathing out, pushing heals backwards, also alternating right and left heal, depending on the condition treated sometimes only right or left.

Extension mobilizations 3 times 1 minute elbow support, 3 minutes rest horizontal, 3 times 1 minute pushing up on straight arms.

Day 3 inverting immediately to 15°; repeating same exercises as day 2. We add dynamic extension exercises. We start lumbar stabilization training (contraction of TA and lumbar multifidi).

Day 4 directly to 15° inversion, same exercises as day 3; raise the trunk with correct cocontraction of transversus and multifidi (2 X 10).

Day 5 till Day 10 : same as day 4 : stabilization exercises are enlarged to 3 X 10.

Patients are instructed few home exercises.

When we look at the results of VAS scales and Oswestry index, we see that

VAS before treatment was :
Average : 68,267
Standarddeviation of 21,694
Maximum : 99 Minimum : 27
Median : 68

VAS after treatment :
Average : 32,867
Standarddeviation of 27,331
Maximum : 89 Minimum : 0
Median : 27

Oswestry before treatment :
Average : 44,4
Standarddeviation of 19,854
Maximum : 84 Minimum : 6
Median : 40

Oswestry after treatment :
Average : 23,08
Standarddeviation of 15,557
Maximum : 54 Minimum : 0
Median : 22

This means that the change that occurred with the treatment is greater than would be expected by chance. There is a statistically significant change.

At the moment the results after 5 weeks are not complete yet but what we already noticed and what we already saw before the study is that those who're still using the table daily, show the best results. Their results are better then those who are following the stabilization training only.

To give you an exemple, one particular patient showed at the beginning of the study severe pain in the left leg for more than 3 years. She had previous surgery twice but kept having problems at the level of the operation, L5-S1. This patient had received all treatment possibilities including painclinic. No therapy was able to take away the pain. The doctors in charge told us we could give the treatment a try but gave us very little chance we could succeed in changing this situation. The VAS-score was 96 at the beginning of the treatment, 31 after the treatment. The patient was so enthousiast that she immediately after the study bought the table for home use. VAS-score after 5 weeks was 5. Oswestry-index showed the same positive evolution. Before treatment 58, after treatment 36, after 5 weeks the score was 8. At the moment this patient can do anything she likes, even working in the garden, but she emphasizes this herself : "I feel I can't miss my table already at the moment". She works on

the table twice a day, coming to the center every two weeks for control. It's our experience with other chronic back patients in the last two years that after a while, this may be after 2 months or after 5 months depending on the condition treated, they get free of pain and can take a holiday leaving the table at home. Working on chronic back problems ask for an intensive therapy. Training on a regular base is the secret, unloading the discs and joints, and building up pelvic and lumbar stability. That's why we should encourage our patients to work on LBP because it's a much better alternative then taking painkillers. Decreasing mobility and getting physicaly and emotionaly in a negative spiral. We need to change the mentality of the patients, we have to tell them to work on pain, instead of learn to live with pain. I'm convinced that Mastercare can help the patient by succeeding in this.

In short

Purpose :

- decreasing pain and muscle spasm, decreasing EMG activity;
- increasing mobility;
- increasing circulation and nutrition towards discs and joints;
- postural correction, re-alignment pelvic-spine;
- increasing muscle-balance and power in an unloaded position;
- relaxation.

Indications :

- Nuclear disc protrusions;
- CLBP;
- Posterior dysfunction syndrome;
- Lumboglut. pain with prolonged restriction of SLR;
- Nerve compressions as long as they are mechanical;
- Recurrence after laminectomy, arthrodesis;
- Primary posterolateral protrusions.

Conclusion : every condition where we intend to increase the intradiscal space, centripetal suctionforce within the disc, more space at the apophyseal joints and intervertebral foraminae.

Yours sincerely,

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Fysiotherapist

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