

A hand-drawn illustration of a person in a red jumpsuit, possibly a space explorer or astronaut, standing on a globe. The globe is drawn with black lines on a brown, textured background. The person is wearing a red jumpsuit with a white collar and a white patch on the chest. The person's right arm is raised, and they appear to be holding a small object. The globe has latitude and longitude lines. The overall style is that of a hand-drawn sketch or a simple graphic design.

Tim Herzberg

# A Quart' more, please?

My three month adventure with the

**Bioness NESS L300<sup>®</sup>**

Thanks.

( just like that)

## **Diagnosis**

Severe atypical ICB (intracerebral bleed) rt. cen. (10/2009)  
near micro-AVM (arteriovenose Malformation) rt. cen.  
with surgical resection (11/2009).

Symptomatic Epilepsy, lt. hemiparesis.

For more check my first book:

“Halftime: Experiences of a neuro”, ISBN-13: 978-3732287000

Manufactured and published by ISBN: 3732236072

# Table of Contents

Preface

Wednesday, 12.04.2017

Thursday, 13.04.

Friday, 14.04.

Saturday, 15.04.

Sunday, 16.04.

Easter Monday, 17.04.

Wednesday, 19.04.

Thursday, 20.04.

Friday, 21.04.

Saturday, 22.04.

Sunday, 23.04.

Monday, 24.04.

Tuesday, 25.04.

Wednesday, 26.04.

Thursday, 27.04.

Friday, 28.04.

Saturday, 29.04.

Sunday, 30.04.

Monday, 01.05.

Tuesday, 02.05.

Wednesday, 03.04.

Thursday, 04.05.

Friday, 05.05.

Saturday, 06.05.

Sunday, 07.05.

Note

Monday, 08.05.

Tuesday, 09.05.

Wednesday, 10.05.

Thursday, 11.05.

Friday, 12.05.

Saturday, 13.05.

Sunday, 14.05.

Monday, 15.05.

Tuesday, 16.05.

Wednesday, 17.05.

Thursday, 18.05.

Friday, 19.05.

Saturday, 20.05.

Sunday, 21.05.

Monday, 22.05.

Tuesday, 23.05.

Wednesday, 24.05.

Thursday, 25.05.

Friday, 26.05.

Saturday, 27.05.

Sunday, 28.05.

Monday, 29.05.

Tuesday, 30.05.

Wednesday 31.05.

Thursday, 01.06.

Friday, 02.06.

Saturday, 03.06.  
Sunday, 04.06.  
Monday, 05.06.  
Tuesday, 06.06.  
Wednesday, 07.06.  
Thursday, 08.06  
Friday, 09.06.  
Saturday, 10.06.  
Monday, 12.06.  
Tuesday, 13.06.  
Wednesday, 14.06.  
Thursday, 15.06.  
Friday, 16.06.  
Saturday, 17.06.  
Sunday, 18.06.  
Monday, 19.06.  
Tuesday 20.06.  
Wednesday, 21.06.  
Thursday, 22.06.  
Friday, 23.06.  
Saturday, 24.06.  
Sunday, 25.06.  
Monday, 26.06.  
Tuesday, 27.06.  
Wednesday, 28.06.  
Thursday, 29.06.  
Friday, 30.06.  
Saturday, 01.07.  
Sunday, 02.07.

Monday, 03.07.  
Tuesday, 04.07.  
Wednesday, 05.07.  
Thursday, 06.07.  
Friday, 07.07.  
Saturday, 08.07.  
Sunday 09.07.  
Monday, 10.07.  
Tuesday, 11.07.  
Epilogue  
Tuesday, 08.08.  
Thursday, 10.08  
Friday, 11.08

## **Preface**

The NESS L300 Foot Drop system helps lift a dropfoot and counters an inward rotation by timed electro stimulation to accomplish a more natural gait. It does this through a charge dispensing cuff that is strapped around the calf below the knee. In combination with a pressure sensor, which can be integrated into the shoe, the impulse is timed so that the appropriate muscles contract at exactly the right moment.





## **Wednesday, 12.04.2017**

About time!

My health insurance company has avoided the lawsuit at social court and has offered me a three month trial of the Bioness L300 system. I was in the deepfreeze department of a local wholesale store when the lawyer called me, asking if it would be okay if he could agree to that in my name.

“Yeah, go for it! As long as that doesn’t undermine or conflict with any long-term provisioning after the trial. Sure!”

After the written cost assumption arrived last Monday, everything happened at amazing speed. Carolin (Bioness specialist at MPM, my supplier of medical equipment) called me and we made an appointment for today. I called Jan my work therapist. He wanted to be there too. Once again, I’m the test subject. No one in the near vicinity of my therapists and doctors has been supplied with such a system for such a long period. So everyone’s really excited. That’s the reason why I didn’t sleep too well last night.

9 AM. I’m right on time.

As a regular at MPM, I wave to the receptionists.

“Hi, me again. Appointment with Carolin at nine o’clock, room three?” And go upstairs.

Shortly after, Jan arrives Carolin not too much later, carrying two cases.

“Oh my.” I think. “How am I going to carry all that?”

But only the small one is for me. The big one holds the programming unit (which, sadly, I don't get. Yes, I'm a nerd) The Bioness L300 doesn't look as spectacular in real life as it does on the marketing material I've seen. But in this case, understatement is a good thing. I like it sleek. The L300 consists of the stimulation cuff, the gait sensor (which is placed between the soles of your shoe) and the small remote that controls the cuff.

“Drop your pants, time to try it on.”

That's easier than expected, even one-handed. There's an indentation in the cuff, which goes under your kneecap so you know where the front is and so you don't wear it upside down. The cuff fits loosely unfastened, but it doesn't fall off, giving you enough time to grab behind your calf, find and grab the strap, bring it round to the front and snap it over the battery pack. Adjust the strap tight - but not too tight - so it doesn't constrict blood circulation. And that's it; easy as pie. But wait - first you have to wet the electrode pads.

After being added into the patient database of the programming unit and initialising a few basic settings, the cuff is switched on. A weird buzz pierces my calf. My foot instantly raised and turned to the left almost into a straight forward position. Carolin tapped a few times with the Stylus on the touchscreen of the programming unit and my foot twisted a little more until it was in a normal position. That was the end of my foot's inward rotation. After that we tested the strength of the stimulation against the foot drop. From painful to not perceptible, Carolin chose a setting that wasn't painful but gave maximum lift.

“Pants back up! Test walk!”

With my walking stick - a Nordic-walking stick that keeps me more upright, improving my overall posture (I also have a very stylish "old Fritz" - a cane with sterling silver head and ebony shaft that my therapists immediately forbade me to use because it was way too low and made me stoop. What a waste! But probably better that way) - I walk up and down the hallway a couple of times. A little unsteady at first, but that feeling recedes quickly. It feels as if my left foot glides over the carpet; or hovering! It's difficult to explain, and I'm not sure that describes it adequately. The stiff and heavy muscles and bones that define my left leg are back working for the first time in years. With each step my heel is the first part of my foot that touches the floor and I actually roll along the complete foot and finish with my toes. Unbelievable! I had hoped for some progress but had in no way expected that much. I try to relieve myself of my stick completely but ... Woahhh, that doesn't work all too well.

"Not yet," I think, "maybe later." One step at a time. Years and years of therapy with only gradual improvements have hammered patience into me.

Carolin explains the remote to me; shows me there's a training mode that can mobilise my ankle, keep the sinews flexible and the muscles supple.

She shows me how I can change the intensity of the electrostimulation (ES). The remote starts at 5 which corresponds to the standard setting Carolin determined for me, but I can increase the power to 9 or lower it to 0(zero). The rechargeable batteries need about four hours from flat to full - so easiest to recharge overnight. I get two felt electrodes that I should use alternately, changing them on a daily basis. The small case only just barely fits upright in my bag, and I (on a hunch) had already taken the biggest one I had. We agree to meet every now and then if needed, on

Wednesdays at 9 AM at work therapy which is right next door to MPM.

And that's it. Done. I can go. Mine, for three months!

My initial impression while using the Bioness is that I'm very unsteady, probably because it's so unfamiliar - and the cuff's buzz is pretty distracting - but the biggest difference is that after seven years of absence, my leg is somewhat back in action. With a big grin on my face, it's off to work.

First thing I did at work was play with the training mode. I wore it until about three pm and it was time for my siesta. After my rest, the soles of my feet were so sensitive that I couldn't stand on them, so much so, I had to put shoes on to get to the toilet. But then again I hadn't really expected to get away with no side effects. To counter the expected muscle ache I swallowed a huge dose of magnesium.

## **Thursday, 13.04.**

This morning I did have some muscle ache, but not as bad as expected. Today I'll try to keep it on all day. I may have to buy looser cut jeans; the cuff barely fits under my Levis 527s. The sore soles haven't returned. My physiotherapists are very enthusiastic and are looking into how to adjust my therapy to boost the positive effects of the system. In the meantime, they will take care of the side effects and mobilise my foot, ankle and hip. But it's still early and we can react in a flexible manner, adapting to problems or needs as they may arise.

I show them the difference, one walk with the system off and another with it on. First obvious, visible changes: faster, longer steps, and the inward rotation is gone. I now step down on the heel and roll off over the whole foot. That's probably the reason for my sole problems yesterday. I hadn't put any notable weight on my heel for years, because I usually step with my foot flat to the floor.

There is also a notable after-effect. Even after switching the system off there's still a distinct improvement in my gait pattern, but that effect wears off quickly.

One of my therapists noted that I seemed to lift my leg less using my hip, but he wasn't too sure. Usually, I lift my left leg by tipping my hip to the right because I have difficulty bending my knee. I told them that there was a huge improvement in my balance too. I assume that's because my left side is now definitely forced back into awareness.

And then I almost fried my therapist Artour. He tried on the cuff and then started training mode after I accidentally raised the level to 9. "Ooops, sorry 'bout that!" He jumped and screamed from pain. I've tried 9 on myself too and, yes it is very unpleasant, but it's not that painful. Then again, I do have a sensibility disorder; the ability to feel anything touching my left side is reduced to about 20%. Side effect: only a fifth of the pain actually reaches my brain.

When walking I hardly notice the ES at all. It just blends into my stride perfectly; giving the impulse at just the right time when the muscle should normally contract. The gait sensor in my shoe gives the order to buzz when weight is reduced on my left heel, lifting the foot at just the right moment. That all happens when I walk - and that's fine - however, while standing you unconsciously displace your weight from left to right all the time as a normal part of keeping your balance. Due to my disorders and lack of balance, I do this more than usual and every time I do, I get zapped! The first time I was so surprised I almost fell over. Switching the whole system off for such short time span is not an option - so I'll have to develop a workaround sometime soon. Today I dispensed static charges. It seems I'm all charged up. Off to Dithmarschen, my former homeland. It's family time. It's Easter.