

**LAUFBAND THERAPY.
OCTOBER 4 - 7, 2000**

**International Symposium
and Guide to Therapy**

**Klinikum Karlsbad-Langensteinbach,
Germany**



**Organisation:
J. Harms, S. Müller, A. Wernig**



Die SRH-Gruppe

**Klinikum Karlsbad-
Langensteinbach gGmbH**

Akademisches Lehrkrankenhaus
der Universität Heidelberg



Rheinische Friedrich-Wilhelms-Universität

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Introduction

It is about 10 years now, that our program on Laufband (LB) therapy has been installed in Klinikum Karlsbad-Langensteinbach under the patronage of Prof. Dr. Jürgen Harms. It was initially developed for restoring locomotion in incompletely paralyzed spinal cord damaged persons. Meanwhile it has spread over to treat other diseases as well. In June of 1990 we could present our first results at an International Meeting held in Bonn. It was at this meeting that we first met and exchanged with the only other group then experimenting with body weight supported (BWS) locomotion, Hugues Barbeau from Montreal. It was fascinating to see how well principles learned from the spinal cat also applied to the (incompletely) paralysed spinal cord damaged patient: "Walking can only be (re)learned by walking" and the "rules of spinal locomotion" facilitate stepping sometimes even with very little voluntary movement remaining. We also learned that the (complete) "spinal man" cannot walk as a spinal cat can, even after intensive training. We know now that this is more of a quantitative than a principle difference since we have seen amazing amounts of stepping elements. Following this first period of search, progress reports were given in several International Symposia in this clinic (1992, 1993, 1994), the last one in 1994 gathering most of the researchers active in the field then (and also present at today's meeting). A milestone was the completion in 1995 of a clinical trial with some 160 chronic and acute patients who were either trained conventionally or with LB therapy. It appeared that this simple principle of task oriented learning was effective to a degree far beyond of what has been possible under conventional therapy. This has in particular been true for the most severely paralyzed, wheel chair-bound patient. It is the principle which is deciding, and the knowledge of the therapist what may be expected and therefore what to demand and how to guide. Then comes the equipment which was designed to enable such intensive training in a practical and realistic way not possible be-

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fore. There is no magic to the equipment and we have seen patients successfully trained according to the above mentioned rules, in the pre-LB therapy era. From all this it becomes very clear that the therapists need to learn the new perspectives and the rules of handling the patients when training on the LB. Purchasing the equipment obviously is not sufficient. It has been the major goal of this symposium, therefore, to gather and present all the experience on LB therapy (which is called differently in different places) worldwide present today and to teach the practical hands-on to therapists and doctors.

We will have scientific sessions in which a number of leading researchers will work out the principles of LB therapy, often derived from experimental animal work. We are proud to announce 28 clinical reports from institutions all over the world, 19 from German speaking countries who had early exposure to LB therapy, but also from other European countries and the leading groups in USA and Canada as well.

Soon LB therapy spread to other neurological diseases, in particular stroke. Though the few clinical trials have not been informative on this point, it appears that again it is the initially most severely paralyzed patient who can gain most from LB therapy. Again we will have the leading investigators at our symposium and Hemiplegia will also in detail be covered in the Practical Course. Another large group of patients who might profit in one or the other way from LB therapy are non-ambulating brain damaged people, and we will hear several reports. We will also hear about its application in flaccid paralysis including Guillain Barre syndrome, MS, Parkinson disease and orthopedic patients. The principle remains the same: Train walking if you need to learn it again (with an altered periphery or a damaged center); obviously, the details of training, the expectations and the time scales will be different in the different diseases.

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In 1998 the US National Institute of Health (NIH) proposed a clinical multicenter trial to apply LB therapy in acute SCI patients, which is being performed now. In Europe we have been trying to convince the EU commission to fund a similar multicenter trial on LB therapy in SCI and stroke patients; although twice as many clinics are involved in our proposal, half the amount of money given by NIH is so far considered as too much for the EU commission. In any case, the European study group is almost completely represented at the symposium and as a first step we will propose to unify functional measures of disability (for SCI patients going beyond the somewhat impractical ASIA scores), training protocols, assessments, in- and exclusion criteria for clinical trials.

We have reason to thank the EU commission for generously supporting this symposium in their program on Accompanying Measures " in order to disseminate information on novel therapies within Europe". As a consequence, simultaneous translations into German / English can be provided. There is a number of others to be thanked: Prof. Harms for manifold help, the staff of Klinikum Karlsbad Langensteinbach and my coworkers at Bonn University who were involved, in particular my secretary Hans Peter Bürkner, the Trainers in the Practical Course which were recruited from several clinics. Finally I want to mention Chief Therapist Sabine Müller, who has a major share in starting and developing LB therapy and has within the last 10 years passed on here experience to many therapists all around the world. She is in charge of the Practical Courses at our symposium.

May I wish us all a fruitful Meeting.
Prof. Dr. med. A. Wernig

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Program

Wednesday, October 4th

09 00 - 09 45 J. Harms and A. Wernig:
Welcome and Introductory Lecture: Principles of Laufband (LB) therapy for spinal cord injured patients

09 45 - 10 15 S. J. Harkema (Los Angeles, USA):
Locomotor training modulates sensory processing and clonus at the level of the human lumbosacral spinal cord during locomotion

10 15 - 11 00 S. Müller / Stoltze (Langensteinbach, D):
LB therapy for patients with SCI, stroke, brain damage and orthopedic diseases

Coffee break

11 30 - 12 00 H. Barbeau (Montreal, CAN):
Does neurorehabilitation play a role in the recovery of walking in neurological patients?

12 00 - 12 30 St. Hesse (Berlin, D):
Treadmill training with partial body weight support in hemiparetic patients

12 30 - 13 00 G. Laufens (Siegen, D):
Alternating Laufband and Vojta therapy on selected MS patients.

Reception by the Mayor of Karlsbad

Lunch

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Program

Con't Wednesday, October 4th

- 14 30 - 15 00 D. S. Stokic (Jackson, USA):
Clinical outcome of LBT on an outpatient basis.
- 15 00 - 15 30 J. Duysens (Nijmegen, NL):
The effect of treadmill therapy long after incomplete spinal
cord lesions.
- 15 30 - 16 00 E. Koenig (Bad Aibling, D):
Treadmill training in nonambulatory hemiparetic post-
stroke patients with symmetrical and asymmetrical body
weight support
- Coffee break
- 16 30 - 17 00 R. Töpper (Aachen, D):
Mechanisms of rapid motor recovery following stroke:
A fMRI and TMS study
- 17 00 - 17 30 J. B. Nielsen (Copenhagen, DK):
Pathophysiology of spasticity.
- 18 15 Departure to Schloss Ettlingen by bus
- Reception by the Mayor of Ettlingen
- Dinner Symposium Dinner

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Program

Thursday, October 5th

08 30 - 10 45 Clinical Reports (with video demonstrations):
LB-therapy after spinal cord damage.

E. J. Protas (Houston, USA):

Supported treadmill ambulation training after incomplete spinal cord injury.

M. Wirz (Zürich, CH):

Long term training effect on locomotor activity of isolated human spinal cord.

C. Forstner (Wien, A):

'Langzeitlaufbandtherapie bei Tetraplegie'

P. Grieshofer (Bad Radkersburg, A):

Laufband Therapie bei inkompletter Querschnittslähmung

D. Hegemann (Nottwil, CH):

Einsatz des Laufbands im SPZ Nottwil

B. Stotz (Murnau, D):

Laufbandtherapie bei noch beatmeten Tetraplegikern
– zwei Fallbeispiele.

S. Hauser (Bad Häring, A):

Laufband Therapie im Rehaszentrum Häring

Coffee break

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Program

Con't Thursday, October 5th

11 15 - 13 30 Clinical Reports (with video demonstrations):
LB-therapy after brain damage and stroke.

H. Jackson (Jackson, USA):

Short- and long-term outcome of Laufband therapy in a chronic hemiparetic patient with complete sensory loss

K. R. Willis (Jackson, USA):

The outcome of Laufband therapy in a chronic stroke patient due to right intracerebral hemorrhage

B. Herterich (Neustadt a. d. Saale, D):

Laufbandtherapie bei Patienten mit erworbenen Hirnschäden – eine prospektive Verlaufsuntersuchung

K. Lutz (Rheinfelden, CH):

Laufband bei Patienten mit Hemiplegie und Wahrnehmungsproblematik

J. Mehrholz (Kreischa, D):

Case reports on brain damaged persons.

H. Schmitt (Andernach, D):

Laufbandtherapie bei verschiedenen Neurologischen Krankheitsbildern

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Program

Con't Thursday, October 5th

M. Huber:

Regulation of muscle tension and influence on atactic components with help of LB-therapy in a patient with a subarachnoid haemorrhage

13 30 - 14 30 Lunch

14 30 - 15 00 H. Hultborn (Copenhagen, DK):

Central pattern generator and its control from sensory afferents.

15 00 - 15 30 V. R. Edgerton (Los Angeles, USA):

Short and long-term motor learning-related events in complete spinal animals

15 30 - 16 00 V. Dietz (Zürich, CH):

Locomotor capacity of spinal man.

Coffee break

16 30 - 18 00 Clinical reports Con't

M. Schindl (Wien, A):

Treadmill Training with partial bodyweight support in patients with C.P.

H.-J. Eich (Schwaan-Waldeck, D):

Videodemonstration der praktischen LB-Therapiearbeit

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Con't Thursday, October 5th

S. Mussolin (Bruessels, B):

Rehabilitation of walking with Laufband – Therapy in three different cases (SCI,stroke,orthopedic patients)

C. Werner (Berlin, D):

Laufband nach Hüft – TEP: eine prospektive Vergleichsuntersuchung

A. Opheim (Nesoddtangen,N):

Laufband therapy in secondary rehabilitation of a multi traumatic patient

Th. Piefke (Kötzing, D):

Die Anwendung der Laufband Therapie bei Morbus Parkinson

18 00 General Discussion

18 30 Dinner buffet (Foyer)

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Program

Friday, October 6th

Practical Course

09 00 - 13 00 Lecture Hall: Introductory Lectures (open to all)

H. Hultborn:

Normal human gait and the grammar of walking

A. Wernig:

Aims and expectations of LB therapy

Assessments and functional measures of locomotion

Selection of patients for LB therapy

Principles of LB therapy

Equipment

S. Müller:

The role of the therapist: Help with limb setting, help with rump control, (SCI, hemiplegia, brain damage) with video demonstrations

Lunch

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Program

Con't Friday, October 6th

- 14 30 -18 00 Therapy rooms and Lecture Hall (participation restricted)
S. Müller, V. Jung (Basel, CH), S. Heller (Bad Aibling, D),
D. Wulf (Bad Aibling, D), K. Hanf (Neustadt a. d. Saale, D),
I. Nowotny (Langensteinbach, D), B. Lang (Langenstein-
bach, D), E. Reuss (Langensteinbach, D), M. Reichert (Lan-
gensteinbach) and K. Fadaei (Bonn, D) will work in paral-
lel with small groups: Putting on the harness in the
wheel chair, when standing etc; different suspension
systems in action; BWS; helps provided by therapists.
Lecture Hall:

Selected video demonstrations showing different typical
helps with different patients and diseases (led by diffe-
rent instructors).
- Dinner buffet (Foyer of Lecture Hall)

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Program

Saturday, October 7th

Practical Course continued:

08 00 - 10 30 Therapy rooms

Patient demonstrations on 4 treadmills
(practical work mainly with SCI patients)

10 30 - 12 00 Lecture Hall

Round Table (all instructors, guest patients who
performed therapy years back): Guided discussion with all
the participants (A. Wernig)

Lunch

End of Symposium

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General Informations

Location of Symposium/*Tagungsort*

Address / *Adresse*

Klinikum Karlsbad-Langensteinbach
Guttmanstraße
D - 76307 Karlsbad-Langensteinbach
Germany
Lecture Hall / *Großer Hörsaal*

Contacts / *Kontakte:*

- 1) Office of / *Büro von* Sabine Müller, chief therapist / Itd. PT (Secretary: Frau I. Zimmermann)
Telephon: 49 7202 61 3770
Fax: 49 7202 61 6183
e-mail: sabine.mueller@kkl.srh.de

- 2) Office of / *Büro von* Prof. Dr. A. Wernig (Secretary: Herr H.-P. Bürkner)
Telephon: 49 228 287 2274,
Fax: 228 287 2208
e-mail: wernig@physio.uni-bonn.de

During symposium / *Während des Symposiums:*

Telephon: 49 7202 61 3527
Fax: 49 7202 61 6150

Symposium: 4. - 7. October, 2000

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Con't General Informations

Further Informations / *weitere Informationen*

See homepage of Prof. Wernig: www.med.uni-bonn.de/wernig

Es ist beabsichtigt auf der homepage von Prof. Wernig einen Teil „Laufband Symposium 2000“ anzubieten mit dem Inhalt:

- download des Programmes
- dito Stadtpläne Ettlingen, Waldbronn, Karlsbad
- Links zur weiteren Information, Bahn etc.

Registration office / *Tagungsbüro*

Open from October 4th, 7.45 o'clock at the Foyer of the Main Lecture Hall / 4. Oktober ab 7.45 Uhr im Foyer des Hörsaalgebäudes

At the desk: Frau I. Zimmermann, Herr K. Fadaei,
Herr H.-P. Bürkner

Telephon: 49 7202 61 3527

Fax: 49 7202 61 6183

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Con't General Informations

Meals / *Mahlzeiten*

Please pick up meal vouchers at the Registration office. Lunch will be served in the reserved area at the Restaurant, Dinner buffets will be in the Foyer of the Lecture Hall. / Die Essensmarken erhalten Sie im Tagungsbüro. Mittagessen wird in den reservierten Räumen des Restaurants serviert, Abendbuffet im bestuhlten Foyer des Hörsaals.

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Con't General Informations

Hotels / *Hotels*

Booking / *Reservierung*

After September 1st please make your own bookings. /
Bitte machen Sie nach dem 1. September Ihre eigenen
Hotelreservierungen.

Hotel Information / *Hotelinformationen*

Hotels booked for pre-registered participants to be
reached by tram S11 (S1) / *Reservierungen für*
bereits registrierte Teilnehmer, die mit der Straßen
bahn S11 (und S1) erreichbar sind:

Hotel Erbprinz, Hotel Watthalden, Weinhaus Steppe,
Pension Landsitz, Gästehaus Klinikum Karlsbad-Langen-
steinbach (see below page 18) / *(s. Seite 18)*

From all these hotels you can reach the Klinikum by tram
S11 / *Von diesen Hotels kann das Klinikum mit der*
Straßenbahn S11 erreicht werden.

By car / *Auto:* Landgasthaus Pension „Zum Hirsch“

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Route Description and Accommodation

Public Transport / *Öffentliche Verkehrsmittel*

By train / mit dem Zug:

1. From Frankfurt Airport (FRA) Station (Frankfurt(M) Flughafen Fernbf.) to Karlsruhe Hauptbahnhof with Deutsche Bahn (DB). There are direct trains (IC/EC) every hour with a duration of aprox. 1 hour to Karlsruhe.

Request your time table at <http://bahn.hafas.de/bin/query.exe/en> or via www.bahn.de
2. From Karlsruhe Hbf to Karlsbad-Langensteinbach:
Leave the station through the main entrance, directly at the **Bahnhofplatz** you'll find Local Trams: operated by KVV - Karlsruher Verkehrsverbund.

www.karlsruhe.de/KVV for further information.

Go to platform D where you find the line S1 / bound to Ettlingen / Bad Herrenalb and S11 / bound to Ettlingen / Ittersbach.

Both lines will bring you to most hotels (see below). Only the S11 takes you to the Klinikum (tram station 'Langensteinbach – St. Barbara') The duration is about 30 minutes.

Taxi from Main Station to Clinic about 20 minutes and DM 45,- / **Taxi vom Hauptbahnhof zur Klinik ca. 20 Min., Preis ca. DM 45,-**

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Route Description and Accommodation

Con't Public Transport / *Öffentliche Verkehrsmittel*

3. On foot from the tram station 'Langensteinbach – St. Barbara':
After leaving the tram, turn to the right, cross the rails and follow the Alemannenstraße, until you reach the Spielberger Straße (main road), turn to the right and go straight ahead; on the left side you'll pass by the Badstraße, a public swimmingpool, then you reach a Parking lot.
Enter the Parking lot and follow the signs 'LB Symposium' or 'Hörsaal', there is a footpath to the Klinikum area. The symposium takes place at the Hörsaal-Building of the Klinikum.
4. The following hotels are accessible via the indicated tram stations (S1 and / or S11).
 - 4.1 **Hotel Erbprinz**
Rheinstr. 1
D-76275 Ettlingen
Tel.: +49-(0)7243-322-0
Fax: +49-(0)7243-1 64 71
e-mail: info@hotel-erbprinz.de
URL: www.hotel-erbprinz.de
Leave at tram station S1/S11: 'Ettlingen-Erbprinz'

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Route Description and Accommodation

Con't Public Transport / *Öffentliche Verkehrsmittel*

- 4.2 Hotel Watthalden
Pforzheimer Straße 67a
D-76275 Ettlingen
Tel.: +49-(0)7243-714-0
Fax: +49-(0)7243-714-33 33
e-mail: hotel@villa-watthalden.de
URL: www.villa-watthalden.de
Leave at tram station S1/S11: 'Ettlingen-Albgaubad'
- 4.3 Weinhaus Steppe
OT Reichenbach
Neubrunnenschlag 18
D-76337 Waldbronn
Tel: +49-(0)7243-5656-0
Fax: +49-(0)7243-5656-56
Leave at tram station S11: 'Reichenbach Bhf.'
- 4.4 Pension Landsitz
OT Langensteinbach
Spielberger Str.28
D-76307 Karlsbad
Tel: +49-(0)7202-94 29 49
Fax: +49-(0)7202-94 29 50
Leave at tram station S11:
'Langensteinbach-St.Barbara'

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Route Description and Accommodation

By Car / *mit dem Auto*

1. From all directions to the clinic (location of symposium)
Go to the Autobahn A8 between Dreieck Karlsruhe and Stuttgart. The nearest exit to Dreieck Karlsruhe is **Ausfahrt 42 Karlsbad / Waldbronn**, leave the Autobahn and follow the signs 'Klinikum Karlsbad' (with a red cross). You'll find the **PARKING LOT** near to the clinic besides a public swimming pool, park your car in the signed area (LB Symposium) and follow the signed footpath to the Hörsaal Building. A 3 minutes walk.

2. To Landgasthof Pension zum Hirsch
Coming from Autobahn A8 you'll reach OT Langensteinbach; turn left at the big traffic light (direction Auerbach). Go straight, after aprox. 2 km you'll hit the Hailerstraße in Auerbach.
OT Auerbach
Hailerstraße 4
D-76307 Karlsbad
Tel: +49-(0)7202-89 54
Fax: +49-(0)7202-71 17

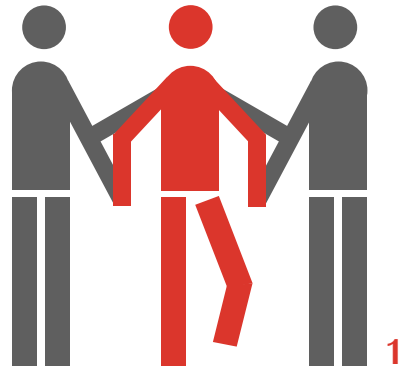
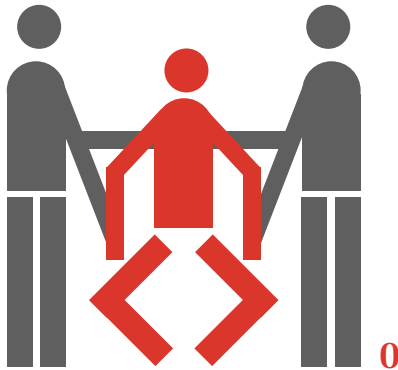
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Map / Lageplan



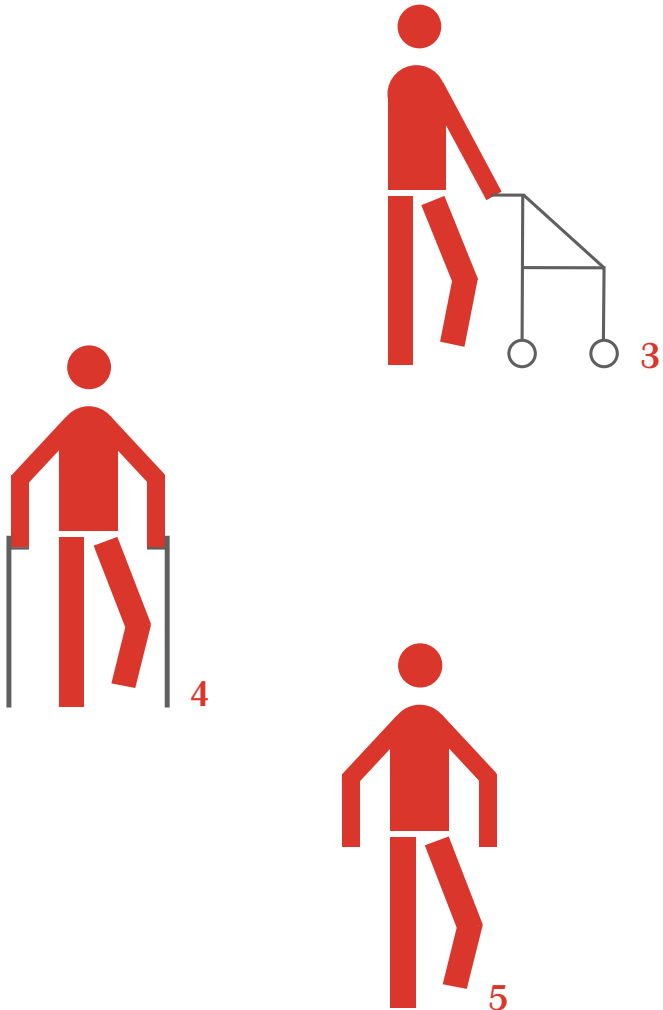
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Functional Classes SCI



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Notes / Notizen