

# Effects of Galileo® vibration exercise in addition to care-related exercise according to the Viv-Arte® nursing conception on motor control, motor function, motor action and muscular strength in patients with chemotherapy-related polyneuropathy [Auswirkungen des Galileo®-Vibrationstrainings als Zusatz zum pflegerischen Trainingskonzept des VivArte® Modells auf Bewegungssteuerung, Alltagsbewegungen, Alltagshandlungen und Muskelkraft bei Chemotherapie-Induzierter Polyneuropathie]

<b>Submission date</b> 25/08/2010	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 06/09/2010	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
<b>Last Edited</b> 15/02/2017	<b>Condition category</b> Cancer	<input type="checkbox"/> Individual participant data

**Plain English summary of protocol**  
Not provided at time of registration

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## **Additional identifiers**

### **Protocol serial number**

PI-PNP-\_01\_10 (sponsor), DJCLS R 09/22 (funder)

## **Study information**

### **Scientific Title**

Effects of whole-body vibration exercise in addition to care-related exercise according to the Viv-Arte® nursing conception on motor control, motor function and muscular strength: a randomised controlled trial in chemotherapy-related polyneuropathy

### **Study objectives**

Based on a further development of kinesthetic nursing, Viv-Arte® Training conception (VAT) includes

1. Manual therapy
2. Gymnastic exercise
3. Functional training

Whole-body vibration has proved to help persons who are bedridden or otherwise unable to exercise, maintaining muscular strength needed for activities of daily living. It is hypothesised, that patients suffering from chemotherapy-related polyneuropathy could also benefit from whole-body vibration exercise, when added to VAT. Therefore, the trial at hand compares randomised groups treated with VAT versus VAT + whole-body vibration.

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

University of Ulm (Germany) Ethics Board, 25/05/2010, ref: 27/10 UBB/bal

### **Study design**

Open-label single-centre randomised active controlled trial

### **Primary study design**

Interventional

### **Study type(s)**

Treatment

### **Health condition(s) or problem(s) studied**

Polyneuropathies, secondary to haematologic neoplasms and chemotherapy

### **Interventions**

Control group and experimental group:

15 sessions (two per week) of 60 minutes each, containing VAT manual therapy and functional training. The latter will be skipped for patients who are not reliant upon personal assistance for mobility tasks (according to MOTPA, see secondary outcome measurements). Gymnastic

exercise is instructed individually during the session, but should be conducted between sessions. Patients receive a diary and a pedometer for documentation of exercise including walking.

Experimental group only:

In each session, whole-body vibration exercise is integrated after manual therapy. Using a Galileo® training platform, a side-alternating motion similar to a seesaw movement is applied. Amplitude and frequency are variable and will be individually adjusted.

## **Intervention Type**

Other

## **Phase**

Not Applicable

## **Primary outcome(s)**

Chair Rising Test (5 times standing up from a chair) at baseline, 8th exercise session, 15th (last) exercise session, and 4 weeks after last exercise session

## **Key secondary outcome(s)**

1. Bipedal jump test and balance test using a force plate (Leonardo® Mechanography) at baseline, 15th (last) exercise session, and 4 weeks after last exercise session
2. Functional mobility measured using motor tests including the Timed up and go test (TUG) and the Mobility test for patients in acute care (MOTPA) at baseline and 15th (last) exercise session
3. Quality of life, measured using the EORTC Quality of Life Core Questionnaire (QLQ-C30), Version 3.0, at baseline, 15th (last) exercise session, and 4 weeks after last exercise session
4. Neurotoxicity, measured using the FACT/GOG Ntx (Funktionale Assessment of Cancer Therapy /Gynecologie Onkologie Group - Neurotoxicity) at baseline, 8th exercise session, 15th (last) exercise session, and 4 weeks after last exercise session
5. Paresthesia, measured using the Visual Analogue Scale (VAS) at baseline, 15th (last) exercise session, and 4 weeks after last exercise session
6. Sensory function, measured at baseline and 15th (last) exercise session, using a standardized quantitative sensory testing (QST) battery:
  - 6.1. Thermal detection threshold, using a computer controlled thermode
  - 6.2. Tactile detection threshold, using von-Frey hairs
  - 6.3. Mechanical pain threshold/sensitivity for pinprick and for light touch, including wind-up (series) sensitivity
  - 6.4. Vibration detection threshold, using a tuning fork
  - 6.5. Pressure pain threshold, using a pressure algometer
7. In order to estimate velocity of nerve conduction as well as sensory and motor evoked potentials (SNAP, MEP), additional electrophysiological measurements will be taken on the discretion of the neurologist

## **Completion date**

30/06/2014

## **Eligibility**

### **Key inclusion criteria**

1. Aged between 18 and 70 years
2. Polyneuropathy diagnosed (MeSH D011115)
3. Ongoing or finished chemotherapy due to hematologic neoplasms (MeSH D019337)

4. Contiguity between polyneuropathy and chemotherapy supposable
5. Chair Rising Test with pathological score (> 10 s)
6. Informed consent

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Blood coagulation disorder
2. Infection beyond control
3. Thrombosis within 6 months before the trial
4. Severe neurological or psychiatric disorder, which might impair the validity of informed consent or the compliance with trial interventions
5. Epilepsy
6. Pregnancy

**Date of first enrolment**

01/07/2010

**Date of final enrolment**

30/06/2014

**Locations****Countries of recruitment**

Germany

**Study participating centre**

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**Sponsor information**

## Organisation

University Ulm Medical School (Germany)

## ROR

<https://ror.org/032000t02>

## Funder(s)

### Funder type

Industry

### Funder Name

German Jose Carrera Leukaemia Foundation (Deutsche José Carrera Leukämie Stiftung e.V.) (Germany) - (DJCLS R 09/22)

### Funder Name

NOVOTEC Medical GmbH (Germany)

### Funder Name

Viv-Arte® Bewegungsschule (Germany)

## Results and Publications

### Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Not provided at time of registration

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	07/02/2017		Yes	No