

Research has shown that exercise and physical therapy can be effective in helping sustain mobility as the disease of Ataxia progresses. Before beginning any exercise program, the National Ataxia Foundation recommends that you speak with your health care professional.

Doris Brötz is a Physiotherapist in Tuebingen, Germany. The focus of her work is the treatment of patients with neurological disorders and spinal disease. From her work emerged the development of a set of therapeutic exercises. Please find more information, exercises and pictures in "Übungen in der Neurorehabilitation" Thieme Stuttgart.

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#### Overview of the program

Patients with Ataxia suffer from disturbance of coordination and balance. This leads to exceedingly uncontrolled swaying movements. Patients tend to avoid these uncontrolled movements and, in particular, stop performing those movements that demand high coordinative efforts. Thus, their movement repertoire is increasingly restricted to movements with only poor variation. As a consequence, patients lose coordination skills, reaction ability and gait safety to a larger extent than could be explained by the severity of the disease per se. Our physical therapy approach aims to improve coordination skills, static and dynamic balance control.

#### General instructions for all exercises in this fact sheet

- The exercises differ in difficulty and risk.
- Some exercises are performed lying on the floor so that the patients do not run the risk of falling.
- A physical therapist should assist you in those exercises that you cannot perform yourself without risking injuries or falls.
- All exercises should be done without holding anywhere.
- Feel free to perform the safe exercises on a regular basis at home, but omit those exercises which you cannot perform without aid.

#### Treatment strategy

As a key element of the treatment strategy, you should stop making yourself stiff. If you start to sway more after the first exercises, an intermediate goal has been achieved. It will allow you to perform more accurate movements and, once you lose balance, to react more flexibly. After some training, you gain more control over your movements. This program strengthens you in repeating the daily life-oriented coordination exercises. This means that you do not need additional strengthening exercises.

#### Changing your movement behavior

- Move in a smooth and fluid manner as much as possible
- Change your movement behavior
- Adopt the new learned skills in daily life
- Motto 1: "Move"
- Motto 2: "Bend Knees"

**Coordination and mobility of spine and shoulders :**

**Rotation in lying**

Lie down on your back

- Bend your knees and put your feet on the mat
- Spread your arms
- Tilt both knees to one side
- Move knees back up
- Repeat the same procedure to the other side
- Repeat 10 times to each side



**Rolling on a mat or in bed**

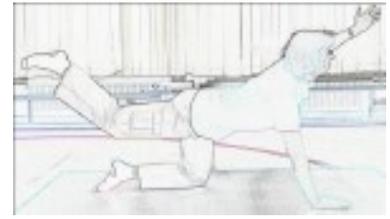
Lie down on your back

- Lift the arm in the direction you want to roll
- Push the other arm over your body and lift the leg, so that you come to lay on your side
- Roll back
- Repeat 10 times to each side
- *Variation: roll from your back - to side -to stomach - to side - to back in a continuing manner*



**Quadruped Position**

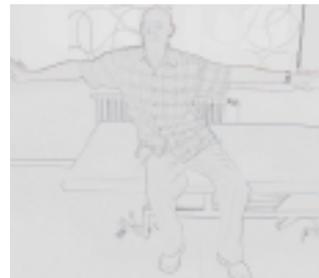
- Bring your left elbow and right knee together below your body. Straighten your left arm and right leg and elevate them far up
- Repeat 5 times balancing on the left leg and the right arm
- Repeat with the other leg and arm



**Coordination and balance :**

**Shifting your weight to the side**

- Sit upright
- Shift your weight to the right
- Sit back up
- Repeat 5 times
- Shift your weight to the left
- Sit back up
- Repeat 5 times



Increase of Difficulty:

- Put one foot on the bed and back on the ground
- Put both feet on the bed over the side

### Standing Up and Sitting Down

- Bend your spine a bit
- Shift your weight onto the feet
- Move in an upright position
- Keep the back and knees slightly bent
- Sit down controlled
- Repeat 10 times



### Kneeling Position 2

- Move into a kneeling position
- Move one leg forward without touching the ground with your toes
- Move back into kneeling position
- Repeat with the other leg
- Repeat 5 times each



### Standing Up From the Ground Using *Bear Stand*

- Stand – bend knees and spine
- Touch the floor
- You will be in quadruped position
- Stand on your feet with your hands still on the ground
- Straighten your knees, but keep them slightly bent; the pressure remains mostly on the forefoot
- Lift your hands off the ground, stand up, and orientate your weight forward; keep your knees slightly bent



### Dynamic Balance Training / Safety Steps :

#### Side Steps

- Stand upright with your feet hip-width apart
- Take a big step to the side
- Go back to the original position
- Repeat 20 times with each leg



Side Steps

#### Steps Forwards

- Stand upright with your feet hip-width apart
- Take a big step forwards
- Go back to the original position
- Repeat 20 times with each leg

#### Steps Backwards

- Stand upright with your feet hip-width apart
- Take a big step backwards
- Go back to the original position
- Repeat 20 times with each leg

### **Cross-Step Front**

- Stand upright with your feet hip-width apart
- Cross your legs in the front
- Go back to the original position
- Repeat 20 times with each leg



Cross-Step Front

### **Training of Hand-Arm Coordination:**

#### **Exercises with increasing difficulty**

- Pile building blocks
- Pile little toy bricks
- Turn around playing cards
- Collect items in a small jar (marbles, paper clips)
- Write half page every day

### **Forearm Rotation**

- Pour water from one cup in another 20 times



Forearm Rotation

### **Throwing and Catching a Ball**

- Throw the ball up in the air with your right hand and catch it with your right hand
- Do the same with your left hand
- Throw as far up as your eye height
- Catch at the height of your waist
- Throw a ball from the right hand to the left and back



Throwing and Catching a Ball

### **Drinking**

- Keep calm
- Move one hand to your chin – and back to the table - repeat 10 times
- Pour water into a big cup
- Take the cup and move it to your chin and back to the table – 10 repetitions
- Drink two mouthfuls – put the cup back on the table
- Do 7 repetitions
- Motto: Shoulder Relaxed



Drinking