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## **D4E1 – bedsheet aid**

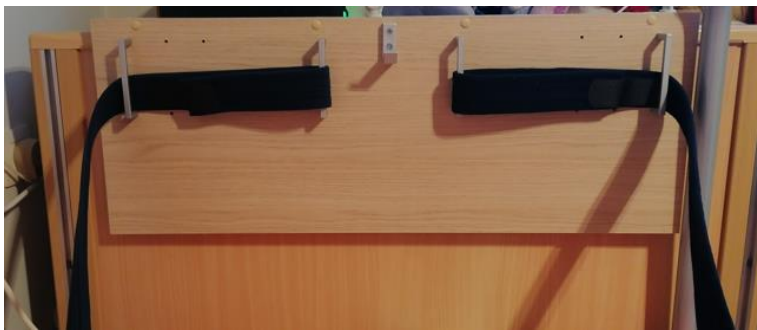
By Annouk De Neels

### **A bedsheet helping aid who suffers from Cerebral Palsy.**

We made this bedsheet aid voor Kristof in corporation with his personal assistent Michaël. Kristof is a 35year old man, born with Cerebral Palsy, quadriparese with a mild cognitive impairment and visual problems. For transportation, he uses an electronic wheelchair. Kristof has a huge drive to be as independent as possible. He lives alone, but has the possibility to call for professional help. At night, he sleeps in a adapted high low bed. He has de upperlimb force to push away the bedsheets, but he's unable to pull the bedsheets back.

We made a headboardframe system with slings. By pulling the slings, he can pull the bedsheets back.

Below you will find instructions and files to make your own bedsheet aid.



While developing the product we discovered the extra possibilities to make the bedsheet aid more personal. For example: Kristof uses a apnea dvice. By installing one hook he can hang his mask in the morning to let it dry.

TEAM: Kristof, Michaël en Annouk

## Step 2: Gather Your Supplies, Parts and Gear

We designed the bedsheet aid as simple as possible. The main parts can be purchased in DIY stores. This gives everyone the possibility to buy more or less expensive materials. In the next step you'll find downloads for making your parts.

### Materials:

- ✓ 3 x furniture panel light oak ABS 80x30cm 18mm
- ✓ 4 x handle patricia aluminium look 104mm
- ✓ 1 x hook carmen aluminium look
- ✓ 2 x active sling comfort 5,5cm x 1,7m
- ✓ 2 x velcro 5x5cm



(gamma.be)



(farmaline.be)

Gear:

- ✓ scissor
- ✓ markers/tape
- ✓ hammer
- ✓ screwdriver
- ✓ screws

### Step 3: Start Prototyping

Before starting prototyping it's important to know the exact measures of the patients bed, more specific the headboard and also the type of bed (standard or high low). This allows you to make a prototype which fits the right sizes and gives the patient a real idea of sizes. When using cardboard the system may not be that firm to attach both slings for the patient to try.

This prototype was made for the high low bed Burmeier Inovia.

To make the prototype please use leftovers wood and not to expensive extra materials.



Testing the prototype:



#### **Step 4: Final Product:**

1. Use one furniture oak panel for the front of the headboardframe. Another for the background rear end of the headboardframe and the third one as the connection between the front and back. The width of the headboard will determine the final width. In this example to total width of the third panel is 13cm. U will lose 2cm at both sides when you connect the three parts together
2. To make it extra firm, use screws
3. To attach the outer handles, make at each side three rows with 5cm between each row
4. To attach the middle handles, use the middle of the furniture panel minus 7cm
5. The hook is attached in the middle of the furniture panel
6. At each side of the handle attach a sling

#### **Final Product:**



**Step 5: Finished!**

Look at your work and be proud! Use it, test it and personalize it!