

### Supplementary Material 3

Selected user-relevant items with ordinal answer categories, definition, and reason to include items for the patient-reported outcome measure to assess the preferred usage features of upper limb prostheses: the PUF-ULP.

| Items with answer categories and descriptions of items  |   |   | Why was the item selected for the PUF-ULP?   |
|---|---|---|--|
| Question:   |   |   |  |
| Click on the bars to select the answer that best describes your experiences with your arm/hand prosthesis |   |   |  |
| Item  | Answer categories   | Definition item   | Reason to include the item   |
| 1. Wearing comfort  | <ul style="list-style-type: none"><li>- Comfortable</li><li>- Fairly comfortable</li><li>- Not very comfortable</li><li>- Uncomfortable</li></ul>           | <p><b>How do you rate the <u>wearing comfort</u> of your prosthesis?</b></p> <p>This includes the weight of the prosthesis, the comfort of attachment approaches and/or harness (e.g. for body-powered prosthesis), prosthesis fit, skin irritation related to prosthesis use, and heat/sweating while wearing the prosthesis.</p>  | 'Wearing comfort' was the overall most selected item in the HealthFan survey. 'Heat/sweating' and 'weight' overlap with 'wearing comfort', and were therefore included as examples in the description of this item.  |
| 2. Functionality  | <ul style="list-style-type: none"><li>- Functional</li><li>- Fairly functional</li><li>- Not very functional</li><li>- Unfunctional</li></ul>               | <p><b>Do you think your prosthesis is <u>functional</u>?</b></p> <p>Considering <b>active prostheses</b>, you can think about:</p> <ul style="list-style-type: none"><li>- Grabbing, picking up, and holding objects</li><li>- Supporting and stabilizing objects</li></ul> <p>Considering <b>cosmetic or other passive prostheses</b>, you can think about:</p> <ul style="list-style-type: none"><li>- Supporting and stabilizing objects</li></ul> | The items 'grabbing, picking up, and holding' and 'functionality' were respectively the second and fifth-most selected items of the HealthFan survey, and were therefore included. Because they overlap, they were combined in the overarching item 'functionality'.   |
| 3. Independence   | <ul style="list-style-type: none"><li>- Completely independent</li><li>- Fairly independent</li><li>- Little independent</li><li>- Dependent</li></ul>      | <p><b>To what extent do you think you can <u>take care of yourself independently</u> with your prosthesis?</b></p> <p>You can think about being able to wash, dress, eat, go to the toilet, and other self-care.</p>  | 'Independence' was the fourth most selected item of the HealthFan survey. Because 'self-care' overlaps with 'independence', and was selected by 23.4% of the participants in the top-10 most important items, 'self-care' was added to the description.  |
| 4. Work, hobby and household  | <ul style="list-style-type: none"><li>- No problems</li><li>- Few problems</li><li>- Quite a lot problems</li><li>- Many problems</li></ul>                 | <p><b>Do you think that you are having any trouble doing your <u>job, hobby, or household</u> with your prosthesis?</b></p>   | The activities 'work/job' and 'household' were selected frequently in the top-10 by participants. Although 'leisure activities' was selected by only 16%, the item was still accommodated within the overarching item 'work, job, and household', since they were all activities of daily living.  |
| 5. User-friendly  | <ul style="list-style-type: none"><li>- User-friendly</li><li>- Fairly user-friendly</li><li>- Not very user-friendly</li><li>- Not user friendly</li></ul> | <p><b>Do you think your prosthesis is <u>'user-friendly'</u> or easy to use?</b></p> <p>You can think about the ease of control, donning/doffing of the prosthesis, cleaning the prosthesis, etc.</p>   | Since the PUF-ULP should be applicable for preferably all persons with a ULP, this overarching item included: <ul style="list-style-type: none"><li>- 'Usability', which was chosen by 25.1% of the overall population in the top-10 from the HealthFan survey.</li><li>- 'Ease of control', which was especially considered important by the younger age category and mono-grip myoelectric prosthesis users.</li><li>- 'Donning/doffing', which was especially considered important by persons with ULA at or proximal from the elbow and passive/cosmetic prosthesis users.</li></ul> |

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| 6. Life-like appearance | <ul style="list-style-type: none"> <li>- Life-like</li> <li>- Fairly life-like</li> <li>- Not very life-like</li> <li>- Not life-like</li> </ul>  | <p><b>Do you think that your prosthesis looks <u>life-like</u>?</b></p>   | 'Life-like appearance' was considered important by the overall population and several subgroups (i.e. cosmetic/passive prosthesis users, persons with congenital ULA, women).                               |
| 7. Phantom limb pain    | <ul style="list-style-type: none"> <li>- No influence phantom limb pain</li> <li>- Little influence phantom limb pain</li> <li>- Fairly much influence phantom limb pain</li> <li>- Much influence phantom limb pain</li> </ul> | <p><b>Do you think that <u>phantom limb pain</u> affects your prosthesis use?</b></p> <p>Phantom limb pain is a <u>painful sensation</u> that seems to originate from the missing arm/hand.</p>                 | 'Phantom limb pain' was the fifth most selected if considering only the frequencies of the item ranked as the most important one in the HealthFan survey. Therefore, this item was included in the PUF-ULP. |
| 8. Overuse complaints   | <ul style="list-style-type: none"> <li>- No influence overuse</li> <li>- Little influence overuse</li> <li>- Fairly much influence overuse</li> <li>- Much influence overuse</li> </ul>   | <p><b>Do you think that <u>overuse complaints</u> affect your prosthesis use?</b></p> <p>Overuse complaints are pain complaints from the neck, back, shoulder, or unaffected arm as a result of overload.</p>   | 'Overuse complaints' was selected by 22.3% from the overall population in the top-10 from the HealthFan survey, and selected by even more women and MHP-users.  |
| 9. Reliability          | <ul style="list-style-type: none"> <li>- Reliable</li> <li>- Fairly reliable</li> <li>- Not very reliable</li> <li>- Unreliable</li> </ul>  | <p><b>Do you think your prosthesis is <u>reliable</u>?</b></p> <p>You can think about the occurrence of unplanned movements, drop things from the hand, battery life/ sudden discharge of the battery, etc.</p> | 'Reliability' was selected by 23.4% persons in the top-10 most important items in the HealthFan survey, and was selected even more frequently by mono-grip and multi-grip myoelectric prosthesis users.     |

Abbreviations: ULP = upper limb prostheses; ULA = upper limb absence; PUF-ULP = patient-reported outcome measurement tool to assess the preferred usage features of upper limb prostheses; MHP = Multi-articulated myoelectric hand prosthesis.