## Pragmatic Home-Based Exercise after Total Hip Arthroplasty - Silkeborg: Protocol for a prospective cohort study (PHETHAS-1)

## CERT - Consensus on Exercise Reporting Template

## A Checklist for what to include when reporting exercise programs

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| Section/Topic | Item # | Checklist item | Location Protocol paper (Heading - subheading) |
| WHAT:  materials | 1 | Detailed description of the type of exercise equipment (e.g. weights, exercise equipment such as machines, treadmill, bicycle ergometer etc)   * Elastic bands (TheraBand®, non-latex) with different resistance – tied in loops of 55 cm. Chair. | Methods - Intervention  Table 2 |
| WHO:  provider | 2 | Detailed description of the qualifications, teaching/supervising expertise, and/or training undertaken by the exercise instructor   * Exercise instruction will be performed by physiotherapists from Elective Surgery Centre. The physiotherapists are members of the staff of physiotherapists at Elective Surgery Centre and all have at least 6 months of experience working with THA and more than 10 years of clinical experience. | Methods – Study setting |
| HOW:  delivery | 3 | Describe whether exercises are performed individually or in a group   * Exercises are performed individually | Methods – Intervention |
|  | 4 | Describe whether exercises are supervised or unsupervised and how they are delivered   * Supervised instruction in exercises, hereafter unsupervised home-based exercises | Methods – Intervention |
|  | 5 | Detailed description of how adherence to exercise is measured and reported   * Performed exercise dose will be quantified as the total physiological exercise stimulus (Time under tension summary dose per week) recorded by a sensor (Bandcizer: commercially available from www.bandcizer.com) attached to the elastic exercise band. The sensor automatically switches on and stores data when the elastic exercise band is used (13,14). Furthermore, performed exercise dose will be quantified as the number of days with strengthening exercises being performed. | Methods - Intervention |
|  | 6 | Detailed description of motivation strategies   * THA patients attend in an educational class prior to surgery, where they are informed of the clinical pathway, the importance of postoperative rehabilitation exercises, pain management. They also receive the information both web-based and in an instruction booklet comprising written and illustrated exercise descriptions. Additionally, study participants receive an exercise and activity diary in paper. | Methods - Intervention |
|  | 7a | Detailed description of the decision rule(s) for determining exercise progression   * When the participant is able to perform more than 20 repetitions in 2 out of 3 elastic band exercises, the resistance should be progressed to assure, that strengthening exercises are performed with a relative load of 10-20 RM | Methods – Intervention  Table 2 |
|  | 7b | Detailed description of how the exercise program was progressed   * When the relative load gets too low (item 7a) the participant is instructed to change the elastic band to the next level of resistance to get a higher loading. | Methods – Intervention  Table 2 |
|  | 8 | Detailed description of each exercise to enable replication (e.g. photographs, illustrations , video etc) | Table 2 |
|  | 9 | Detailed description of any home program component (e.g. other exercises, stretching etc)   * The strengthening exercises are supplemented with daily stretching of hip flexor muscles and balance exercise (one-legged stance). | Methods - Intervention |
|  | 10 | Describe whether there are any non-exercise components (e.g. education, cognitive behavioural therapy, massage etc)   * The participants will be advised to gradually increase their activity level after the operation in order to comply with the recommendations on physical activity from the Danish Health and Medicines Authority. Furthermore, they will receive instructions on how to handle pain during exercises and recreational activities. | Methods – Intervention  Pain Management guide available as extended data |
|  | 11 | Describe the type and number of adverse evens that occurred during exercise | Will be reported in primary paper |
| WHERE:  location | 12 | Describe the setting in which the exercises are performed   * Instruction is delivered at the hospital. During study period, participants will perform the exercises at home | Methods – Study settting + Intervention |
| WHEN, HOW MUCH:  dosage | 13 | Detailed description of the exercise intervention including, but not limited to, number of exercise repetitions/sets/sessions, session duration, intervention/program duration etc. | Table 2 |
| TAILORING: what, how | 14a | Describe whether the exercises are generic (one size fits all) or tailored whether tailored to the individual   * The exercises are generic, but the progression is based on the individual participant’s progress. Furthermore, each participant is instructed to modify the exercises in case of increasing pain | Methods – Intervention  Table 2  Pain management guide (available as extended data) |
|  | 14b | Detailed description of how exercises are tailored to the individual   * See item 14a | Methods – Patient information |
|  | 15 | Describe the decision rule for determining the starting level at which people commence an exercise program (such as beginner, intermediate, advanced etc.)   * The participants will receive a thorough instruction in the strengthening exercises conducted one-to-one by a physiotherapist. During this session the participants perform the exercises until fatigue and an elastic band resulting in a relative load of 10-20RM is chosen by the physiotherapist. | Methods – Intervention + Patient information  Table 2 |
| HOW WELL: planned, actual | 16a | Describe how adherence or fidelity to the exercise intervention is assessed/measured   * The physiotherapists adhere to the detailed exercise description as well as the pain management guide. All physiotherapists have more than 6 months experience with instructing THA patients in the exercises described. To reinforce similar treatment administration, face-to-face meetings will be held per need to discuss issues experienced in the clinic. | Methods – Intervention  Table 2  Pain management guide (available as extended data) |
|  | 16b | Describe the extent to which the intervention was delivered as planned | Will be reported in primary paper |