

BIBOTM
course

Course based on 'Better in, Better out' concept (BiBo™)

Organization:

University of applied science, Utrecht, the Netherlands

in association with

TNO, Leiden, the Netherlands

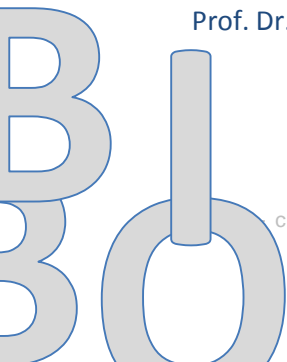
Maastricht University, the Netherlands



Preface

Medical, surgical and anesthesiologist approaches have improved vastly over recent decades. Perioperative prevention and care improved somewhat less and later, but these parts of the total integrative perioperative approach are more and more seen as pivotal and paramount in the success of optimization of health and functioning of surgical patients, especially those that are frail. In the Netherlands the concept of Better in, Better out (BiBo™) was developed and is nowadays implemented in several hospitals nationwide. Also, several hospitals abroad are implementing this concept. By doing so, educational material in courses and close cooperation between hospitals – national and international – was established, which ended up in a so called “Community of Practice (CoP)”. This CoP contains a large group of PostDocs, PhD- and MSc students from all over the country and abroad. Members of the CoP are all working under supervision of Prof. Dr. Van Meeteren and are thereby involved in innovation and validation of all ‘bits and pieces’ of the BiBo™-concept in several types of patients, professionals, health care systems and countries. Hospitals and/or colleagues that are interested in the concept BiBo™ are thus invited to follow the course and at the same time pick up membership in this BiBo™-CoP that is jointly developing knowledge about BiBo™/perioperative care across nations.

Prof. Dr. Nico van Meeteren



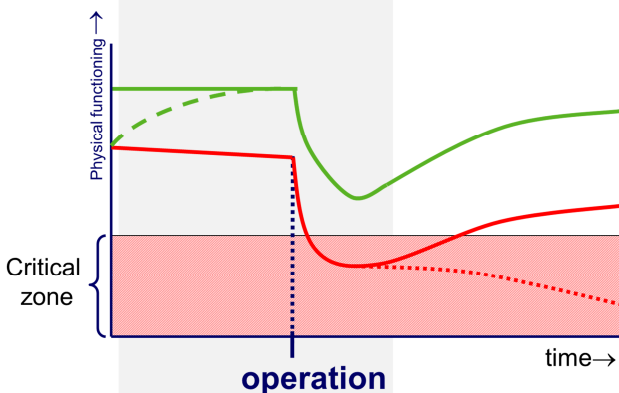
Introduction

“For example, consider a physically active patient who undergoes an uncomplicated elective colectomy for cancer. At the 3-week postoperative visit, the patient reports no major physical symptoms, but is unable to resume normal sporting activities or work because of fatigue, which negatively affects the patient’s psychologic, social, and economic domains. In this case, focusing only on the physical domain and ignoring the other domains will incorrectly describe this patient as “recovered” from surgery” (source: Lee, et al. What does it really mean to “recover” from an operation? Surgery, 2014)

Major orthopedic, oncology, abdominal and thoracic surgery and its underlying diagnosis are constituting a major life event associated with a serious risk of more or less permanent functional decline especially for those that are already fragile. Recovery can take up months and receives growing attention in recent scientific publications which illustrated a transition from a medical towards a more combined medical and functional healthcare. The literature indicates the multidimensional aspect of “recovery” which encompasses the physiological recovery (interest of anesthetists), solely medical recovery from the pathology which necessitates the hospital admission (interest of medical specialist) and the functional recovery (interest of physical therapist and last but not least patient). The functional recovery is important because this is about the independent functioning and quality of life, in other words ‘can I do what I want to do or what I was used to do’. Functional recovery is associated with lots of modifiable functional indicators one of which is the physical activity level of the patients which acts as secondary prevention in a number of pathologies among which cancer.

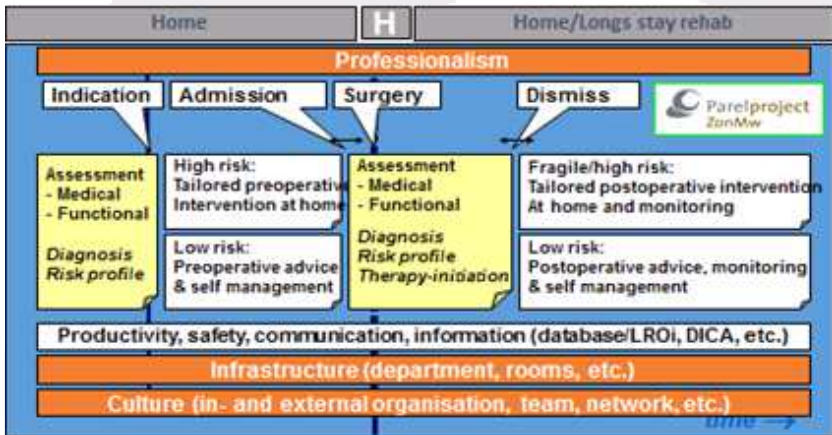
Content

Patients with a poor preoperative physical condition might not be able to respond to the detrimental effects of hospitalization and surgery, which may hamper postoperative recovery. Figure 1 visualizes functional decline and recovery after hospitalization and surgery including the preoperative period. Many patients show a satisfactory functional recovery during the postoperative period because they have an adequate stress response and regain their pre-hospitalization level of functioning (green line). These patients are able to withstand the allostatic load, whereas some patients do not recover fully. The red line represents the situation of a patient with a poorer preoperative physical condition, partly due to a decline during the waiting period. This patient is not able to respond to the physical stress of surgery, which leads to a poor postoperative course and brings that patient into the critical zone. Functional recovery is limited, making the patient susceptible to postoperative complications and even death. This type of patient is characteristic of a group that can be termed the “frail elderly”, older patients who are unable to successfully cope with surgery and hospitalization



Functional decline is multicausal. *Bed rest* leads to a marked and rapid loss of lower extremity strength, power, and aerobic capacity, particularly in those with distinct risk profiles. Surgery and anaesthesiology is known to augment this muscle waste due to *surgical stress*. This surgical stress response includes a wide range of physiological effects that directly impair cardiopulmonary, muscle and neurological function and contribute to an accelerated loss of lean tissue. Patients undergoing surgical manipulations close to the diaphragm may even lead to more serious or even life threatening conditions. Also elderly patients are more susceptible for functional decline. It is a fast growing group as a result of recent acute cure/medical progress (surgery and anesthesiology) which urges for steep progress in preventive care concepts. The BiBo™ concept aims to prevent patients for the functional decline as iatrogenic and avoidable side effect after hospitalization and major surgery.

The BiBo™ concept is about the self-management, empowering and guidance of patients who are scheduled for major surgery in order to prevent concomitant functional decline



As visualized above the BiBo™ concept includes a preoperative assessment for known risk factors and for medical and functional factors in each patient. Patient tailored preoperative exercise intervention aims to augment the outcomes of surgery by improving patients’ physical fitness. The BiBo™ program has evolved over years because successful recovery after major surgery is moving beyond length of stay. The programme also includes the clinical and post clinical period for the assessment and guidance of the patient during the recovery period.

The course will discuss the screening for risks, preoperative and postoperative exercise therapy particularly in the physically frail patients in respectively thoracic, abdominal and major joint replacement surgery. The course will also deal with the implementation of the BiBo™ concept and the barriers and facilitators that can be expected in the particular situation of the course members.



Parelproject
ZonMw



Better in, Beter out was awarded “De Parel” (“The Pearl”), a prestigious prize of The Netherlands Organisation for Health Research and Development (ZonMw) in 2009.

Course objectives

Course members:

Theory

- *Technics*
 - can describe the BiBo™ concept in the light of current developments in health care;
 - can describe the benefits of the BiBo™ concept;
- *Social*
 - can identify barriers and facilitators of the implementation of the BiBo™ concept
 - can determine a implementation strategy for a BiBo™ program in his or her hospital
- *Physiological*
 - can describe functional decline and functional recovery after major surgery;
 - can describe multidisciplinary factors affecting the postoperative course;

Practice

- can perform a screening in order to detect high-risk patients for postoperative complications and long-lasting of permanent functional decline;
- can draw up a patient-tailored preoperative treatment improving the preoperative physical condition of the patient
- can perform the monitoring of the postoperative functional recovery of the patient;
- can draw up a patient tailored program facilitating the postoperative functional recovery.

Deliverables of the course members

Pre-course

- Reading recommended articles as attached to this leaflet.
- Reading course guide.

Course:

- Interactive participation during lectures and hospital visits.
- Performing practice skills during education on the job

Post course

- Implementation of perioperative care in own work setting.
- Writing a case report describing a patient
- Presentation of case report
- Access to an international Community of practice (CoP)
- Contribution of treatment data for comparative effectiveness Research (CER)

Workload

Total course load: 5 EC (140 hours)

Period

March 2 – 6, 2015

Price

€ 1900.- (excl. VAT)

Included

- the BiBo™ Course
- Five nights in a hotel in Utrecht, including breakfast
- Working visit to three hospitals

Excluded

- Travelling expenses to Utrecht (e.g. flight costs)
- Dinner
- Optional activities (during evenings)





Sign up


Registration: until January 31, 2015

Maximum number of course members: 10

In case of enough interest, a next-course will be organized in June 2015

Course Programme

	Programme	Location
Day 1 Monday March 2	<ul style="list-style-type: none"> - General introduction - Introduction in the general concepts and paradigms of BiBo™ concept - Hospital Care from the perspective of the course members - BiBo™ concept: preclinical, clinical and postclinical - BiBo™ from multidisciplinary perspective - BiBo™ research in the Netherlands 	University of applied science, Utrecht 
Day 2 Tuesday March 3	Education on the job with focus on: <ul style="list-style-type: none"> - Total hip/knee surgery - Oncology - Practice skills 	Nij Smellinghe Hospital, Drachten 
Day 3 Wednesday March 4	Education on the job with focus on: <ul style="list-style-type: none"> - Total hip/knee surgery - Abdominal surgery - Nutrition and movement - Activity level patients during hospital stay - Practice skills 	Gelderse Vallei Hospital, Ede 
Day 4 Thursday March 5	Education on the job with focus on: <ul style="list-style-type: none"> - Cardiac surgery - Transplantation surgery - Multidisciplinary approach - Practice skills 	Utrecht University Medical Centre 

Day 5 Friday March 6	<ul style="list-style-type: none"> - Transfer of knowledge to own practice of course members - How to implement BiBo™ - Set up BiBo™ network in primary care - Arrangement of presentation case studies - Evaluation of the course 	University of applied science, Utrecht 
Day 6 Week 21 2015	Presentation case study by course members including discussion and peer-feedback and feedback of some lectures.	Digital video conference

During the course and up to September 2015 course members have access to the BiBo™ community with information, articles, developments and discussions in the area of BiBo™.

Teachers

- **Jordi Elings, MSc**
Physiotherapist at Diakonessen Hospital, Utrecht. PhD-student in the area of perioperative care of patients scheduled for hip and knee arthroplasty.
- **Roelof Ettema, PhD**
Lecturer at University of applied science Utrecht.
Obtained his doctorate with a dissertation on preoperative multidisciplinary preoperative management of patients scheduled for elective cardiac surgery.
- **Prof. Nico van Meeteren, PhD**
Director Life Sciences & Health for Development, Netherlands enterprise agency, The Hague. Professor Physiotherapy, physical functioning in chronic diseases” - Faculty of Health, Medicine and Life Sciences”, University of Maastricht. Chair of EUNAAPA
- **Ellen Oosting, MSc**
Physiotherapist Gelderse Vallei Hospital, Ede.
PhD-student in the area of perioperative care of patients scheduled for hip and knee arthroplasty.
- **Geert van der Sluis, MSc**
Physiotherapist Nij Smellinghe Hospital, Drachten. PhD-student in the area of perioperative care of patients scheduled for hip and knee arthroplasty.
- **Karin Valkenet, MSc**
Physiotherapist Utrecht University Medical Centre. PhD-student in the area of perioperative care of patients scheduled for cardiac surgery.
- **Prof. Cindy Veenhof, PhD, PT**
Professor in Clinical Health Sciences, Utrecht University Medical Centre
- **Prof. Ben Witteman, PhD, MD**
Medical doctor Gelderse Vallei Hospital , Ede. Professor in Nutrition and intestinal health transitional care, Division of Human Nutrition, Wageningen University.
- **Jaap Dronkers, PhD**
Physiotherapist Gelderse Vallei Hospital, Ede. Lecturer at University of applied science Utrecht. Obtained his doctorate with a dissertation on preoperative physical fitness in older patients.

Preparation

In preparation of the course we recommend to read the following back-ground literature.

General

- Hoogeboom TJ, Dronkers JJ, Hulzebos EH, van Meeteren NL. Merits of exercise therapy before and after major surgery. *Curr Opin Anaesthesiol* 2014.
- Ettema RG, Hoogendoorn ME, Kalkman CJ, Schuurmans MJ. Development of a nursing intervention to prepare frail older patients for cardiac surgery (the PREDOCS programme), following phase one of the guidelines of the Medical Research Council. *Eur J Cardiovasc Nurs*. 2014 Dec;13(6):494-505.
- Lee L, Tran T, Mayo NE, Carli F, Feldman LS. What does it really mean to "recover" from an operation? *Surgery*. 2014 Feb;155(2):211-6.
- Miller TE, Mythen M. Successful recovery after major surgery: moving beyond length of stay. *Perioper Med (Lond)*. 2014 Jul 8;3:4.
- Flores M, Glusman G, Brogaard K, Price ND, Hood L. P4 medicine: how systems medicine will transform the healthcare sector and society. *Per Med*. 2013;10(6):565-576.
- Covinsky KE, Pierluissi E, Johnston CB. Hospitalization-associated disability: "She was probably able to ambulate, but I'm not sure". *JAMA* 2011;306:1782-93.

Abdominal and thoracic surgery

- Dronkers JJ, Chorus AM, van Meeteren NL, Hopman-Rock M. The association of pre-operative physical fitness and physical activity with outcome after scheduled major abdominal surgery. *Anaesthesia*. 2013;68(1):67-73.
- O'Doherty AF, West M, Jack S, Grocott MP. Preoperative aerobic exercise training in elective intra-cavity surgery: a systematic review. *Br J Anaesth*. 2013 May;110(5):679-89
- Dronkers J.J. ; Valkenet K. Prehabilitation: exercise therapy before major surgery *In* H.J. Stam (chief) HMB, J.L. Melvin and G. Stucki., ed. *Acute medical rehabilitation*, 2012.
- Hulzebos EH, Helders PJ, Favie NJ, De Bie RA, Brutel de la RA, van Meeteren NL. Preoperative intensive inspiratory muscle training to prevent postoperative pulmonary complications in high-risk patients undergoing CABG surgery: a randomized clinical trial. *JAMA* 2006;296:1851-7
- Valkenet K, van de Port IG, Dronkers JJ, de Vries WR, Lindeman E, Backx FJ. The effects of preoperative exercise therapy on postoperative outcome: a systematic review. *Clin Rehabil*. 2011 Feb;25(2):99-111.

Orthopedic surgery

- Elings J, Hoozeboom T, van der Sluis G, van Meeteren N. What preoperative patient-related factors predict inpatient recovery of physical functioning and length of stay after total hip arthroplasty? A systematic review. *Clin Rehabil.* 2014 Oct 15
- Oosting E, Jans MP, Dronkers JJ, Naber RH, Dronkers-Landman CM, Appelmande Vries SM, van Meeteren NL. Preoperative Home-Based Physical Therapy Versus Usual Care to Improve Functional Health of Frail Older Adults Scheduled for Elective Total Hip Arthroplasty: A Pilot Randomized Controlled Trial. *Arch Phys Med Rehabil.* 2012 Apr;93(4):610-6.
- Maxwell JL1, Keysor JJ, Niu J, Singh JA, Wise BL, Frey-Law L, Nevitt MC, Felson DT. Participation following knee replacement: the MOST cohort study. *Phys Ther.* 2013 Nov;93(11):1467-74.

Training

- de Vreede PL, Samson MM, van Meeteren NL, Duursma SA, Verhaar HJ. Functional-task exercise versus resistance strength exercise to improve daily function in older women: a randomized, controlled trial. *J Am Geriatr Soc.* 2005 Jan;53(1):2-10.
- Hoozeboom TJ, Oosting E, Vriezokolk JE, Veenhof C, Siemonsma PC, de Bie RA, van den Ende CH, van Meeteren NL. Therapeutic validity and effectiveness of preoperative exercise on functional recovery after joint replacement: a systematic review and meta-analysis. *PLoS One.* 2012;7(5)



Nij Smellinge



UMC UTRECHT

Gelderse Vallei

