

# HOW TO SUCCESSFULLY IMPLEMENT INTERVENTIONS TO REDUCE PHYSICAL INACTIVITY AND SEDENTARY WORK

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**TNO** innovation  
for life



## TNO mission

To connect people and knowledge to create innovations that boost the sustainable competitive strength of industry and well-being of society.

## Themes & Roadmaps





## TNO Prevention, work and health

- › **monitors** trends in (occupational) risk factors and determinants of health
- › **developments, implements and evaluates interventions** to reduce health risks and promote a sustainable healthy and productive workforce e.g. promoting a healthy lifestyle.
- › develops **knowledge on (cost-)effective health and intervention (e.g. lifestyle) programs** to improve the health, vitality, engagement and productivity of employees, in order to bring about sustainable employability of personnel and answer research questions from policy and practice.
- › **on different levels:** individual, company, sectoral, national, but also through professionals and policy makers on different levels.



## Health promotion of employees

Combined expertise of exercise scientists, behavioral scientists, food and nutrition scientists, statisticians and epidemiologists is used in our projects focusing on a wide range of topics:

- › Sufficient physical activity
- › Reducing sedentary behaviour
- › A healthy diet
- › Mental health and relaxation
- › Behaviour Change
- › Implementation
- › E-health





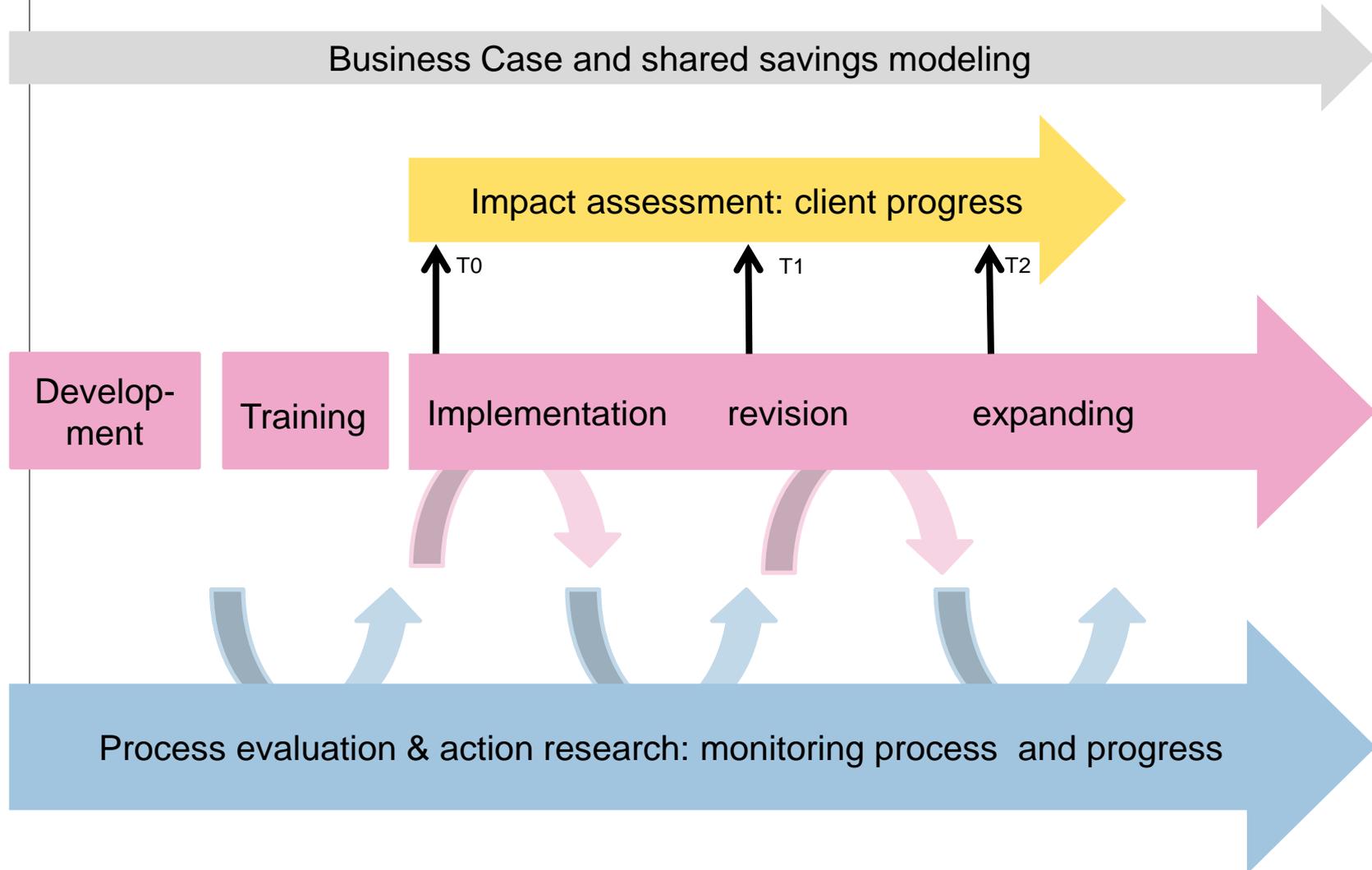
## Implementation research & support

**TNO provides** support to professionals and organizations in their change and innovation processes:

- **Implementation studies:** research of factors that help and hinder renewal, effectiveness of implementation strategies, measuring the extent to which a change or innovation is actually put into practice.
- **Support developing and applying** innovation and changes.
- **Specific training** in the change to be implemented.
- **Practicable instruments (e.g. MIDI)** that provide organizations with information on the factors that help or hinder implementation



## Open innovation design (action research)





## MIDI

- › Measurement Instrument Determinants of Innovations
  - › Questions and answer scales
  - › [www.tno.nl/midi](http://www.tno.nl/midi)
  - › English translation available
  - › Int J Qual Health Care (2014)

A practical tool that improves the understanding of critical determinants

It helps to target innovation strategies that can bring about actual use



## Overview of determinants

- › 7 associated with the innovation
  - › perceived complexity, relevance for client
- › 11 associated with the adopting person
  - › personal benefits/drawbacks, outcome expectations
- › 10 associated with the organisation
  - › formal ratification by management, materials and resources, replacement when staff leave
- › 1 associated with the socio-political context
  - › regulations and legislation



## Determinants associated with the innovation

- > Procedural clarity
- > Correctness
- > Completeness
- > Complexity
- > Compatibility
- > Observability
- > Relevance for client



## Determinants associated with the user

- > Personal benefits/drawbacks
- > Outcome expectations
- > Professional obligation
- > Client/patient satisfaction
- > Client/patient cooperation
- > Social support
- > Descriptive norm
- > Subjective norm
- > Self-efficacy
- > Knowledge
- > Awareness of content of innovation



## Determinants associated with the organisation and the socio-political context

- > Formal ratification by management
- > Replacement when staff leave
- > Staff capacity
- > Financial resources
- > Time available
- > Material resources and facilities
- > Legislation and regulations
- > Performance feedback
- > Coordinator
- > Unsettled organisation
- > Information about use of innovation



# The evaluation of a worksite intervention to promote a healthy lifestyle among employees in two different organizations

D. Wierenga, L. Engbers, P. van Empelen, W. van Mechelen





## Intervention

- › Both companies applied a general **7-step implementation strategy**, to implement lifestyle interventions that fit the needs of their organization and employees.
- › The key aspect of the strategy is an **active participation** of managers and employees from the organization as implementers.



## BRAVO KOMPAS

- › Stap 1 Creating solid support
- › Stap 2 Formation of basic structure
- › Stap 3 Needs assessment
- › Stap 4 Development phase
- › Stap 5 Implementation phase
- › Stap 6 Evaluation
- › Stap 7 Maintenance



Lifestyle aspects: physical activity, nutrition, smoking, alcohol use and vitality

Significant associated with **participation** levels:

A. Programs fit with the organisation

**B. Positive attitude towards program implementation**

OR=2.06

C. Perceived social support of colleagues and supervisor

D. Perceived social norm among colleagues and supervisor

E. Programs' fit with work demands

F. Perceived level of knowledge of lifestyle and health promotion interventions

G. Programs' fits employee needs

H. Positive program image

I. Positive attitude towards employer involvement

J. Positive attitude towards program maintenance

K. Colleagues program awareness

L. Program notification to new employees

M. Program participation is not perceived as obligatory

**Satisfaction level at T2 are positively associated with higher participation level:**

**OR=1.2**

6 factors were sign. associated with **satisfaction** levels

<b>A. Programs fit with the organisation</b>	$\beta$ : 0.27
<b>B. Positive attitude towards program implementation</b>	$\beta$ : 0.42
C. Perceived social support of colleagues and supervisor	
D. Perceived social norm among colleagues and supervisor	
E. Programs' fit with work demands	
F. Perceived level of knowledge of lifestyle and health promotion interventions	
<b>G. Programs' fits employee needs</b>	$\beta$ : 0.22
<b>H. Positive program image</b>	$\beta$ : 0.24
<b>I. Positive attitude towards employer involvement</b>	$\beta$ : 0.20
J. Positive attitude towards program maintenance	
K. Colleagues program awareness	
<b>L. Program notification to new employees</b>	$\beta$ : 0.13
M. Program participation is not perceived as obligatory	



## Conclusion

- › **Before implementation you need insight into:**
  - › Wishes & needs of users (user-driven is key)
  - › Solid support among all stakeholders
  
  - › Take your time during preparation phase!
  
- › **During implementation:**
  - › Monitor users satisfaction and participation levels and act accordingly



## Pilot study on barriers and facilitators (4 companies) – Jonas Föllmi

- › Aim: insight in barriers and facilitators of the use of interventions on sedentary work (sit-stand desks and dynamic workplaces)
- › Method: online questionnaire 4 companies (n=85)
  - semi-structured interviews with managers (n=5)
  - focus groep interviews (n=3)
- › Instruments & model:
  - MIDI (Measurement Instrument for Determinants of Interventions)
  - BRAVO-kompas
  - Precaution Adoption Process Model (PAPM; describes behavioral change)



## Interventions

- › Sit-stand desk (standing position used by 68%)
- › Oxidesk/Deskbike (22%)
- › Standing or walking-meetings (36%)
- › stand-support (11%)
- › sitting ball (4%)
- › Other: 'active' environment (accessible stairs, placing coffee corner/ printer/ wastebasket further away) (35%)



Photo: Worktrainer



## Barriers

- No instruction on use
- Knowledge is lacking (advised duration of sitting/standing and preferred posture in relation to specific worktasks)
- No motivation
- No cue to action/no reminders
- Organizing the workplace takes too much time
- Use of the intervention is not stimulated
- Not able to concentrate/easier distracted
- Availability and quality of materials



## Facilitators

- Social support from managers and colleagues!
- Positive approach
- Provide information and give feedback
- Enquire the needs of the employees
- Use equipment of high quality
- Use materials that tempts to be used
- Availability and quality of materials



## Implementation

- Employees appreciate the possibility to use the intervention, they like to be able to choose whether they use it or not
- Necessary improvements (based on BRAVO-kompas):
  - Involvement of employees
  - Mapping of opportunities and bottlenecks
  - Formulate aims and desired effects together with employees
  - Repeat instructions and clarification yearly
  - Evaluation on fixed moments
  - Continuous stimulation of the employees



10-6-2015  
Implementation strategies

# Questions?