






GOAL Lifestyle Implementation Trial For The Prevention Of Type 2 Diabetes

GOAL Program



-  Päijät-Häme Hospital District and its 15 municipalities
-  National Public Health Institute
-  UKK Institute for Health Promotion
-  University of Helsinki, Palmenia Centre for Continuing Education and Department of Social Policy
-  Lahti University of Applied Sciences

GOAL (Good Ageing in Lahti region):

- comprehensive health promotion program in the Province of Päijät-Häme
- target ageing population AND social and health care personnel
- prevention of major chronic diseases; promotion of functional capability



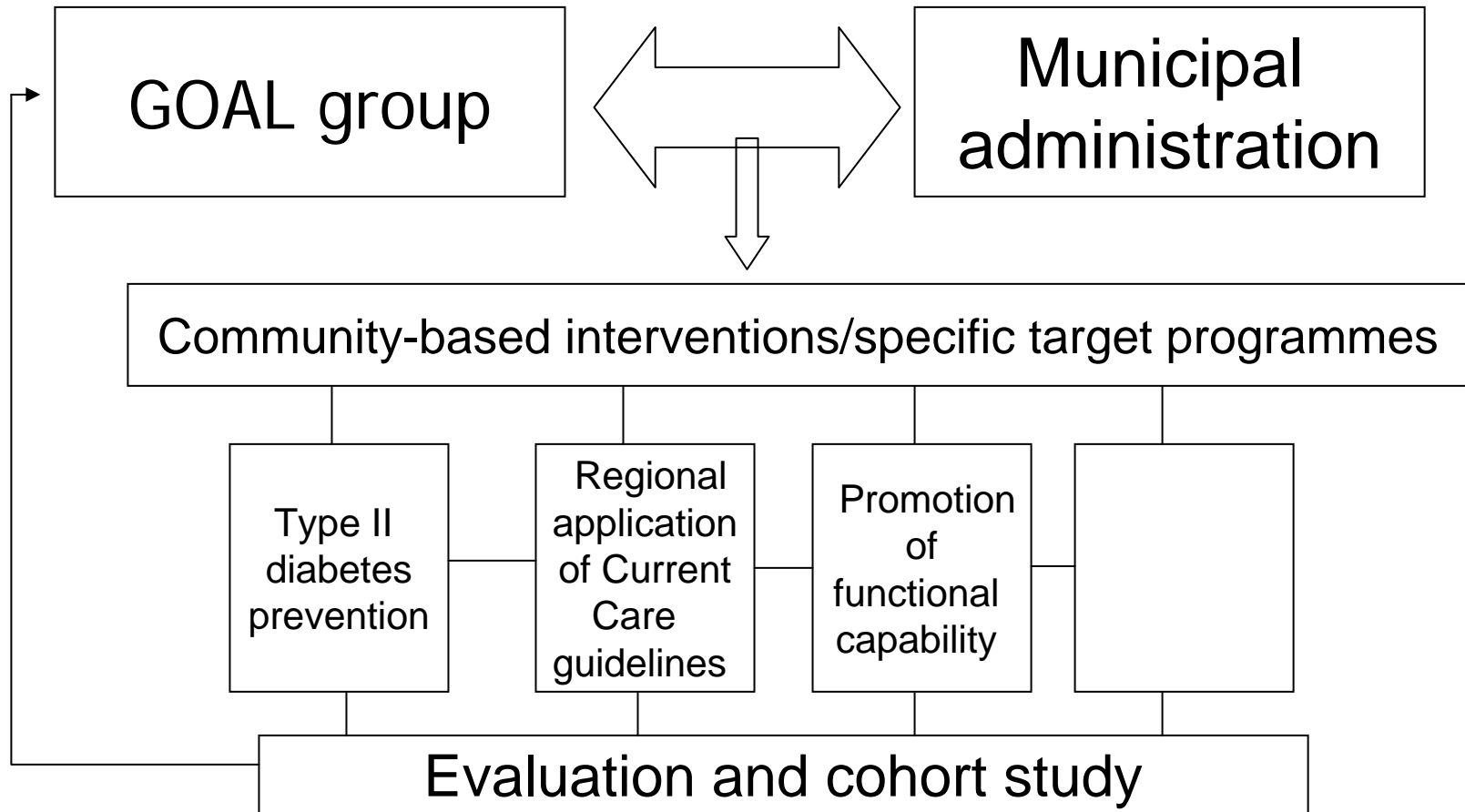
Kihyvä

PÄIJÄT-HÄME 2002 - 2012

TUTKIMUS- JA KEHITTÄMISHANKE



GOAL model



General principles behind GOAL interventions

- Use existing resources more efficiently, e.g.
 - Group instead of individual counselling
 - PHC nurses and physiotherapists as facilitators
- Create links with other potential stakeholders
 - PHC linked with municipal sports and recreation office to lower the threshold of using the existing facilities
- Shared costs if new resources are required:
 - A dietician in all groups during one session, payed jointly by the municipalities (hospital district)
- GOAL supports by bringing in expertise and research:
 - Programme development, training and evaluation

GOAL Lifestyle Implementation Trial aims

- To change HC preventive practices by introducing a life-style counselling model with
 - Evidence-based, measurable goals
 - Theory-based methods for behaviour change
 - Practical tools
 - Empowerment of patients and professionals
- To support implementation and maintenance
- To develop further by multilevel evaluation
 - Participants' behaviour & determinants of behaviour, risk factors
 - Method feasibility
 - Economical analysis

Diabetes Prevention Study* (DPS): Goals for Diet and Physical Activity

- 1 No more than 30% of energy from fat
- 2 No more than 10% of energy from saturated fats
- 3 At least 15g / 1000 kcal fiber
- 4 At least 30 min / day moderate physical activity
- 5 At least 5% weight reduction

*Tuomilehto et al. (2001). Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. New England Journal of Medicine, 344, 1343-1350.

DPS: Success in reaching the goals

1	Amount of fat:	47%	} 49/265 (18.5 %)
2	Type of fat:	26%	
3	Amount of fiber:	25%	
4	Physical activity:	86%	
5	Weight:	43%	

High-risk subjects (IGT); none of those reaching 4-5 goals got T2D during the six-year follow-up (3.2 yrs average).

*Tuomilehto et al. (2001). Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. New England Journal of Medicine, 344, 1343-1350.

Theories Behind the GOAL Lifestyle Implementation Trial

- Health Action Process Approach¹:
 - Motivation, intention, planning and action
- Self-determination theory²:
 - Intrinsic motivation, will to act
 - Autonomous regulation vs. controlled regulation
- Self-regulation theories³:
 - Goal setting, planning, self-monitoring, feedback
- Positive emotions (e.g., Broaden-and-build-theory⁴):
 - Positive emotions, cognitions and actions have health benefits

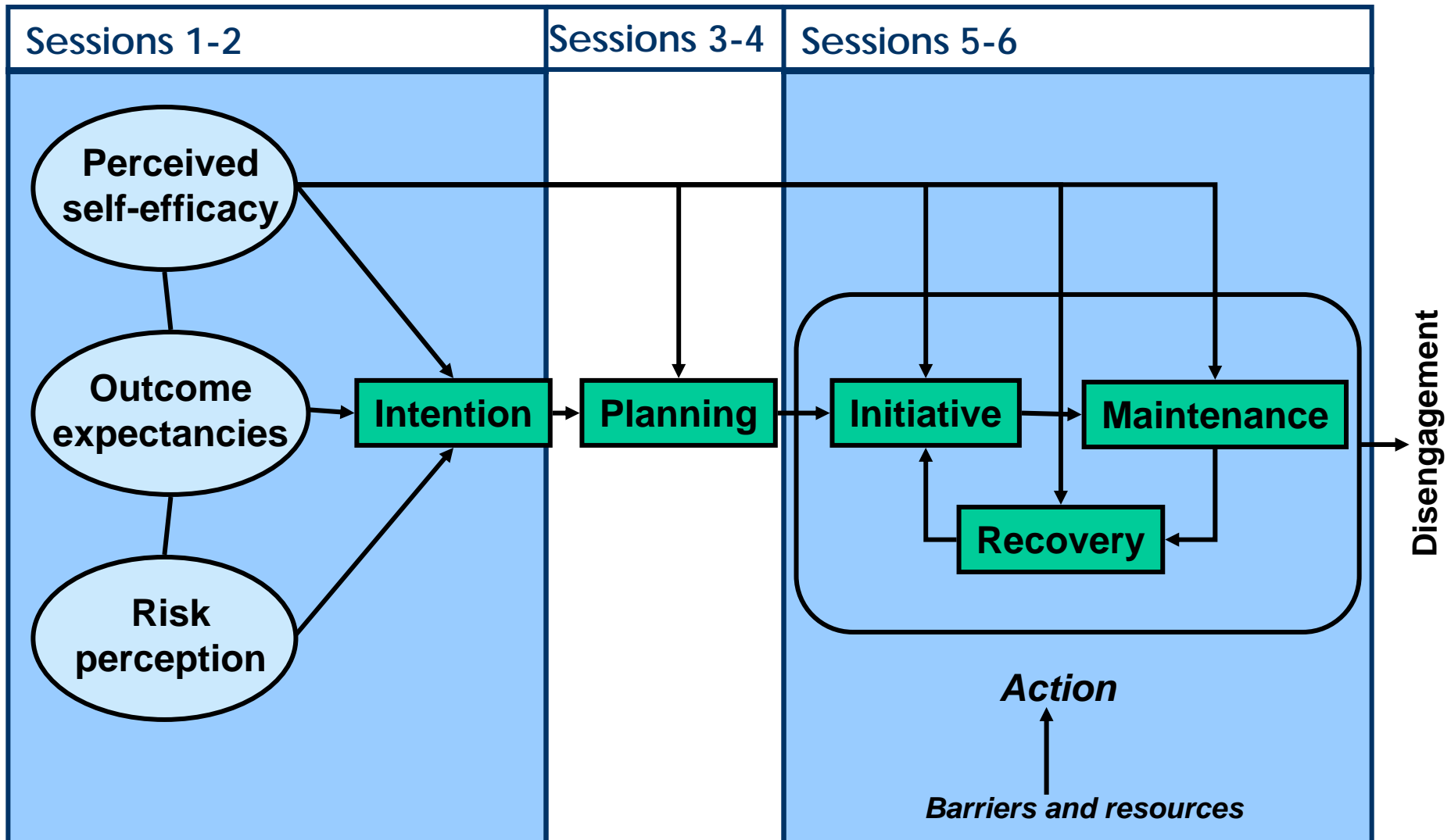
¹ Schwarzer & Fuchs. (1996). Self-efficacy and health behaviors. Teoksessa: Conner & Norman (toim.): Predicting health behaviour: Research and practice with social cognition models (ss. 163-196). Buckingham, UK: Open University Press.

² Williams, Deci & Ryan. (1998). Building health care partnerships by supporting autonomy: promoting maintained behavior change. Teoksessa: Suchman ym. (toim.): Partnerships in health care. Transforming relational process (ss. 67-88). NY: University of Rochester Press.

³ Gollwitzer. (1999). Implementation intentions: The strategic preparation of automatic goal pursuit. American Psychologist, 54, 493-503.

⁴ Fredrickson. (2001) The role of positive emotions in positive psychology. The Broaden-and-build theory of positive emotions. American Psychologist, 56, 218-226.

The Health Action Process Approach



The counselling provides tools for:




- Creating motivation by risk awareness, positive outcome expectations and self-efficacy
- Self-monitoring of behaviour
- Goal setting and planning
- Action initiation, relapse management and maintenance
- Positive thinking and social support

Components: Sessions 1 & 2

- Learning to know one another
- Rules for group work
- Discussion on current beliefs: How does life-style influence health?
- Introduction: Diabetes, risk factors, effects, prevention
- Reflective discussion and re-evaluation of beliefs
- Exercise: Dream – where do we want to be in 12 mo
- Tools to make dream come true: goals, planning, home-work
- Homework assignments: dietary self-monitoring, PA schedules, examples of difficult and easy situations
- Introduction: Prevention really works
- Evaluation of own behaviour: PA schedules, fat & fibre tests
- Discussion: own habits vs. preventive goals
- Role model stories: what contributes to success?
- Discussion: analysis & re-attribution of previous experiences
- Homework assignment: preparation for goal setting, PA and eating habit schedules
- Discussion: barriers for group work

1D. Physical Activity Schedule

Draw a line for each 10 minutes of physical activity during the week.
Also tell how you have found yourself.

	Walking, Biking, Swimming	Shoveling snow, Chopping wood, Beating rugs, Heavier garden work	Gymnastic exercises, weight lifting	Volley ball, Tennis, Other ball games	Nordic pole walking, Skiing, (Exercise) biking	Other	How do you find yourself?   		
Mon									
Tue									
Wed									
Thu									
Fri									
Sat									
Sun									
Sum									

Name: _____

Group ID: _____

2H. Eating habits

Evaluate and mark with a cross all your meals during the week. If you had snacks, tell also what they were.

	A breakfast high on fiber			Snack	Lunch following the plate model			Snack	Supper following the plate model			Snack	Nibbling in-between meals		
	Yes	Almost	No	Yes	Yes	Almost	No	Yes	Yes	Almost	No	Yes	Often	Occas.	No
Mon															
Tue															
Wed															
Thu															
Fri															
Sat															
Sun															
Sum															

Name: _____

Group ID: _____

Components: Sessions 3 & 4

- Feedback from the PA schedule
- Introduction: health effects of PA
- Goal planning:
 - WHAT: are the goals concrete, positive, attainable, developing?
 - Short-term WHERE, WHEN, HOW, EQUIPMENT
 - Feedback: difficult and easy situations
- Goal setting
- Homework assignments: feedback and re-inforcement, PA and eating habit schedules
- Possibilities for PA in local community

- Food choices: feedback from dietary self-monitoring
- Introduction: How to eat healthy
- Goal planning:
 - WHAT: are the goals concrete, positive, attainable, developing?
 - Short-term WHERE, WHEN, HOW, EQUIPMENT
 - Feedback: difficult and easy situations
- Goal setting
- Exercise: How to make favourites lighter
- Homework assignment: positive feedback in getting social support, PA and eating habit schedules

Goal setting: Eating

Name: Mr Goal

Group ID: _____

Next step... During the 1st week I intend to

Eating

WHAT:

- I eat using the plate model

WHERE:

- At the worksite cafeteria

WHEN:

- Every day at lunch

PREPARATIONS TO GUARANTEE SUCCESS:

- I remind myself before going to cafeteria

- I ask the cafeteria personnel to apportion using the plate model

- I add salad myself

- I tell my work mates

- I reward myself (not with food!)

Subsequent step... During the next month I intend to

Eating

WHAT:

- I start eating fruit

- I eat fruit and veggies on all meals

WHERE:

- At home and at work

WHEN:

- With coffee, as a snack, something on each meal

PREPARATIONS TO GUARANTEE SUCCESS:

- I write down the fruit and veggies on my shopping list

- I count how much I need to buy to get my daily ½ kilo

- I take fruit with me to work and set them so that I can see them

Here I want to reach

Eating

WHAT:

- I eat all my meals using the plate model

- I eat ½ kilo fruit & veggies every day

WHERE:

- At home, at work, also at my summer cottage!

WHEN:

- Always

Health and wellbeing

- My weight has gone down below 100 kg

- My blood pressure is better

- I'm able to do more and I'm not panting

- Heat doesn't feel unbearable

- My digestion functions without medication

I'm here now

Eating

- I've already substituted butter with margarine and vegetable oil

- I do not eat much vegetables, and mostly as cooked or fried

- I don't eat fruit

Health and wellbeing

- I'm overweight and have elevated blood pressure

- I start sweating and get out of breath and tire out easily

- I have difficulties in leaning down and tying my shoelaces

- I suffer from constipation

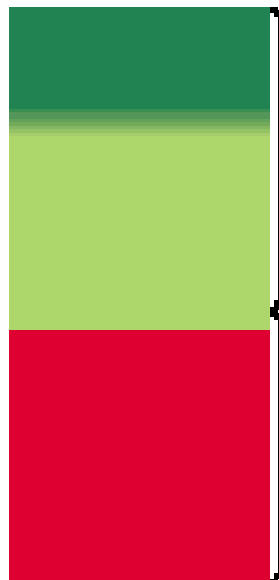
A half kilo each day: Fruit and vegetables

- Comprehensiveness of diet
- Plate model:
 - $\frac{1}{2}$ veggies, $\frac{1}{4}$ protein-rich food, $\frac{1}{4}$ carbohydrates



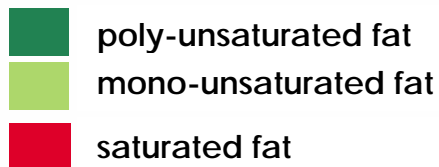
Heave into view: Favour the unsaturated, soft fat

Current dietary fat content

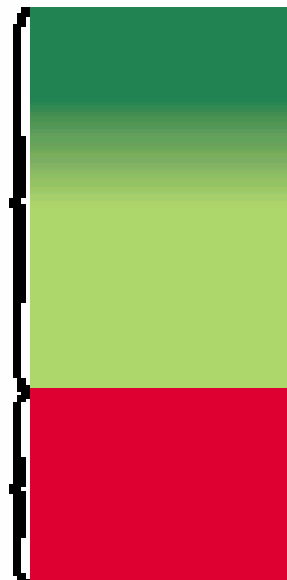


Unsaturated, soft fat

Saturated, hard fat



Recommended dietary fat content



Heave into view: Favour the unsaturated, soft fat

White bread, **cream cheese**

Rye bread, **baloney, yoghurt**

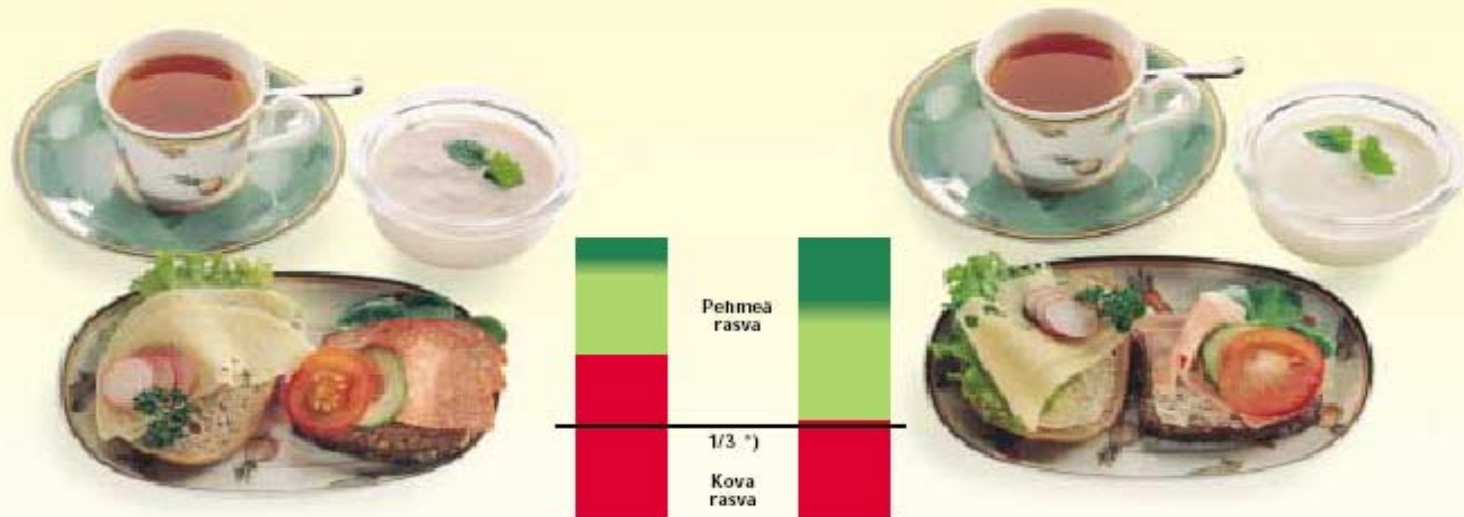
Total fat 13 g:
13 g saturated & invisible, 0 g visible

White bread, **low-fat cheese, margarine**

Rye bread, **ham (lean), margarine, low-fat yoghurt**

Total fat 9 g:
4 g saturated & invisible, 5 g visible

By choosing cheese and yoghurt products with vegetable fat you can lower the saturated fat content even more



*) Rasvan laatu on ihanteellinen, kun kovan rasvan osuus on korkeintaan 1/3 ja pehmeän rasvan osuus vähintään 2/3.

Crave for Grain

- High fiber

15 g / 1000 kcal
or
25 – 35 g / day

Nauti vapaasti viljasta



Goal setting: Physical activity

Here I want to reach

Name: Mrs Goal

Group ID: B112

Next step... During the 1st week I intend to

Physical activity

WHAT:

- I walk

WHERE:

- On my way to work I get earlier off the bus

WHEN:

- Morning and afternoon

PREPARATIONS TO GUARANTEE SUCCESS:

-I get up 15 min earlier

-I take appropriate clothing

-I take a fruit for the afternoon

-I tell my husband I'm coming home a little later

-I tell in advance to my workmate I'm getting off earlier than usual

I'm here now

Physical activity

-I do not exercise (I used to go to the gym)

-I walk to bus stop (100 meters) about four times per day, slowly

-On Saturdays I walk while shopping at the mall

-I do household work (vacuum, beat carpets) appr. 2h/week

Health and wellbeing

-Overweight and elevated blood pressure

-I feel tired often

-I suffer from headaches and pain in my neck and shoulders

Subsequent step... During the next month I intend to

Physical activity

WHAT:

-I walk part of the way to work every day

-I go for a walk once-a-week

-I'll find out about local possibilities for gymnastic exercise and join in

WHERE:

- I'll walk around lake Pikku-Vesijarvi

WHEN:

- Sunday mornings for an hour; gym on a day with none of my favourite programs on TV

PREPARATIONS TO GUARANTEE SUCCESS:

-I'll take my husband with me!

Physical activity

WHAT:

-I'm walking part of the way to work every day

-I go for a brisk one-hour walk once-a-week (appr. 5 km)

-I go to gym regularly once-a-week

WHERE:

-I have many different places where I can walk

WHEN:

- A walk on Sunday mornings, at gym on Wednesday evenings

Health and wellbeing

-Blood pressure has gone down

-I've lost weight

-I feel I have more energy

-Pains and aches do not stop me from enjoying life

Components: Sessions 5 & 6

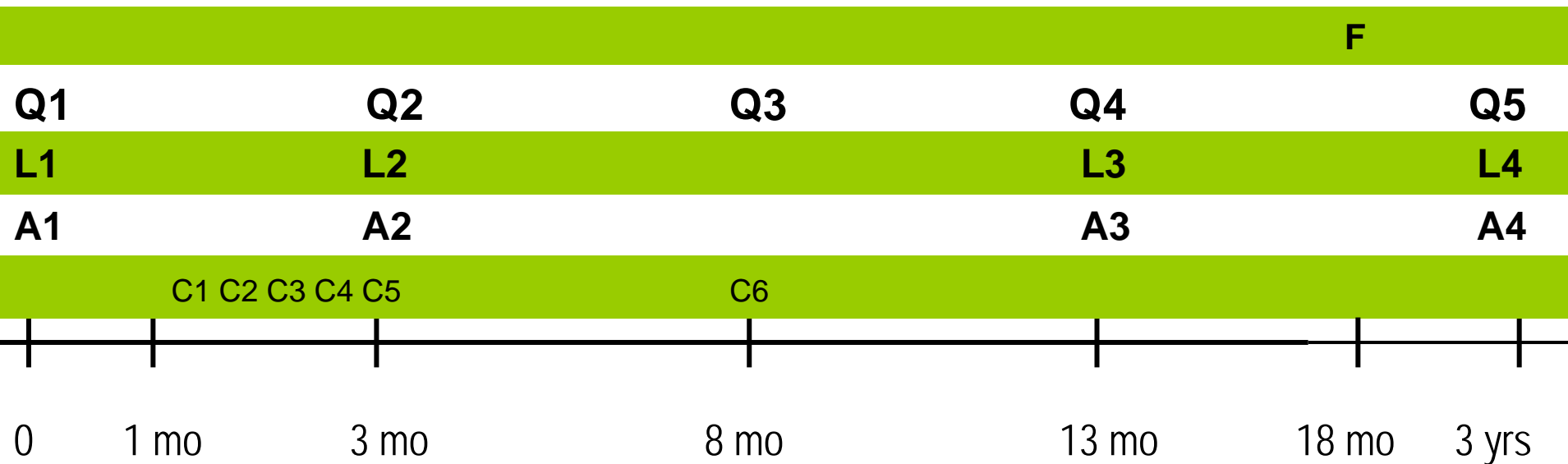
- Discussion: evaluating and refining goals
 - Discussion: routines – have they already changed? PA schedule, fat & fibre tests
 - Intermediate goals (next 6 mo)
 - Exercise: how to overcome barriers / use resources in maintaining behaviour change
 - Possibilities for peer support system
 - Homework assignments: PA and eating habit schedules
- Discussion: evaluating and refining goals
 - Discussion: routines – have they already changed? PA schedule, fat & fibre tests
 - Discussion: analysis and re-attribution of success and failure
 - Discussion: future goals
 - Discussion: Evaluation of the group work

Setting & target group

- Primary health care centres, 14 municipalities
- 36 groups, N = 389, men (N = 103, 26.3%); women (N = 286, 73.7%), N = 352 non-diabetic at baseline
- Age 50-65 years
- At least moderate risk of type II diabetes:
 - 1/6 will get diabetes in the next 10 years
 - Type 2 diabetes risk test by Lindström & Tuomilehto*. Risk score ≥ 12
- Exclusion criteria:
 - Diagnosed T2D; cancer; recent MI or stroke; or mental disorder or substance abuse interfering with group activities

* Lindström J & Tuomilehto J. The diabetes risk score: a practical tool to predict type 2 diabetes risk. *Diabetes Care*. 2003 Mar; 26(3):725-31. (www.diabetes.fi).

Study timeline



F = Focus group interview
Q1-Q5 = Questionnaires
L1-L4 = Lab tests
C1-C6 = Counselling sessions
A1-A4 = Anthropometric measurements

Selected publications

1. Uutela, A., Absetz, P., Nissinen, A., Valve, R., Talja, M., Fogelholm, M. Health psychological theory in promoting population health in Päijät-Häme, Finland: First steps towards a type 2 diabetes prevention study. *Journal of Health Psychology*, 2004, 9, 73-84.
2. Fogelholm, M., Valve, R., Absetz, P., et al. Rural-urban differences in health and health behaviour: a baseline description of a community health promotion program for the elderly. *Scandinavian Journal of Public Health*, 2006; 34(6):632-40
3. Absetz, P., Heinonen, H., Valve, R., Talja, M., et al. Changes in HAPA model constructs predict type 2 diabetes risk factor reduction in life-style counselling. *Psychology & Health*, 2005, 20 Suppl, 10.
4. Jallinoja, P., Kuronen, R., Absetz, P., Patja, K. Lääkehoidon, elintapahoidon ja ryhmäneuvonnan asema elintapasairauksien hoidossa – tutkimus lääkäreiden ja hoitajien näkemyksistä Päijät-Hämeessä [Role of pharmaceutical care, lifestyle modification and group counselling in the treatment of lifestyle related diseases – a study of the views among physicians and nurses in Päijät-Häme]. *Suomen Lääkärilehti*, 2006, 61, 37, 3747-3751.
5. Kuronen, R., Jallinoja, P., Ilvesmäki, V., Patja, K. Valtimotautiriskeihin liittyvät Käypä hoito suositukset: asenteet, tutustuminen ja käyttö Päijät-Hämeessä [Current care guidelines related to vascular diseases: attitudes, familiarity and usage in Päijät-Häme]. *Suomen Lääkärilehti*, 2006, 61, 44, 4571-4577.
6. Yoshida, S., Hankonen, N., Absetz, P. Facilitators' self-fulfillment predicts successful weight change in life-style counseling program. *International Journal of Behavioral Medicine*, 2006, 13, Suppl., 292.
7. Hankonen, N., Absetz, P., Valve, R., Fogelholm, M., Talja, M. Is life-style counseling based on a social cognitive model more applicable among men than women? *International Journal of Behavioral Medicine*, 2006, 13, Suppl., 88.
8. Kilkkinen, A., Heistaro, S., Laatikainen, T., Janus, E., Chapman, A., Absetz, P., Dunbar, J. Prevention of type 2 diabetes in a primary health care setting. Interim results from the Greater Green Triangle (GGT) Diabetes Prevention Project. *Diabetes Research and Clinical Practice*, 2006, doi: 10.1016/j.diabres.2006.09.027
9. Absetz, P., Valve, R., Oldenburg, B., Heinonen, H., Nissinen, A., Fogelholm, M., Ilvesmäki, V., Talja, M., Uutela, A. Type 2 diabetes prevention in the “real world”: One-year results of the GOAL implementation trial. *Diabetes Care*. In press.