DO IT YOURSELF @ TNO

TNO acting as a field lab for health measurements

innovation for life

Wilrike Pasman, PhD



Genes Nutr (2013) 8:507–521 DOI 10.1007/s12263-013-0343-9

RESEARCH PAPER

Nutrigenomics approach elucidates health-promoting effects of high vegetable intake in lean and obese men

W. J. Pasman · M. J. van Erk · W. A. A. Klöpping ·

L. Pellis · S. Wopereis · S. Bijlsma · H. F. J. Hendriks · A. F. M. Kardinaal









INCREASE IN DO-IT-YOURSELF METHODS FOR MONITORING OWN HEALTH

- Devices
- > Apps
- > Tests
- > Questionnaires

DIY Blood test





Internet



Blood pressure

Body weight







(SELF) MONITORING OF HEALTH



FROM CLASSIC RCT TO DIY@...HOME / FIELD



JMIR RESEARCH PROTOCOLS

Pasman et al

Original Paper

Effect of Caffeine on Attention and Alertness Measured in a Home-Setting, Using Web-Based Cognition Tests

Wilrike J Pasman¹, PhD; Ruud Boessen², PhD; Yoni Donner³, PhD; Nard Clabbers¹, MSc; André Boorsma¹, PhD







RECRUITMENT VIA SOCIAL MEDIA





TOOLS & TIME LINES

Recruitment: social media; within two weeks 100 potential subjects (October 2013)

Screening: email of PIF and signed IC, screening with questionnaire, 70 potential subjects, two weeks (October 2013)

Start study: internet, portal TNO and QuantifiedMind, conduct (4-5 test days) – completed in one month by 53 subjects (November 2013)

Data analysis: portal, databases

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Recruitment	Log in (twice)
Strict protocol for test day	Too difficult (drop out rate high)
Coffee preparation (simple product)	Selective population (white, educated females, middle- aged, computer skills)
Easy to implement in daily	Variation in conduct



LESSONS LEARNED

Helpdesk 24/7; data portal

Simple product

Clear protocol

More variation and drop-out ->

• More subjects needed!

Visual instruction (YouTube films)





OVERALL CONCLUSION

The DIY coffee trial shows that the DIY@Home design is useful to answer a simple, straightforward research question and is an interesting, cheaper and faster alternative for RCT for food companies.





OPTIMUM: PREGNANT MOMS MEASURE



De eerste 1000 dagen

De periode tussen de conceptie en de tweede verjaardag van het kind – de eerste duizend dagen – is de kritische periode om de gezondheid van het kind te beïnvloeden... Lees meer →

Zelfmeten

oPTiMuM

Lees meer ->

Zelfmeettechnologie waarmee je bijvoorbeeld je bloeddruk, bloedsuiker spiegel, gewicht, beweging, slaap en emoties kunt meten, kan zwangere vrouwen meer inzicht geven in de ontwikkeling van hun gezondheid gedurende de zwangerschap... De oPTIMuM studie heeft als doel de haalbaarheid van gezondheid monitoren van zwangere vrouwen door middel van zelfmetingen te onderzoeken...

Lees meer ->

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METHODS

Questionnaires

RAND-36

Vita-16

DASS-21

Lifestyle







Food intake





Body weight







Frequency	Measure	Time	
		(in minutes)	TNO innovation for life
	Activity (Activ8)	2	
	Blood pressure (Medisana)	5	
Once every two weeks	Body weight (smart scale)	1	
	Blood glucose (Medisana)	5	
	Questionnaires	10	Interacting to
	Cognition	15	meresting to
	Food intake (MijnEetmeter)	18	normor during
Open overv eight weeks	Cholesterol (Mission 3-in-1)	10	pregnancy
Once every eight weeks	OGTT (with glucose meter)	140	
	Faecal sample	10	
	Salivary sample	10	
	Dried blood spots	5	
Once (start of study)	GPS application (installation)	5	
Once (and of study)	User experience questionnaire	10	
Once (end of study)	Cortisol (hair sample)	5	
Average total time-investment	t <u>per week</u> :	34	

VOORSTEL METINGEN PROTOCOL VERSIE 1

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NAV EERSTE ERVARINGEN AMENDEMENT!

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	TNO innovation for life
Team supportive	Recruitment via hospital (selective group of subjects)
Instruction manual and also at home instructed by study nurse	Too difficult & too much (drop out rate high)
Control of subject input possible (collect data via	Shifts of team member and task responsibilities unclear



LESSONS LEARNED

Again: Helpdesk 24/7; contact!

Simplify protocol, gadgets and number of tests

More communication (inform them)

Recruitment via obstetrician (numbers, healthy)

Visual instruction (YouTube films)





OVERALL CONCLUSION



The OpTiMuM trial shows that a DIY@Home design is not possible when too much activities are asked and apps/tools are not suficiently tested. A good communication flow is needed for subjects and team members.





OVERALL CONCLUSION DIY@HOME

There is a need and a good opportunity to perform DIY studies at home. Design and applicability need attention. More studies, time and evaluation is needed for fine tuning, but there is certainly room for these type of studies!









STATEMENT

HEALTH CAFÉ – A LIVING LAB FOR MEASURING AND CHANGING HEALTH





<image>

Sharing

innovation for life





Testing

Vision: Empowering people to take control of their own health!



STATEMENT FOR DISCUSSION

- > Monitoring health via tools will empower subjects and improve their health behaviour!
- Het in kaart brengen van de gezondheidsstatus van deelnemers mbv apparatuur/gadgets thuis geeft mensen meer eigen daadkracht/bevoegdheid/mogelijkheid hun gedrag positief aan te passen voor een betere gezondheid.



STATEMENT FOR DISCUSSION

- > DIY studies at home are an alternative for RCT.
- > DIY onderzoek thuis is een alternatieve opzet voor gerandomiseerd, gecontroleerd onderzoek.