

Project information

Project title

Mixtures and metabolic syndrome

Year

2012/2013

Project leader

Torkjel Sandanger, UiT/NILU

Participants

- Department of Community Medicine, University of Tromsø, Charlotta Rylander (postdoc), Eiliv Lund (professor)
- NILU, Torkjel M Sandanger
- Université Laval Axe de recherche en santé des populations et environnementale Centre de recherche du CHUQ Direction de la Toxicologie Humaine-INSPQ , Pierre Ayotte, Pierre Dumas

Flagship

Hazardous substances, Theme: Human health and society

Funding Source

Fram Centre, NRC, ME

Summary of Results

of the questionnaire data on diabetes type 2 is in the pipeline.

Unfortunately we do not have any results on concentrations of the mixture or gene expression yet and cannot summarise any of this.

This project is delayed as we have been waiting for confirmation from doctors regarding the status of the self-reported diabetes type 2 cases. The selection of matched controls and the final sample picking and quality check of sample integrity.

That means that the analyses have only recently been initiated for 113 selected cases and 113 controls matched on age and sampling time. Both PFAs analysis and microarray analysis are now underway. The POP analysis will unfortunately not be started before spring 2013.

The data analysis has revealed that the predictive value of the questionnaire alone is only 83,4%. In addition we do however have medical records of the participants that can be used for further verification of the actual disease. A first paper on the validation of the questionnaire data on diabetes type 2 is in the pipeline.

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Published Results/Planned Publications

Planned publication:

- Validation of questionnaire data on type 2 diabetes in the Norwegian women and cancer study.
- Fish intake and diabetes type 2 in the Norwegian women and cancer study.
- FPAS and POPS in diabetes cases and control
- Mixtures and gene expression in diabetes cases and controls.

Communicated Results

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Interdisciplinary Cooperation

The project has greatly benefited from inter disciplinary cooperation. Epidemiology, analytical chemistry, environmental epidemiology, bio informatics, statistics.

Budget in accordance to results

The Fram centre funding has contributed towards analyzing complex mixtures rather than single compounds. This gives the project

much more scientific integrity and novelty. There is currently too little information available about the composition of the human cocktail.

Could results from the project be subject for any commercial utilization

No

Conclusions

a) This project will generate an immense amount of data over the next two years that can be of use for other students and clearly strengthen inter disciplinary research. The connection with the transcriptome is unique and this has recently been written into a large EU proposal. A contact with the Flemish Environment and Health Survey (FLEHS) was also recently established, and data and samples will be exchanged in order to compare findings. This will greatly strengthen the findings of each group.

b) The project has revealed a need for more sophisticated techniques to measure biomarkers of exposure. Where on complicated direction could be the inclusion of the metabonomic profiles.