PERSONAL INFORMATION Reinskje Talhout, PhD

RIVM, Bilthoven, The Netherlands (http://www.rivm.nl)

Sex F | Nationality NL

CURRENT POSITION Senior expert in tobacco research, team leader of the tobacco group and spokesperson to the media on tobacco products at the Center for Health Protection (GZB) of the National Institute for Public Health and the Environment (RIVM).

http://www.rivm.nl/en/About_RIVM/Knowledge_and_expertise/Experts_and_expertise/Profiles/T/Dr_R_Reinskje_Talhout

WORK EXPERIENCE

2004-present

Senior researcher/assessor, team leader tobacco group, head of WHO Collaborating Centre for Tobacco Product Regulation and Control

RIVM, Bilthoven, The Netherlands (http://www.rivm.nl)

Research comprises tobacco and related products and their toxic, addictive and attractive properties. Examples:

- Tobacco regulation policy advice (National – EU - WHO).
- Research and routine measurements on tobacco, tobacco products and smoking components that affect the toxic, addictive and attractive properties of the product. Examples include:
  - Flavour measurement
  - Method development for tobacco contents and emissions proposed by WHO TobReg for mandated lowering
  - Smoking/vaping of cigarettes, roll-your-own, e-cigarettes, heat-not-burn products, and waterpipe tobacco.
  - Pyrolysis experiments of additives such as sugars in tobacco to mimic cigarette smoking.
  - Reduced ignition propensity cigarette testing
  - Environmental tobacco smoke in hospitality industry.
- Risk assessment
  - Exposure to tobacco smoke (PhD project)
  - Early detection of new products such as iQos
  - MOE analysis of tobacco ingredients and smoke components, also in the context of harm reduction
  - Testing strategies
  - Human volunteer experiments
  - Smoking behaviour and brand choice of adolescents
  - Analysis of ingredient lists sent by manufacturers.
- Risk communication:
  - Alternative health promotion strategies (RIVM strategic PhD project RICALTS), such as the e-cigarette
  - Dissemination of tobacco health effects to the general public, using the PITOC fact sheets and a searchable database with ingredient lists per brand and type (http://www.tabakinfo.nl)
  - Consumer attitude after public dissemination of tobacco additive information through the website

Contributor to various collaborative European projects

- As consortium leader (HETOC consortium) in the EAHC/2013/Health/23 multiple framework contract to support tobacco policies. Composition of tobacco and related products and its impact on human health. Assessing characterising flavours in tobacco products
- As project leader of the Expert Toxicological Assessment of Smoke Components (ETASC). Development of an up-to-date list of hazardous tobacco smoke components together with inhalation risk values covering all major tobacco-related diseases, with a panel of tobacco scientists
- As project leader of the project Public Information Tobacco Control (PITOC). Development and dissemination of fact sheets informing the public and professionals on the harmful effects of a selection of 14 tobacco additives was achieved, that were successfully distributed among the websites of 16 collaborating European countries.
- As project member of Electronic Model Tobacco Control (EMTOC). Development of a web application which enables safe submission of the lists of tobacco ingredients to the concerned authorities.

Business or sector The RIVM is a governmental organisation and, as such, performs independent and objective tobacco research and provides scientific support to the Ministry of Health on tobacco product regulation in the Netherlands.

2011-present

Head of WHO Collaborating Centre for Tobacco Product Regulation and Control

RIVM, Bilthoven, The Netherlands (http://www.rivm.nl.whocctobacco)

- To support WHO Tobacco Free Initiative (TFI) Tobacco Laboratory Network (TobLabNet) with the validation of laboratory methods related to the WHO Framework Convention on Tobacco Control (WHO FCTC), in particular to provide the training to labs such that a minimum of eight (8) labs participants is achieved for each of the validations tasked by the WHO FCTC Conference of Parties to TFI;
- To provide training and support in tobacco products testing, in particular to TobLabNet laboratories in countries with limited resources and capacity;
- To support the working plan of TobLabNet;
- To support testing of novel tobacco products and tobacco related products such as Electronic Nicotine Delivery Systems on the international market, and provide policy guidance to WHO related to the test results;
- To support TFI in the context of Article 10 of the WHO FCTC with respect to the development of a global database for disclosure of information to the government and to the general public.

2011-2016

Coördinator Centre for assessment and monitoring of new drugs (CAM)

RIVM, Bilthoven, The Netherlands (http://www.rivm.nl)

- Coördinating meetings with a network of experts in the field of new drugs
- Coördinating assessment and monitoring of new drugs

EDUCATION AND TRAINING

2008-2010

Postgraduate education in toxicology

University of Utrecht and Wageningen

- Including risk assessment and risk communication

1998-2003

PhD - Thesis title: 'Understanding enzymic binding affinity: thermodynamics of binding of benzamidinium chloride inhibitors to trypsin'

Rijksuniversiteit Groningen, The Netherlands

- Research in the process of obtaining a PhD in natural sciences (chemistry). Project management, educating and training students.

1990-1998

Msc Chemistry

Stratingh award

Rijksuniversiteit Groningen, The Netherlands

- Specialisation physical organic chemistry

1994-1998

Msc Philosophy

Rijksuniversiteit Groningen, The Netherlands

- Specialisation philosophy of science, logic and epistemology

ADDITIONAL INFORMATION

Memberships

TobLabNet (WHO Tobacco Laboratory Network)
Participant of Working Group Tobacco of Brazilian Health Regulatory Agency (ANVISA)
External expert SCENIHR/SCHEER Group on Additives used in tobacco products

Recent Invited Presentations

May 2016: Sixth Meeting of the WHO Tobacco Laboratory Network (TobLabNet), Maastricht, The Netherlands. Presentation on cigarette design characteristics
December 2015: Eight Meeting of the WHO Study Group on Tobacco Product Regulation (TobReg), Rio de Janeiro, Brazil. Presentation on cigarette design characteristics
June 2015: WHO-PAHO Seminar on Tobacco Product Regulation, Washington DC, US. Presentation on tobacco product design and attractiveness

Publications

Van Nierop LE, Talhout R (2016) Sugar as Tobacco Additive Tastes 'Bitter'. J Addict Res Ther 7:293. doi:10.4172/2155-6105.1000293

Y.C.M. Staal | R. Talhout. Alternative tobacco products: harm reduction? Tobacco- and related products that may be less harmful than cigarettes. RIVM report 2016-0103. 2016.

HETOC Consortium, 2016. Mapping of best practices and development of testing methods and procedures for identification of characterising flavours in tobacco products.
http://eceuropaeu/health/tobacco/docs/hetoc_frep_enpdf. Accessed on 2016-11-11

SCHEER (Scientific Committee on Health, Environmental and Emerging Risks),
Preliminary Opinion on Additives used in tobacco products (Tobacco additives II), 6 July 2016.
http://ec.europa.eu/health/scientific_committees/consultations/public_consultations/scheer_consultation_01_en.htm

Visser W, Geraets L, Bos P, Ramlal R, Fokkens P, Klerx W, Cremers H, Schwillens P, Talhout R. The health risks of e-cigarettes to bystanders (Dutch, with English Summary and Annexes). RIVM Report 2016-0036, 2016.
http://www.rivm.nl/dsresource?objectid=rivmp:319228&type=org&disposition=inline

Van de Nobelen S, Kienhuis AS, Talhout R. An Inventory of Methods for the Assessment of Additive Increased Addictiveness of Tobacco Products. Nicotine Tob Res. 2016 Jan 26. pii: ntw002. [Epub ahead of print] Review. PubMed PMID: 26817491; PubMed Central PMCID: PMC4902882.

Kienhuis AS, Staal YC, Soeteman-Hernández LG, van de Nobelen S, Talhout R. A test strategy for the assessment of additive attributed toxicity of tobacco products. Food Chem Toxicol. 2016 Aug;94:93-102. doi: 10.1016/j.fct.2016.05.002. Epub 2016 May 4. Review. PubMed PMID: 27155068.

Talhout R, van de Nobelen S, Kienhuis AS. An inventory of methods suitable to assess additive-induced characterising flavours of tobacco products. Drug Alcohol Depend. 2016 Apr 1;161:9-14. doi: 10.1016/j.drugalcdep.2015.12.019. Epub 2015 Dec 30. Review. PubMed PMID: 26774948.

Bos PM, Kienhuis AS, Talhout R. Author's response to: "Harmful effects from one puff of shisha-pen vapor: methodological and interpretational problems in the risk assessment analysis". Tob Induc Dis. 2016 Jul 7;14:21. doi: 10.1186/s12971-016-0087-6. eCollection 2016. PubMed PMID: 27390574; PubMed Central PMCID: PMC4936250.

Report to COP7 on specific cigarette characteristics and design features. Talhout R.; Richter P,; Stepanov I.; Watson C.; Watson C. 2015.

Report to COP7 on the applicability and adaptability of the TobLabNet SOPs for cigarettes to waterpipe tobacco. Brinkman M.; Klerx W.; Shihadeh A.; Talhout R.; Zaatari G. 2015.

Considerations and recommendations in the application of World Health Organization Tobacco Laboratory Network standard operating procedures to electronic nicotine delivery systems (ends). Patricia Richter, Rima Baalbaki, Rachel El Hage, Bryan Hearn, Ahmad El Hellani, Hongwei Hou, Qingyan Hu, Walther Klerx, Naoki Kunugita, Joseph Lisko, Jose Perez, Najat A Saliba, Shigehisa Uchiyama, Wouter Visser, Clifford Watson, Liqin Zhang.
Additieven in Nederlandse tabaksproducten : Trendanalyse gegevens 2010-2014. RIVM Briefrapport 2015-0201. J. Pennings et al.

SCENIHR (Scientific Committee on Emerging and Newly Identified Health Risks), Additives used in tobacco products, 25 January 2016.
http://ec.europa.eu/health/scientific_committees/emerging/docs/scenihr_o_051.pdfAnne S. Kienhuis, Walther N. Klerx, Reinskje Talhout. Regulation of emissions of tobacco products other than cigarettes. Tobacco Regulatory Science 2015; 1(2):142-53.

A.S. Kienhuis, L.G. Soeteman-Hernandez, P.M.J. Bos, J.W.J.M. Cremers, W.N. Klerx, R. Talhout. Potential harmful health effects of inhaling nicotine-free shisha-pen vapor. Tobacco Induced Diseases, series 'Electronic cigarettes: towards evidence-based regulation', 2015; 13(1):15.

Additieven in Nederlandse tabaksproducten : Trendanalyse gegevens 2010-2013. Schenk E, van de Nobelen S, Pennings JLA, Kienhuis AS, Talhout R. RIVM Rapport 2014-0084. 41 pagina's | Nederlands | 2014.

Speciation of metals and metalloids in tobacco and tobacco smoke : Implications for health and regulation.Campbell RCJ, Klerx WNM, Talhout R, Stephens WE. RIVM Rapport 2015-0026.
139 pagina's | Engels | 2015

W. Visser, L. Geraets. W. Klerx, L. Hernandez, E. Croes, P. Schwillens, H. Cremers, P. Bos, R. Talhout. De gezondheidsrisico's van e-sigaret gebruik (Dutch, with English Summary). RIVM Rapport 20 14-0143, 2015.

A.S. Kienhuis, L.G. Soeteman-Hernandez, P.M.J. Bos, J.W.J.M. Cremers, W.N. Klerx, R. Talhout. Potential harmful health effects of inhaling nicotine-free shisha-pen vapor. Tobacco Induced Diseases, 2015, series 'Electronic cigarettes: towards evidence-based regulation'.

Publications

Jansen E, Cremers J, Borst S, Talhout R (2014) Simple Determination of Sugars in Cigarettes. J Anal Bioanal Tech 5:219 doi: 10.4172/2155-9872.1000219

Jansen E, Beekhof P, Cremers J, Talhout R (2013) Simple and Fast Determination of Ammonia in Tobacco. J Anal Bioanal Tech 5: 178. doi: 10.4172/2155-9872.1000178

Stepanov I, Soeteman-Hernández LG, Talhout R. Background Paper for 7th Meeting of WHO TobReg 2013: Research and monitoring the evolution of new tobacco products, including products with potentially “modified risks.

Soeteman-Hernandez, L.G., Bos, P.M., and Talhout, R. (2013) Tobacco-smoke related health effects induced by 1,3-butadiene and strategies for risk reduction. Toxicol Sci. 2013 Dec;136 (2):566-80. doi: 10.1093/toxsci/kft194. Epub 2013 Sep 6.

Kienhuis AS, Schenk E, Talhout R., Informing the public on tobacco product additives; the right to know (Dutch, with English summary). RIVM rapport 050057001, 1-24, 2013.

Talhout, R.; Schenk, E., Additives in Dutch tobacco products (Dutch, with English summary). RIVM rapport 340610005, 1-41, 2012.

Talhout, R.; Opperhuizen, A., Reporting and regulation of tobacco ingredients : a comparison of the Netherlands with other countries (Dutch, with English summary) . RIVM rapport 340610004, 1-32, 2012.

Bos PJM, Hernandez LG, Mennes WC, Kienhuis AS, Talhout R, Risk assessment of tobacco additives and smoke components : a method proposal, RIVM Report 340031001, 1-47, 2012.

Kienhuis AS, Hernandez LG, Talhout R, Tobacco additives: information for professionals, RIVM brochure, 1-68, 2012.

Talhout, R.; Opperhuizen, A., Review Directive *2001/37/EG* (Dutch, with English summary). RIVM rapport 340610003, 1-68, 2012.

Talhout, R.; Schulz, T.; Florek ,E.; van Benthem, J.; Wester, P.; Opperhuizen, A., Hazardous Compounds in Tobacco Smoke, Int. J. Environ. Res. Public Health. 2011, 8, 613-628.

Talhout, R.; Sleijffers, A.; Van Amsterdam, J.G.C.; Opperhuizen, A., Wat rookt de Nederlandse jeugd en waarom? RIVM rapport 340600004, 1-58, 2009.

Talhout, R.; Sleijffers, A.; Opperhuizen, A., Handhaving van een rookvrij binnenmilieu, RIVM briefrapport 340600002, 2009.

Talhout, R.; Opperhuizen, A.; Het effect van rookverboden op de incidentie van hart- en vaatziekten, RIVM briefrapport 340600003, 2009.

Talhout, R.; Opperhuizen, A.; van Amsterdam, J.G.C., Role of acetaldehyde in tobacco smoke addiction, Eur. Neuropsychopharmacol. 2007, 17, 627-636.

Talhout, R.; Opperhuizen, A.; van Amsterdam, J.G.C., Sugars as Tobacco Ingredient: Effects on Mainstream Smoke Composition, Food Chem. Toxicol. 2006, 44, 1789-1798.

Van Amsterdam, J.G.C.; Talhout, R.; Opperhuizen, A., Contribution of monoamine oxidase (MAO) inhibition to tobacco and alcohol addiction, Life Sci. 2006, 79, 1969-73.

Talhout, R.; Stafforst, T.; Engberts , J. B. F. N., Aggregation Behaviour of *p-n*-Alkylbenzamidinium Chloride Surfactants, *J. Colloid Int. Sci.* **2004**, *276,* 212-220.

Talhout, R.; Engberts , J. B. F. N., Probing the Influence of the Amidinium Group and the Phenyl Ring on the Thermodynamics of Binding of Benzamidinium Chloride to Trypsin, *Org. Biomol. Chem.* **2004**, *2,* 3071-3074.

Talhout, R., Understanding Enzymic Binding Affinity. Thermodynamics of Binding of Benzamidinium Chloride Inhibitors to Trypsin*, Ph.D. Thesis*; University of Groningen: Groningen, **2003**.
http://www.ub.rug.nl/eldoc/dis/science/r.talhout

Talhout, R.; Villa, A.; Mark, A. E.; Engberts , J. B. F. N., Understanding Binding Affinity: A Combined Isothermal Titration Calorimetry/Molecular Dynamics Study of the Binding of a Series of Hydrophobically Modified Benzamidinium Chloride Inhibitors to Trypsin, *J. Am. Chem. Soc.* **2003**, *125*, 10570-10579.

Talhout, R.; Engberts, J. B. F. N., Thermodynamic Analysis of Binding of *p*-Substituted Benzamidines to Trypsin, *Eur. J. Biochem.* **2001**, *268*, 1554-1560.

Talhout, R.; Engberts, J. B. F. N., Self-Assembly in Mixtures of Sodium Alkyl Sulfates and Alkyltrimethylammonium Bromides: Aggregation Behavior and Catalytic Properties, *Langmuir* **1997**, *13*, 5001-5006.