



Arlene Leonie Oei, PhD

Arlene Leonie Oei is a group leader at the Laboratory for Experimental Oncology and Radiobiology (LEXOR)/ department of Radiation Oncology at the Amsterdam University Medical Centers (Amsterdam UMC). She received her bachelor's degree in Biomedical Sciences at the Free University of Brussels, her master's degree in Biomedical Sciences at the Radboud University Nijmegen. In 2017 Arlene obtained her PhD at the University of Amsterdam at the Faculty of Medicine with a thesis entitled: 'Tumors can't stand the heat. Boosting the effectiveness of hyperthermia in cervical carcinoma.' Within her PhD training, Arlene investigated (I) Mechanisms of response to hyperthermia, (II) Schedule and time interval of hyperthermia and radiotherapy, and (III) Novel multimodality combinations with hyperthermia. The online version of her thesis is available at [link]. After successfully defending her PhD thesis, Arlene moved to Baltimore for 1.5 years and worked at the Johns Hopkins University at the department of Radiation Oncology, focussing on the effect of magnetic nanoparticle hyperthermia on checkpoint inhibitors (PD1-i and CTLA4-i) and radiotherapy in a metastatic breast cancer mouse model.

Her research group currently focusses on radiobiology, hyperthermia and ways to improve current anti-cancer regimes. This involves better understanding of biological responses after various treatments in 2D and 3D *in vitro* cultures, and *in vivo* treatments. Four PhD students and two technicians are focussing on the following projects: (1) The effects of multimodality treatments radiotherapy, hyperthermia, cisplatin and PARP1-inhibitors on DNA damage responses in cervical carcinoma. (2) The exploration of potential immune modifiers in cervical carcinoma. (3) The understanding of early and late radiation toxicity in prostate cancer patients. (4) The improvement of hyperthermic intraperitoneal chemotherapy (HIPEC) in metastasized colorectal cancer models.

Keywords:

Hyperthermia, Radiotherapy, Immunotherapy

Top five publications:

- Oei Arlene L., van Leeuwen Caspar M., ten Cate Rosemarie, Rodermond Hans M., Buist Marrije R., Stalpers Lukas J. A., Crezee Johannes, Kok H. Petra, Medema Jan Paul, Franken Nicolaas A. P. Hyperthermia Selectively Targets Human Papillomavirus in Cervical Tumors via p53-Dependent Apoptosis. *Cancer research* 2015;75 (23):5120-5129 [[PubMed](#)]

- Oei Arlene L., Korangath Preethi, Mulka Kathleen, Helenius Mikko, Coulter Jonathan B., Stewart Jacqueline, Velarde Esteban, Crezee Johannes, Simons Brian, Stalpers Lukas J. A., Kok H. Petra, Gabrielson Kathleen, Franken Nicolaas A. P., Ivkov Robert. Enhancing the abscopal effect of radiation and immune checkpoint inhibitor therapies with magnetic nanoparticle hyperthermia in a model of metastatic breast cancer. *International journal of hyperthermia* 2019;36:47-63 [[PubMed](#)]
- Oei Arlene L., Vriend Lianne E. M., Crezee Johannes, Franken Nicolaas A. P., Krawczyk Przemek M. Effects of hyperthermia on DNA repair pathways: one treatment to inhibit them all. *Radiation oncology (London, England)* 2015;10:165 [[PubMed](#)]
- Oei Arlene L., van Leeuwen Caspar M., Ahire Vidhula R., Rodermond Hans M., ten Cate Rosemarie, Westermann Anneke M., Stalpers Lukas J. A., Crezee Johannes, Kok H. Petra, Krawczyk Przemek M., Kanaar Roland, Franken Nicolaas A. P. Enhancing synthetic lethality of PARP-inhibitor and cisplatin in BRCA-proficient tumour cells with hyperthermia. *Oncotarget* 2017;8 (17):28116-28124 [[PubMed](#)]
- Oei A. L., Kok H. P., Oei S. B., Horsman M. R., Stalpers L. J. A., Franken N. A. P., Crezee J. Molecular and biological rationale of hyperthermia as radio- and chemosensitizer. *Advanced drug delivery reviews* 2020 [[PubMed](#)]

More information can be found at:

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Pubmed: <https://pubmed.ncbi.nlm.nih.gov/?term=Oei+AL+hyperthermia>

Amsterdam UMC: <https://www.amc.nl/web/research-75/person-1/phd-a.l.-oei.htm>

Research gate: https://www.researchgate.net/profile/Arlene_Oei

PhD-thesis: https://pure.uva.nl/ws/files/9141418/Oei_Thesis_complete_.pdf