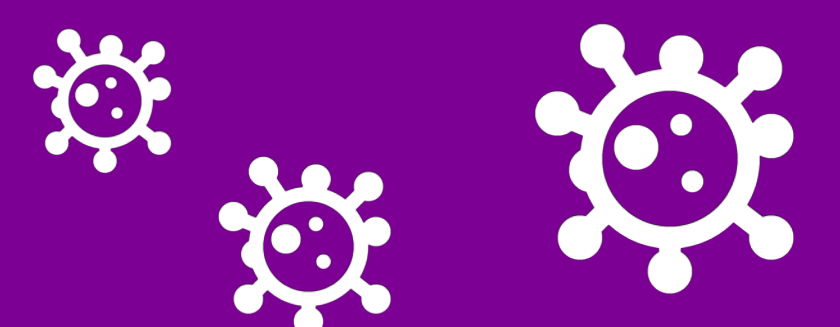


Viruses and Cancer

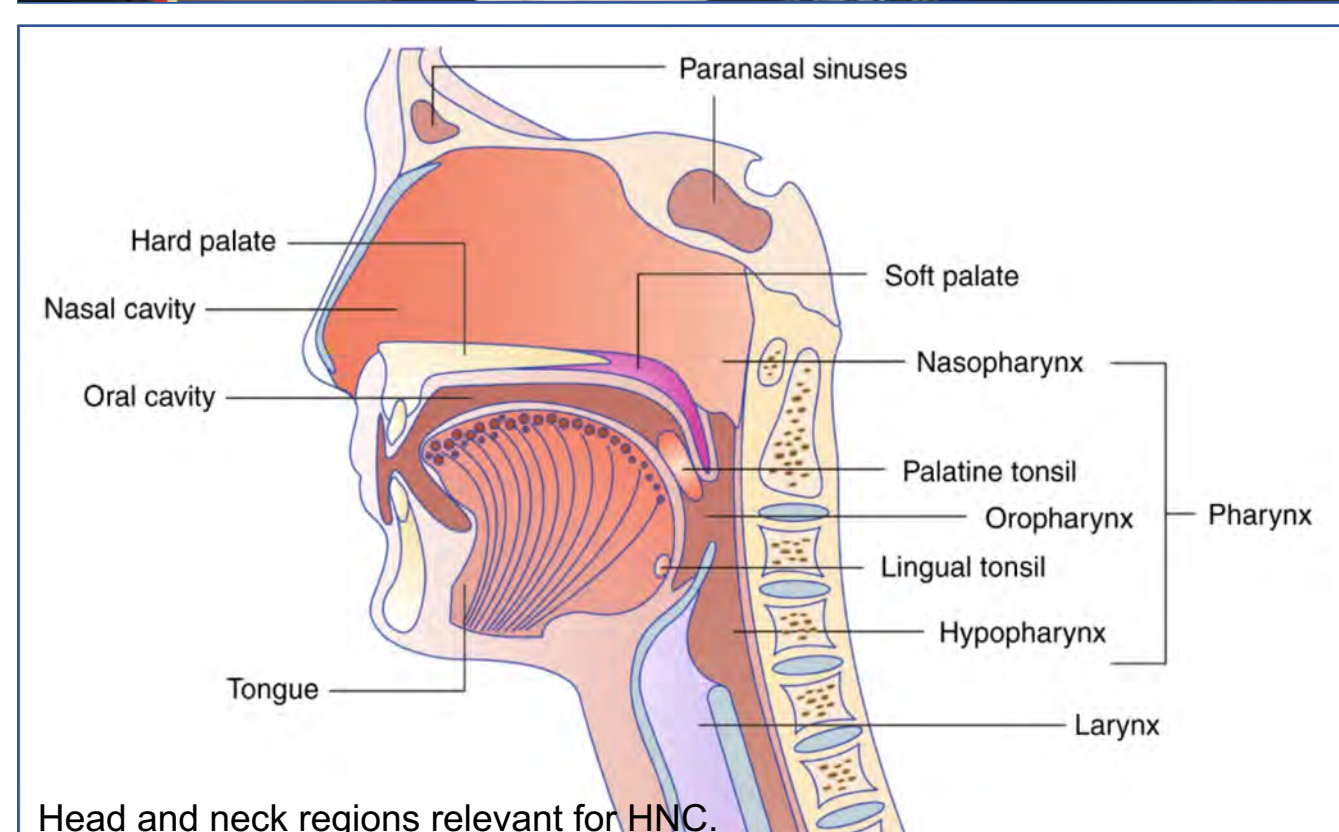


600,000
The **number** of PEOPLE
DIAGNOSED with Head&Neck
cancer **GLOBALLY**

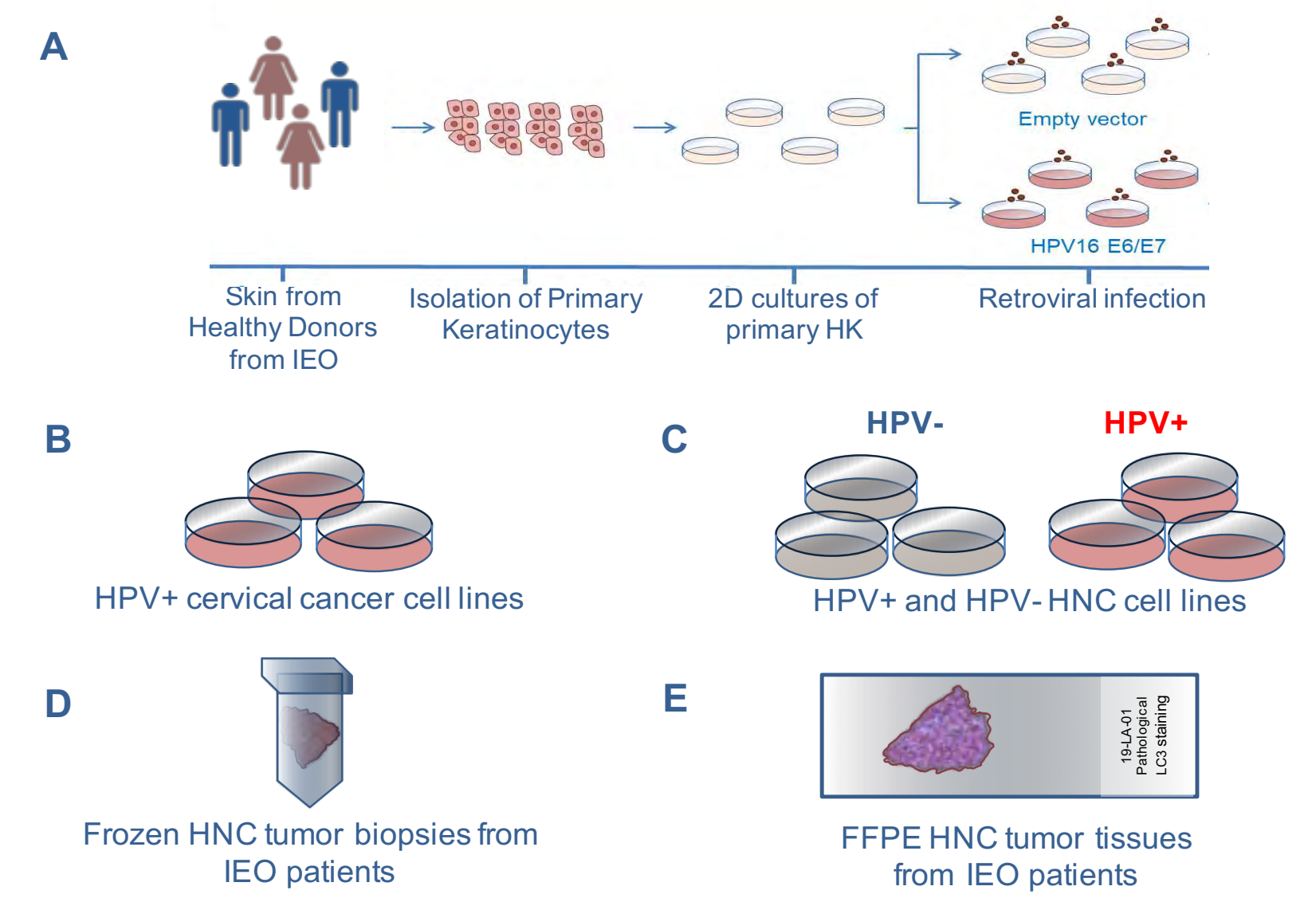
350,000 The
number of attributable
DEATHS

THE GLOBAL BURDEN OF HEAD AND NECK CANCER

Graphic: Business Wire



Biological systems



Head and Neck Cancer (HNC) Features

**Same therapy
for 2 different
pathologies**

Incidence
Age
Socioeconomic Status
Risk Factors
Prognosis

TP53 pathway
RB pathway
p16INK4a expression
Histology

HPV-



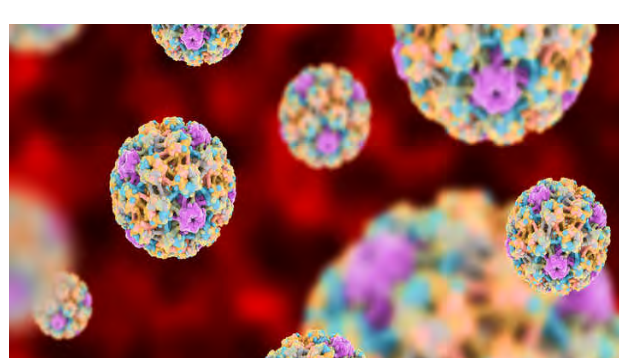
Clinical and epidemiological characteristics

Decreasing
Older
Lower
Tobacco and Alcohol
Poor

Biological and histopathological characteristics

Mutations in 80% patients
Inactivations or mutations
Low
Modestly to well
differentiated

HPV+



Increasing
Younger
Higher
Sexual Behavior
Good

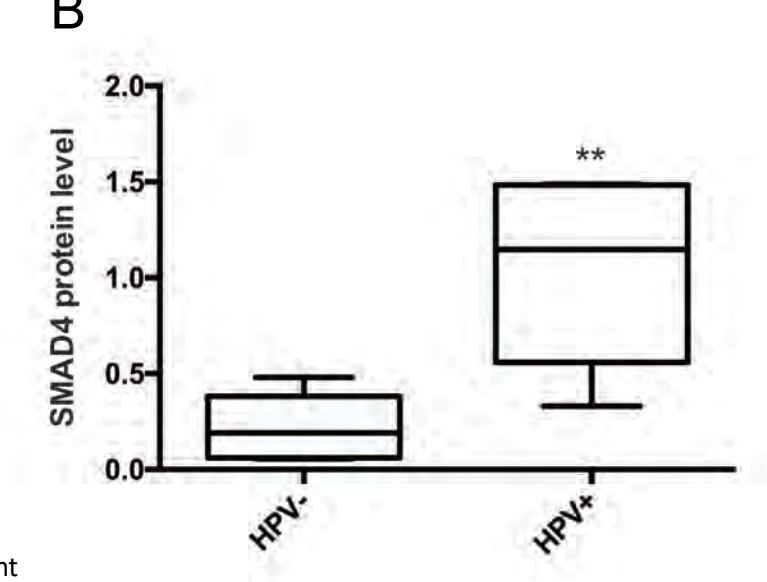
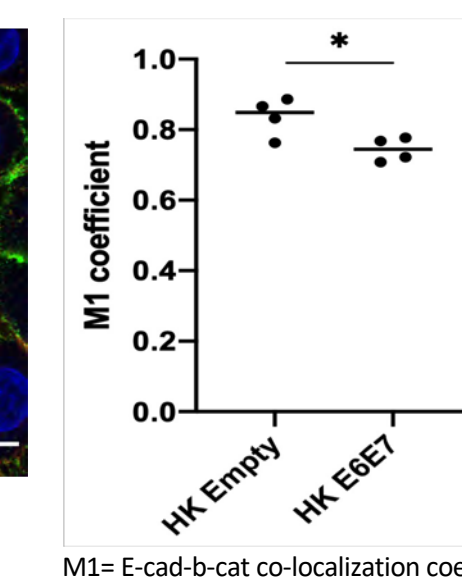
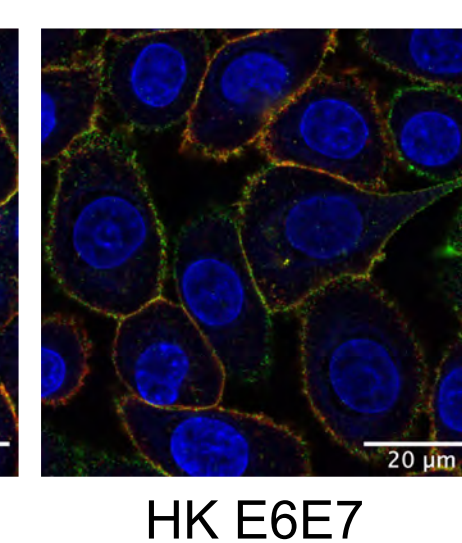
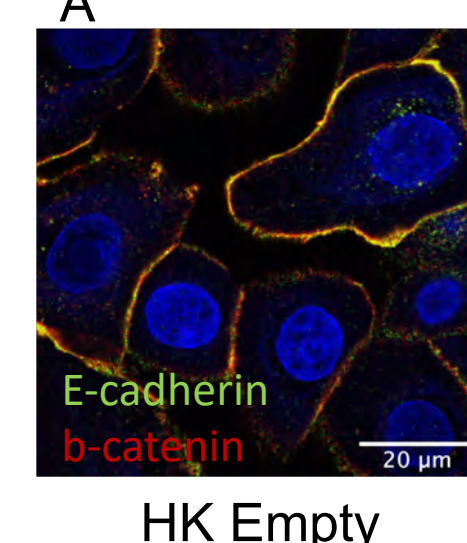
E6 mediated degradation
E7 mediated degradation
High
Poorly differentiated

Adapted from Dok and Nuyts Cancers 2016

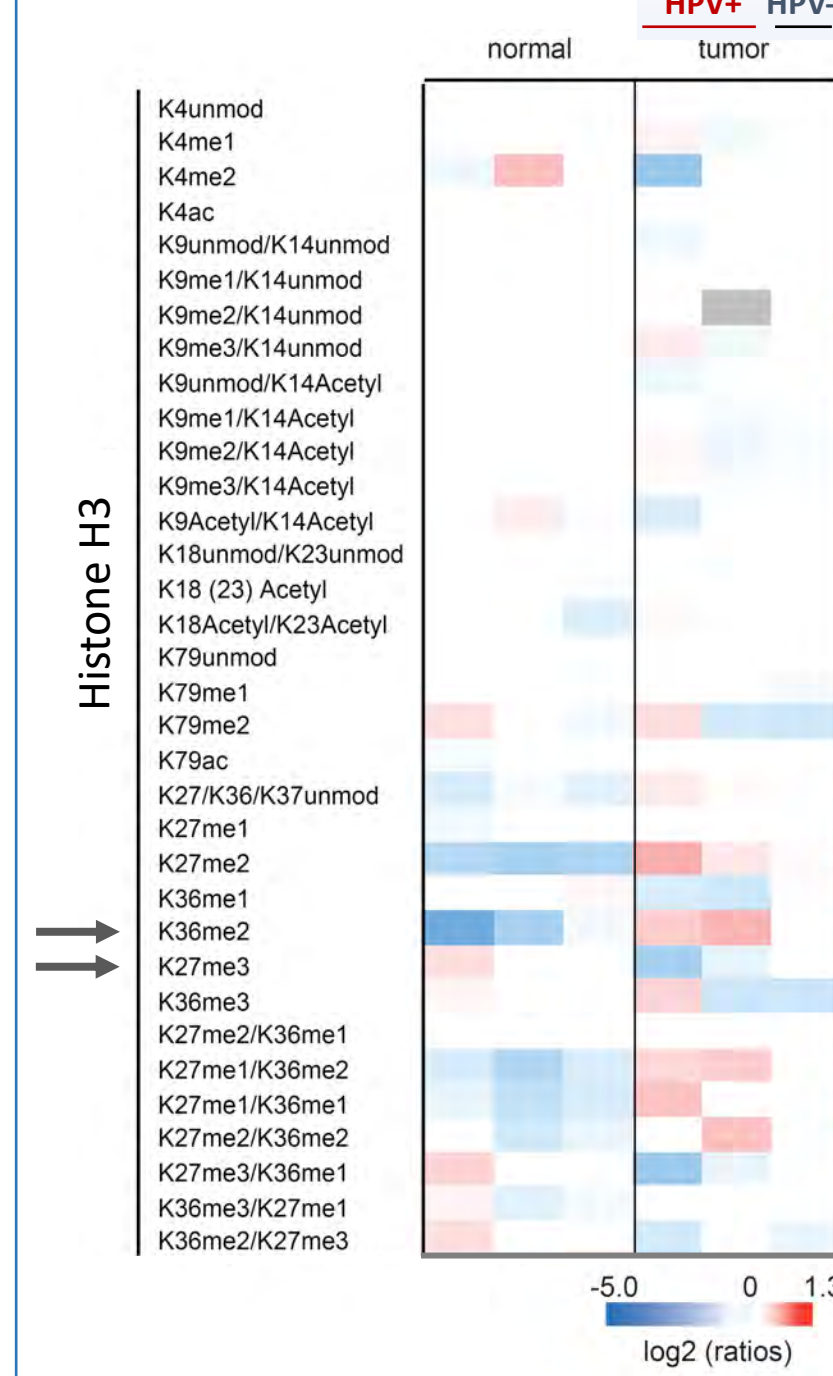
Ongoing in the Lab

1. Novel signalling pathways in HPV+ HNC (Simona, Maria Elisa, Claudia)
2. hPTMs landscape of HPV+ vs HPV- HNC (Lavinia and Simona)
3. Autophagy pathway as a target for HPV+ HNC (Alessandro, Simona, Claudia)
4. Ubc9, SUMO in HNC (Maria Elisa, Micaela, Claudia)

1.



2.



3.

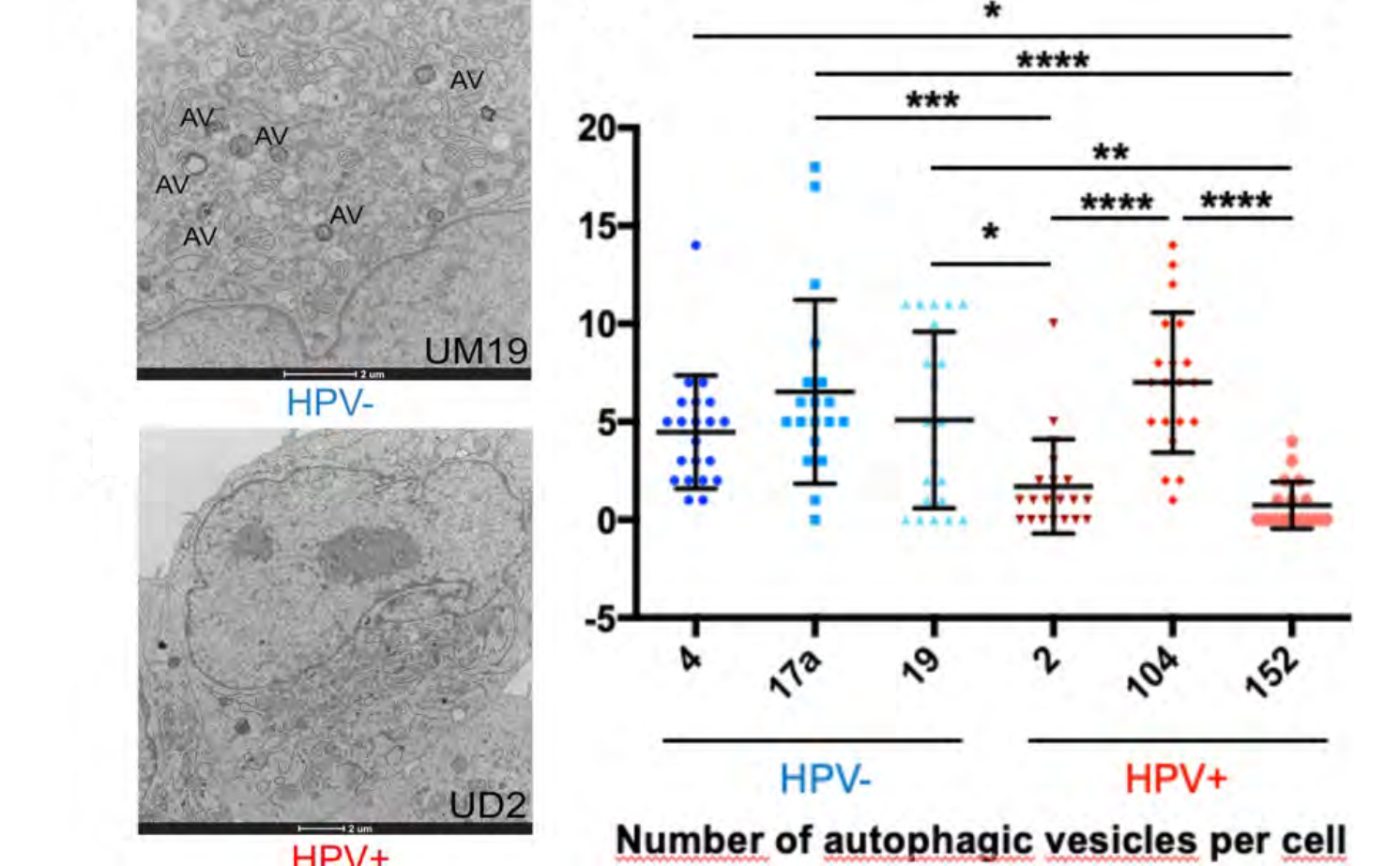
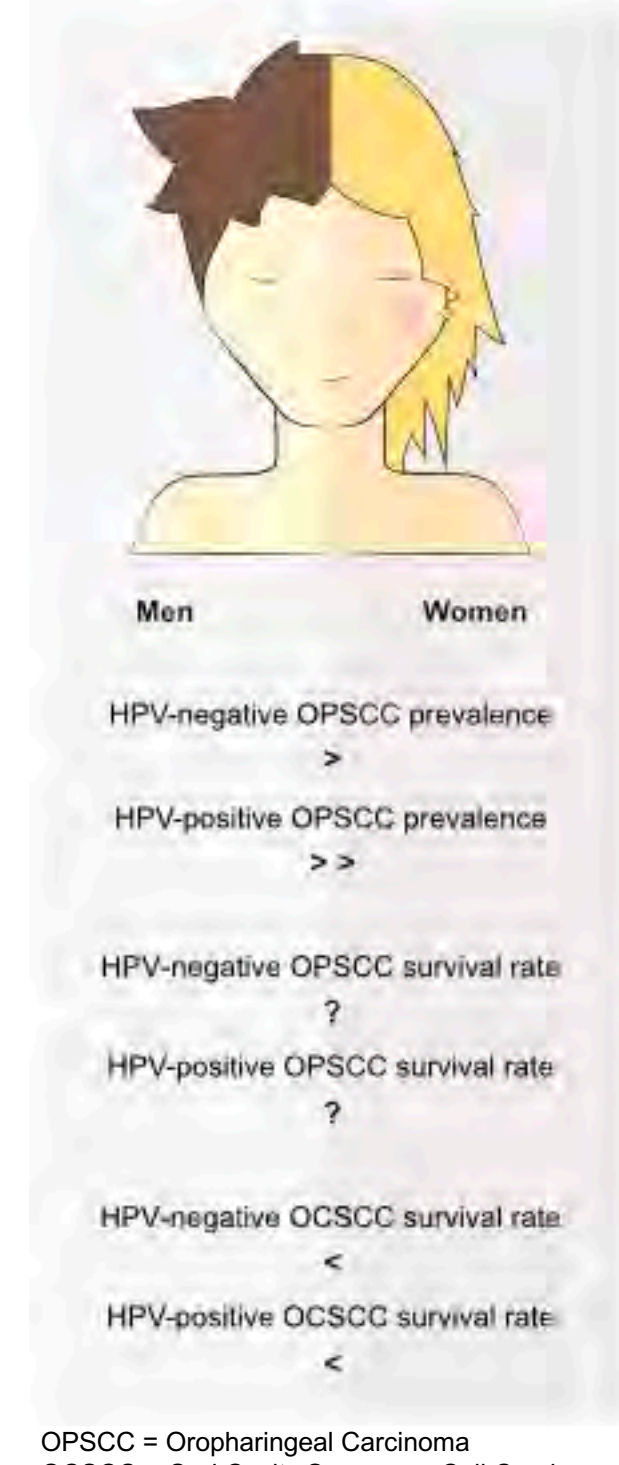
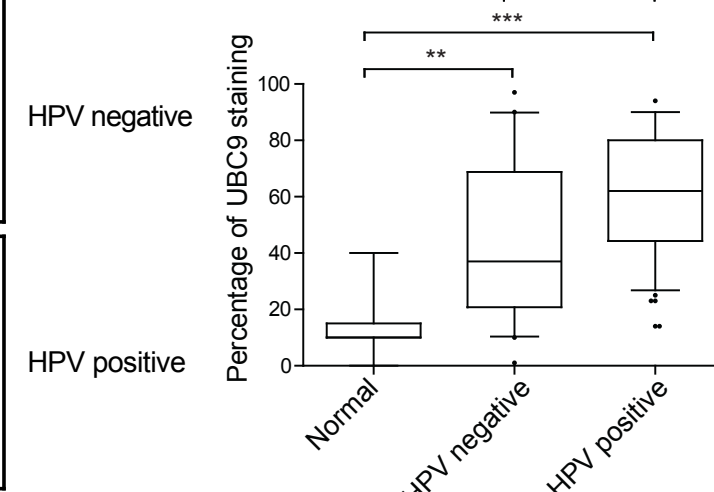
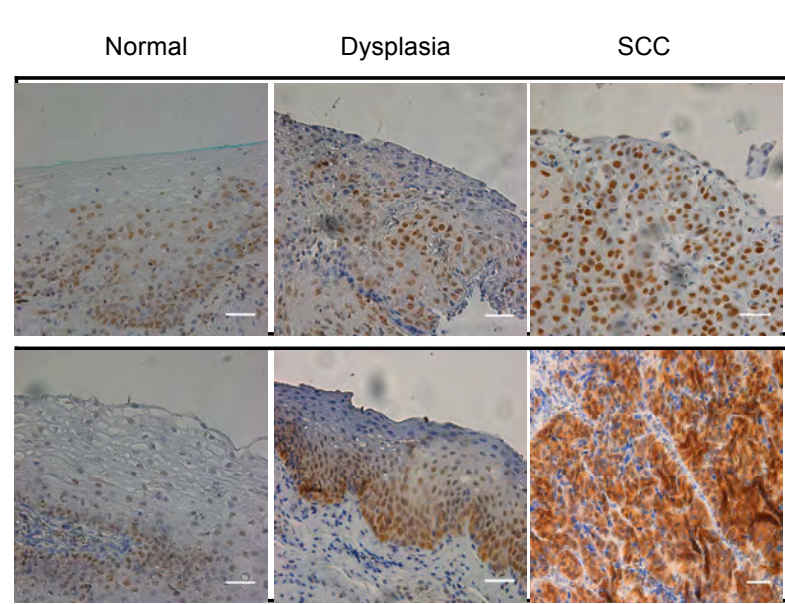


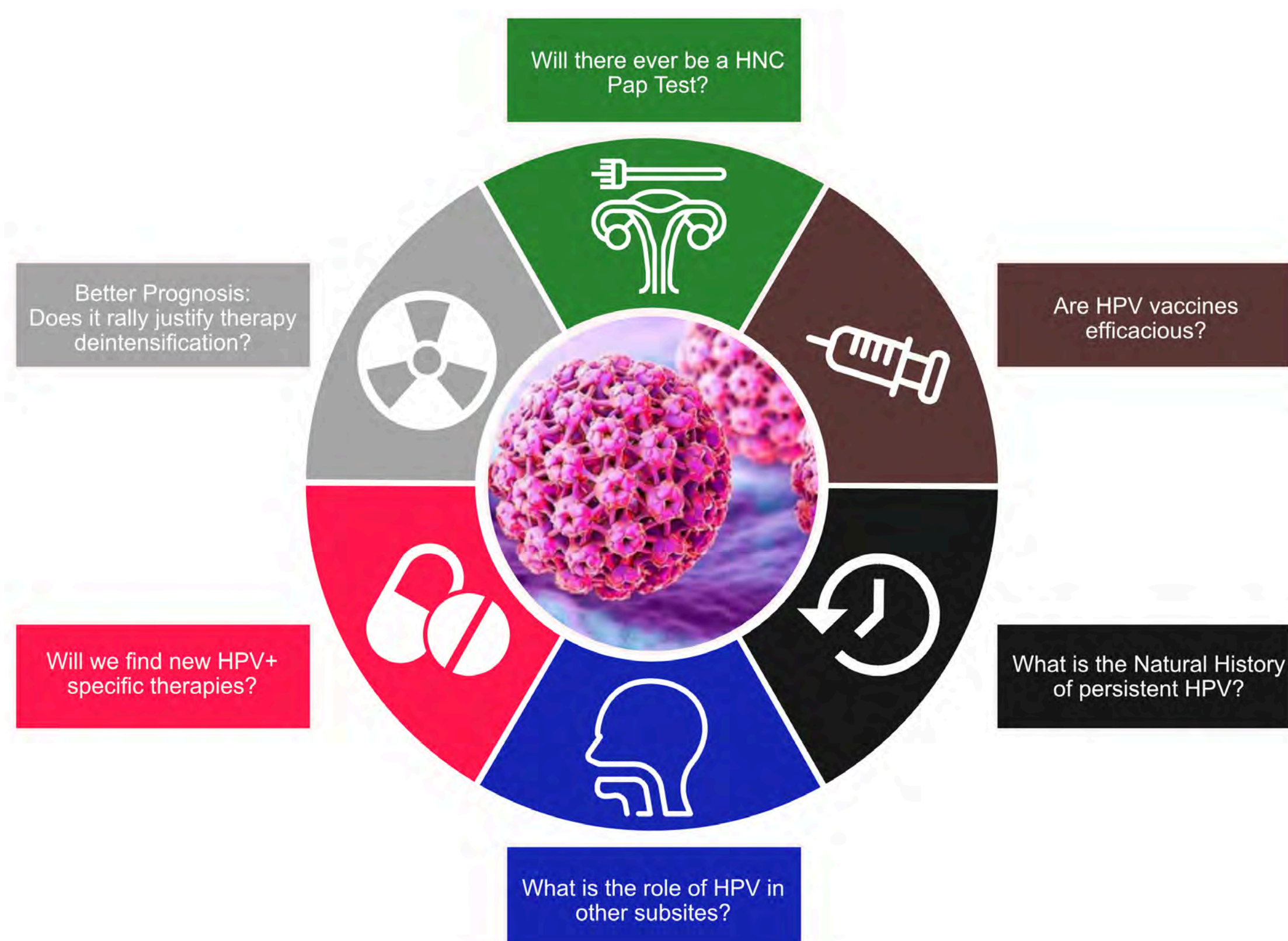
Fig. 1 Co-localization of E-cadherin and b-catenin in HK transduced with E6/E7 or empty (A); SMAD4 expression in HPV+ vs HPV- HNC cell lines (B).
Fig. 2 Proteomic profiling of histone H3 modifications in HNC tumors using super-SILAC.
Fig. 3 Electronic micrographs of HPV+ vs HPV- HNC cell lines showing the number of autophagic vesicles per cell.

State of the Art

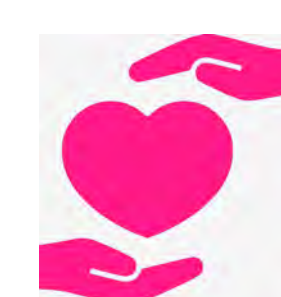


OPSCC = Oropharyngeal Carcinoma
OCSCC = Oral Cavity Squamous Cell Carcinoma

Burning questions on HPV-related HNC



Future and how we push the boundary



HNC **treatment is intrinsically complex**. Nutritional, swallowing dentary evaluation/preparation, pain management are mandatory throughout treatment. IEO considers this.



Given the complexities of HNC, treatment decisions have to be taken by **multidisciplinary teams** (MDTs). IEO MDTs have training in treatment and in supportive care.



In the future, a variety of biological, pathological, and molecular factors that affect the behavior and the prognosis (e.g., HPV status, hPTMs, autophagy, tumor infiltrates lymphocyte,) might allow a more **accurate selection of treatments**.



Sex and Gender Dimension in Head and Neck Cancer.