

Poster presentation

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## Orally HIV-1 exposed uninfected men who have sex with men display HIV-neutralizing capacity correlating with their partners viral load

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### Objectives

The exposure of mucosal surfaces to HIV-1 stimulates systemic and mucosal immune responses even in the absence of an established infection. We have investigated whether oral exposure to HIV-1 is sufficient to mount an anti-HIV-1 response in exposed uninfected (EU) individuals of discordant couples in the Men who have sex with men group (MSM). Further we have evaluated if this response correlates to the level of exposure measured by the HIV-seropositive partners virus load.

### Methods

Saliva and plasma samples were collected from EU individuals (N = 25) and from low-risk healthy controls (N = 22). IgA was purified and quantified by Elisa, and specificity of IgA1-antibodies was tested with Western Blot. Neutralization capacity of whole plasma and salivary IgA1-fractions was tested in a PBMC-based neutralization assay using a primary HIV-1 isolate.

### Results

Levels of IgA1 and IgA2 were significantly higher in EU saliva compared with controls, as well as IgA2 fraction in plasma. EU individuals were able to neutralize a primary HIV-1 isolate in whole plasma (N = 7) and salivary IgA1 fraction (N = 13), but the controls did not have this capacity. The ability of the EU to neutralize in whole plasma correlated significantly with their respective HIV-positive partners peak viral load during the relationship.

### Conclusion

Unprotected oral sex in discordant MSM couples is sufficient to mount an anti-HIV response in EU individuals, both in the mucosal compartment as well as systemically. Furthermore this neutralizing capacity within the EU group correlates with the level of exposure measured by the virus load in the HIV-positive partner.