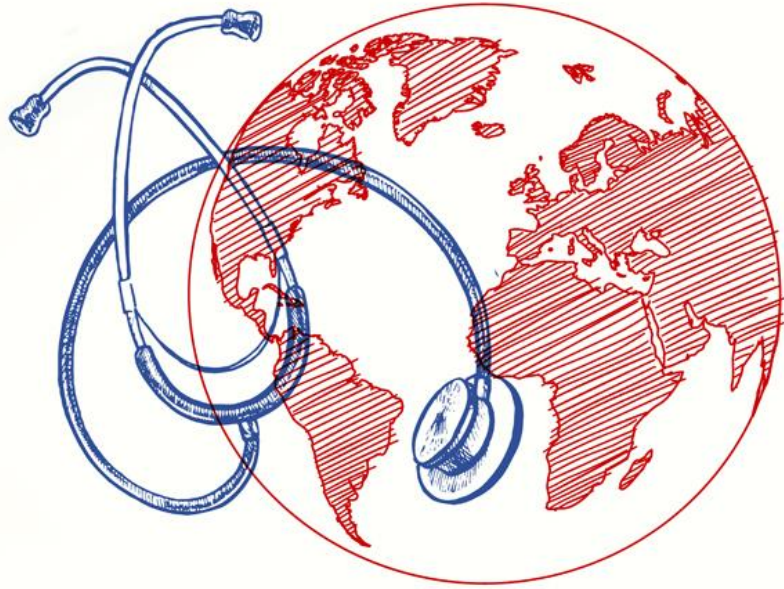


Global Health Cast 77

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Dr. Melvin Sanicas
X @Vaccinologist

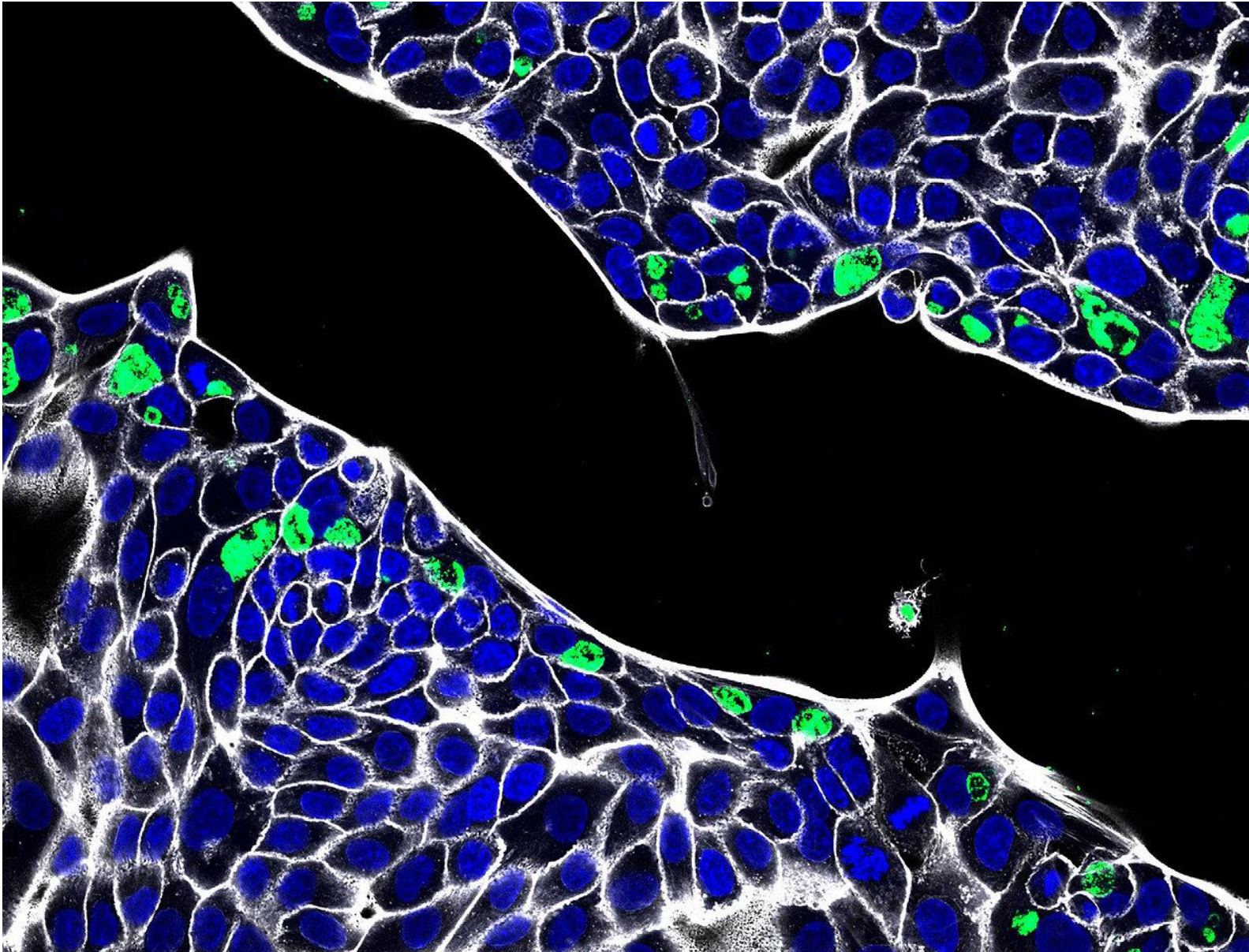


Prof. Dr. Joe Schmitt
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What we talk about today

- **Chlamydia can settle in the intestine**
- **New principle for treating tuberculosis**
- **Obesity raises risk of COVID infection by 34%**
- **Epidemiology update**
- **RSV update**

Chlamydia can settle in the intestine

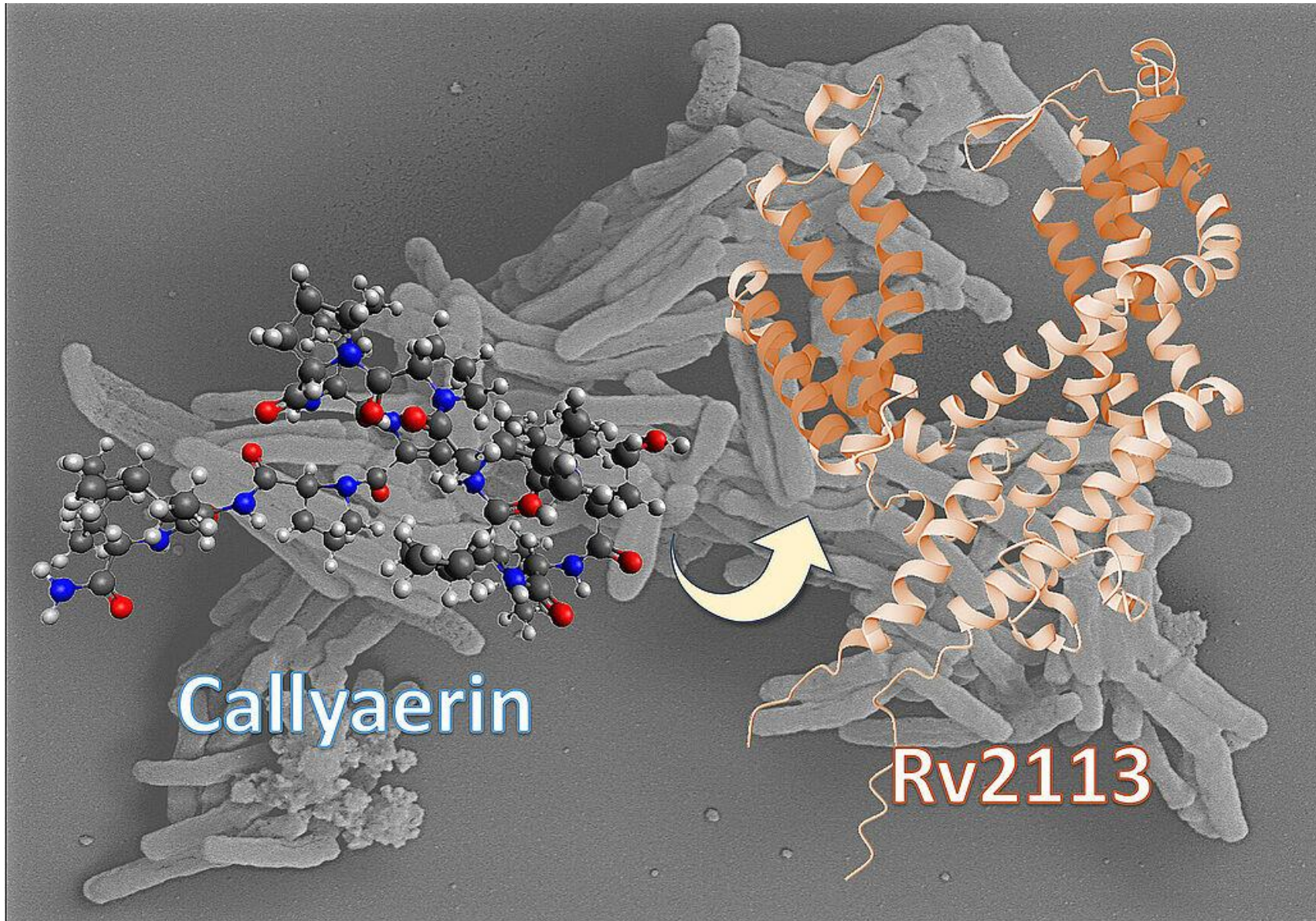


Chlamydiae are sexually transmitted pathogens that can apparently survive in the human gut for a long time. Researchers from Würzburg and Berlin report this in the journal PLOS Pathogens.

Immunofluorescence staining of human gastric cells grown in a microplate and infected with *Chlamydia trachomatis*. Blue: cell nuclei, green: *C. trachomatis*, grey: actin.

(Image: Pargev Hovhannisyan / Universität Würzburg)

New principle for treating tuberculosis



Researchers from Heinrich Heine University Düsseldorf (HHU) and the University of Duisburg-Essen (UDE) have together succeeded in identifying and synthesising a group of molecules that can act against the cause of tuberculosis in a new way.


The non-essential membrane protein Rv2113 as a target structure of callyaerin in *M. tuberculosis*.

(Fig.: HHU/Rainer Kalscheuer)

Obesity raises risk of COVID infection by 34%

JOURNAL ARTICLE

Obesity and age are transmission risk factors for SARS-CoV-2 infection among exposed individuals

Joan T Matamalas, Sarvesh Chelvanambi, Julius L Decano, Raony F França, Arda Halu, Diego V Santinelli-Pestana, Elena Aikawa, Rajeev Malhotra, Masanori Aikawa  [Author Notes](#)

PNAS Nexus, Volume 3, Issue 8, August 2024, pgae294,
<https://doi.org/10.1093/pnasnexus/pgae294>

Published: 27 August 2024 [Article history](#) ▼

Large-scale studies have focused on the negative impact of coronavirus disease (COVID-19) on obese individuals, increasing the risk of worse outcomes and mortality. This study provides insight into the relationship between obesity and an increased risk of developing a productive SARS-CoV-2 infection.

*“We demonstrate evidence that **SARS-CoV-2 exposed obese individuals were more prone to become COVID positive than nonobese individuals [adjusted odds ratio = 1.34 (95% CI: 1.29–1.39)]**. Temporal analysis showed significantly increased susceptibility in obese individuals across the duration of the pandemic in Massachusetts. Obese exposed individuals are at a higher risk of getting infected with SARS-CoV-2. This indicates that **obesity is not only a risk factor for worsened outcomes but also increases the risk for infection upon exposure**. Identifying such populations early will be crucial for curbing the spread of this infectious disease.”*

Outbreak updates

- ▶ **Mpox virus clade**
 - Imported **Mpox** clade 1b cases in Sweden and Thailand
 - Both cases: travel history to Africa.
 - Overall, 18 837 mpox cases reported in Africa in 2024; CFR: 3%
- ▶ **Locally acquired Dengue** in 2024 in mainland France
 - 10 locally acquired dengue cases have been reported in mainland France
- ▶ 2024, **West Nile virus (WNV)** cases reported by 8 EU/EEA countries
- ▶ Since 2003, **908 human cases of avian influenza A(H5N1)**, including 464 deaths (CFR: 51%),
- ▶ **Poliomyelitis**
 - 1 **cVDPV2 Polio case** in Gaza.
 - As of August 20th, 2024, 27 cases of wPV infection reported in Pakistan (14) and Afghanistan (13).

ARI-Pathogens: Clinical Classification

(No underlying diseases, no unusual exposure)

Colonizers:

Bacteria: Betalactam +

- ***Streptococcus pneumoniae***
- *Haemophilus influenzae*
- *Neisseria meningitidis*
- *Moraxella spp.*
- *Staphylococcus aureus*
- *Streptococcus pyogenes*
(Group A-streptococci, GAS)

Non- Colonizers:

Epidemic Bacteria (5): Macrolid +

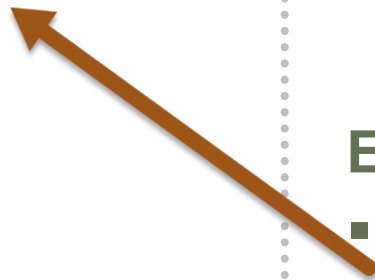
- *Chlamydia, Legionella, Mycoplasma, Bordetella*

Epidemic Viruses (≥ 14):

- Picornaviridae (rhinovirus; enterovirus),
RSV, PIV1-4, hMPV, SARS-CoV2, influenza A and B, coronavirus, adenovirus, reovirus ...

Rare but relevant DD

- *Mycobacterium, Leptospira, ...*



RSV in Infancy – Prevention Options Based on EPAR

Nirsevimab (Beyfortus®)

- Human immunoglobulin (IgG1κ) monoclonal antibody produced in CHO cells by recombinant DNA technology.
- For prevention of RSV-LRTI in neonates / infants during their first RSV season.
- One single dose (50 mg) i. m. for body weight <5 kg or 100 mg for body weight \geq 5 kg prior to RSV season / from birth during the RSV season.

Bivalent pre-F RSV vaccine (Abrysvo®)

- 60 mg of each, RSV subgroup A + B stabilised pre-F – protein produced in CHO cells by recombinant DNA technology.
- Passive RSV-LRTI protection of infants from birth through 6 months of age following ViP.
- One single dose (0.5 mL) administered i.m. between weeks 24 and 36 of gestation (ACIP: 32-36)

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Causality assessment from observational studies



... is impossible!