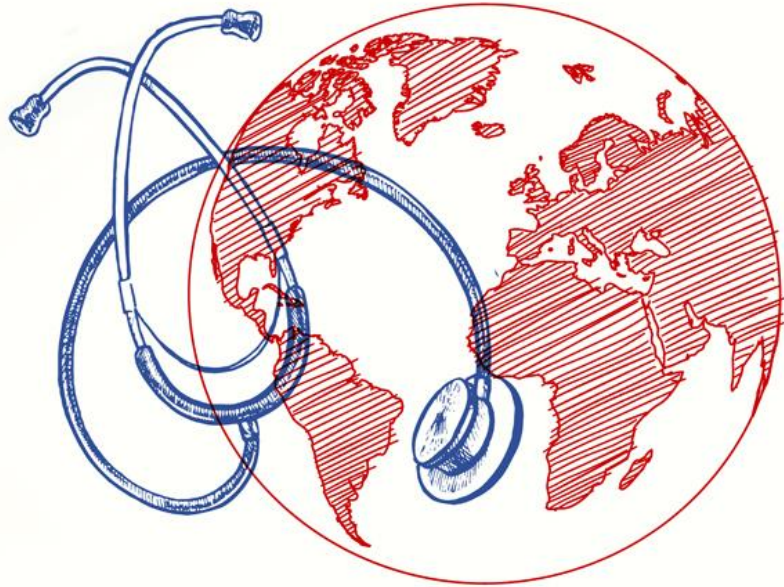


Global Health Cast 74

August 15th, 2024



Dr. Melvin Sanicas
X @Vaccinologist

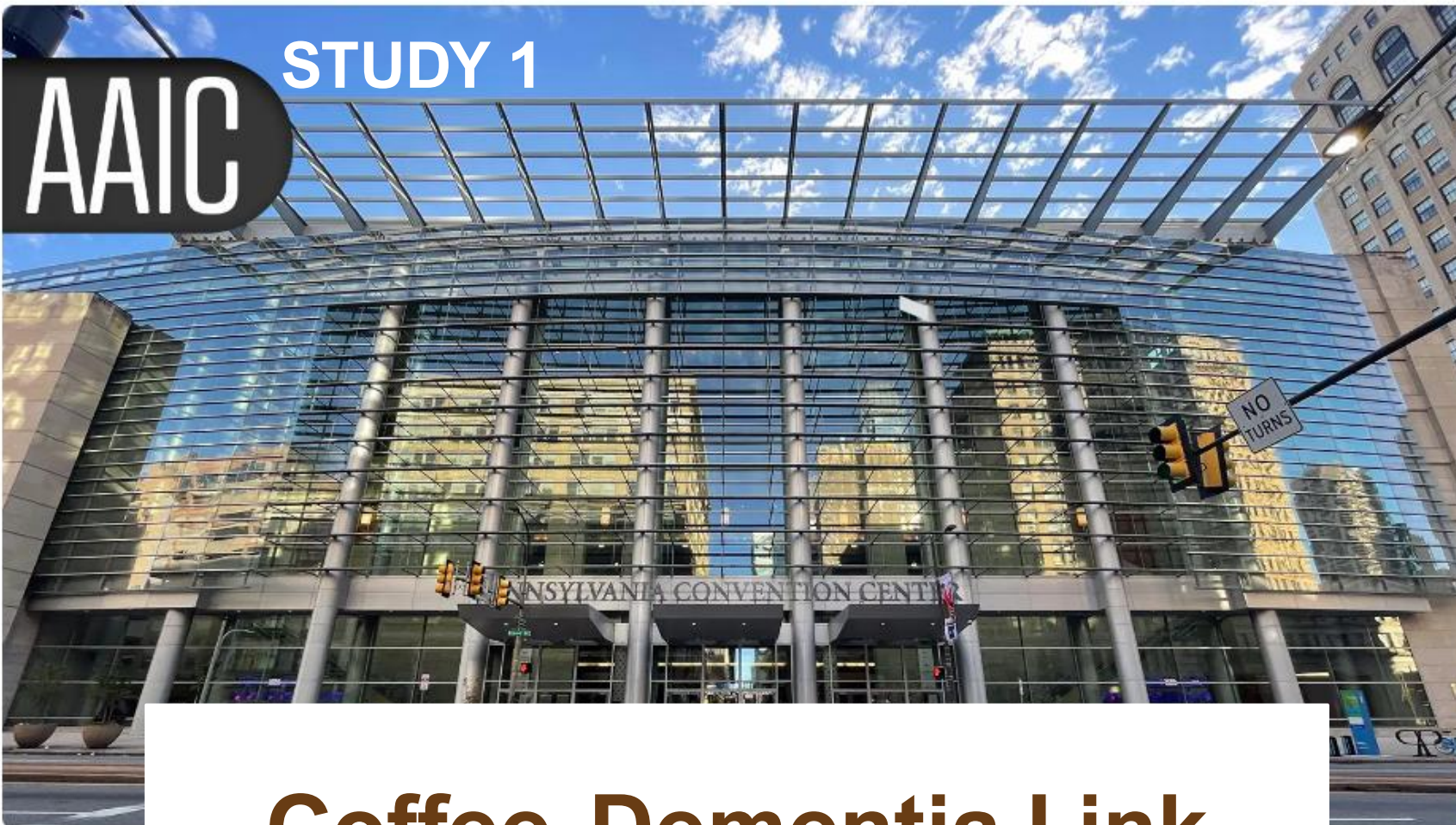


Prof. Dr. Joe Schmitt
X @Prof_Schmitt

What we talk about today

- **Studies hint at protective relationships for some coffee & tea drinkers**
- **COVID vaccines saved 1.6 million lives in Europe**
- **Artificial sweetener erythritol's potential to induce blood clots**
- **US FDA approves drug Targeting brain cancer gene mutation**
- **PCV24 (Vaxcyte) and eCRM-conjugate a new concept**
- **PET-CT scan and FUO**
- **Efficacy of the Butantan Dengue Vaccine**

Studies hint at protective relationships for some coffee & tea drinkers



STUDY 1

AAIC

Coffee-Dementia Link

- Drinking **two or more cups of coffee a day** was associated with a **28% lower risk of dementia over 7 years** compared with drinking less than one daily cup ($P < 0.05$)
- Moderate tea drinking -- **up to two cups a day** -- was also **associated with a lower dementia risk** compared with no tea consumption ($P < 0.05$).

Studies hint at protective relationships for some coffee & tea drinkers

STUDY 2

AAIC

Coffee-Dementia Link

- Participants who never drank tea had a greater decline in fluid intelligence compared with those who had moderate (one to three daily cups) or high (four or more cups per day) tea consumption.
- Fluid intelligence is defined as reasoning ability, and the ability to generate, transform, and manipulate different types of novel information in real time.

COVID vaccines saved 1.6 million lives in Europe

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Estimated number of lives directly saved by COVID-19 vaccination programmes in the WHO European Region from December, 2020, to March, 2023: a retrospective surveillance study

[Margaux M I Meslé, PhD](#)   • [Jeremy Brown, PhD](#) • [Piers Mook, PhD](#) • [Mark A Katz, MD](#) • [José Hagan, MD](#) • [Roberta Pastore, MPH](#) • et al. [Show all authors](#)

Published: August 07, 2024 • DOI: [https://doi.org/10.1016/S2213-2600\(24\)00179-6](https://doi.org/10.1016/S2213-2600(24)00179-6)



Between December, 2020, and March, 2023, in 34 of 54 countries, areas, and territories CAT included in the analysis, **COVID-19 vaccines reduced deaths by 59% overall** (CAT range 17–82%), **representing approximately 1.6 million lives saved** (range 1.5–1.7 million) in those aged 25 years or older: 96% of lives saved were aged 60 years or older and 52% were aged 80 years or older; first boosters saved 51% of lives, and 60% were saved during the Omicron period.

Artificial sweetener erythritol's potential to induce blood clots

Arteriosclerosis, Thrombosis,
and Vascular Biology

RESEARCH ARTICLE

| Originally Published 8 August 2024



Ingestion of the Non-Nutritive Sweetener Erythritol, but Not Glucose, Enhances Platelet Reactivity and Thrombosis Potential in Healthy Volunteers

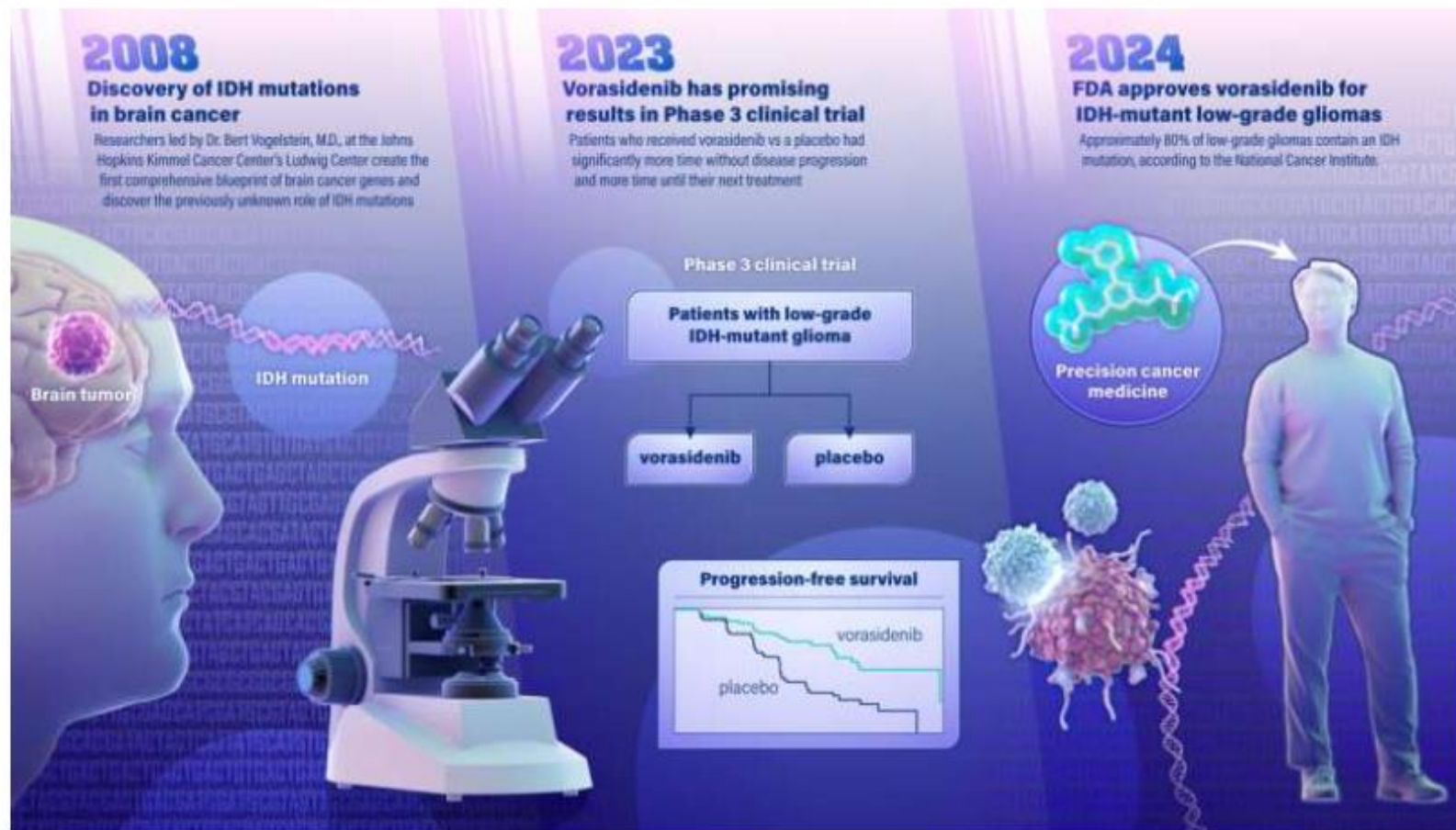
Marco Witkowski , Jennifer Wilcox , Valesha Province, Zeneng Wang , Ina Nemet , W.H. Wilson Tang , and Stanley L. Hazen  | [AUTHOR INFO & AFFILIATIONS](#)

Arteriosclerosis, Thrombosis, and Vascular Biology • **New online**

<https://doi.org/10.1161/ATVBAHA.124.321019>

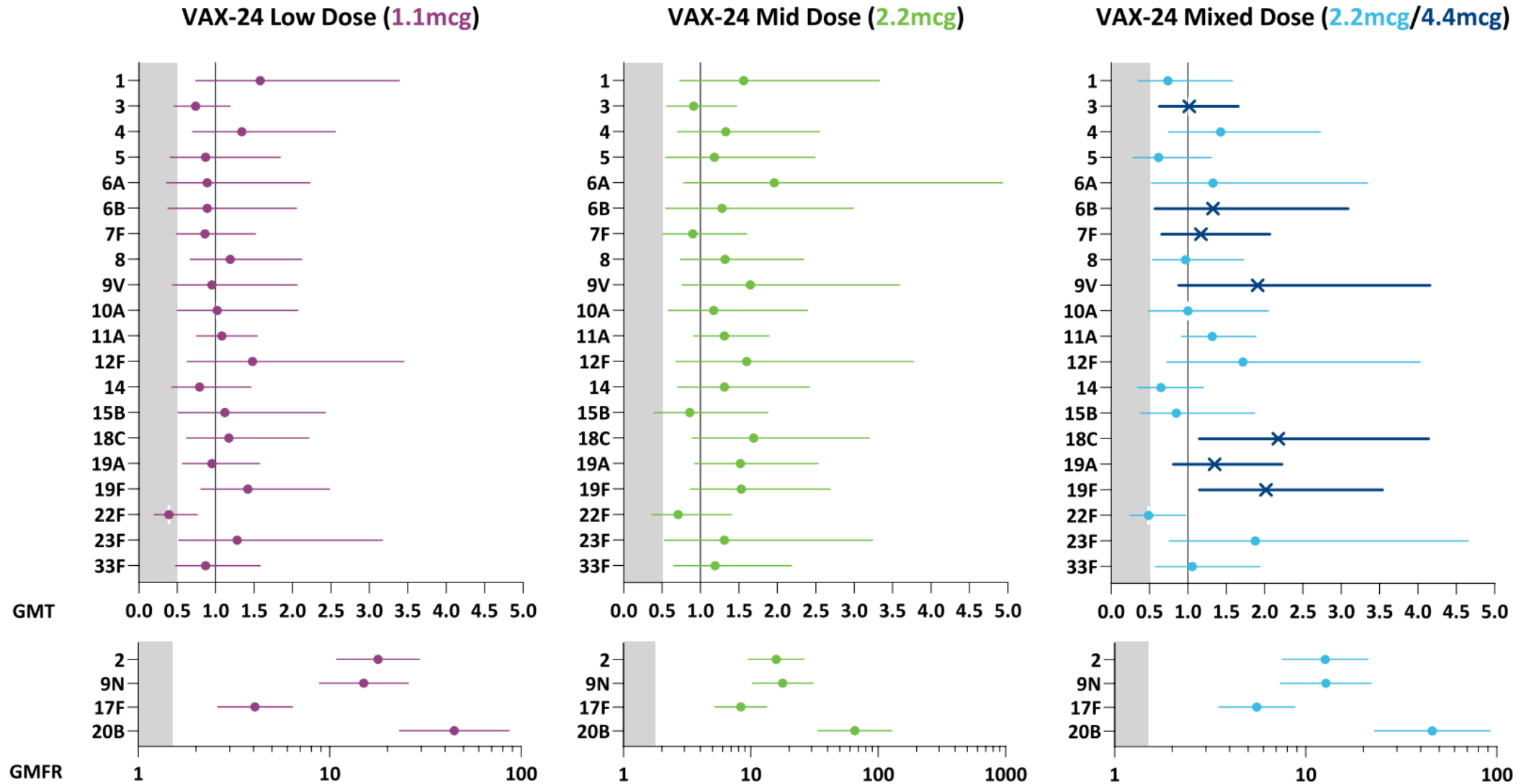
- Dietary erythritol (30 g), but not glucose (30 g), lead to a >1000-fold increase in erythritol plasma concentration (6480 [5930–7300] versus 3.75 [3.35–3.87] $\mu\text{mol/L}$; $P < 0.0001$) and exhibited acute enhancement of stimulus-dependent aggregation responses in all subjects and doses examined.
- Erythritol ingestion also enhanced stimulus-dependent release of the platelet dense granule marker serotonin ($P < 0.0001$ for TRAP6 [thrombin activator peptide 6] and $P = 0.004$ for ADP) and the platelet α -granule marker CXCL4 (C-X-C motif ligand-4; $P < 0.0001$ for TRAP6 and $P = 0.06$ for ADP).

US FDA approves drug Targeting brain cancer gene mutation



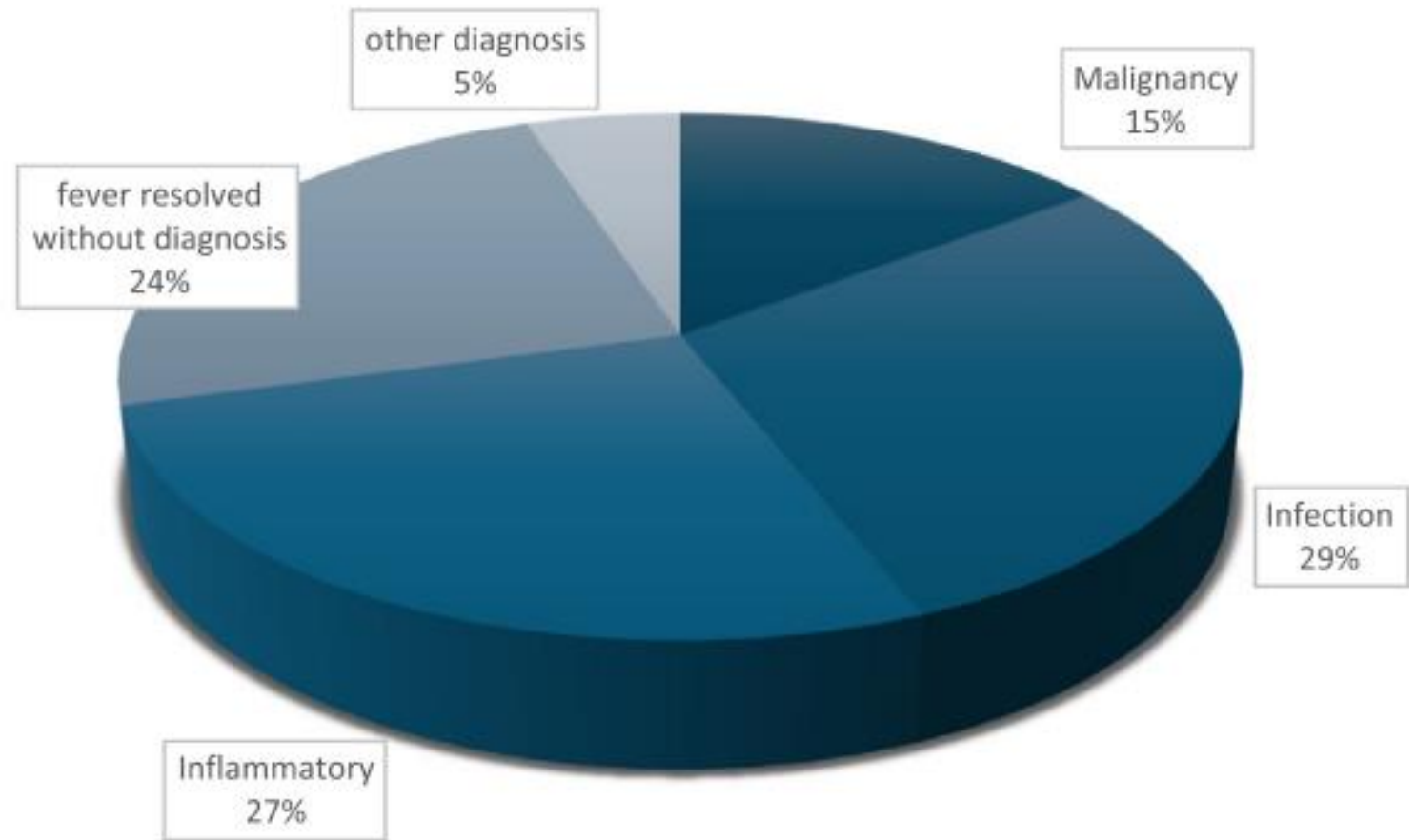
Approximately 80% of low-grade gliomas contain an IDH mutation, according to the National Cancer Institute. They include IDH-mutant astrocytoma and oligodendroglioma, and they occur most commonly in younger adults.

Safety, Reactogenicity, & Immunogenicity of 24 PCV (eCRM) VAX24 – adults ≥ 65 years



PET-CT Scan for finding a diagnosis for FUO

- Systematic review, 36 studies; 3516 patients.
- Pooled contribution of PET-CT was 75.4%.
- The compiled sensitivity: 85.9%; specificity 59.5%,
- PET-CT has a contributory effect of 75% for the diagnosis of fever of unknown origin



Butantan Dengue Vaccine Efficacy

▶ Background

- ▶ Safety and efficacy of the live, attenuated, tetravalent Butantan-DVx) persons **age 2-59 years**

▶ Methods

- ▶ Double-blind, randomised, placebo-controlled, phase 3, multicentre trial in Brazil, healthy participants (**aged 2–59 years**), no previous DVx, **no serology**, 2:1 stratification; receive 0.5 mL s.c. of Butantan-DV or placebo; accrual of virologically confirmed dengue (**VCD**) cases (by RT-PCR) at least 28 days after vaccination up until the cutoff (at least 2 years of follow-up from the last participant enrolled).

▶ Findings

- ▶ **16 363 participants**, follow-up (mean 3.7 years [SD 1.0], **median 4.0 years** [IQR 3.2–4.5]).
- ▶ 356 VCD cases captured - 128 in the vaccine group and 228 in the placebo group.
- ▶ **VEy against VCD caused by any DENV serotype was 67.3% (95% CI 59.4–73.9);**
- ▶ **No cases caused by DENV-3 or DENV-4** observed.
- ▶ S-AE were similar between treatment groups (637 [6.2%]; vs. 395 [6.6%] in the placebo group).

▶ Interpretation

- ▶ A single dose of Butantan-DV was generally well tolerated and efficacious against symptomatic VCD (caused by DENV-1 and DENV-2) for a mean of 3.7 years. These findings support the continued development of Butantan-DV to prevent dengue disease in children, adolescents, and adults regardless of dengue serostatus.

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Understanding Infectious Diseases. *Mycobacteria*

- ▶ Outbreak result from **exposure** to and **transmission** of disease agents
- ▶ **Mycobacterial diseases**: current knowledge based on infections in vertebrates.
- ▶ Research: Literature searches assessing the role of **mycobacteria interactions with non-vertebrate species**
- ▶ **RESULTS**
 - ▶ Challenge current theory of person-to-person transmission for several mycobacterial infections.
 - ▶ Suggest that diverse non-vertebrate organisms influence virulence, mediate transmission, and contribute to pathogen abundance in relation to vertebrate exposure.
- ▶ **Ecological and evolutionary framework provides novel insights to support a more comprehensive understanding of the prevention and management of diseases in vertebrates.**

Biodiversity: high diversity of *Mycobacterium* species means high animal or human abundance and density and facilitates strain expansion

