

Post: Inflammatory sialic acids only in red meat/dairy



Created by [Brittany Bunk](#) on 17-Jul-2021

 Video

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Content

New Research: Sialic Acids May Contribute to Inflammation & Disease



SIALIC ACIDS UNIQUE TO RED MEAT/DAIRY



ANTIBODY RESPONSE AND INFLAMMATION

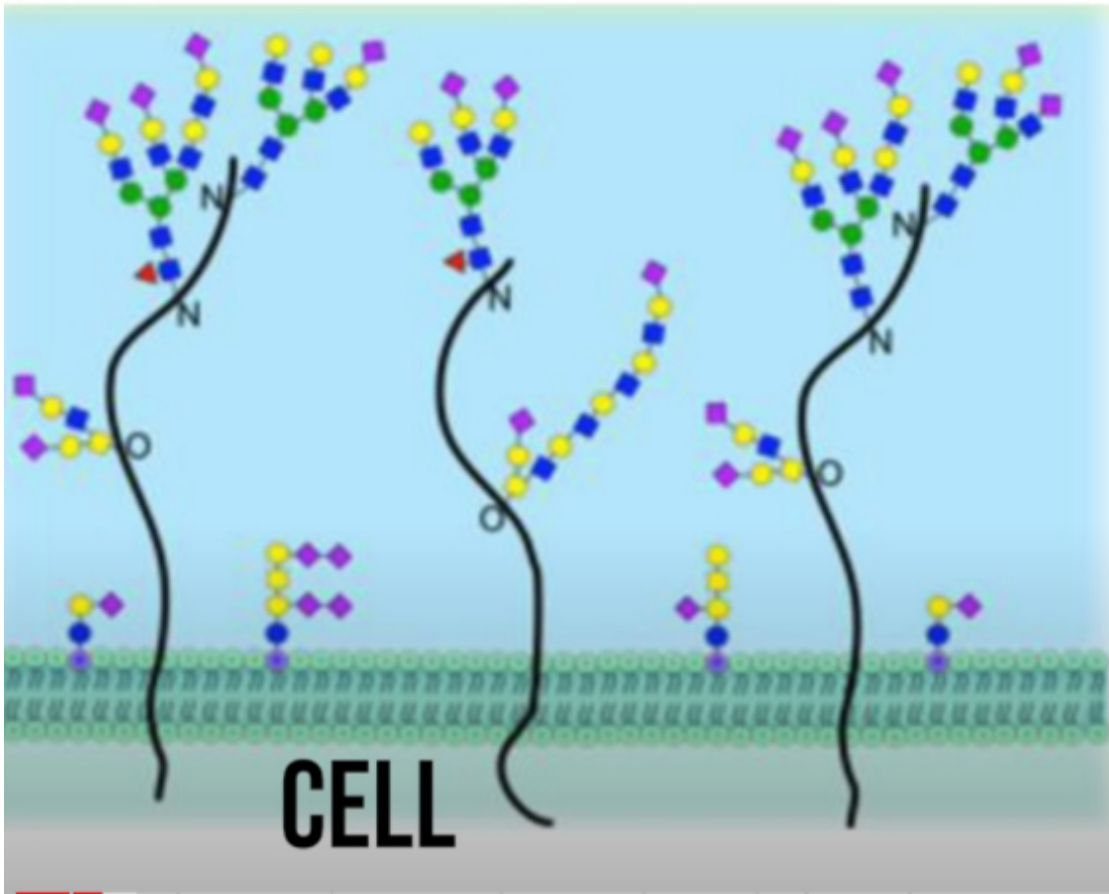


MAY CONTRIBUTE TO



CHRONIC DISEASE

SEVERE COVID-19



SIALIC ACIDS ARE THE PURPLE DIAMONDS

SIALIC ACIDS TERMINATE GLYCAN CHAINS ON GLYCOLIPIDS AND GLYCOPROTEINS AS PART OF THE GLYCOALYX ON THE SURFACE OF CELLS

Barnard et al: <https://doi.org/10.1101/800300>

Glycans

- Mannose
- GlcNAc
- Galactose
- ◆ Neu5Ac
- ◇ Neu5Gc
- ☆ Xylose
- ◄ Fucose

yeast

insect

non-human mammals

plants

human


2:01 / 22:48 • Introduction to Neu5Ac (in humans) & Neu5Gc (in other mammals) > file:Variety_of_glycans.svg



N-Acetylneuraminic acid (NeuAc)

CC(=O)N[C@@H]1[C@@H](O)[C@@H](O)[C@@H](CO)O[C@H]1C(=O)O

1. High concentration in the nervous system.
2. Unique monosaccharide for carbohydrate chains used for cell-cell interaction.
3. Ligands for viral and bacterial adhesion receptors.

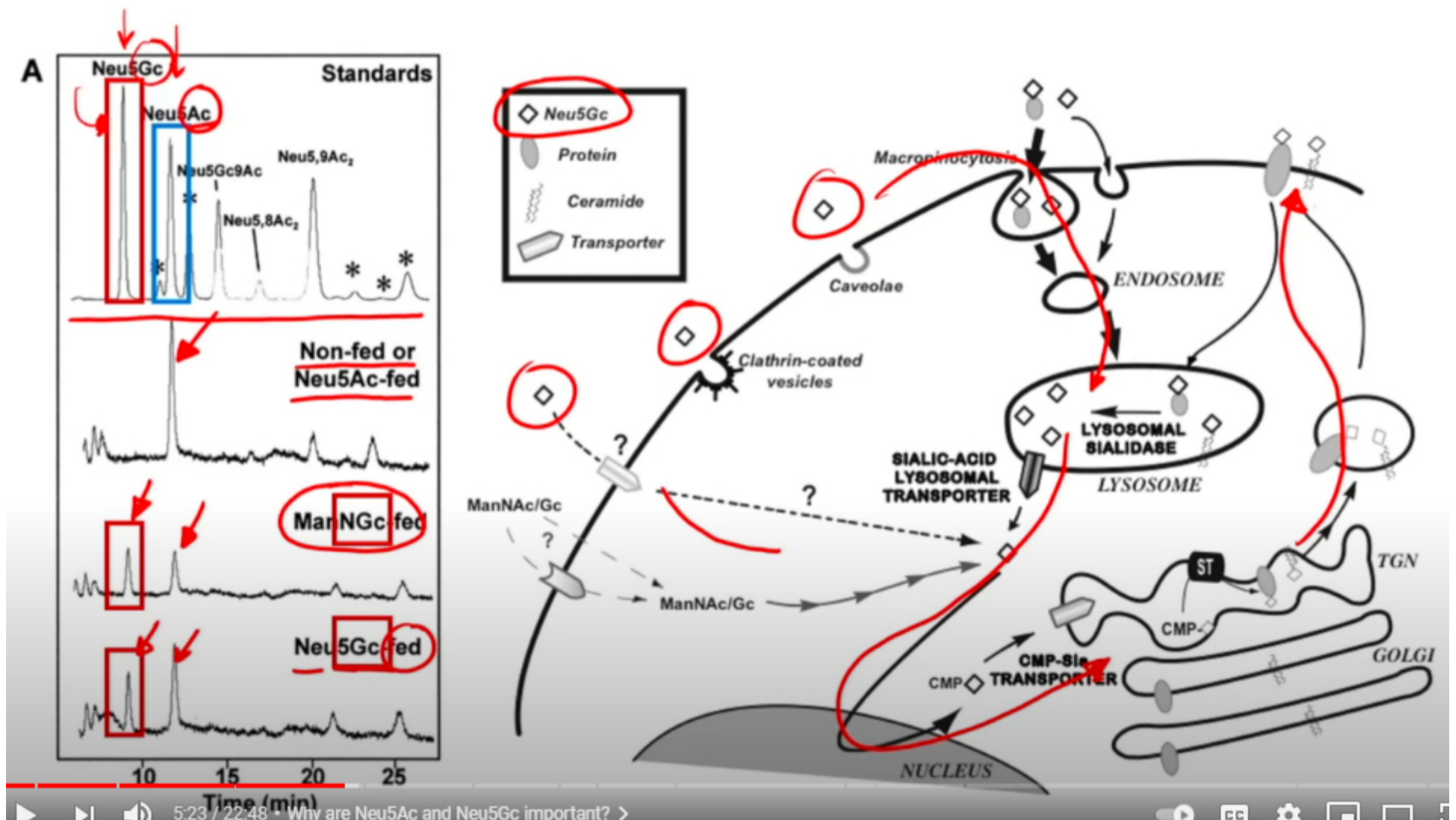
CMAH  **Humans**

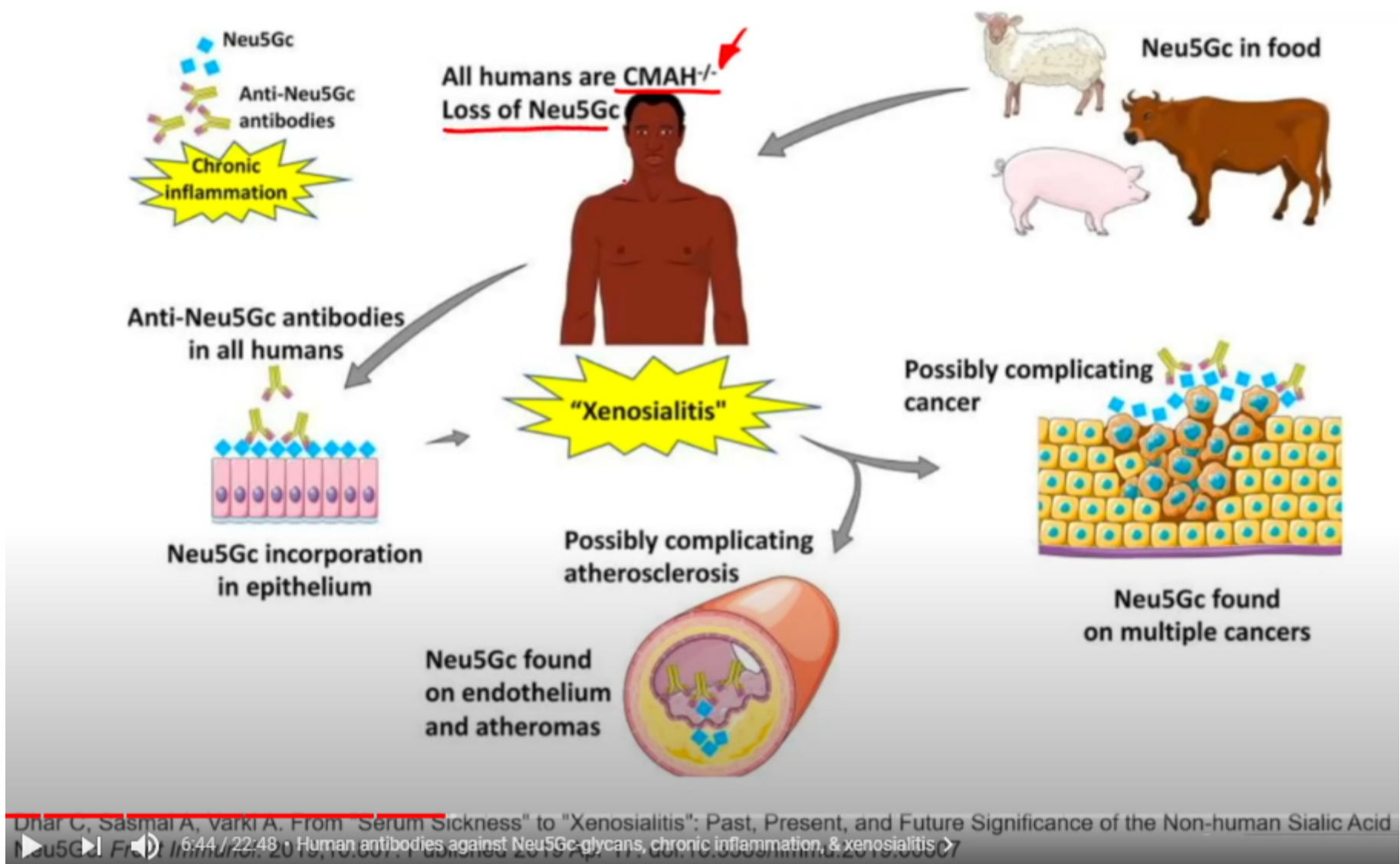
N-Glycolylneuraminic acid (NeuGc)

OC[C@@H]1[C@@H](O)[C@@H](O)[C@@H](CO)O[C@H]1C(=O)O

1. Not detectable in normal human tissues but present in cancer tissues and meconium,
2. Human can produce antibody.
3. Not present in the nervous system of mammals.

Suzuki A. Genetic basis for the lack of N-glycolylneuraminic acid expression in human tissues and its implication to human evolution. *Proc R Soc Lond Ser B Phys Biol Sci.* 2006;32(9):93-103. doi:10.2183/pjab.82.93





Comments

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