



## COLLEGIUM RAMAZZINI

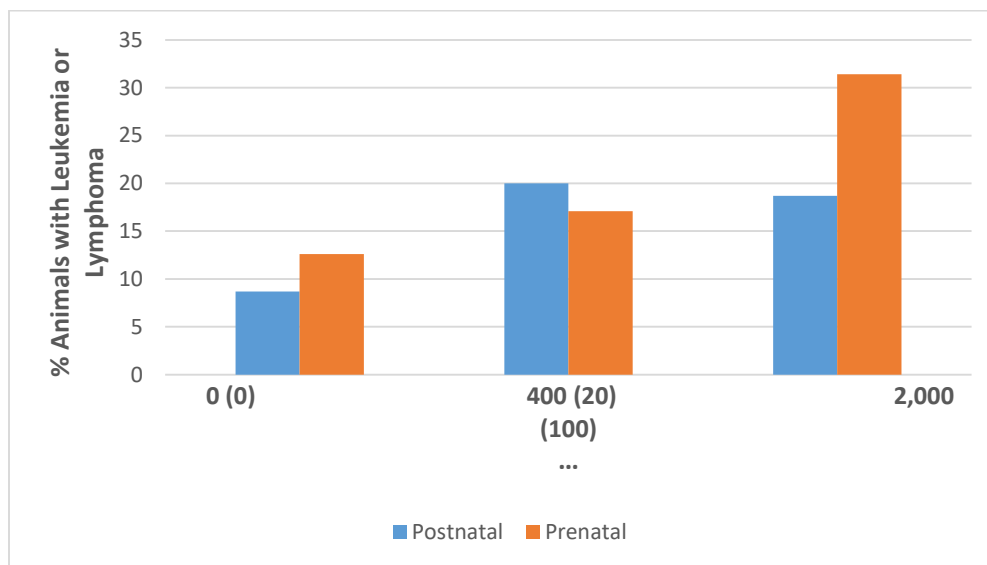
DA VENIAM SCRIPTIS QUORUM NON GLORIA NOBIS  
CAUSA, SED UTILITAS OFFICIUMQUE FUIT

### Confirmation of the Experimental Carcinogenicity of Aspartame

In 2006 and 2007, our colleagues Drs. Morando Soffritti and Fiorella Belpoggi and their team at the Ramazzini Institute published a series of ground-breaking papers reporting that aspartame, one of the world's most widely used artificial sweeteners, caused cancers at multiple sites in rats and mice.

Cancer incidence was dose-related, and increased cancer risk was seen even at very low levels of aspartame exposure that approached the recommended Acceptable Daily Intake (ADI). Prenatal aspartame exposures caused increased cancers in offspring at lower doses than in adults (**Figure 1**) - a finding of grave concern for public health given the extensive consumption of aspartame-sweetened, low-calorie beverages by children and pregnant women.

**Figure 1. Lymphoma/Leukemia Incidence in Female Sprague-Dawley Rats Exposed to Aspartame. Dose-Response Relationship. Comparison of Prenatal v. Postnatal Exposure**



The Ramazzini Institute's findings on aspartame were savagely attacked by the chemical manufacturing and processed food industries and by their allies in regulatory agencies. These groups put forward the unsubstantiated claim that the Ramazzini Institute's animal colony was poorly managed and that the experimental animals were subject to uncontrolled infections, notably *Mycoplasma* infections. These groups claimed that the lesions seen in the rodents were inflammatory rather than malignant.

These attacks had serious, negative effects on the Ramazzini Institute and its leaders. Government funding was slashed. The Ramazzini Institute laboratories were ridiculed. Dr. Morando Soffritti was personally slandered and his lifetime of dedication to science called into question.

Now however, the Ramazzini Institute's findings on the experimental carcinogenicity of aspartame have been validated, and Dr. Soffritti and the team have been vindicated by a recently published, state-of-the-art reanalysis that has confirmed the original diagnoses of cancer in 92% of cases.

In this reanalysis, all hematolymphatic tumors from aspartame-exposed animals were reexamined using a battery of immunohistochemical markers. The premise underlying immunohistochemical analysis is that all cells in a malignancy are expected to be immunohistochemically identical - i.e., monoclonal because they are all the direct descendants of a single transformed cell. By contrast, the inflammatory lymphocytes that respond to an infection are of diverse cellular origin and are therefore not immunohistochemically identical, but instead are polyclonal.

This reanalysis confirmed the original diagnoses of cancer in 72 (92.3%) of 78 cases and determined that another 3 lesions (3.8%) were premalignant. This reanalysis also confirmed the presence of a statistically significant, positive dose-response relationship between aspartame exposure and cancer incidence. Lastly, it reconfirmed that prenatal exposures to aspartame produces a dose-related increase in cancer incidence in offspring at lower exposure levels and with shorter latency than in adults.

These revalidated findings on the experimental carcinogenicity of aspartame need to be considered very seriously by the regulatory agencies that had previously dismissed them. These agencies will need to urgently reexamine their assessments of aspartame's risks to health - especially the risks of prenatal exposure. Indeed, the Advisory Group on Future Priorities for the International Agency for Research on Cancer (IARC) has recently recommended that the IARC Monographs Program evaluate the potential carcinogenicity of aspartame to humans with high priority.

Finally, the findings from this his reanalysis provides important validation of the high quality of the scientific findings produced by the Ramazzini Institute. They vindicate Dr. Soffritti, Dssa. Belpoggi and the Ramazzini Institute team. They restore the honor of the Ramazzini Institute.

The Collegium Ramazzini salutes Dr. Soffritti, Dssa. Belpoggi and all their colleagues in the Ramazzini Institute on their scientific integrity, their courage, their perseverance, and their willingness to speak truth to power – even at great personal cost. We are proud to stand with them.

## References

Soffritti M, Belpoggi F, Degli Esposti D, Lambertini L, Tibaldi E, Rigano A. First experimental demonstration of the multipotential carcinogenic effects of aspartame administered in the feed to Sprague-Dawley rats. *Environ Health Perspect.* 2006;14 (3):379–85. [doi.org/10.1289/ehp.8711](https://doi.org/10.1289/ehp.8711).

Tibaldi E, Gnudi F, Panzacchi S, Mandrioli D, Vornoli A, Manservigi M, et al. Identification of aspartame-induced haematopoietic and lymphoid tumours in rats after lifetime treatment. *Acta Histochem.* 2020; 122: 15148. [doi.org/10.1016/j.acthis.2020.151548](https://doi.org/10.1016/j.acthis.2020.151548).

Landrigan PJ, Straif. Aspartame and cancer – new evidence for causation. *Environmental Health* 2021; 20: 42 [doi.org/10.1186/s12940-021-00725-y](https://doi.org/10.1186/s12940-021-00725-y)