

Microbiome Analysis in Lithuania:

Overview of the Global and Lithuanian
Ecosystem, Strengths, Weaknesses, and
Recommendations



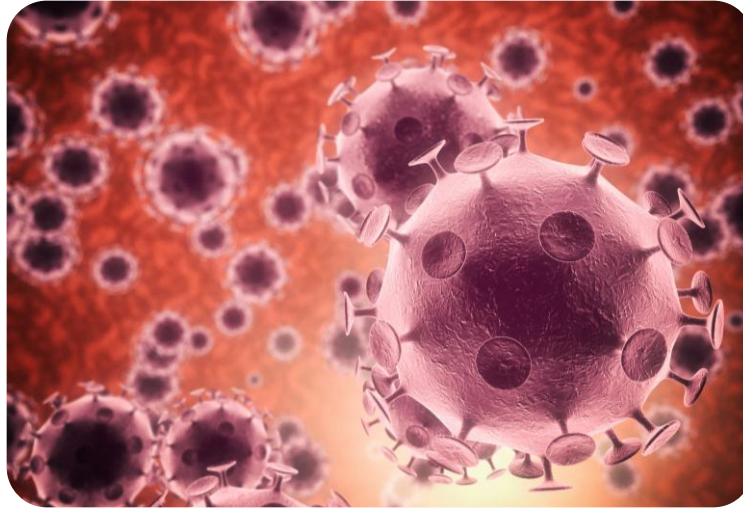
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Disease Prevention

Diet and targeted therapies can alter the microbiome to **prevent and treat illnesses.**



Microbiome

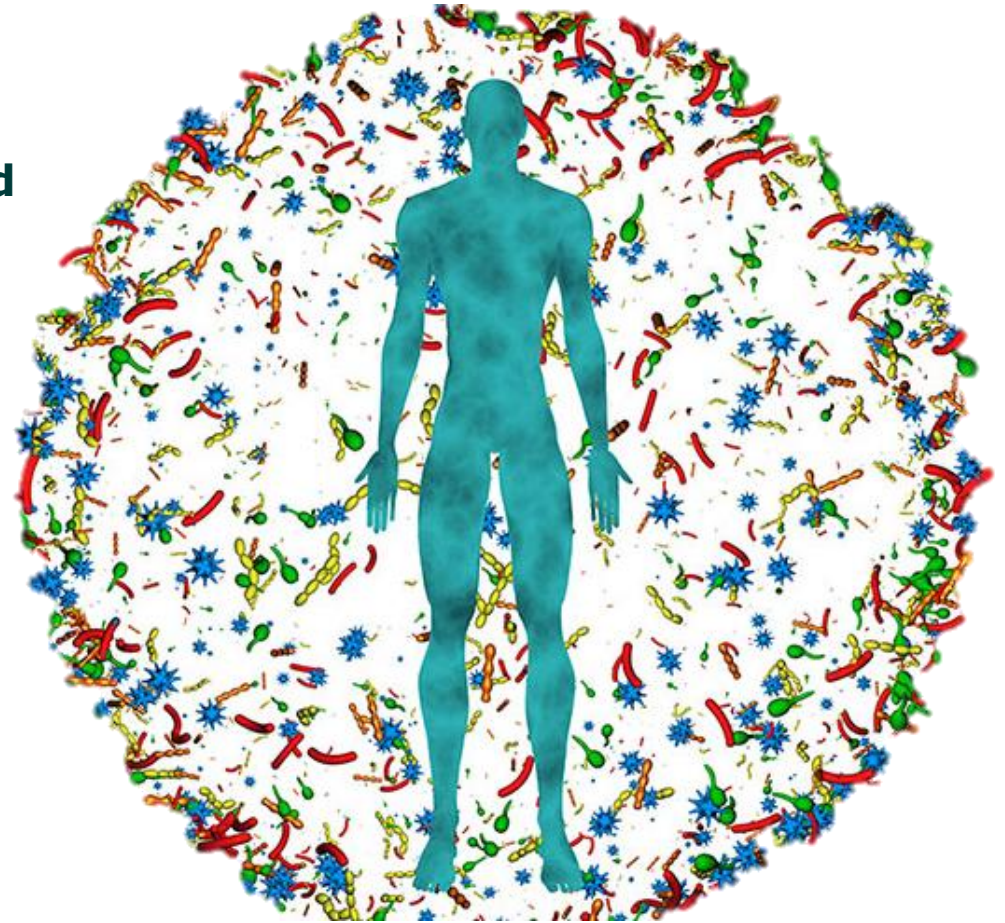
The microbiome refers to the collection of trillions of bacteria, viruses, yeast, fungi, and archaea, including their genetic material, and their interactions inside and on a host organism or environment.

Role in Health

- Bacteria take part in vital processes in **digestion, metabolism, and in protecting our body from pathogens.**
- Imbalance in the microbiome increases the risk of cancer, heart disease, obesity, and metabolic and neurodegenerative illnesses.

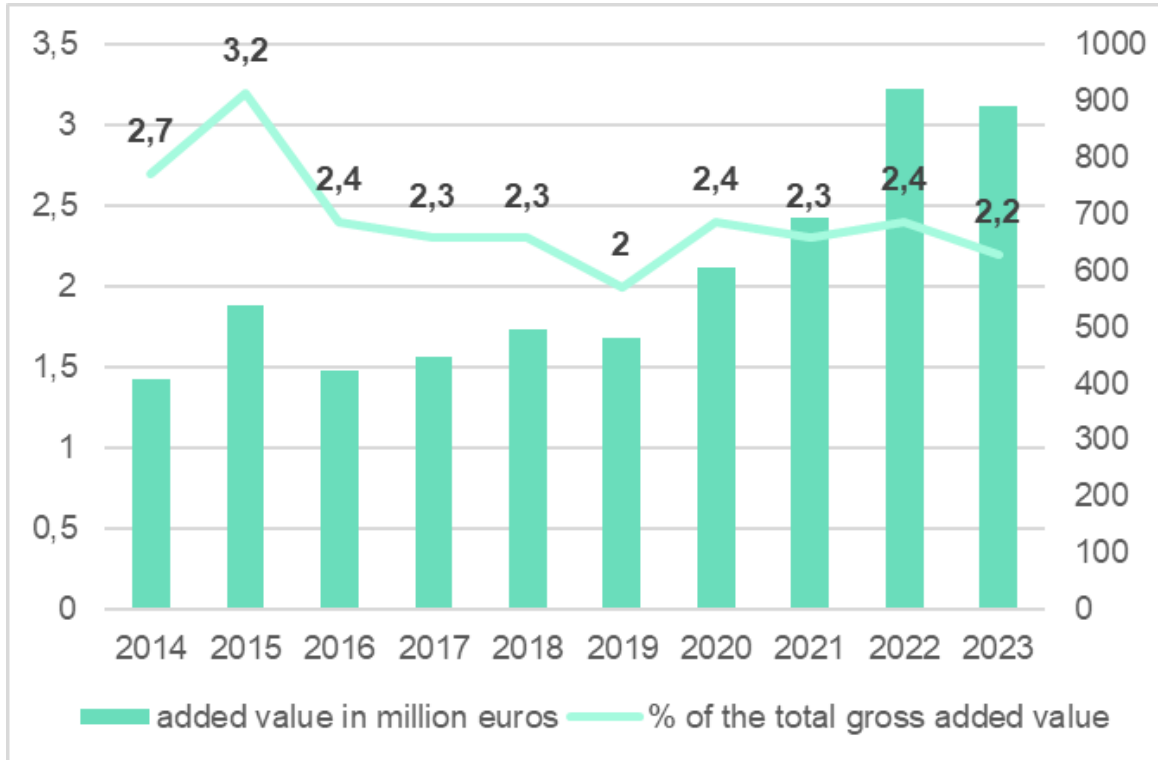
Chronic Disease Problem

- Chronic diseases are the **leading causes of mortality and morbidity worldwide**, responsible for **41 million deaths annually**.
- Lithuania has among the **highest levels of preventable and treatable mortality** in the EU.
- The United Nations' 2030 Sustainable Development Goals (SDGs) aim to reduce premature mortality from chronic diseases by **one-third**, with a focus on **prevention, treatment, and mental health promotion**.
- Microbiome analysis and therapy are recognized as **promising solutions** to combat these diseases by the European Innovation Council.

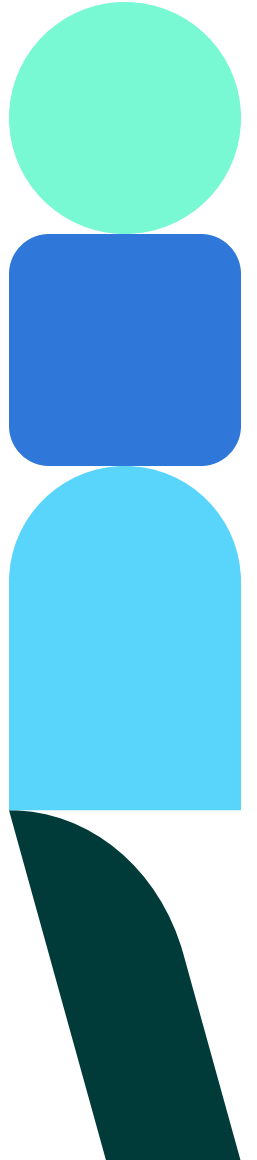


Untapped Opportunity for Lithuania

Added Value of the Life Sciences Sector in Lithuania



- In 2022, Lithuania's expanding life sciences sector contributed 2.4% to the country's GDP, with a goal of increasing this percentage to **5% by 2030**
- Microbiome research presents an **untapped opportunity** to support this ambition by meeting the rising demand for innovative health solutions.



5 Current Situation in Lithuania

With the rise in publication rates worldwide by **634.39% from 2013 to 2023**, Lithuania has also seen an increase in microbiome research and innovation:

- Key Lithuanian research accomplishments:
 - At least 9 Horizon Europe and EU4Health projects, amounting to more than **6.1 million euros**
 - **Medical Sciences Center** – hosts the new Biobank of Lithuanian Population and Rare Disorders
 - **Microbiome Research Institute**
- Lithuanian industry:
 - Several companies focusing on psychobiotics, probiotic drinks, and snack bars



6 Recommendations



National Strategy & Policy Framework

Revise National Strategies

Update key documents (e.g., S3, Life Sciences Roadmap) to emphasize microbiome research and align with global trends.

Provide Suitable Public Procurement Policies

Modify procurement policies to better support clinical trials and scientific research.

Promote Long-Term Research Projects

Prioritize long-term grants for microbiome research, particularly for high-risk, high-reward projects with breakthrough potential.

Support Research Commercialization

Implement initiatives to help bring research-backed products to market.

Establish Microbiome Regulations

Advocate for clear regulatory pathways at both EU and national levels.

Optimize Research Infrastructure

Increase incentives to modernize facilities and foster collaboration for greater efficiency.

Public Engagement & Awareness

Launch Public Awareness Campaigns

Educate the public through healthcare professional, events etc.

Promote Healthy Food in Schools & Daycares

Encourage microbiome-friendly diets from an early age.



Research & Innovation Development

Develop Unique Signature Products

Leverage Lithuania's expertise (CRISPR, microfluidics) for global leadership.

Include Microbiome field in Funding Calls

Although microbiome research is currently covered under the broader category of life sciences, explicitly mentioning it in funding calls and programs would help address existing financing gaps. This adjustment would sustain ongoing projects and attract new researchers by providing targeted financial resources.

Encourage Postgraduate Exchanges

Promote international student exchanges, research partnerships, and collaboration to strengthen global ties and foster expertise among Lithuania's future researchers.

Expand Specialized Training Programs

Universities should develop interdisciplinary programs for future professionals and other targeted programs to address the shortage of skilled professionals.

International Collaboration & Talent Attraction

Address Brain Drain

The Lithuanian government and its institutions should offer suitable conditions to attract and retain specialists.

Attract Pharmaceutical Companies

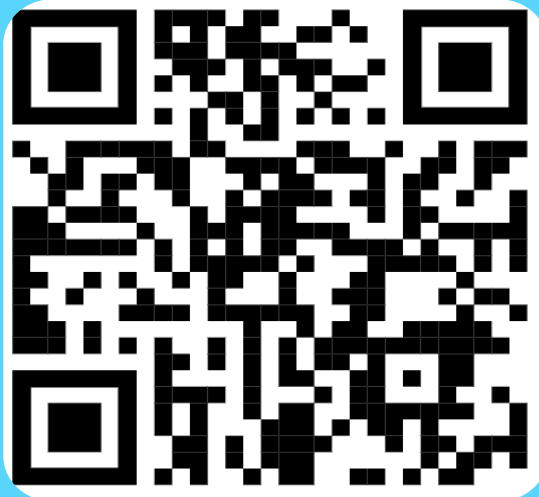
Government institutions should actively promote Lithuania as a strategic hub for world-renowned pharmaceutical companies, addressing challenges stemming from the limited presence of these companies.

Thank you for our stakeholders and your^w
attention!
Let's stay in contact!

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