

EXECUTIVE SUMMARY

Sample based on: [Freidl et al. \(2026\)](#), published in *Front Public Health*, doi: 10.3389/fpubh.2025.1747693.

Title: From urban to alpine: environmental microbial transfer in urban adults – the ALM Study.

Intended audience: Public health policymakers, health promotion officers, regional government officials, health professionals and researchers

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STUDY CONTEXT

The ALM Study (Alpine Farming and Human Nasal Microbiome Diversity) is a pilot intervention study conducted by the Institute of Ecomedicine (Paracelsus Medical University Salzburg, Austria) and funded by Land Salzburg. It examines environmental health restoration in urban adults.

BACKGROUND

More than 75% of Europeans live in cities with air and noise pollution, low microbial exposure, and increasing stress. Traditional alpine pastures have been proposed as a potential health-promoting environment. The ALM Study tested whether a 7-day immersion in an alpine farming environment improved urban adults' physiological and mental health.

OBJECTIVES

- Evaluate the feasibility of using alpine pasture interventions as a scalable preventive health strategy.
- Assess if a 7-day retreat in a traditional alpine pasture is associated with measurable health improvements in urban adults.
- Quantify changes in nasal microbiome, immune markers, cardio and respiratory functions, and psychological well-being.

APPROACH

The pilot study involved 22 healthy adults with no prior agricultural exposure, who stayed 7 days at an alpine pasture during farming season and engaged in daily farming activities. The team collected nasal swabs, venous blood, and data related to the cardio-respiratory fitness and psychometric scores of each participant before and after the experience. This study designed a unique model of environmental exposure with the potential to be scaled in health restoration programs.

KEY RESULTS

1. Significant increase in nasal microbial diversity.
2. Measurable activation of the immune system.
3. Reduction of total and non-HDL cholesterol.
4. Robust improvement in WHO-5 psychological well-being scores.

LIMITATIONS

- Small sample size and short-duration study.
- Absence of a control group.
- Potential self-selection bias.
- Use of non-standardized data from physical activity levels and dietary intake.

RECOMMENDATIONS

1. Design a randomized controlled trial in alpine pastures with a longer duration and a control group.
2. Explore the integration of this immersion experience as a complementary alternative in preventive and rehabilitation health strategies.

IMPACT SUMMARY

Short-term exposure to alpine pasture environments is a promising model to prevent and improve health issues in urban populations. This approach connects cultural heritage, sustainable land use, and public health benefits, expanding the opportunities for local development and urban well-being based on traditional values.