

Team Up & Think Big to add Hungary nationwide to both the School Study and its seamless follow-up University & College Study Call for Collaborative Research & Innovation

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From SCIENCE to HIGHSCHOOL & UNIVERSITY

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BACKGROUND TO ISSUE

Diet (in particular whole food plant-based diets) and physical activity (PA), sports & exercise are each well-accepted as medicines and are sound recommendations to improve one's state of health, especially when permanently linked for a dual approach of „healthy eating – active living” (1) as a minimum recommendation to sustainable and lifelong health (2-4) – all the more during COVID-19 times of crisis. Accompanying exercise & sport, food choices and diet type make a crucial difference for the immune system in preventing illness, and thus the risk of moderate to severe disease progression, and even the risk of death, can be improved (5-22). Experts agree on the role of meat in the risk of COVID-19 infection and future pandemics (23-25), as data suggest that slaughterhouses are an optimal environment for preserving highly infectious viruses such as SARS-CoV-2 (26-27). The WHO (28) specifically recommends consuming 6 out of 9 "Best food Buys" from plant-based foods and explicitly no meat. Current studies show that a (whole-food) vegan diet, in particular, can positively influence the risk of (reduction to -73%) and the severity of (moderate to severe courses of) COVID-19 infections (18, 26-27, 29-33). For decades, the world and Austria have been facing two global-scaling health problems of

pressing concern and great urgency that track from childhood into adulthood and old age (2, 4, 19,21, 34-43): Physical inactivity/insufficient physical activity (PA) „crisis” (44-58) along with overweight/obesity „epidemic” (45-46, 48-50, 59-63). In Austria, however, these crises still exist even though health literacy and health promotion – preferably via “PA, sports, and exercise” and “healthy nutrition” (according to the state mandate of Austrian school curricula) – are declared as an overarching educational goal and thus general teaching principal, and are highly relevant to the school setting for every compulsory subject (64-71). The problem seems to include the solution, as physical inactivity (6% of deaths globally) and overweight/obesity (5%) are respectively ranked 4 and 5 among the top risk factors for global mortality and contribute markedly to the risk of developing chronic and non-communicable diseases (NCD) such as heart disease, diabetes and some cancers (58). At the same time, the so-called veggy boom is still unrelenting, with the young generations being key (children/adolescents, emerging adulthood; pupils/students) and major drivers towards more healthy and more sustainable diets and lifestyles. A recent study performed on more than 2 million Facebook posts in 132 countries (age group 15-65+ years) regarding interest in sustainable (low-carbon) diets or lifestyles found an ever-

increasingly growing interest in sustainable vegetarian/vegan diets (72). Furthermore, the number of vegetarians and vegans in Germany doubled during the time of the COVID-19 pandemic (73). Despite this, no study reflecting the current trends on more sustainable (plant-based) diets exists.

OBJECTIVE

Therefore, the main purpose of both the Austria nationwide studies, the school study **From Science 2 School**, and its immediate follow-up university & college study **Sustainably healthy**, was to address and survey with a special focus on the prevalence of vegetarian and vegan diets linked to levels of PA, sports & exercise (among other health behaviors) at educational settings of secondary schools levels I and II (pupils, teachers/principals) and tertiary level (university/college students, lecturers/academic staff), respectively.

METHOD

Both these interdisciplinary studies were designed as a cross-sectional and Austria nationwide approach based on a large sample size, supported by the Federal Ministry of Education, Science, and Research, Department 1/7 – School and University Sports, with the university/college study additionally supported by the Austrian Students' Union. The target groups were approx. 771,500 pupils and 89,240 adults at secondary schools levels I and II (n=2,688) for the school study and approx. 376,000 students and 69,300 lecturers/academic staff at the tertiary level (n=102) for the university/college study. Participants were asked to fill in a standardized online questionnaire by self-report throughout either regular classroom sessions or at any other time preferred (breaks, home, etc.) with the survey conveniently completed via Smartphone, Tablet, or PC/Laptop. At data closure, 8,845 pupils and 1,350 adults (1.15% and 1.5% of basic sample, respectively) participated in the school study (<https://www.science2.school/en/#Questionnaire>), and 4,510 students and 1,043 lecturers (1.2% and 1.5% of basic sample) participated in the university/college study (<https://uni.science2.school/en/#Questionnaire>). The interested reader is kindly referred to the study protocol (74).

RESULTS

First results from the **From Science 2 School** study show that vegan children and adolescents (7.2% vs. 8.5% vegetarian; N=8,799) in Austrian secondary schools I and II are significantly more active in leisure time (3.2 ± 2.1 days/week, $p < 0.01$; 86.4% of vegans, $p = 0.003$) and prevalence of alcohol use is significantly less (74.7% never drink alcohol) compared to non-vegans. The interested reader is kindly referred to some award-winning publications of first results (42, 75-76).

DISCUSSION/CONCLUSION

Both these studies are the first to survey the prevalence of vegetarian and vegan diets with a dual approach to health at different educational (secondary schools, university/college) settings, and seamlessly and sequentially contribute markedly to overcome and add to the lack of information about plant-based diets linked to PA, sport & exercise in Austrian educational settings. Thus, they will provide viable information on key lifestyle behaviors given the importance of PA and diet on one's state of health, resulting in a nation's state of health since the personal health of children and adolescents tracks over time into adulthood and old age. Moreover, the immediate follow-up study **Sustainably healthy** performed at universities/colleges was created especially to overcome the lack of information and bridge the gap between the state mandate of the Austrian secondary school curricula (that not only has to be addressed but being fulfilled) and the specialized studies for pedagogy and teacher training at Austrian universities/colleges. To date, information on the untapped potential of lifestyle habits and behaviors of health that results from the six lifestyle areas, including diet and PA, along with stress management, sleep, social relations, and substance abuse, provided through adequate courses from introductory up to specialized lectures and courses to empower the future teachers to sufficiently address and match their didactical duties regarding health education, literacy, and promotion, is lacking. However, both lifestyle behaviors – diet and PA – are well-known to (i) contribute to the individual's state of health for better or even for worse and (ii) serve as an intervention that is

basic and low-cost but also safe and highly effective for improving pupil health (4, 74, 77). Our data have the potential to:

- (1) justify the need for this dual approach to decision-makers, which should be the minimum recommendation according to the Austrian state mandate;
- (2) motivate policy and decision-makers in the educational context (federal authorities, school principals and teachers, families) to reassess current health-related school offerings in order to build on or even create new programs, opportunities, and materials encompassing this dual approach for everyday school scenarios (cafeteria and catering, vending machines, interdisciplinary events, etc.);
- (3) offerings in order to build on or even create new programs, opportunities, and materials encompassing this dual approach for everyday school scenarios (cafeteria and catering, vending machines, interdisciplinary events, etc.);
- (4) establish health-oriented action competence and sustainable action readiness regarding improvements to the current and long-term health status of school pupils (for pupils of all socioeconomic backgrounds).

FUTURE PERSPECTIVE & CALL FOR INTERNATIONAL R&I-COLLABORATION TO GO FOR MAJOR FUNDING

In order to **internationally map the interwoven prevalences of plant-based diets and PA levels in the peer-groups of the young**, from childhood/adolescence (pupils) up to emerging adulthood (students of pedagogy and teacher training, medicine and health, nutrition, sports, and life sciences) as future parents, teachers, doctors, and therapists, among other specialized health, nutrition, sports, and life science professions, we intend to **transfer both studies to the European level to be carried out in European countries and/or EU member states** that will help then provide an overview of the impact of the relationship between different kinds of diet linked to levels of PA, sports & exercise seamlessly from secondary school age up to emerging adulthood at university/college. In this regard, subsequent follow-up studies are already under the plan of intent to apply for major funding with an collaborative application to, eg.:

- **FWF Weave Program** (no deadline): <https://www.fwf.ac.at/de/forschungsfoerderung/fwf-programme/internationale-programme/joint-projects>
- **HORIZON-HLTH-2022-DISEASE-07-03: Non-communicable diseases risk**

reduction in adolescence and youth (Global Alliance for Chronic Diseases - GACD), pp. 92-95 (deadline: 21. 4. 2022):

https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-4-health-horizon-2021-2022_en.pdf; <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-hlth-2022-disease-07-03>

THE TARGET GROUP OF POTENTIAL COLLABORATORS WE ARE ADDRESSING

Interested researchers (PhDs, Post-docs, Professors, others) from the disciplines (i) sports, (ii) nutrition, (iii) medicine/health, and/or (iv) pedagogy/education that will join and team up, to bring both the studies to your country. There are 2 studies, one for a secondary school setting, one for a university/college setting: each study needs a national PI, a person responsible for communications to government/federal ministry, federal educational authorities, and schools, for creating the list of all schools nationwide, helping translate the questionnaires, etc;

- for the school study preferably 1 person (researcher working in pedagogy and/or sports, nutrition, health) who perfectly knows how the Hungarian school system is working, along with its framework and requirements; at best with help of 1 PhD student;
- for the university study preferably 1 person from a Hungarian university/college (researcher from a department/institute of sports, and/or nutrition, of medical school/medical university, or even health, a focus on pedagogy/education would be advantageous) who perfectly knows how the tertiary education system is working, along with its framework and requirements; at best with help of 1 Ph.D. student

Each study can stand/be conducted for its own, but if there would be 1 person to organize and sequence both studies in Hungary who is interested in the seamless follow-up from secondary school up to tertiary teacher/doctors training as future teachers/doctors for better public health, it would be optimal. However, reliable and robust network at (a) federal ministry and educational authorities, and (b) university/college level is a crucial requirement to provide. To date, in

addition to Germany and Switzerland from which each 1 medical university will take the national lead, even researchers from Hungary, Luxembourg, Poland, and Portugal are interested to team up for funding and participate in bringing both studies to their countries.

DEADLINE FOR REPLY ON INTEREST/ DECISION

End of December 2021

MORE DETAILED INFORMATION (ROLE, REQUIREMENTS, DUTIES, STAFF, BUDGET)

In addition to respective websites, please feel free to contact the **principal investigator of both the studies, Katharina Wirthner** – corresponding author and member of *Schools for Health in Europe (SHE)* inclusive *SHE Research Group* –, who is happy to answer your questions, also via e-meetings at Zoom:

- **From Science 2 School: Sustainably healthy – active & veggy**
<https://www.science2.school/en/>
- **Sustainably healthy – From Science 2 Highschool & University**
<https://uni.science2.school/en/>



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