

pause, but it adds to the evidence base and offers ongoing lessons about lung cancer anti-tumour immunity.

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Universal free school meals: the future of school meal programmes?



School meal programmes create one of the world's most extensive social safety nets, with 83% of countries providing school meals to an estimated 418 million children daily.¹ But this ubiquity conceals inequity; on average, 41% of the world's primary schoolchildren are fed, with coverage at about 61% in high-income countries but only 18% in low-income countries where food is needed most.² When schools closed during the COVID-19 pandemic, hundreds of millions of children worldwide lost access to school meals, and food insecurity rates increased by about 17% worldwide, particularly affecting children in lower-income countries.² These school closures also highlighted the value of school meal programmes as an investment in students' physical, mental, and cognitive health, refocusing attention on the barriers to receiving school meals, especially stigma when free meals are only available to children from lower-income households.³

Several diverse high-income and low-income countries provide free school meals to students from lower-income households while charging other students for meals.⁴ By contrast, universal free school meals (UFSM) is a policy whereby all students within a school, region, or country receive a school meal at no cost. UFSM policies are expanding in some settings to support nutrition and academic equity. For example, in 2022 the Commissioner

for Human Rights of the Council of Europe called on authorities in the UK to address barriers to accessing school meals and to work towards a UFSM provision to reduce childhood poverty and food insecurity.⁵ Similarly, in 2022 the Community Preventive Services Task Force in the USA recommended a UFSM policy, on the basis of scientific research showing UFSM reduce child food insecurity and absenteeism while improving diet quality and academic outcomes.^{3,6} Although UFSM policies have gained attention recently, this concept is not new; multiple countries have implemented UFSM policies over the past 80 years (table).^{2–12}

With the rise of compulsory universal education globally, countries have implemented school meal programmes for effective learning, thus supporting educational achievement and the creation of human capital.³ Additionally, these policies typically encourage or require the use of nationally grown foods, thereby supporting domestic agriculture.⁴ UFSM can also support gender equity. For example, in India the midday meal policy was expanded in 2008 as a legally mandated requirement, alongside the introduction of compulsory universal education to promote gender equity and social equality by caste; research suggests this UFSM policy is successfully helping to reduce these disparities.^{13,14} More

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	Year policy introduced	UFSM policy	Description of policy	Number of children receiving free meals daily
Brazil	2009	National UFSM policy	School meals are provided to all students at no cost	40 200 000
England ⁷	2014	Grade-specific UFSM policy	School meals are provided to all children during their first three years of primary school	1 900 000
Estonia	2002	National UFSM policy	School meals are provided to all students at no cost	221 479
Finland	1943*	National UFSM policy	School meals are provided to all students at no cost	920 700
India	2008	National UFSM policy	School meals are provided to all students at no cost	106 000 000
Japan	1947	National UFSM policy	Participation in UFSM is required by all schools but is only free for students from low-income households	8 863 908
Scotland ^{8,9}	2015	Grade-specific UFSM policy	UFSM provided to all children during their first 5 years of primary school	357 599
South Korea ¹⁰	2011	National UFSM policy	School meals are provided to all students at no cost	7 175 800
Sweden	1946	National UFSM policy	School meals are provided to all students at no cost	2 177 882
USA ¹¹	1980	School and school district UFSM policy based on poverty levels	Schools and/or school districts with high poverty levels can opt in to federal UFSM provisions (some states require that all eligible schools participate)	18 592 106†
	2022–23	State-level UFSM policy	Multiple states currently have UFSM policies whereby the state covers the difference in cost not covered by the federal government	..
All the above countries with UFSM policies‡	..	..	..	186 409 474

*Policy fully implemented in 1948. †Estimated based on preliminary school year 2022–23 participation data from the US Department of Agriculture (September to December, 2022). ‡Approximate number of total students receiving free school meals daily. Free school meal participation values based on 2022 data from the World Food Programme unless otherwise specified.² Participation data exclude planned future expansion of UFSM policies, such as Wales which plans a phased approach to their UFSM policy through 2024.¹²

Table: Summary of countries with UFSM policies

broadly, a World Food Programme strategic evaluation found widespread evidence of the positive impact of school feeding programmes on gender equity with regards to school enrolment and attendance.²

UFSM policies can provide a good return on investment for all students globally.³ First, research suggests that UFSM policies improve school meal participation among all students, partly due to reductions in stigma that arises when meals are only available to those from lower-income households.^{3,6} Additionally, with less staff time needed for processing school meal applications, efforts can be redirected to improving meal quality.¹⁵ Importantly, even as childhood obesity rates increase globally,¹⁶ UFSM policies are not associated with unhealthy weight gain.³ Healthy foods are often provided by schools and research suggests that in some settings school meals can be healthier on average than meals brought from home.^{17,18} Research has also shown that UFSM policies benefit students academically, potentially through improvements in school attendance and diet quality and reductions in behavioural incidents and suspensions.³

Importantly, UFSM policies are cost-effective. Multiple studies have found that UFSM policies are associated with a lower cost per meal, partly due to economies

of scale.³ With UFSM, debt from unpaid school meal balances is eliminated for families.¹⁹ Furthermore, short-term investments in school meals can have long-term economic benefits. For example, US school meal programmes cost about US\$19 billion annually, but provide a \$40 billion return per year in human health and economic benefits through decreases in diet-related diseases, poverty, and food insecurity, and UFSM policies could lead to an additional \$7.5 billion annual return on investment.²⁰ Additionally, a study in Sweden showed UFSM had long-term health, education, and income benefits; students who had access to UFSM had on average a 3% higher lifetime income than students who attended schools without this policy.²¹ These benefits were observed among both students from lower-income and higher-income families, with the greatest benefits among children from lower-income households.²¹

Overall, evidence suggests that UFSM can be a cost-effective policy that benefits all students, while also promoting health and academic equity. Thus, UFSM policies can be justified on the basis of the benefits to health, education, and human capital, but even more so if other returns on investments are considered, including multisectoral impacts in the social protection,

gender-equity, and local agricultural and food systems domains.²² The arguments against UFSM are typically related to costs and parental responsibility; these are similar to the arguments used in the 19th century in the UK and the USA against providing free, compulsory universal education, which has become the standard for child development in all countries.^{23,24} Thus, if universal free education makes sense for growing children, children's wellbeing must also be considered. The provision of universal free education and UFSM together can help ensure that the benefits of both measures are leveraged. Barriers to UFSM can be addressed through regulations that support local agriculture and pilot initiatives within diverse schools and regions to inform potential expansion of UFSM policies. For example, in the USA the implementation of UFSM policies in a few states in 2022 was instructive for the expansion of UFSM to other states and the national proposal in 2023 to expand access to UFSM, alongside concurrent federal funding to states to increase local and regional school food purchases, with the specific goals of strengthening food systems for schools, establishing resilient local food chains, and expanding partnerships among historically underserved farmers to expand economic opportunities.²⁵

More than a third of the world's school meals are provided through UFSM policies, which benefited 186 million children of the 418 million children who received school meals in 2022.² Political and community support for UFSM needs to be harnessed to build the growing UFSM movement and expand school meal coverage worldwide.

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