

How to improve the nutritional qualities of school meals?

Policy and practice recommendations from a pilot school meal initiative in Serbia

The challenge

Serbia reports **increasing levels of inadequate children nutrition**, leading to an escalation of childhood obesity and malnutrition issues. Schools, where children consume at least one meal per day, play an important role in influencing children's nutrition and their daily intake of nutrients and energy. However, the **quality of existing school meals in Serbian primary schools is often insufficient**, with an overreliance on processed and starchy foods.

In the framework of the Strength2Food project, the Ministry of Education, Science and Technological Development of Serbia, the Faculty of Economics of the University of Belgrade, and the European Training Academy implemented a pilot initiative in Serbia, aimed at formulating a set of strategies and recommendations to **improve the nutritional qualities of school meals with food procurement and associated benefits**.

The pilot action

Led by the Ministry of Education, Science and Technological Development of Serbia, with the support of the Faculty of Economics of the University of Belgrade and the European Training Academy, the pilot action aimed at **improving food procurement in primary schools** to stimulate short food supply chains and improve meal nutritional quality.

The first phase of the research explored the **state of food procurement and meal provision** in Serbian primary schools, through schools' questionnaires, web research, school meal normative analysis, and school visits.

The second phase of the research, which saw the direct involvement of 27 urban and rural schools, aimed at **testing** children's perceptions and consumption of healthy food and **providing recommendations** to improve children's nutrition. Data collection activities, including children's nutritional knowledge tests and two questionnaires – one for children and one for parents – allowed evidence-based recommendations to be formulated while monitoring the impact of Strength2Food activities.

Key recommendations

For schools:

- Ensure the respect of national nutritional standards
- Choose school-made meals instead of catering
- Create a standardised set of school meal menus
- Review meal pricing policies for parents

For teachers:

- Engage children in food- and nutrition-related educational activities
- Be present with children during mealtime

For cooks and kitchen staff:

- Improve the nutritional balance of school meals
- Adopt strategies to minimise school plate waste

For policy makers:

- Encourage the use of the Meal Planner tool and other educational resources
- Increase support to schools for improved nutritional quality of school meals

Main findings

Results indicate that children's food preferences and habits are influenced by several factors. **Parents' attitudes, habits, and practices towards food** are proved to play a role of primary importance in influencing children's food preferences and choices. Children and parents eating meals together is beneficial for children's food preferences. The majority of parents responding to the questionnaire demonstrated a good knowledge of what a healthy diet is, however the analysis of children's food diaries revealed concerning issues, such as the absence of fruit in the diet of nearly a quarter of the children.

Findings also reveal that **school meals** have the potential to make a positive contribution to children's food preferences and nutrition. Children who eat school meals tend to dislike fewer foods and to like wider categories of foods, including vegetables. This often leads to wider eating habits beyond school, thus contributing to **children's improved nutrition and overall health**. However, school meal normative analysis highlighted that a large proportion of daily school menus do not respect standard guidelines in terms of nutrition, with lower energy value, lower content of fibre and excessive content of saturated fat compared with recommended standards.

Recommendations for school directors and administrators

- **Ensure the respect of national nutritional standards**

Schools are recommended to enhance the quality of school meal menus and offer healthier meal options to children, in accordance with national standards. They are also recommended to develop partnerships with local food producers to receive good quality food from local suppliers.

- **Choose school-made meals instead of catering**

Engaging a caterer to provide school meals is often associated with a less healthy diet for children compared with meals prepared within school premises. Therefore, schools are recommended, whenever possible, to take active measures to prioritize school-made meals, for instance by equipping schools with kitchen facilities and utensils, and by increasing the number of kitchen staff.

- **Create a standardised set of school meal menus**

Schools are recommended to adopt a standardised set of menus to ensure that children receive a nutritionally well-balanced meal. The Strength2Food project has developed a Meal Planner tool to help schools adjust their menus to national standards in terms of meals' nutritional value, as well as to analyse the menus' costs and CO₂ footprints.

- **Review meal pricing policies for parents**

Schools are recommended to carefully evaluate their meal pricing policies for parents. Achieving as low a meal price as possible without sacrificing nutritional quality is crucial to allow all children to participate in school meals. Strength2Food has prepared a set of two weeks of [winter and summer menus](#) for school lunches to optimize the nutritional composition of menus while minimizing meal prices.

Recommendations for teachers

- **Engage children in food- and nutrition-related educational activities**

Educational resources for teachers have been developed and are available on the [Serbian website of Strength2Food](#). These include a number of exercises and presentations to be used by teachers during classes, as well as a collection of video animations and printable materials to help the youngest children understand the basic information on healthy eating.

- **Be present with children during mealtime**

Teachers should be present in canteens during mealtimes and encourage children to try new tastes and eat their portions.

Recommendations to cooks and kitchen staff

- **Improve the nutritional balance of school meals**

Cooks and kitchen staff are recommended to serve more energy-dense meals, which allow children to take in more nutrients in a given time. Educational resources for cooks and kitchen staff have been developed by BARILLA and are available on the [Serbian website of Strength2Food](#), including several examples of menus, cooking demonstrations, as well as recommendations on how to prepare dishes in the fastest and most nutritious way.

- **Adopt strategies to minimise school plate waste**

Cooks are recommended to set food in more decorative ways, following the recommendations available on the [Serbian website of Strength2Food](#). In this way, children will be more open to trying new healthy food, with positive impacts on the decrease of school plate waste.

Recommendations for policy makers

- **Encourage the use of the Meal Planner tool and other educational resources**

In order to educate different target groups about the importance of healthy eating, Ministries and policy makers are recommended to refer to and promote the use of Strength2Food tools and [educational resources](#) in their national and local contexts. The Meal Planner tool, originally designed for Serbian primary schools, can be adapted to different national contexts and promoted as a tool to help schools adjust their menus to national regulations.

- **Increase support to schools for improved nutritional quality of school meals**

Ministries and policy makers are advised to increase their financial support to schools for improving the nutritional quality of school meals. In addition to financial support, policy makers and administrations should support school food procurement, by stimulating the development of partnerships both amongst schools to encourage joint procurements, and between schools and local food producers.

More info

Quarrie S., Šćepanović D., Colić Barić I., Filipović J., Aničić Z., Bojović R., Kuč V., Vuksanović-Herceg I., (2021) "Report evaluating the pilot initiative to improve the nutritional qualities of school meals catering procurement and assessment of benefits" Strength2Food Deliverable n. 9.1.

<https://www.strength2food.eu/2021/03/12/report-evaluating-the-pilot-initiative-to-improve-the-nutritional-qualities-of-school-meals-catering-procurement-and-assessment-of-benefits/>

Other resources and tools:

- [Meal Planner tool](#)
- [Strength2Food educational resources in English](#)
- [Strength2Food educational resources in Serbian](#)

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Strength2Food is a five-year, €6.9 million project to improve the effectiveness of EU food quality schemes (FQS), public sector food procurement (PSFP) and to stimulate Short Food Supply Chains (SFSC). Lessons from the research have been applied and verified in 6 pilot initiatives that brought together academic and non-academic partners.



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