



Monitoring physical fitness for the whole family



University of Ljubljana
Faculty *of Sport*

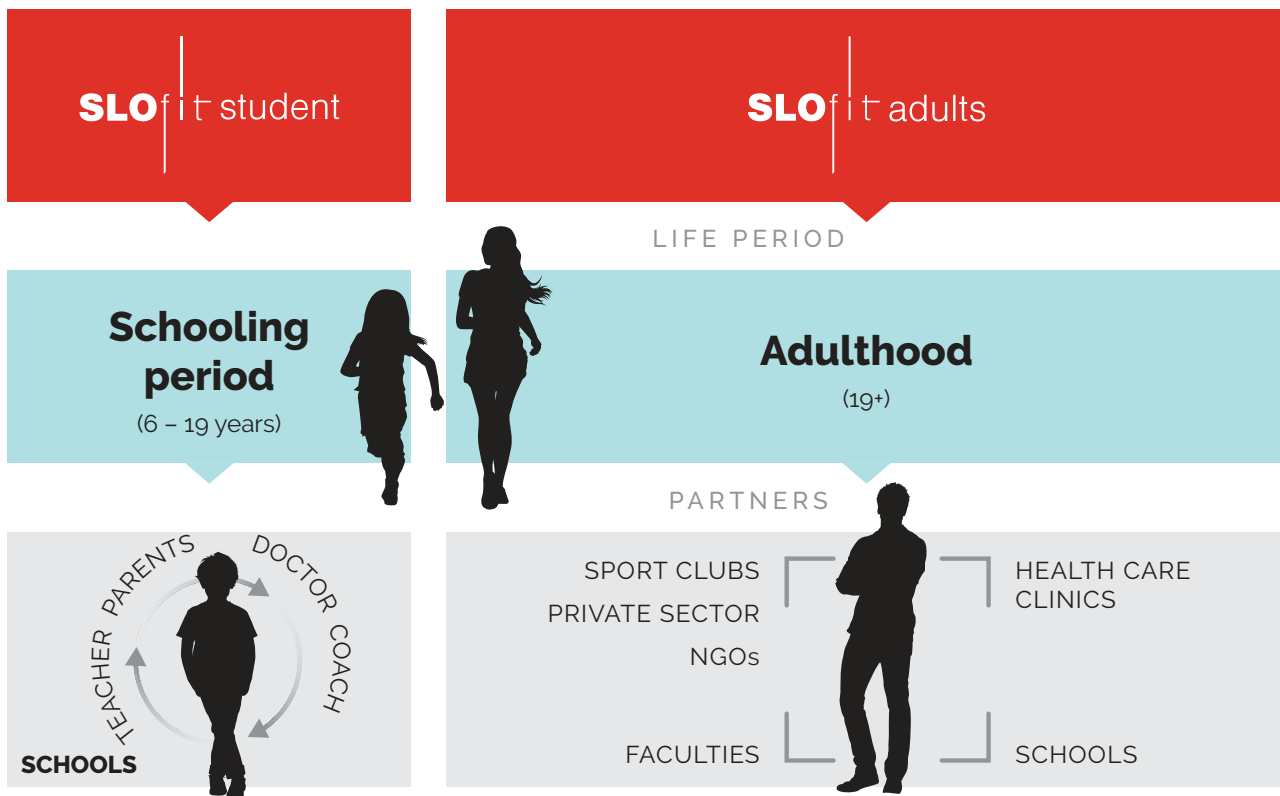
SLOfit® stands for the Slovenian national physical fitness monitoring system for children, adolescents and adults established by the Faculty of Sport at the University of Ljubljana. SLOfit monitors the physical and motor development of all Slovenian school children annually from 1987 onwards. From 2021, SLOfit also provides fitness monitoring throughout adulthood.

Helping to get people fit, participate in SLOfit!

The SLOfit system provides **lifelong physical fitness monitoring** and associated data, such as 24-hour movement behaviour, and user support from the My SLOfit application. Within this application, individuals can link fitness results from their schooling period to those acquired during adulthood, thereby directly monitoring progressions in their own lifelong physical fitness status.

Children and adolescents participate in the SLOfit programme through their schools, whereas adults can access the widely-available system from various education, health and community providers.

Remember: Physical fitness can be thought of as the ability to execute daily activities with vigour and alertness without undue fatigue. To be physically fit means you have ample energy to enjoy leisure time pursuits and also to meet the challenge of unforeseen emergencies (e.g. quick reaction time and adequate muscular power can reduce falls).





Education First - Monitoring physical fitness to improve physical literacy

SLOfit was primarily developed as a physical fitness diagnostic tool for physical education teachers to assess their student's current fitness status and augment their classroom educational goals whilst supporting the physical literacy of the children themselves.

Having a solid grasp of how one's body moves ensures that children and adolescents have **the tools to understand how to engage in purposeful physical activities which will promote an active lifestyle** throughout their life. Providing continuous fitness monitoring and feedback comprises a critical part of the national PE curricula. Class feedback reports provide PE teachers with the current physical fitness status of their class, including

fitness trends from previous years which can be used for planning PE classes, identifying children who may have developmental or health difficulties, or even those showing promising sport talent. Teachers can access detailed individual physical and motor development of any given student in their class **to better tailor the pedagogical process** and provide individualized teaching methods to meet the child's specific needs.

Schools, and especially the dedicated physical education teachers, are the beating heart of SLOfit!

Fitness monitoring is enshrined in school legislation and curricula by law

All primary (ages 6-14 y) and secondary schools (ages 15-19 y) in Slovenia organise **SLOfit measurements every April**.

Measurements are carried out under the trained leadership of physical education teachers according to a uniform protocol. The testing takes two physical education lessons (2x45min) per class to complete.

Inclusive programme

All schools, teachers, children, parents and other users (e.g. doctors, coaches) can participate **free of charge**. Although measurements for children with special needs are not obligatory to perform by law, they are of course encouraged to participate in the annual testing.

The SLOfit programme is also offered and available to private schools, Slovenian minority schools located in Italy, Austria and Hungary, and schools with high Roma populations.

CONSENT

Written, positive consent of parents and assent of children are obtained for personal data treatment; primary school respond rate is above 95%; secondary school is around 75%.

DATA INPUT

Schools first enter physical fitness data into My SLOfit app, where data is checked with smart algorithms.

DATA CHECK

Specialised tools enable communication between individual schools and the Faculty of Sport, UL cleans and verify results.

ACCESS

Teachers, parents, adolescents and another authorised persons can access their SLOfit reports with a secure username and password.

FEEDBACK

Registered users of the My SLOfit app receive feedback on SLOfit measurements within only a few days after testing. Only authorised persons have access to any personal data. For example, parents can grant access to others, e.g. doctor, coach, grandparent. A national report for the Ministry is created on anonymised data.

DATA ANALYSIS

After approval from the main SLOfit administrator, data are analysed and the school, class, and individual reports are generated.

SLOfit physical fitness test battery for students

TEST		CONSTRUCT	COMPONENT
Body height	BMI	HEALTH-RELATED FITNESS	Anthropometry
Body weight			
Triceps skinfold			
600-meter run			Cardiorespiratory endurance
60-s sit-ups			Repetitive strength
Bent arm-hang			Upper body strength
Stand and reach		SKILLS-RELATED FITNESS	Flexibility
20-s arm plate tapping			Speed of alternative movements
Standing long jump			Explosive power
Polygon course backwards			Coordination
60-meter dash			Speed



The SLOfit test battery is the same for all ages (6-19 years) and has been performed in this version since 1987.

Feedback supported by the My SLOfit application

The free-of-charge My SLOfit app provides all registered users official SLOfit reports and facilitates communication between important stakeholders, e.g. teachers, parents, doctors and coaches.

Profile of current physical fitness compared to previous measurements with short instructions for reading



Health-risk zones are labelled using different colours:

- healthy zone
- low risk – improvement recommended
- increased risk – improvements are necessary

A brief description of fitness test and relevance of fitness component to physical and motor development of a child

Current and previous year

Percentiles

Raw values

ADDITIONALLY, THE MY SLOFIT APP PROVIDES:

- a) **growth and mature stature predictions** on previously-collected data;
- b) **an estimation of maturity during** the puberty period;
- c) the possible **effects of physical activity** interventions on physical fitness;
- d) **report on 24-hour movement behaviour** based on 7-days recall questionnaire.

Trend results can be presented over the course of the child's development in the report.

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www.facebook.com/slofit.org



www.youtube.com/c/slofitslovenia

For more feedback, parents can also follow the professionally-moderated SLOfit social media (Facebook and YT channel) and **web magazine SLOfit advise** which carry up-to date information on different aspects of physical activity, physical fitness and promoting a healthy lifestyle in children and adults alike.

TAILORING PHYSICAL EDUCATION PROCESS

Schools and teachers can generate **classroom reports** that provide information on their children's fitness variability, future health risk, and other data to enable better physical education planning. Moreover, **school reports** give an overview of school fitness between generations of the students providing an empirical basis for **school and local community interventions**, including cooperation with medical staff like the school doctor and local sport organisations.





Surveillance of adult physical fitness

Adults can participate in the SLOfit programme free-of-charge through special trained education, health and community providers.

SLOfit physical fitness test battery for adults

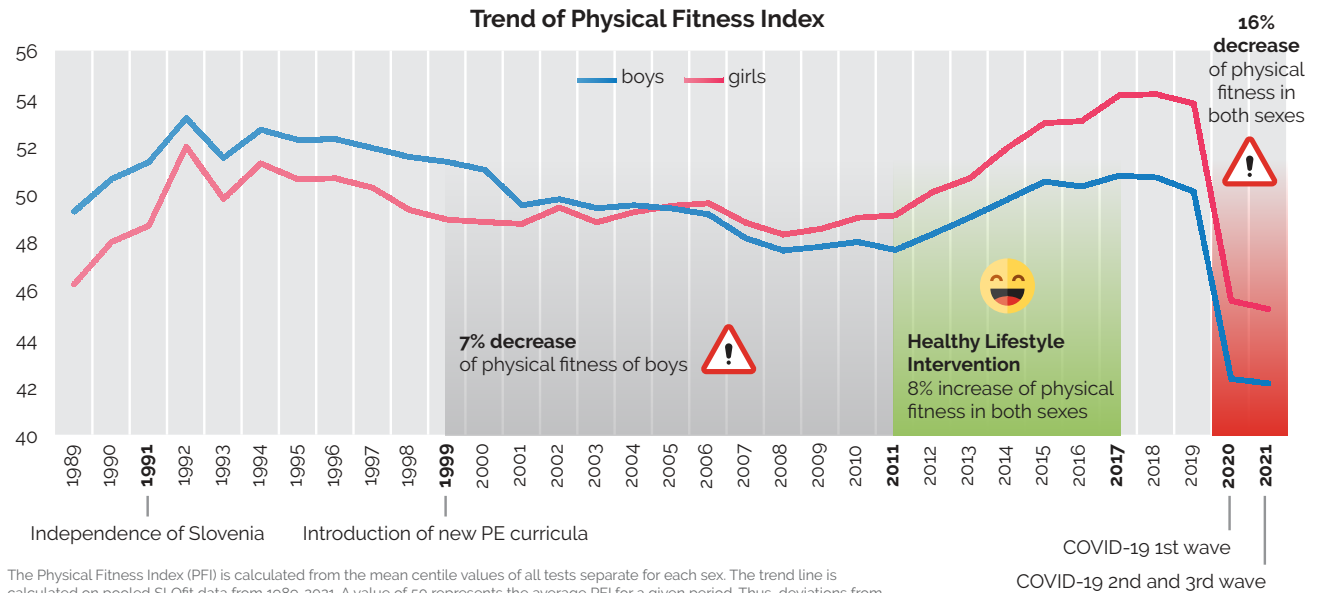
TEST	CONSTRUCT	COMPONENT
Adopted ACSM PAR questionnaire	HEALTH-RISK ASSESSMENT	Vital functions
Arterial blood pressure at rest		
Heart frequency at rest		
Saturation of oxygen in blood		
30 second chair stand test		Strength
Body height	HEALTH-RELATED FITNESS	Anthropometry
Body weight		
Waist circumference		
6-minutes' walk test		Cardiorespiratory endurance
Partial curl up beep test		Strength of trunk
Dynamometry	SKILLS-RELATED FITNESS	Muscular fitness
Standing vertical jump test		Explosive power
Seat and reach test		Flexibility
20-s arm plate tapping		Speed of alternative movements
Figure 8 running		Agility

The SLOfit fitness test battery for adults was developed in 2021 and is still being evaluated; therefore, slight modifications could happen over the next several years, according to testing experience and end-user feedback.

SLOfit is the scientific backbone for strategic decision making



The anonymous SLOfit database serves as a powerful tool to compare the regional and national fitness status of children over time, and flags decision-makers to significant deviations from previous years. From these data, the SLOfit team of experts can suggest **national policy plans and future health interventions** based on these empirical results.



The Physical Fitness Index (PFI) is calculated from the mean centile values of all tests separate for each sex. The trend line is calculated on pooled SLOfit data from 1989-2021. A value of 50 represents the average PFI for a given period. Thus, deviations from 50 indicate better or worse overall population fitness compared to the mean of that entire period.

MINISTRY MATTERS

SLOfit was developed within the Faculty of Sport, University of Ljubljana, but the system runs under the patronage of the Ministry of Education, Science and Sport.

The Ministry prepares **the school legislation**, which in turn regulates all school-based physical fitness testing, making **decisions on any curricula changes**, and ultimately informing schools directly about any changes to various procedures.

The Ministry also prepares **national interventions and evaluates the effectiveness of its policies**, based largely on the annual SLOfit national reports prepared by experts from the Faculty of Sport. SLOfit data is also used by Ministry of Health **to evaluate health in local communities** as well as indicator for physical activity policies.

SLOfit fast facts



Physical fitness monitoring system

est. 1987 in all Slovenian schools;

first attempt of national monitoring took place in 1969.

Slovenia is the only country in the world which has **managed to decrease the prevalence of childhood obesity**

from 7.5 % to 6.8 %
across 2011-2018 respectively.



The average Slovenian schoolchild's fitness is on the 70 percentile of European peers, meaning they are **in the top 30% of all children across Europe** for both boys and girls.



SLOfit is **the longest running longitudinal database of child fitness in the world**, making it a useful resource for research and policy purposes, in addition to its original educational goals.

In 2018, **girls** reached their highest level of physical fitness in the past 30 years, and therefore **exceeded the fitness performance of their mothers.**



2 078 848

Slovenian population

More than **half the entire population of Slovenia** has participated in **SLOfit** during their schooling.

In 2020, **the physical fitness index of children decreased by 16% due to COVID-19 restrictions**, which is the single greatest decrease measured in the entire 30-year history of child fitness monitoring.



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