



Healthy  
Workplaces  
**LIGHTEN THE LOAD**



## Musculoskeletal disorders among children and young people - a life course approach to risk factors and prevention

### Key points

- The prevalence of musculoskeletal disorders (MSDs) in children and young people is very high.
- Many young people enter the labour market with pre-existing musculoskeletal problems that can potentially be exacerbated by work.
- The lifelong impact of musculoskeletal pain (starting from childhood) needs to be considered.
- A life course approach to MSDs will contribute to their prevention among ALL workers regardless of their age.
- Most MSD risk factors are preventable.
- The public health, education and occupational health sectors should work together to prevent MSDs and promote good musculoskeletal health among children and young people.

### Healthy Workplaces Campaign 'Lighten the Load'

The European Agency for Safety and Health at Work (EU-OSHA) is running a Europe-wide campaign from 2020 to 2022 to raise awareness of work-related MSDs and the importance of preventing them. The objective is to encourage employers, workers and other stakeholders to work together to prevent MSDs and promote good musculoskeletal health among EU workers.

## High MSD prevalence among children and young people

The prevalence of MSDs in children and young people (7 to 26.5 years old) who are still going to school, college or university and who have not yet entered the labour market is very high at approximately 30 %. The average prevalence in young workers (15 to 32 years old) who have entered the labour market is even higher, at approximately 34 %.<sup>1</sup>

There are several reasons (some of which are presented below) for these high prevalence rates in children and young people. MSDs can be caused by acquired or congenital risk factors. It is important to highlight that most of the acquired risk factors, that is, physical, psychological and socioeconomic risk factors, are largely preventable.

## Why it is so important to prevent MSDs among children and young people

The existing high prevalence of MSDs among children raises the issue of young workers coming into the workplace with pre-existing musculoskeletal problems that can potentially be exacerbated by work.

This is why a life course approach to addressing musculoskeletal conditions and musculoskeletal health should be adopted. Such an approach has the potential to enhance understanding of how and why musculoskeletal conditions occur over the life course and how musculoskeletal health can be promoted. Good musculoskeletal health underpins a person's ability to live and work.<sup>2</sup> If MSDs in children and young people can be prevented, this will contribute to decreasing the prevalence of MSDs among workers (regardless of their age). This is also fundamental to healthy ageing.

In a context in which promoting sustainable work throughout the working life of workers is a priority, the lifelong impact of MSDs (starting from childhood) needs to be considered.

## Main risk factors

A considerable number of preventable, non-work-related risk factors have been suggested to be associated with a higher risk of MSDs in children and adolescents. These include:

- malnutrition and overweight;
- very low and very high levels of physical activity;
- absence of leisure activities;
- smoking and alcohol consumption;
- bad or incorrect postures;
- prolonged sitting<sup>3</sup>;
- excessive use of electronic devices;
- backpack loads;
- injuries from playing an instrument;
- sports injuries;
- mental health problems;
- social status and social health inequalities.

However, current studies show inconsistent results, and currently there is no clear evidence supporting the association of most of these factors with a higher risk of MSDs in children and young people. This could certainly also be attributed to the limitations of some existing studies. However, evidence suggests that some risk factors like sports injuries, overweight and inactivity are associated with MSDs.

1 See: <https://osha.europa.eu/en/publications/musculoskeletal-disorders-among-children-and-young-people-prevalence-risk-factors-preventive-measures>

2 See: [https://oshwiki.eu/wiki/Musculoskeletal\\_Disorders\\_in\\_Children\\_and\\_Young\\_People](https://oshwiki.eu/wiki/Musculoskeletal_Disorders_in_Children_and_Young_People)

3 See: <https://osha.europa.eu/en/publications/prolonged-static-sitting-work-health-effects-and-good-practice-advice/view>







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## Prevention or reduction of musculoskeletal pain among children and adolescents

### Increasing awareness

In general, school curricula, education sessions, materials or courses aimed at informing and changing attitudes and skills are effective in increasing knowledge and awareness about musculoskeletal discomfort and pain in both children and young people. Nevertheless, increased knowledge does not necessarily lead to improved behaviour. Such initiatives should therefore be accompanied by active interventions (for example, exercises). Interventions involving a combination of actions (educational interventions and exercises) have more chance of being successful than stand-alone actions.

### Physical activity and exercise

Muscle strengthening programmes, gym lessons, exercise trainings and new pedagogical approaches integrating movement in lessons are promising interventions that may have rapid success in the prevention or reduction of MSDs. For sustainable results, long-term adherence should be encouraged.

### Ergonomics

Ergonomic equipment (specially designed seats, desks, computer accessories) in addition to training has a positive effect. The combination of these two measures is an example of a good practice or intervention.

### Prevention of childhood accidents

Accidents and injuries can effectively be reduced by injury prevention education programmes and moderate physical activity.

## Working together!!!

The public health, education and occupational health sectors need to work together to prevent MSDs and to foster musculoskeletal health among children and young people. This can be done through, among others actions, the promotion of physical activity, playing and sport in the context of schools and also by mainstreaming health and safety into education. Some practical examples follow.

### Austria – Moving School<sup>4</sup>

The original aim of the initiative ('Moving School Austria') was to counteract the increasing number of health problems in students, partly caused by the amount of time spent sitting and the lack of physical activity, by offering more opportunities for exercise in schools. From the original health-oriented goal, the holistic goal of learning through exercise was developed. The approach uses physical activity with the aim of helping improve the educational quality of schools. The initiative is widespread throughout the country and is supported by key stakeholders from the education sector, in particular the state education authorities, as well as from the occupational safety and health sector, such as the Austrian Workers' Compensation Board (AUVA).

### Finland – Schools on the Move<sup>5</sup>

The Finnish programme 'Schools on the Move' is a research-based programme to promote physical activity in schools. Since 2010, it has developed from a pilot project to a country-wide programme that is used by more than 90 % of Finnish comprehensive schools.

The aim of the programme is to increase the physical activity of children and young people during their time at school. It does so by making school culture, and thereby everyday school life, more active. It is less about a specific focus and more about a general increase in physical activity during everyday school life, which should in turn lead to other positive developments. The primary aims are better physical fitness, promoting learning and an improved social climate.

<sup>4</sup> See: <https://osha.europa.eu/en/publications/austrian-moving-school-model-school-quality-means-enabling-children-live-out-their/view>

<sup>5</sup> See: [https://oshwiki.eu/wiki/Schools\\_and\\_Students\\_on\\_the\\_Move\\_%E2%80%93\\_A\\_Finnish\\_initiative](https://oshwiki.eu/wiki/Schools_and_Students_on_the_Move_%E2%80%93_A_Finnish_initiative)

## Hungary – Daily physical education as part of health promotion in schools<sup>6</sup>

The public health and education sectors in Hungary were able to achieve mandatory prescription and gradual implementation of daily physical education for all schoolchildren. This initiative aims to reduce physical inactivity among students to mitigate what is a central risk factor for non-communicable illnesses such as MSDs. The physical education class is intended to contribute to the strategic aims of holistic health promotion in schools by improving: physical, mental and emotional health for all students; academic performance; integration; and social well-being.

## Mainstreaming OSH (and more specifically musculoskeletal health) into education<sup>7</sup>

An EU-OSHA<sup>8</sup> report provides a comprehensive look at how schools can contribute to the early, long-term prevention of MSDs. It considers the different perspectives of safety and health in work, education and public health and explores options for common courses of action across these three policy areas. The report argues that systematically tackling the issue of integrating safety and health in schools will promote the quality of education and develop a culture of prevention long term. The report also presents a 'strategic approach for the promotion of physical activity and the prevention of MSDs in schools'.

6 See: [https://oshwiki.eu/wiki/Daily\\_physical\\_education\\_as\\_part\\_of\\_holistic\\_health\\_promotion\\_in\\_Hungarian\\_schools](https://oshwiki.eu/wiki/Daily_physical_education_as_part_of_holistic_health_promotion_in_Hungarian_schools) and [https://oshwiki.eu/wiki/Application\\_of\\_special\\_exercises\\_in\\_physical\\_education.\\_The\\_Hungarian\\_prevention\\_programme](https://oshwiki.eu/wiki/Application_of_special_exercises_in_physical_education._The_Hungarian_prevention_programme)

7 See: <https://osha.europa.eu/en/themes/mainstreaming-osh-education> and <https://enetosh.net>

8 See: <https://osha.europa.eu/en/user/login?destination=en/publications/better-schools-promoting-musculoskeletal-health>

## Napo film clips and resources for discussions

- Keep on runnin'! - Napo in Lighten the Load - 2021:  
<https://www.napofilm.net/en/napos-films/napo-lighten-load-2021/keep-runnin-napo-lighten-load-2021>
- Napo in the workplace:  
<https://www.napofilm.net/en/learning-with-napo/napo-in-the-workplace>
- Conversation starters:  
<https://osha.europa.eu/en/publications/conversation-starters-workplace-discussions-about-musculoskeletal-disorders/view>
- Napo for teachers - Be body-wise with Napo: back  
<https://www.napofilm.net/tr/learning-with-napo/napo-for-teachers/be-body-wise-napo-back>

