

# Knowledge based on the effects of Heart Zone

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In light of local and national promotion, a growing number of schools are introducing the traffic safety measure "Heart Zone" (Hjertesone). The initiative aims to make it safer and more appealing for children to walk or cycle to school, and reduce parental driving.

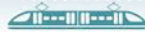
To date, knowledge about the effects of Heart Zone is limited. Therefore, the Norwegian Council for Road Safety (Trygg Trafikk) has engaged the Institute of Transport Economics (TØI) to conduct a national survey and develop a national knowledge base on the effects of the Heart Zone. The current work is based on a literature review of previous Heart Zone studies and similar traffic safety measures, and results from three different surveys: one among Norwegian municipalities, one among school representatives at schools that have introduced and are planning to introduce Heart Zone, and one among parents and pupils at schools with Heart Zone and at schools planning to introduce Heart Zone.

## Results from survey to Norwegian municipalities

136 municipalities responded to the survey about Heart Zone. 36% of the municipalities in the survey currently have Heart Zones, while 39% are considering introducing Heart Zone. 11% responded that Heart Zone is not applicable in their municipality. There is a clear connection between being a "Traffic Safe Municipality" and having a Heart Zone. 77% of the municipalities in the survey were certified as Traffic Safe, where 6 out of 10 municipalities report that Heart Zone has been introduced in connection with being a Traffic Safe Municipality.

## How widespread is Heart Zone among schools in Norway?

A survey about Heart Zone was sent to all schools in Norway with primary education levels (n=2267) during March-May 2023. 662 schools responded to the survey. About 20% of the schools currently have a Heart Zone, while 12% plan to introduce the measure. 37% of the schools had not heard of the measure.



## How do schools work to implement Heart Zone?

The results suggest that most Heart Zone schools have a satisfactory approach to the initiative. At most schools, Heart Zone is well anchored with the school management and the Parents' Committees, and most schools have set specific goals for their Heart Zone work.

However, only 12% of the schools have established an internal Heart Zone group. The extent to which schools work continuously with the initiative varies. 50% of the schools report that they work continuously with Heart Zone.

Most schools (72%) send information to all parents about Heart Zone. However, there is some variation in how regularly reminders are sent, and to what extent there are routines for informing new staff. 30% of the schools do not send out regular reminders about Heart Zone. Regarding student involvement, we find that the cooperation committee and the school environment committee are the forums most used. Whether, and to what extent, the student council is involved in Heart Zone work varies.

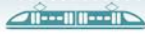
## Schools' experiences related to key success factors, most effective measures, and biggest barriers to Heart Zone work

Analyses of open text responses show that the most important perceived success factor for Heart Zone work is anchoring of the initiative, with an emphasis on good cooperation with parents through the Parents' Committees, and broad anchoring in the school's various committees and external actors. Information work, especially directed at parents and through repeated reminders, is also highlighted. Student involvement through the student council and joint activities promote engagement and ownership of the Heart Zone work. Physical measures, such as the establishment of drop zones and the increasing the visibility of the Heart Zone with guards, as well as signage, support the initiative's effectiveness. Some schools stated that they had not experienced any success factors.

Attitude-influencing measures, such as bicycle and walking competitions, reflector days, and visible traffic guards outside the school, are mentioned as effective in promoting safe and healthy travel habits. Physical measures that improve the infrastructure around the school, such as establishing drop zones and remodeling sidewalks, contribute to easing traffic flow. Engagement from the school's management, especially the principal, is essential to legitimize the initiative. The greatest challenge schools highlight is that parents do not follow Heart Zone recommendations and continue to drive their children right up to the school building. Physical conditions, such as a lack of suitable areas for drop zones and challenging traffic conditions, are also barriers mentioned. Other perceived challenges include a lack of coordination at the interface with external actors and a lack of cooperation with the municipality. Organizational challenges, such as a lack of capacity and insufficient involvement of school management, can also prevent successful implementation and follow-up of the initiative.

## Effects of Heart Zone

The results suggest that Heart Zone affects the traffic culture among parents. There are significant differences between Heart Zone schools and schools that have not introduced the initiative regarding what is considered normal ways to pick up/drop off. There are indications that the initiative has led to changes in travel habits among parents and students. 16% of parents at Heart Zone schools report that they use the car less for pick up/drop off than before the introduction, 14% report that their children cycle more, and 10% report that their children walk to/from school more often. This is consistent with previous studies on Heart Zone, as well



as studies on similar traffic safety measures. The literature review of research on similar initiatives (School Streets and School Safety Zones) documents effects in terms of reduced speed around the school, better air quality, fewer dangerous traffic situations, and reductions in traffic volume around the school. Over half of the schools report that Heart Zone has contributed to more systematic traffic safety work and greater awareness of traffic safety among parents, staff, and students.

## What shapes the traffic culture in the Heart Zone?

Regression analyses revealed several factors associated with a strong Heart Zone culture. There is a statistically significant relationship between experienced traffic near the school, how the heart zone is perceived, and traffic culture.

There was a negative correlation between experienced traffic problems around the school and Heart Zone traffic culture, which supports findings from previous studies and responses to open-ended questions, which indicate that the traffic conditions and existing infrastructure can represent barriers to successful implementation of the measure.

The analyses further reveal that engagement from school management and the Parents' Committee (FAU) affects traffic culture. In the regression analysis, we find that there is a significant relationship between the Parents' Committees' involvement in Heart Zone work and traffic culture. The implementation of attitude-forming measures, such as encouraging walking and cycling and sanctioning/correcting parents who do not follow Heart Zone recommendations, has a strong positive effect on traffic culture.

The same factors also predict a change in traffic culture as a result of the school implementing the Heart Zone. Additionally, reactions from the school's staff and other guardians to non-compliance with Heart Zone recommendations, is a significant explanatory factor for change in traffic culture.

## Discussion and further research

The results suggest that the Heart Zone contributes to increased awareness around traffic safety, supporting findings from previous surveys that show a moderate decrease in car use and a moderate increase in cycling and walking. The findings suggest that Heart Zone influences the traffic culture among parents and pupils.

The existing infrastructure and the prevailing traffic conditions around the school represent important constraints for what is possible in terms of physical adaptation and design of the Heart Zone, and schools have quite different starting points in this regard. The results also show that framework conditions, such as infrastructure and traffic conditions, are critical for the quality of implementation. That the physical design of the Heart Zone is perceived as good also seems to be important for the success of the attitude-shaping work.

The findings suggest that anchoring with the school's leadership and the Parents' Committee (FAU), as well as involving students, is important for building a strong Heart Zone culture. The results further indicate that the work to influence attitudes, in the form of the school regularly focusing on the Heart Zone, encouraging guardians and students to cycle and walk, and correcting those who do not follow recommendations, is important for succeeding in influencing traffic culture.

To achieve a lasting change in traffic culture, systematic, comprehensive, and continuous work with the Heart Zone over time is required, where long-term goals are set for the work, and where relevant parties are involved in the effort.



There is a need for more robust studies on the effects of the Heart Zone, where effects are measured before and after the implementation of the measure. There is also a need for more knowledge about the long-term effects of the Heart Zone. In this study, we have collected baseline data for a total of 40 schools planning to introduce the Heart Zone, which lays the foundation for future robust analyses of the effects of the Heart Zone on traffic culture at schools."