

Regulations regarding Child Safety Seats for Motor Vehicle Travel— Abstract and Background

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A Review

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Abstract

This document was prepared at the request of MK Michal Cotler Wunsh, and it presents data and policies on the use of child safety seats and booster seats in private cars. We will begin by presenting the relevant provisions in the traffic regulations, including amendments made over the years, and a standards for ensuring the seats' safety. We will then provide data on how the use of child restraint systems and similar issues are enforced and on programs for promoting the safe use of child seats. We will also examine recommendations from safety and health organizations and compare them with the provisions of the traffic regulations. Finally, we will present findings from a report that covers the main regulations in place in OECD member countries. Note that this document will not address the use of safety seats and booster seats in shuttle services or taxis. Please note that this document is an English-language translation of the abstract and introduction to an in-depth examination of the subject in Hebrew. For the full document in Hebrew please see [here](#).

The main points made in this document are:

- **In 2019, a total of 29 children and teens under 18 died in car accidents as passengers, drivers and users of another motor vehicle, including on public transportation.** Neither we nor the relevant professionals possess data on the scope of injuries to children due to a failure to use safety seats or to misuse of these seats. Studies have shown that **the proper use of restraint systems, including the use of a model fitted to the child's age, weight, and height, may lower the risk of death among toddlers and small children by some 60%.**
- **The traffic regulations stipulate the following:**
 - **Children 0–1–years old** must ride in a rear-facing safety seat adjusted to their height and weight;
 - **Children 1–3years-old** must ride in a forward-facing safety seat adjusted to their height and weight;
 - **Children 3–8 years-old** must ride in a safety seat or booster seat adjusted to their height and weight;
 - A child may only ride in a car under the above conditions if the car's airbag is deactivated;
 - Safety seats and booster seats must meet the standards specified in the regulations.

- Since 2016, the National Road Safety Authority (NRSA) has made efforts to amend the traffic regulations as follows: **requiring children to sit in rear-facing seats until age two rather than only until age one, raising the minimum age at which children may sit without a booster seat to ten, and prohibiting children under age 13 from riding in the front seat unless all the other seats are occupied.**
- During a discussion of the Inter-Ministerial Committee for Coordinating Legislative Amendments on Matters of Transportation, it was noted that the Police prefers that the mandatory use of safety seats be determined by age rather than weight or height, as the latter are more difficult to enforce. According to the response to our query from the Ministry of Transport, **the draft regulation written on the basis of these recommendations is awaiting comments from the relevant parties within the ministry.**
- According to **enforcement data from the Israel Police**, the period 2016–2019 saw an increase of 82.5% in the number of tickets issued for violations of child safety seat regulations. Some 70% of the tickets were issued for failure to seat 3–8-year-olds in a safety seat during a car ride, some 30% of tickets were issued for failure to seat 1–3-year-olds in child safety seats and about 1% of the tickets were issued for failure to seat babies up to age one in rear-facing seats and failure to deactivate airbags.

Plans to promote the safe use of safety seats

Various steps to promote the safe use of child safety seats are being taken as part of the efforts to implement the National Road Safety Plan and in the context of the work by government entities and civil society organizations. These include the project to lend child safety seats for Arab and Bedouin children in the south of Israel, campaigns to raise awareness of the proper and safe use of seatbelts, and workshops on installing safety seats. Furthermore, the Ministry of Health is working on establishing a national database on injuries to children, which will potentially contain data on injuries to children in traffic collisions, among other data.

Child safety seat recommendations by NRSA, Beterem and other organizations

The NRSA, Beterem Safe Kids Israel (hereinafter, "Beterem"), the World Health Organization, and the US National Highway Traffic Safety Administration (hereinafter, "NHTSA") recommend establishing stricter guidelines than those mandated by the regulations in Israel. For instance, all of the organizations recommend **having children sit in a booster seat up to age 10 or at least until they reach 145 cm in height and seating them in the back seat until at least age 12**. We note that there are developed countries besides Israel where the requirements are not in line with the above recommendations, as indicated by the comparative study presented in this document.

Comparison of child safety seat regulations among OECD member countries

Analysis of a comparative study performed by the World Health Organization that examined the regulations on child safety seats in the 37 OECD¹ member countries reveals the following findings:

¹ WHO, [Global status report on road safety 2018](#), November 2018, pp. 370–378.

- a. In almost all countries, children up to a certain age may only sit in the front seat with a safety seat. Four countries prohibit children (up to age 7, 10 or 12) from sitting in the front seat altogether, even with a safety seat.
- b. Fifteen countries require the use of a safety seat for children up to a certain height (135 cm /150 cm); eight countries obligate children to use a safety seat until they reach age 12 or a height of 135/150 cm.
- c. **Thirteen countries use age to determine the safety seat requirement. Five of the countries, including Israel, set the minimum age for sitting without a child safety seat at eight years of age or less, while eight other countries set this at ten years of age or higher. Some add weight or height requirements, as well.**

1. Background

Over the past five years (2015–2019) traffic collisions have been the main cause of death among children under 18, constituting some 44% of all deaths (the other causes were drowning, falls etc.)² **The largest number of the children and teens under 18 killed in traffic collisions in 2015–2019** (20.3% of all deaths of children in traffic collisions and 25 deaths on average per year) **were passengers, drivers, or users of other motor vehicles, including public transportation.** In 2019, a total of 29 children and teens under age 18 died under these circumstances.

Examination of the mortality data on children and teens under age 18 in traffic collisions in which they were passengers or drivers (not including those in other motor vehicles or riding public transportation) indicates that the **mortality rate was highest among children up to age four—25.3% of all children who were killed.** The mortality rate among 10–14-year-olds (21.7%) was slightly lower than 0–4-year-olds, whereas the rate among 5–9-year-olds was even lower—15.7%.³ For more data on injuries in traffic collisions, see Appendix 2 of the original document.

An analysis of CBS data by the Or Yarok organization indicates that **318 children under age 14 were killed in traffic collisions over the past decade, of whom 58 (18.2%) were killed while sitting in the back seat.** Examination of the data on children injured in traffic collisions when sitting in the back seat reveals injuries to some 10,000 children

Neither we nor the relevant professionals are in possession of data on the scope of child injuries due to failure to use safety seats or unsafe use.

The proper use of restraint systems such as safety seats, booster seats and seatbelts has been found to be lifesaving, preventing injuries and reducing their severity.

² Beterem and the National Pediatric Injury and Surveillance System (NAPIS), *2019 Report on Child Mortality from Unintentional Injuries*, Publication No. 1109, January 2020.

³ Children ages 15–18 constituted 37.3% of all the child casualties of car collisions (this figure includes the deaths of teenage drivers).

over the last decade (2010–2019), constituting 34% of all the children injured in traffic collisions during this period.⁴

Neither we nor the relevant professionals have data on the extent to which the aforementioned injuries to children were due to a failure to use safety seats or to sitting in an unsafe manner. However, many studies conducted in Israel and around the world⁵ indicate the importance of using child safety seats and booster seats when riding in motor vehicles. The proper use of seats—which includes adjusting the type of seat to the child's age, weight and height—may lower the risk of death among toddlers and young children by about 60%.⁶ It has been found that the proper use of restraint systems such as safety seats, booster seats and seatbelts can be lifesaving during a collision, preventing injuries and reducing their severity. Therefore, switching a child from a booster seat to the car's three-point seatbelt, for instance, is only recommended after he or she has grown to a height of 145 cm. According to growth curves, this is the average height for girls aged 11 and for boys aged 11 and four months or height of children in the 97th percentile (both boys and girls) at age 9 years and three months (see Appendix 1).⁷ At this height, the seatbelt rests correctly on the child's pelvis and crosses the child's chest (rather than his or her neck), thereby providing maximum protection during a collision.⁸ Nevertheless, the traffic regulations allow children to use the car's seatbelt as early as eight years of age.

Safety organizations take a stricter stance and recommend that children up to age ten and whose height is up to 145 cm ride in a booster seat in the back seat and sit in the front only when they reach age 13.

2. Current traffic regulations

Section 70(17c) of the Traffic Ordinance [New Version] (part of the eighth chapter of the ordinance, which is entitled "Regulations and By-laws") stipulates that the Minister of Transport may establish regulations on "seatbelts and care restraint systems, their type,

⁴ Oz Dror, Press Officer and Marketing Director at Or Yarak, response to inquiry by the Knesset Research and Information Center, September 8th 2020 [Hebrew].

⁵ Victoria Gitelman, Fanny Pishov and Limor Hendel, [Use of child safety restraints in cars: The 2012 national observation survey](#), Research Report No. S/50/2013, Transportation Research Institute at the Technion—Israel Institute of Technology and the Ran Naor Road Safety Research Center [Hebrew]; Mark Asbridge, Rachel Ogilvie, Maria Wilson, and Jill Hayden, "The impact of booster seat use on child injury and mortality: Systematic review and meta-analysis of observational studies of booster seat effectiveness," *Accident; Analysis and Prevention* 119 (Oct. 2018), pp. 50–57; Kristy B. Arbogast, Michael J. Kallan, and Dennis R. Durbin, "Effectiveness of high back and backless belt-positioning booster seats in side impact crashes", *Annual proceedings, Association Advancement of Automotive Medicine* 49 (2005), pp. 201–213; José I Nazif-Munoz, Aharon Blank-Gomel and Eran Shor, "Effectiveness of child restraints and booster legislation in Israel", *Injury Prevention*, October 10th 2017; Gwan Jin Park et al., "Preventive effects of car safety seat use on clinical outcomes in infants and young children with road traffic injuries: A 7-year observational study", *Injury* 49 vol.6 (2018), pp. 1097–1103.

⁶ World Health Organization, [Road traffic injuries](#), February 7, 2020.

⁷ Ministry of Health, [Growth curves](#), accessed: July 14th 2020 [Hebrew]. The Ministry of Health bases these growth curves on those published by the World Health Organization (WHO) in 2007 (for girls) and 2006 (for boys). There may be a deviation of 1–2 cm.

⁸ Beterem, Car Safety, [Booster Seat](#), accessed: July 14, 2020 [Hebrew].

requirements for installing and using them, and all the conditions for their use."⁹ The manner in which babies and children are to be seated in motor vehicles is addressed in Regulation 83a of the Traffic Regulations, 5721-1961, and all of its amendments:¹⁰

1. **0–1-year-olds** must ride in a rear-facing safety seat adjusted to their height and weight;
2. **1–3-year-olds** must ride in a safety seat adjusted to their height and weight, which may be forward-facing;
3. **3–8-year-olds** must ride in a safety seat or booster seat suitable for their height and weight;
4. A child may sit opposite an airbag, in accordance with the above provisions, and only if the airbag is deactivated;
5. Safety seats and booster seats must meet the standards specified in the regulations.

We note that the requirement in the regulations for children to use a seat “adjusted to their height and weight” means that the child's seat must not only be age-appropriate but also adjusted to the his or her individual weight and height.

The following points are evident from the regulations:

1. 1–3-year-olds may travel in forward-facing seats;
2. Children up to age eight may sit in the front seat in a safety seat or a seat adjusted to their height and weight;
3. Children aged eight and above may sit in the front or back seat without a booster seat.

These points are the main differences between the current regulations and the recommendations by the NRSA and child safety organizations such as Beterem, the American Academy of Pediatrics¹¹ and the World Health Organization. These organizations recommend adopting a stricter approach to the above points, such as sitting in rear-facing seats up to age two, sitting in child safety seats up to the age five or up to a weight of 18 kg, or sitting in a booster seat up to a height of 145 cm, as specified in Section 6 of the full document.¹²

Traffic regulations require the use of safety seats in both the front and back seat for children up to age eight.

⁹ Chapter Eight of the Traffic Ordinance, [Regulations and by-laws](#) [Hebrew].

¹⁰ [Traffic Regulations, 5721-1961](#) [Hebrew].

¹¹ Committee on Injury, Violence, and Poison Prevention, [Child Passenger Safety](#), *Pediatrics* 127 (4), April 2011, pp. 788-793.

¹² Beterem, Car Safety, [Booster Seat](#), accessed: July 14th 2020.

2.1 Amendments to the traffic regulations and previous discussions

The following section presents the major changes to the traffic regulations as regards restraints (as they are referred to in the ordinance and regulations; in this document, we have referred to them as "safety seats," as well) for children riding in a motor vehicle:

In 1984,¹³ the regulation on safety seats (Regulation 83a) was first enacted, which stipulated that:

- a. **Children under age 14 may sit in the front seat only when using a restraint system appropriate to their age or weight;**
- b. A restraint system is defined in accordance with the standard approved by the Director of the Vehicle Division in a notification, which appears in the Official Gazette.

Two amendments were made to the regulations in 1990. The first was a reference to the definition of a restraint system in Part C of the Second Annex to the regulations.¹⁴ The second was the addition of Sub-regulation B, which stipulates that as a rule, **a child who has not turned four shall not ride in the back seat unless harnessed to a restraint system adjusted to his or her age and weight.**¹⁵

In 2004,¹⁶ after a discussion in the Knesset Economic Affairs Committee¹⁷ and a request to amend the regulations from by the Ministry of Transport, Beterem, and other organizations, Regulation 83A was rewritten **to define child safety seats and booster seats**, including a reference to the standard set out in Part C of the regulations.¹⁸

In addition, these changes introduced the provisions of the regulations as we know them today (and as presented in Section 1 above) **regarding safety rules when driving 0-1-year-olds, 1-3-year-olds and 3-8-year-olds**. The sub-regulation on airbags stated that the airbag's operating mechanism must be deactivated if it is opposite a child's safety seat.

During the discussion in the Economic Affairs Committee, it was explained that although until that point, there had been a general explanation on restraint systems and the

Traffic regulations regarding safety seats have been updated over the years according to safety needs and safety measures for car rides.

The draft regulation written on the basis of these recommendations is awaiting comments from the relevant parties within the ministry ahead of its submission for approval by the Knesset Economic Affairs Committee.

¹³ Section 3 of the [Traffic Regulations \(Amendment No. 2\), 5744-1984](#), RF 4574, p 691 [Hebrew].

¹⁴ Section 11 of the [Traffic Regulations \(Amendment\), 5751-1990](#), RF 5301, p 103 [Hebrew].

¹⁵ Section 1 of the [Traffic Regulations \(Amendment No. 2\), 5750-1990](#), RF 5302, p 135 [Hebrew].

¹⁶ Section 1 of the [Traffic Regulations \(Amendment\) 5765-2004](#), RF 6344, pp 66-67 [Hebrew].

¹⁷ Sixteenth Knesset, Record No. 262 of the Economic Affairs Committee, "[Extending the validity of driver's licenses to ten years and Traffic Regulations \(Amendment No...\), 5764-2004, regarding the seat belt requirement for children in cars, adding license plates to cars for the purpose of collecting Road 6 tolls, installing car headlights](#)," September 13th 2004 [Hebrew].

¹⁸ Item 4 in the Second Annex [Hebrew].

requirement to use them when riding in the front and back seat, the time had come to precisely define a restraint system is and which system is appropriate for 0–1-year-olds, 1–3-year-olds, and children above 8 years of age.

A meeting of the Committee for the Rights of the Child¹⁹ on this subject, which was held before the legislation was amended, noted the difficulty of enforcing regulations based on weight and height as well as the important contribution to saving lives made by the dissemination of information on the use of restraint systems.

The NRSA stated that **the fact that the requirement to use a safety seat is based on age, rather than weight or height, is apparently intended to set out a simple, clear, unambiguous, and easy-to-enforce criterion.** They noted that decision-makers likely did not want police officers to carry a scale and measuring tape in order to enforce the regulations. **The age in the regulation is based on the normal growth curve for boys and is determined by the age of the first children to reach the weight or height that ensures the full protection of a safety seat or seatbelt (i.e., those in the 97th percentile).**²⁰

In 2014, the Economic Affairs Committee approved **an amendment to the sub-regulation on deactivating airbags and added a requirement to deactivate an airbag's operating mechanism even when located in front of a booster seat where a child sits (in addition to the previous requirement to deactivate an airbag's operating mechanism when located in front of a child safety seat).**²¹ Moreover, Regulation 83b was amended to prohibit passengers from riding without a seatbelt in cases where the car lacks sufficient seatbelts.²² That year, Beterem recommended to the Economic Affairs Committee to limit the age at which children are allowed to sit in the front seat, as many countries around the world have done. The committee rejected this recommendation.²³

In 2016, the NRSA filed a proposal with the Coordination Committee on Transportation in the Ministry of Transport to amend the regulations on

It appears the requirement to use a safety seat is based on age rather than weight or height in order to set a simple, clear, unambiguous and easy-to-enforce criterion.

Age in the regulation is based on the first child (97th percentile) to reach necessary the weight or height.

The NRSA and safety organizations seek to change this and determine age in the regulations based on half of the children (50th percentile) who have reached the desired weight or height.

¹⁹ Fifteenth Knesset, fourth session, Committee for the Rights of the Child, "Proposal to amend the Traffic Regulations regarding child safety seats," May 21st 2002 [Hebrew].

²⁰ Merav Refaeli, Director of Government Relations at the National Road Safety Authority, response to query from the Knesset Research and Information Center, July 30th 2020 [Hebrew].

²¹ Section 8 of the [Traffic Regulations \(Amendment\), 5775-2014](#); Nineteenth Knesset, Record No. 333 of the Economic Affairs Committee, "Traffic Regulations, 5774-2013 regarding, *inter alia*, driving scooters, parking, seatbelts, wheelchairs in public vehicles, bicycle riding, July 20th 2014 [Hebrew].

²² Section 9 of the [Traffic Regulations \(Amendment\), 5775-2014](#) [Hebrew].

²³ Yael Mittelman, Director of Government Relations, and Ayelet Givati, Head of Development, Beterem, response to query from the Knesset Research and Information Center, August 2nd 2020 [Hebrew].

transporting children by car (Regulation 83a).²⁴ The request noted that following a previous committee discussion in August 2013, the NRSA conducted information campaigns on the subject in the media and at community events as a backdrop for the regulation change.

The NRSA sought to make the following amendments:

- a. **Seating children up to age two in rear-facing seats** rather than only those up to age one, as in the current regulations; before age two, in physiological terms, a toddler's neck will not support the weight of his or her head in case of a sudden stop or collision;
- b. **Raising the minimum age for seating children without a booster seat to 10** rather than eight as the law currently prescribes, as most children reach a height of **145 cm** only at age ten or above (see Appendix 1 to the full document).²⁵ Children under this height place the seatbelt on their stomach rather than on the pelvis, so it does not properly protect them and may even endanger them.
- c. **Prohibiting children under 13 from riding in the front seat unless the rest of the seats are occupied;** when several children under 13 ride in a car, and all the rear seats are occupied, the oldest child will sit in the front.

In January 2018, the Inter-Ministerial Committee for Coordinating Legislative Amendments on Matters of Transportation discussed the NRSA's request and Beterem's position paper which presented the scientific explanation of the need for the amendment(see above).²⁶ **During the discussion, it noted that the police asked that the criterion be based on age rather than on weight or height, as the latter are more difficult to enforce.** Beterem's review also noted that there are safety seat models that allow children up to 18 kg to face backwards and that suitable for the growth curve of Israeli babies over age two (see details in Appendix 1 to the full document).²⁷

At age two, toddlers lack the physiological ability to protect their heads in an accident and the NRSA therefore seeks to require all babies up to at least age two to be seated in a rear-facing seat.

A seatbelt can protect a passenger who is 145 cm or more in height. Most children only reach this height at age ten or above, and therefore the NRSA recommends using booster seats for children up to that age.

²⁴ Adv. Ami Rottman, legal advisor to the NRSA, letter to the Coordination Committee on Traffic at the Ministry of Transport and Road Safety, "Proposals for amendments to the regulations," August 18, 2020 [Hebrew].

²⁵ Merav Refaeli, Director of Government Relations at the National Road Safety Authority, response to query from the Knesset Research and Information Center, July 30th 2020 [Hebrew].

²⁶ Beterem, Support for legislative amendments on driving children in a car, November 26th 2017, publicized by the Ministry of Transport and Road Safety Administration of Planning, Development, and Coordination of Transportation Infrastructure as an appendix to the summary of the meeting of the Coordination Committee on Traffic, January 8th 2018.

²⁷ Chen Cohen, Director of Department A - Traffic Engineering at the Ministry of Transport and Road Safety, "Summary of meeting of the Inter-Ministerial Committee for Coordinating Legislative Amendments on Matters of Transportation of January 8th 2018," Administration of Planning, Development, and Coordination of Transportation Infrastructure, January 9th 2018 [Hebrew].

The committee recommended that the Knesset Legal Department work to change the regulations in accordance with the aforementioned recommendation. However, it suggested not addressing the issue of seating the oldest child in the front seat, and leaving this decision to parents, instead.

In June 2018, Nechama Laor-Drori, Education and Information Director at the NRSA, said during a meeting of the Committee for the Rights of the Child²⁸ that **legislation is being advanced** to redefine the ages at which it is permissible to sit in the front seat or the age until which children must sit in booster seats.

According to the response to our query from the Ministry of Transport, the draft of the regulations based on these recommendations is awaiting comments from the relevant parties within the ministry.²⁹

We also note that in July 2020 the Committee for the Rights of the Child³⁰ discussed why safety regulations pertaining to children up to age three are based on age rather than on weight and height as in other countries. Some voiced their concerns that this practice is wrong and even dangerous. Another question was whether there are data on injuries to children in traffic collisions due to the misuse of safety seats, whether due to differences in weight and height among children of the same age or to incorrect installation of the seats.

²⁸ Twentieth Knesset, fourth session, Record No. 227 of the Committee for the Rights of the Child, "National plan for child safety – follow-up discussion," June 26th 2018 [Hebrew].

²⁹ Nitay Halperin, Assistant to the Director General of the Ministry of Transport and Road Safety, response to query from the Knesset Research and Information Center, August 13th 2020 [Hebrew].

³⁰ Twenty-third Knesset, first session, Record No. 3 of the Special Committee for the Rights of the Child, "Seven children and 117 adults have died since the beginning of the year in traffic accidents," July 6th 2020 [Hebrew].