



BUDAPESTI  
KÖZLEKEDÉSI  
KÖZPONT

## GUIDE

**for the development of equal access  
to Budapest's public transport services  
through training of the personnel**

TRAINING MATERIAL



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## 1. FOREWORD

In accordance with the **Equal Access Principle**, **equal access to public services must be ensured for disabled persons** by taking into account the different special needs of groups with different types of disabilities, **the way they could use public services in the same quality and quantity than members of the mainstream society**. Public service consists of information and also of activities, to which communications between human beings are required. So if public services must be equally accessed, then also information and communications are required to be equally available, besides the physical, barrier-free accessibility of a building. As a consequence, besides engineers and rehabilitation engineers, service providers and communications experts are also necessary to be included to provide equal access.

**The other key element of equal access is that it does not treat disabled persons as a homogeneous group having the same needs, as persons with physical disability, deaf and hard-of-hearing persons, blind and partially sighted persons, persons with intellectual disability or autism face different challenges when using public services.** Therefore, when carrying out public service-related tasks, BKK Centre for Budapest Transport (hereinafter referred to as: BKK) must find different “reliable, easily-understandable and perceptible” solutions adjusted to the needs of the groups with different types of disabilities, in order that we could understand every single difficulty and we could address it adequately. This approach must be indicated in BKK’s entire business-service activities, including tasks in relation to investment, procurement, transport management, mobility strategy, external and internal communications and HR.

This Guide has been compiled for staff in transport services who regularly or occasionally get in touch with persons with reduced mobility or with other disability. This Guide is intended to assist the work of staff getting in touch with customers, by giving practical advice to them, in order they could be able to recognise and identify persons with different disabilities and could support their travel in an adequate way.

Being aware of the fact that rules may vary from company to company, in case recommendations specified in this Guide conflict with those of a company, the company’s already-approved rules must prevail and be applied.

This Guide was compiled as part of the INCLUSION research-development project funded by Horizon 2020 started in 2017. The project’s main goal is to examine accessibility to public transport. The Budapest-based pilot (WP4) explores the barriers regarding accessibility to public transport of five target groups with reduced mobility (blind and partially sighted persons, persons with physical disability, persons carrying a pram or heavy luggage, tourists and expats living in Budapest).

In the sensitization training realised in the framework of the project, 85 colleagues - dealing with passengers on a daily basis - participated who work in different fields at Budapest’s public transport service providers (BKK Centre for Budapest Transport, Budapest Transport Customer Relations company and the Budapest Transport Privately Held Corporation (BKV).

The main goal of this training was to provide comprehensive knowledge about the mobility needs of persons with reduced mobility for the staff working in the field of public transport. As a result, in their work they will be able to recognise the borders of their tasks and competencies and give support and help to passengers with reduced mobility accordingly.

The training material presented in this document has been compiled with the use of experience gained by the trainers and participants of sensitization trainings.

Topics covered in the training material are, as follows:

- evolution of the approach in relation to persons with reduced mobility;
- the Equal Access Principle; the general aspects of its provision;
- relation between universal design and accessibility;
- the “Nothing about us without us” principle;
- specific disability-related knowledge;
- training for public transport service providers in order they could be able to provide tailor-made and appropriate support during their work for disadvantaged groups in relation to equal access to public transport services;
- management of conflict situations;
- application in practice of communication tailor-made to the target group.

**The training material has been reviewed by:**

BKK HR (Training)

BKK Mobility Strategy

Budapest Transport Privately Held Corporation (BKV Zrt.)

Hungarian Association of the Deaf and Hard of Hearing (SINOSZ)

National Federation of Associations of Persons with Physical Disabilities (MEOSZ)

## 2. INTRODUCTION TO THE TASKS REGARDING UNIVERSAL DESIGN AND ACCESSIBILITY

### 2.1. Universal design and accessibility

What is the relation between universal design and accessibility, why is it necessary for every one of us?

The overall experience has shown that in case of the availability of services and realised investments, some component is often missing or the existent service cannot be well-used by everyone. In Hungary, these days there is average-based design: the demands of “unit-based (so-called uniformed or standard)” persons, vehicles are taken into account, in which case there is no room for exceptions. Passengers, carrying and lifting to vehicles prams, children, tourists carrying and lifting to vehicles heavy luggage, passengers with wheelchair, white cane or any other passengers with different disabilities may fall within the scope of the above-mentioned exception.

By analysing the data of the population census as of 2011, it is visible that only in Budapest, there are circa 73,079 residents with different types of disabilities living and working in the Hungarian capital and using public transport services as much as they can (in Hungary their population number can reach 490,578). Taking into account that different barriers have an impact on family members and accompanying persons helping persons with disabilities, the number of affected persons is even higher.

**2.1.1 Disabled persons by type of settlement, economic activity and gender, Hungarian Central Statistical Office, 2011**

Economic activity	Capital	County seat, municipality	Other cities	Village, large village	Total
<b>Male</b>					
Economically active population					
employed person	7,337	7,739	11,674	10,211	36,961
unemployed person	1,723	1,917	2,925	2,691	9,256
Economically active population altogether	9,060	9,656	14,599	12,902	46,217
Economically inactive population					
persons with childcare allowance	11	21	30	35	97
pensioners by their own right, persons entitled to allowance	12,166	15,203	25,217	24,375	76,961
disability pensioner, accident-related disability pensioner	6,489	10,853	20,544	22,501	60,387
pensioner entitled to dependents' benefits, pensioner entitled to allowance	101	175	425	587	1,288
other inactive income earner	1,455	2,966	6,435	8,728	19,584
Inactive income earner altogether	20,222	29,218	52,651	56,226	158,317
student studying in a full-course	2,726	3,279	5,644	5,158	16,807
other dependant	1,479	1,718	2,878	3,131	9,206
Dependant altogether	4,205	4,997	8,522	8,289	26,013
Economically inactive population altogether	24,427	34,215	61,173	64,515	184,330
Altogether	33,487	43,871	75,772	77,417	230,547
<b>Female</b>					
Economically active population					
employed person	5,462	6,395	9,327	7,436	28,620
unemployed person	1,226	1,424	2,186	1,875	6,711
Economically active population altogether	6,688	7,819	11,513	9,311	35,331
Economically inactive population					
persons with childcare allowance	285	355	652	796	2,088
pensioner by their own right, persons entitled to allowance	20,249	22,676	37,174	34,317	114,416

disability pensioner, accident-related					
disability pensioner	7,218	10,779	18,685	18,351	55,033
pensioner entitled to dependents' benefits,					
pensioner entitled to allowance	866	1,980	5,447	6,905	15,198
other inactive income earner	1,229	2,701	6,201	8,241	18,372
Inactive income earner altogether	29,847	38,491	68,159	68,610	205,107
student studying in a full-course	1,893	2,230	3,952	3,535	11,610
other dependant	1,164	1,356	2,580	2,883	7,983
Dependant altogether	3,057	3,586	6,532	6,418	19,593
Economically inactive population altogether	32,904	42,077	74,691	75,028	224,700
Altogether	39,592	49,896	86,204	84,339	260,031
	<b>Total</b>				
Economically active population					
employed person	12,799	14,134	21,001	17,647	65,581
unemployed person	2,949	3,341	5,111	4,566	15,967
Economically active population altogether	15,748	17,475	26,112	22,213	81,548
Economically inactive population					
persons with childcare allowance	296	376	682	831	2,185
pensioner by their own right, persons					
entitled to allowance	32,415	37,879	62,391	58,692	191,377
disability pensioner, accident-related					
disability pensioner	13,707	21,632	39,229	40,852	115,420
pensioner entitled to dependants' benefits,					
pensioner entitled to allowance	967	2,155	5,872	7,492	16,486
other inactive income earner	2,684	5,667	12,636	16,969	37,956
Inactive income earner altogether	50,069	67,709	120,810	124,836	363,424
student studying in a full-course	4,619	5,509	9,596	8,693	28,417
other dependant	2,643	3,074	5,458	6,014	17,189
Dependant altogether	7,262	8,583	15,054	14,707	45,606
Economically inactive population altogether	57,331	76,292	135,864	139,543	409,030
Total	73,079	93,767	161,976	161,756	490,578

Chart 1. Data about the group distribution of persons with different types of disabilities living in the Hungarian capital made by the Hungarian Central Statistical Office based on the population census result as of 2011.

Source: [http://www.ksh.hu/nepszamlalas/tablak\\_fogyatekossag](http://www.ksh.hu/nepszamlalas/tablak_fogyatekossag)

Instead of the concept of standard-based design, we must deal with the demands of the most vulnerable persons whose needs shall be met. This does not conflict with the interest of the majority, on the contrary, these possibilities imply an extra comfort function for everyone, such as using lifts in the undergrounds, putting a great number of low-floor vehicles into service, installing seats with different width into the vehicles and the display of BKK's FUTÁR Journey Planner (state-of-the-art, real-time traffic management and passenger information system) with voice-based information onboard the vehicles, at platforms, in the undergrounds and at Customer Service Centres. This is the basis of universal design.

**Universal design is more than accessibility design and the provision of accessible services: universal design eliminates discrimination between the disabled and non-disabled people, as it takes every single user into account.** Universal design considers people, by respecting their differences.



Figure 1. Instead of the standard-based design, design for everyone is in the core of this concept.

Source: <https://sites.google.com/site/iumbr20112012/digital-divide-e-inclusion-e-design-for-all/design-for-all>

**Universal design is such a method and design strategy, which takes into account the needs of the broadest range of users already from the outset of the design process.** It is the responsibility of the procurer, the designer and of the manufacturer to make products, to create environments and to provide services that meet the requirements of universal design. Universal design has been stemmed from the accessible design for the groups of people with disabilities. Accessibility (or barrier-free access), as its name implies, focuses on the elimination of the already existent barriers, while universal design is a proactive design-organising method.

**The definition of universal design<sup>1</sup> is included in the UN Convention on the Rights of Persons with Disabilities. It has been ratified by Hungary, as a consequence of which it is legally binding in Hungary.** The Convention stipulates realisation of universal design as the obligation of the society. States Parties have undertaken to provide accessibility for persons with disabilities, by even extending this obligation to the private sector in the form of technical specifications and standards. Therefore, it is a legal obligation not to provide accessibility subsequently but to design from the outset in a way that it is accessible on equal basis to every user..

In the UN Convention, the key concept of “Reasonable accommodation” is specified, which means appropriate adjustment to individual needs within reasonable limits. Lack of reasonable accommodation is considered to be a discrimination. Equal access is linked to groups while reasonable accommodation is linked to individuals. **Reasonable accommodation does not mean extra services for persons with disabilities; its aim is to achieve equal use with everyone else.**

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<sup>1 1</sup> Relating legal regulation: Chapter 6 / 6.1. List of the actual legal regulations

## 2.2. The seven basic principles of universal design

The seven basic principles of universal design represent aspects that must be taken into account when such a product, tool is made and service is created, which is suitable for everyone. Through general and short examples experienced on a daily basis, the basic principles can be well understood (also when tools, products, facilities and services are designed).

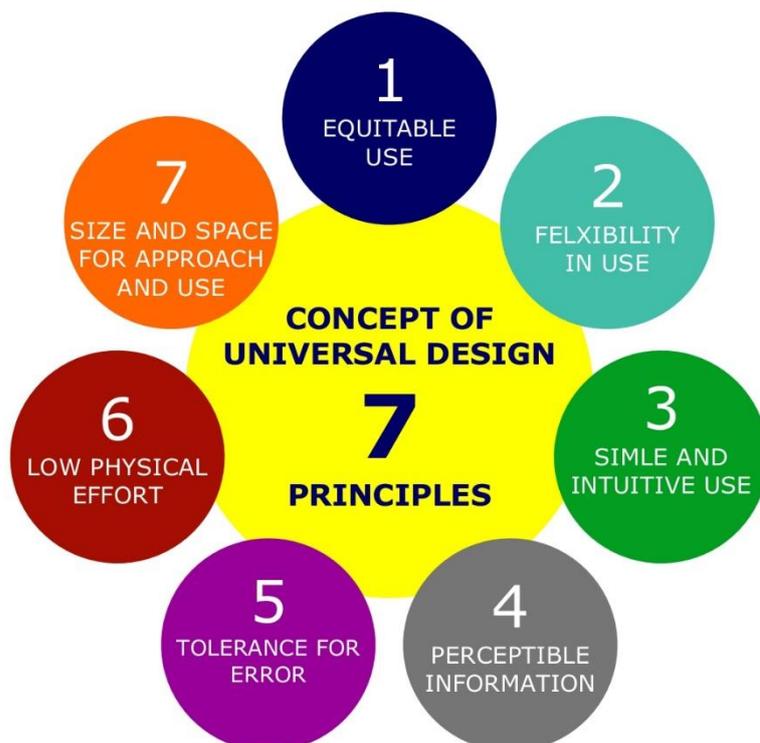


Figure 2. The seven principles of universal design Source: ETIKK (Universal Design Information and Research Center of Hungary)

- **equitable use** – mobile phones can be used by deaf and hard of hearing persons and blind and partially sighted persons with the help of their video phone or screen reader functions, while the adjustment of keyboard sensitivity, the speed dial function make use of the mobile phone easier for seniors or for children;
- **flexibility in use** – equipment should enable that people could use them both either with left or right hand;
- **simple and intuitive use** – household devices should be supplied with pictograms easily understandable by everyone (information regarding their cleaning and use);
- **perceptible information** – we deliver information simultaneously, e.g. with a bell, which gives not only audible but also visual signals for deaf and hard of hearing users Tactile paving indicators provide perceptible information to help blind and partially sighted passengers in transport;

- **tolerance for error** – the best example for this is when using word processing and we delete by accident an already typed text, which we can restore easily and quickly by the “undo” button;
- **low physical effort** – e.g. U shape door handles, which make door opening easier for persons with hand impairment;
- **size and space for approach and use** – primarily for the creation of physical accessibility, e.g. access to and use of lifts; making doors, gates and corridors wider for wheelchair users <sup>2</sup>

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<sup>2</sup> Source of text: Universal Design Day, based on the booklet, 2017 (issued by: Budapest Association of Persons with Physical Disability, Universal Design Information and Research Center of Hungary)

[http://www.etikk.hu/wp-content/uploads/2018/04/egyetemestervezesnap\\_fuzet\\_web.pdf](http://www.etikk.hu/wp-content/uploads/2018/04/egyetemestervezesnap_fuzet_web.pdf)

## 3. EQUAL ACCESS IN THE FIELD OF SERVICES

In accordance with the human rights approach to disability, which has been confirmed by the above mentioned UN Convention, persons with disabilities have the same rights to education, employment and to public services, just as others, to which conditions and circumstances must be created.

The UN convention on the Rights of Persons with Disabilities imposes obligations on the Hungarian government and also on its citizens. **Accessibility is represented among its general principles**, which must be realised horizontally for every right specified by the UN Convention, e.g. in the field of education, at workplaces and in all walks of life, also in the field of transport for the sake of independent living. **The UN Convention lays down that barriers must be identified and eliminated.**

### 3.1. Equal Access Principle

**“In line with Act XXVI of 1998** on the provision of Provision of the Rights of Persons with Disabilities and their Equality of Opportunity (**FOT Act**), **public services are equally accessible, if for every person, in particular for persons with physical, visual, hearing impairments, persons with mental health and communication problems , public services are accessible, reliable, easily-understandable and perceivable - independently to the extent corresponding to the user’ condition, furthermore, buildings in which public services are provided are accessible for everyone, its components open to the public can be easily accessed, and in case of emergency can be safely left, objects, equipment in the buildings can be used for its intended purpose by everyone and services can be equally used.”**<sup>3</sup>

### 3.2. The “Nothing about us without us” principle

Regarding the inclusive society, **the Madrid Declaration**<sup>4</sup> promoting the equal access principle, **stipulates as a basic principle that decisions that could have an impact on persons with disabilities must be made solely and exclusively with the involvement of persons with disabilities.** The Declaration lays down that persons with disabilities form a diverse group, just like every layer of the society and only the policy makers are successful who respect their diversity. In particular, persons living with complex dependence needs and their families require societies’ explicit actions, as among persons with disabilities it is them who are mostly forgotten about.

<sup>3</sup> Relating legal regulation: Chapter 6 / 6.1. List of the actual legal regulations:

<sup>4</sup> Source about the Madrid Declaration: <http://www.msmke.hu/tamogat/madnyil.pdf>

## 4. DIVERSE ACCESSIBLE (BARRIER-FREE) TRANSPORT SOLUTIONS, NEEDS

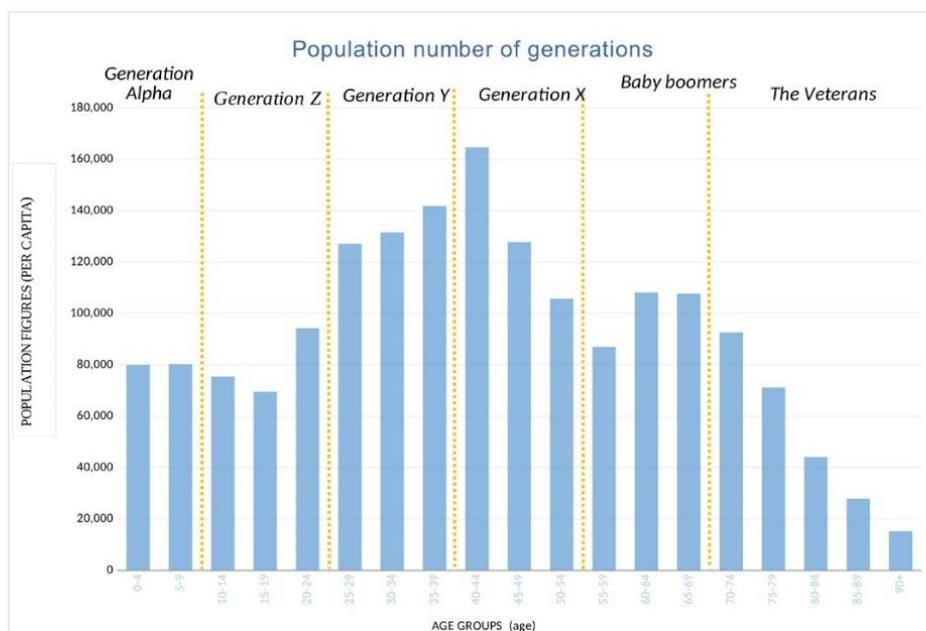
It is obvious to everyone that passengers' transport is extremely heterogeneous and multi-faceted, in terms of transport possibilities and traffic situations. Special needs require diverse accessible and universally-designed solutions.

### 4.1. Transport of people living in temporary life situations

#### Seniors, children, their helpers and temporarily disabled people

Due to the changing nature of life cycles, we are living in different periods one after another in our entire lifetime.

Based on the year-based population census data as of 2011 of the Hungarian Central Statistical Office, the age division is, as follows:



**Childhood and seniorhood could impose different barriers on persons wishing to reach point B from point A.** There could be aggregating circumstances in case of both age groups: owing to their smaller heights, children could climb stairs with difficulties (big heights between stairs, highly-placed handrails), an adult accompanying person is key for their physical and mental protection and information provision. In case of seniors, due to the different levels of deterioration of their health condition, however small or big, more than one impairment could

occur separately or at the very same time - stiff and /or uncoordinated movement, sight - and hearing loss, deterioration of mental health.

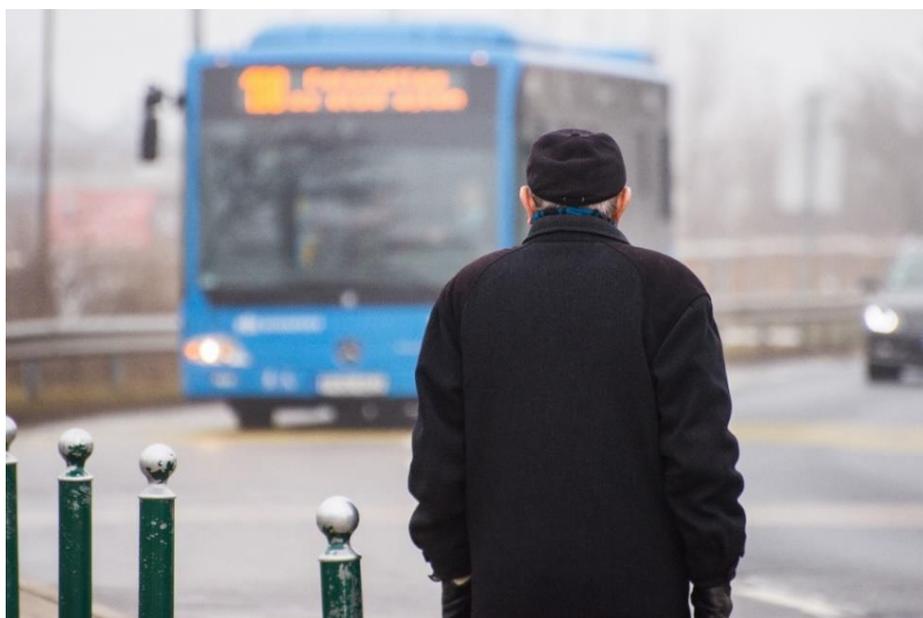


Figure 3. Needs changing throughout a lifetime Source: BKK

The different traffic situations, e.g. long stairs leading to undergrounds, speeding escalators, quickly-operating access gates may be challenging also for guardians accompanying children and also for pregnant women. Using lifts may be more favourable even for persons injured in an accident whose leg is put temporarily in plaster.



Figure 4. Transport with pram onboard a public transport vehicle Source: BKK

## 4.2. Needs of Persons with Disabilities in transport

Persons with disabilities are considered to be a group with severe limitations in their transport-related capabilities. These limitations are stemmed from the insufficient universal design, insufficiently accessible spaces and tools and from the difficulties of accessibility to information, instead of the lack of different capabilities. **Creating accessible street spaces and accessible public transport services means for them primarily the elimination of physical barriers, accessibility of information necessary for transport and the mitigation of accident-prone situations.**

Below you will find a short overview about the different types of disabilities, their characteristics, difficulties and barriers which persons with disabilities face, about general information and also about the general methods of assistance.

### 4.2.1. Transport of persons with mobility-disability

In order persons with mobility disability could use public transport services on an equal basis with others, public spaces, transport systems and different vehicles - from door to door - are required to be accessible on a continuous basis. **Physically-accessible spaces on a continuous basis are required for wheelchair users as well as for persons using crutches, canes, walking frames and other mobility devices.** They face difficulties when getting on and off a vehicle and when finding a stable position onboard a vehicle in motion, if possible, at priority seats. Among persons with mobility disability transport of wheelchair users deserves particular attention.



Figure 5. Transport in wheelchair Source: BKK

For persons using power wheelchairs, **electric mopeds** (mobility scooters), conditions of safe travel - demand for sufficient space and for securing their mobility aids - are required to be provided.

#### **Key transport barriers and resulting difficulties:**

- **Overcoming level differences** – when using stairs, escalators, lifts, curbs at road and railway intersections (e.g. designating the shortest accessible route, avoiding exhaustion by overcoming too steep / uninterrupted, too long ramps).
- **Different coordination problems** when following a route (wide space–narrow space, roadside resting places along routes), when managing reach ranges (heights) and when using mechanical equipment (push buttons, handrails).
- **Ensuring the appropriate spot and size** – size of lifts, thorough and comprehensive examination of and ensuring positions in vehicles and securing methods, solving escape modes (for users and also for their aids) from vehicles and also from the spots and premises (e.g. undergrounds, metro tunnel).

#### **Assistance modes in transport:**

- **Assistance in getting around if the passenger requires**, by providing physical assistance (for some wheelchair users a 5 cm- difference in height and a 10 cm-gap at the tram platform do not cause any problem, however, passengers whose hand is weaker or use heavy powered wheelchair face difficulties).
- **Support in using assistive aids** in physical and/or communications-related form (providing assistance to enable passengers to reach handrails, to use communication equipment, to foster safe travel on the escalator, in case the lift is out of order).
- **Assistance in reaching designated places** (drivers' voice announcements, operation of access ramps).

## 4.2.2. Transport of blind and partially sighted persons

For blind and partially sighted persons, using stairs or escalators is not problematic, however it is necessary to call their attention to stairs and escalators both by tactile and acoustic signals, in order that accidents could be prevented. Similarly, it is not getting on the transport vehicle or standing on the vehicle, which causes problems to them when using public transport vehicles. The challenges they face in such cases are to acquire information on the number of the line that has entered the stop or on the next stop or on the boarding point of the vehicle replacing a fixed-rail line.

**Blind or persons with low vision use usually a white cane and use primarily voice-based signals to acquire information.** Audio traffic lamps at intersections, audible passenger information onboard the vehicles, tactile signals on the top of stairs and also at intersections, tactile indicators at big spaces when crossing the street, smart phone apps helping real-time information acquisition are essential and play a key role in their everyday transport. This is the reason why it is highly important that these devices and apparatus are well operable (provide audio signals in time as well as give real-time information). All these information add to, rather than replace, the use of a white cane.

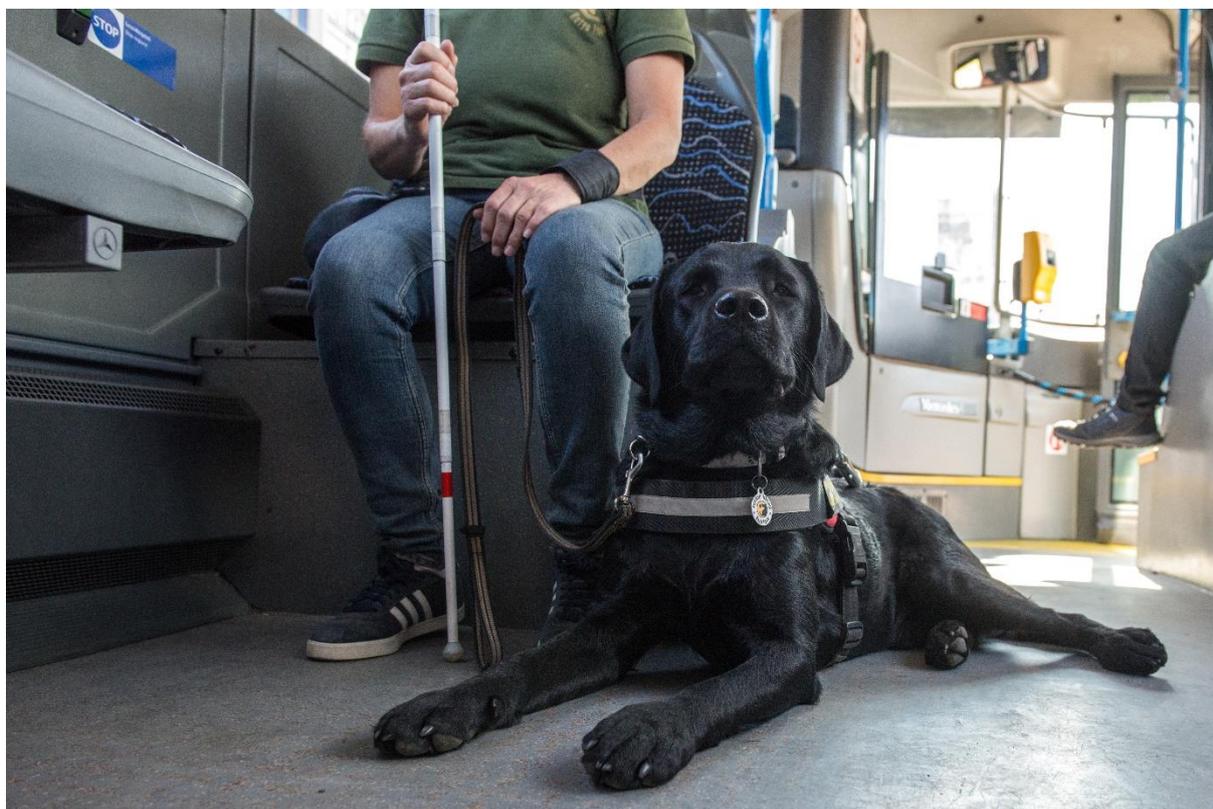


Figure 6. transport of a visually-impaired person with a white cane and with a guide dog for the blind. Source: BKK

**Some blind or partially sighted persons, an estimated number of 150 persons in Hungary, travel with a guide dog.** Guide dogs for blind people, just like other assistance dogs, are entitled to use public transport services free-of-charge without a muzzle, in compliance with the Hungarian legal regulations. Blind and partially sighted persons travelling with guide dogs require bigger space than the average, thus for blind and partially sighted passengers or those facing other types of transport difficulties, priority seats have been designed accordingly. Optimally, the guide dog is travelling underneath the seat. Navigation is facilitated, in case

these designated seats are situated in the same spots within the vehicle. It is not safe to travel on the escalator with guide dogs, therefore the dogs' owners prefer to use lifts as well as stalled escalators, and in case it is necessary, the escalators are stopped.

The majority of partially-sighted persons does not use any mobility aid in transport. It is primarily important that they could see visual information boards well and clearly, e.g. static information with big contrasts and large fonts, good illumination, non-glare **surfaces**.

### Key transport barriers and resulting difficulties:

- **Reading limitation** in terms of infocommunication signals (interpretation of signposts, maps, other signals and symbols) – lack of different sizes of fonts, Braille signs and/or embossed elements.
- **Perception of contrasts** – Specifying illumination-related demands (correct application of the position light (beacon lights), avoidance of elements, lamps and surfaces producing glare, appropriate design of colour contrasts) **Finding and consistent interpretation of tactile elements and the capability to follow them.**
- **Lack of advance notification of maintenance works** – in case of refurbishment works, perception of road barriers, lack of information announcement about **the new traffic situations (at website: in written form and voiced-based, audio information through loud speaker).**

### Assistance modes:

- **Offering physical and communication assistance in an environment burdened with intensive noise** (accompanying blind or partially sighted persons at stops, in the undergrounds and when crossing the pedestrian crossing).
- **Calling their attention in every single case for prevention of accidents** (particularly in cases of non-perceivable barriers: hanging barriers, gaps, holes, pits).
- **During traffic changes** (providing verbal information, physical assistance).

### 4.2.3. Transport of deaf and hard of hearing persons

The term of person with hearing impairment is an umbrella term, which incorporates the deaf and hard-of-hearing persons. It is general that their disability is invisible first, as a consequence of which, persons providing assistance can perceive their disability only later.

Deaf persons do not have any residual hearing, they usually do not wear a hearing aid, as their hearing-related condition cannot be improved with a hearing aid. They communicate with sign language or for those who do not know the sign language, you can either communicate in writing or with the help of a sign language interpreter. Hard-of-hearing persons form a heterogeneous group, in terms of their hearing condition. They usually wear a hearing aid, by the help of which they more-or less understand spoken speech. There are hard-of-hearing persons who do not use a hearing aid and prefer lipreading, through which they gain information. There are even severely hard-of-hearing persons who use sign language.

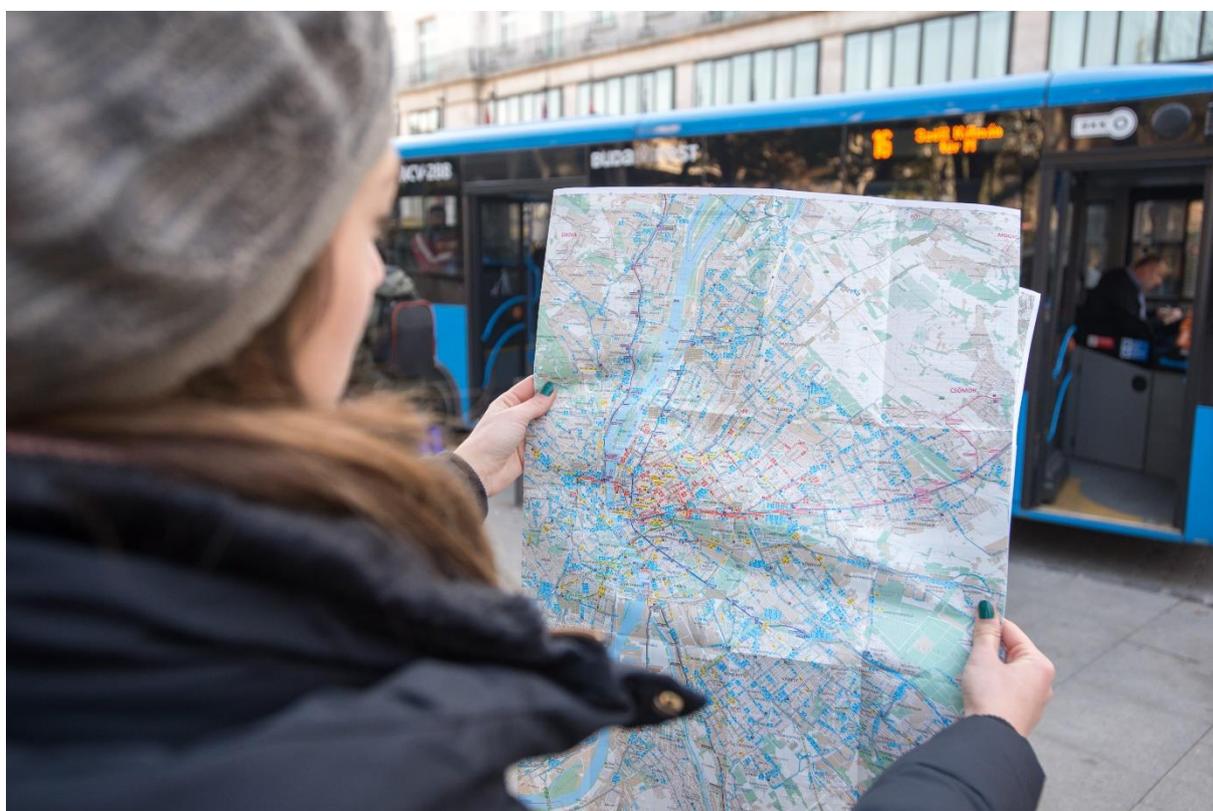


Figure 7. Map reading - easily understandable information. Source: BKK

#### Key transport barriers and resulting difficulties:

- **Lack of written information** (information boards, displays)
- **Lack of amplified verbal information** for persons wearing a hearing aid (existence/lack of induction loop in informational transport hubs).
- **Unavailability of sign language communication** e.g. at informational spots.

**Assistance modes:**

- **Application of appropriate volume and articulation** in the course of communication (no need to talk in an artificial, articulated way or to “shout” –the ability to lipread is the most important criterion) in an appropriate position (speaker and listener being face to face and not telling words in positions other than face to face).
- **The communication space should be well lit and equipped with assistive aids** – Customer Service Centres and ticket offices should be well lit. Hard-of-hearing persons need induction loop (usage - and operation-related knowledge is required to be updated on a continuous basis). In case of deaf customers, use of the internet based sign language interpretation service is recommended (for the service, the use of internet and an electronic device providing images are necessary).

#### 4.2.4. Transport of deafblind persons

In case of deafblind persons, they have both visual and hearing loss at the same time and they are able to communicate only with the help of special methods (usually with the help of an assistant.) The term of deafblind can be quite misunderstanding, as only a certain percent of deafblind persons is literally deaf and blind at the very same time. Functional visibility and/or hearing of the majority of deafblind persons can be measured.

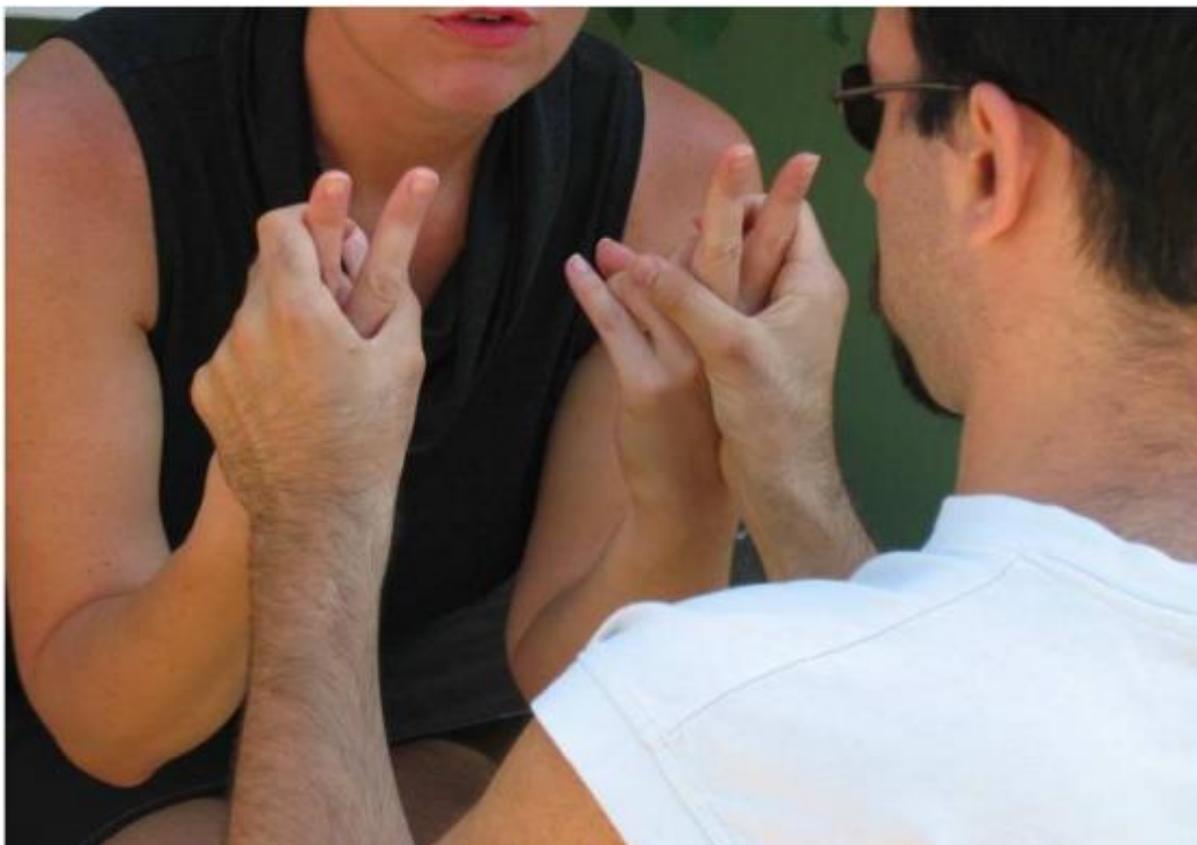


Figure 8. Communication of the deafblind persons Source: Hungarian Deafblind Association (SVOE)

#### Key transport barriers and resulting difficulties:

- **Difficulties** in orientation and ability to independently cross pedestrian crossings
- **Difficulties regarding vehicle use:** recognition of vehicle number, getting on and off the vehicles.
- **Communication-related difficulties while getting around:** request of assistance when walking on and crossing the roadway /pedestrian underpass or overpass, when using vehicles and in case they get lost.
- **Difficulties regarding information acquisition** in unforeseen situations: road refurbishment, relocation of stops, modification of timetables.
- Information is available only from what is **directly perceived and scanned with a white cane**.
- **Increased exposure to environmental changes** having a negative impact on information acquisition (light conditions, acoustic environment).
- **Balance disorder:** Difficulties with straight-forward movements.

**Assistance modes:**

- **Assistance modes that can be expected to be given to** blind and partially sighted persons and deaf and hard of hearing persons, with extra care and attention.

### 4.2.5. Transport of persons with intellectual disability

Persons with various special needs form the group of persons with intellectual disability. **They are characterized by their communication- and intellectual disorders. Their independent living can be solved with help tailored made for each person and by changing the value judgement of the society.** The severity of disability is quite various: they can be mild, moderate and severe.

In their transport, mostly orientation poses challenges. For them simple, easily-recognisable signs, information boards, easy to understand information, personal assistance, teaching routes is very helpful. Persons who can find their ways with difficulties are accompanied by an assistant (a “plus one person”) in transport. Intellectual disability can be coupled with other disabilities (visual-hearing-physical impairment, autism, psychosocial disorders) in several cases.



Figure 9. Picture drawn by an artist with intellectual disability. Source: Day-care home of persons with intellectual disability (internet)

#### Key transport barriers and resulting difficulties:

- **Intensification of orientation-related problems in unknown environment**, to which they have not accustomed (availability of notices, symbols), complexity of spatial structure are aggravating factors.
- **Difficulties regarding information acquisition** (management of “situations”, e.g. in Customer Service Centres), fast information flow and solution of unexpected situations can often result in difficulties.

**Assistance modes:**

- **Application of emphatic approach, natural communication**
- **Providing a separate, dedicated service-related process** on demand at locations where there is tight work schedule and where general process specified by law must be met.

#### 4.2.6. Transport of persons with autism

Autism is the quality developmental disorder of social, communication and cognitive skills, having an impact on the whole personality and the disability could last for a lifetime. We can differentiate, including but not limited to, between the autism spectrum disorder, autistic disorder and the Asperger's syndrome, depending on autistic persons' capabilities how they can adapt to their environment and what their relation to environment is. Autism is often coupled with other disease (e.g. visual or hearing loss, attention disorders, psychological disease, anxiety, phobia).

**To persons with autism orientation, information acquisition, the ability to communicate, maintaining attention and concentration, the systematic, problem solving, decision making and the adaptation ability, the interpretation, memorization and recall of information as well as the interpretation and expression of emotions pose challenges.**

5



Figure 10. Autistic persons' communication-related difficulties  
Source: <https://www.elte.hu/content/az-autizmus-spektrumzavar.e.9781>

<sup>5</sup> Extract from the Booklet –Technical - design aspects and requirements of accessibility and universal design published by The Equal Opportunities of Persons with Disabilities Non-profit Ltd. (FSZK) – A6: Autism, 1. basic concepts, facts, data (2009).

**Key transport barriers and resulting difficulties:**

- **Recognition of information** (interpretation and clarification of pictograms /signs / drawings).
- **Too many stimuli and disability to filter them out** (dissonance, oversensitivity to lights and noises)
- **Difficulties of transport rules and their application**

**Assistance modes:**

- **Showing increased empathy**, in case a person with autism shows confusion or dysfunctional behavior.
- **Clear-cut communication, conversations** with short questions that get to the point.
- **Providing a separate, dedicated service-related process** on demand at locations where there is tight work schedule of the personnel.

### 4.2.7. Transport of persons with psychosocial disability

**Persons with psychosocial disability live with long-term mental health problems , which may restrict them to play a full, effective role in the society on equal basis with others.**

The following disorders may be included in this category: schizophrenia, depression, bipolar disorder (or as was called previously: maniac depression), panic attack, attention deficit hyperactivity disorder (ADHD), etc.<sup>6</sup>



Figure 11. Painting by Vincent Van Gogh (the painter had psychosocial disability)

#### Key transport barriers and resulting difficulties:

Persons with psychosocial disability are often under medication treatment, which has an impact on their way of living. E.g. these medication treatments can cause orientation-related disorders, increased tiredness (driving a personal car in medical terms are not permitted in more cases). They can take active part in pedestrian and public transport.

- **Ambiguous and inconsistently-designed information systems** can interfere in their orientation-related capabilities.
- **Communication-related difficulties** may occur, and owing to inconsistent taking of or lack of medicines or even if medicines are taken precisely, disturbing attitudes may occur.

<sup>6</sup> Source: Interpretation of psychosocial disability <https://pszichoszoc.wordpress.com/2013/10/06/mi-a-pszichoszocialis-fogyatekossag/>

**Assistance modes:**

- **Showing increased empathy**, in case a person with this impairment shows confusion or dysfunctional behavior.
- **Providing a separate, dedicated service-related process** on demand at locations where there is tight work schedule of the personnel.

## 5. RECOMMENDATIONS

### Recommendations for providing accessible services with tailor-made assistance

In this chapter a short overview describes special situations and possibilities of assistance for employees working at different fields at BKV (The Budapest Transport Privately Held Corporation) and BKK (Centre for Budapest Transport) (we described the general principles in Chapter 4, as per the different types of disabilities). This current chapter gives recommendations for employees working in different work fields.

#### 5.1. Recommendations for vehicle drivers

##### Appropriate vehicle positioning in the stop:

- next to the entire platform length,
- positioning the vehicle in the stop, in order the designated door could face the tactile line,
- placing external rear-view mirrors next to the vehicle, in order attention could be paid to passenger flow, especially at arched, outdoor platforms.

##### Procedures to be followed in case of special situations:

- drop-off services must be minimalised at places other than stops. In case it occurs, the **expectable assistance** for the relating passenger to get off the line must be given. Providing **physical assistance** to persons with mobility disability and blind and partially sighted persons is particularly important (when they want to get off, providing help to carry their aids, **providing information** on whether or not there is some barrier – e.g. non-existent platform, curbs distant from the drop-off point),
- passengers with special needs travelling by accident to the operational area should be assisted to get off at an area open to traffic, as much as possible,
- **in severe situations** (e.g. after accident or in case of escape, owing to vehicle fire), passengers with special needs are required to be assisted to leave the vehicle by **providing physical assistance and/or by asking a passenger to contribute to their help**.

##### Modes of behaviour-related assistance / DOs and DON'Ts:

- **not to urge them** by ringing, or by pushing the closing door-button even at an early stage, or verbally,
- when a blind or partially sighted person gets onboard the line, **the number and the terminus of the line must be announced**,
- in case the blind or partially sighted passenger did not get on the line whose service s/he wished to use, we must let him/her get off the vehicle.
- **we must recognize a guide dog/assistance dog (wearing a harness)**, in which case we should not call the passenger to account for the rules applicable to the transport of non-guide dogs.
- for persons with mobility disability using a wheelchair or an **electric moped** (scooter), we can provide audio information, requesting passengers to ensure sufficient space for the wheelchair/scooter user, in case it can make passenger flow faster,
- in case it is necessary, **we should help passengers with reduced mobility to get on and off to the extent expected from us, in case there is not any passenger onboard who is able to help them**.

- we should **notify the dispatcher being in charge of the line schedules immediately about the delay** occurred owing to the slow passenger flow who could intervene in the operation, if necessary, by modifying departure times and also could inform drivers of other lines on the reason of delay,
- owing to the delay occurred as a result of the above-described situation, annoyance and acting in haste should be avoided. Vehicle drivers should not neglect their biological needs, not even in this case; the time required must be agreed with the dispatcher in charge of the line schedules.

## 5.2. Recommendations for employees working at Customer Service Centres

### Behaviour-related assistance / DOs and DON'Ts:

- Every single employee **should be well prepared about the appropriate communication** (application of appropriate expressions laid down in the Pdf file titled Communications).
- The possibility to use the induction loop should be well visible at the accessible customer service counter and also at the entrance. **Every single colleague should be given a comprehensive (and repetitive) training on the use, operation and existence of the induction loop:** how the induction loop can be switched on, used, etc.
- **The contact details of the internet-based KONTAKT Tolmácsszolgálat (CONTACT Interpreter Service, the Interpretation Service by the Hungarian Association of the Deaf and Hard of Hearing) should be available to every single staff working as an administrator.** They should be well informed on the possible use of this service.<sup>7</sup>
- In case of the information counter, it must be ensured that the area is well-lit.
- **Assistance to ticket dispensers should be provided only if requested.** It is advisable to ensure the independent use of the ticket dispenser and the use of the **family-friendly (not disability-friendly) button**. The security guard should not automatically take a number for the customer.
- The locations of assistance and administration should be designed in an accessible way (recessed, and if possible knee-free) counter, an additional seat should be maintained also for the accompanying person. **Seats, other furniture, plants (etc.) should be placed in the Customer Service Centres, in order not to block accessible transport and communication.**
- During the administration process, the assistant represents the person with disability. However, the administrator should communicate both with the person with disability and also with his/her assistant (should keep eye contact also with the blind or partially sighted person).

<sup>7</sup> Contact details of the interpretation service are, as follows: <https://www.skontakt.hu/>

### 5.3. Recommendations for ticket inspectors and operators

#### Behaviour-related assistance / DOs and DON'Ts:

- **They should firmly and consistently call passengers' attention to presenting their ID entitling them to discounts.**
- **Even in case the lift is out of order** in the underground and on the premises of the metro, **possibilities must be provided for persons with every type of disability in order they could be able to leave the premises on the shortest possible route** (discontinue and resume the operation of the escalator when it is used by a wheelchair user; safe move of guide dogs and owners, parents with small children with prams must be equally provided – as specified by BKK Zrt.'s Business Policy.) **In each underground and metro service area, staff competent and trained in the escape process must be present.** In case escape is not possible for any reason on the given station, passengers must be informed on the alternative escape routes /possibility(ies) (to which way they can proceed their trip/ how they can return to previous stations and which transport mode(s) they can use), etc.
- **Dispatchers operating the metro emergency button installed in metrocars must inform passengers shortly on when assistance is expected and how the assistance process will take place.**
  - Every single passenger is entitled to use accessible lifts but persons with disabilities (primarily wheelchair users and passengers with walking aids) and passengers with prams have priorities in using them. **Colleagues must manage firmly and consistently probable conflicts that could arise, in case the lift is crowded or too many passengers are waiting for the lift.**

### 5.4. Conclusion

**In case of assistance and support, it is generally required in every case that contributors or assistants could be consciously at passengers' disposal to offer help but do not insist on it. Just like everyone else, disabled persons are striving to keep their dignity and independence.**

Neither passenger is the reflection of another passenger and at first sight, it cannot be stated what skills and knowledge someone has, of which anyone else is in possess. Persons with disabilities and also those with reduced mobility form a quite heterogeneous group. Even passengers having the same type of disability may need different support, while travelling. Persons with disabilities know best what they are able and unable to do. We must refrain from making decisions on behalf of them; this is the reason why we always must ask them about how we could help them and whether they require our help.

**By their behaviour and reactions, workers in the field of public transport services form passengers' general opinions about what and how they think of public transport services. Thus, it is of paramount importance to provide firm, friendly, fact-based information and help on demand.**

## 6. APPENDIX - EXTRA MATERIALS TO SUPPORT THE TRAINING

This chapter, complementing the Training Material, includes legal regulations as well as extra materials to be used during the training. The extra materials give a comprehensive overview about everyday life of persons with disabilities, in particular about their difficulties they face, while using public transport. Every person is obliged to comply with the legal regulations.

**It is recommended and practical to apply the training syllabus by several methods and incorporate them into the program during the training, such as:**

- **Presentations** held by experts with different types of disabilities having widespread experience along with **interactive practical trainings tightly linked to the presentations**. In the course of personal interactions made with persons with disabilities, acquisition of knowledge and lessons learnt could be more intensive. (Please find presentations in the PDF files. It is recommended to use aids for the interactions, such as wheelchairs, canes, rollators, other tools which make walking more difficult, white cane, blindfolders).
- Before closing the training sessions, **it is helpful for participants to sum and acquire (imprint) the lessons learnt and experienced, if they can share their personal experience and experiences they gained during the training sessions with each other and also with the experts** with disabilities (its best form is informal conversations).
- **A list of multiple-choice questions** tests the lessons learnt by the participants during the training. This is at the same time a feedback for the trainers as well as for the experts with disabilities about the efficiency of the training and also about probable weaker points that would require to be further developed.

### 6.1 List of actual, relating legal regulations

In relation to equal access, specifications of the below-listed, key legal regulations must be complied with:

- Act No XXVI of 1998 on Provision of the Rights of Persons with Disability and their Equality of Opportunity;
- Act CXXV of 2003 on equal treatment and Promotion of equal opportunities;
- Adoption of Act of XCII of 2007 (UN Convention on the Rights of Persons with Disabilities (CRPD)) and its Optional Protocol and the General Comment no.2 (2014);
- Act CXXV of 2009 about the Hungarian sign language and the use of the Hungarian sign language (hereinafter referred to as: Sign language Act).

## 6.2 Lists of questions

Samples, one correct answer is to be given per question.

(Solutions are to be found under Point 6.5 of the Appendix.)

<b>1. Universal design</b>	
	is such a design method that can be acquired only by university students (e.g. engineers)
	is such a proactive design method, which takes diversity of individuals into account.
	is the more developed branch of accessibility.
<b>2. Psychosocial disability</b>	
	is relatively a brand new concept, which considers persons with psychiatric problems to be persons with disabilities.
	is an imaginary disability, from which a lot of persons suffer but causes real issues for the sufferers.
<b>3. We can talk about accessible vehicle use in case,</b>	
	each and every vehicle is low-floor and also routes to the vehicle, as well as stops and stations are accessible, vehicles and stations/stops are provided with visible and audible information.
	ramps can be folded out and also assistance is within reach.
	passengers provide every help, both verbal and physical.
<b>4. Appropriate PC terminology:</b>	
	person with intellectual disability, , person with learning disability, persons with Down syndrome.
	person with Down syndrome, mentally-retarded person.
	idiot, mentally-handicapped, mentally-impaired, mongoloid.
<b>5. In line with BKK Zrt's Business Policy, prams are permitted on the escalators</b>	
	prams are permitted to be carried in a folded form and the child should be held in the adult passenger's arm.
	at stations where lifts are in operation, it is recommended to use the lifts.
	wheelchair users are allowed to use escalators at their own responsibility.
<b>6. Cerebral palsy</b>	
	is an illness.
	is a lifelong condition.
<b>7. The transport-related difficulties are various, yet it can be generally stated that for persons who are able to walk (ambulant persons), the most difficult task which they face</b>	
	is to walk on an uneven surface (e.g. holes on the pavement, cobble stones).
	is walking.
<b>8. In case a blind and partially sighted person gets onboard the vehicle, what should we do first if there is not a free seat next to the door?</b>	
	We go towards the inner area of the bus through the crowd because we can spot a free seat.

	We shout into the crowd, requesting our fellow-passengers to give up on their seat for the blind and partially sighted person
	We help the blind and partially sighted person put his/her hand on a handrail as soon as possible.
9. Which is the place among the below-listed places where a blind person or a person with low vision certainly do not head for alone?	
	A mass event.
	Grocery store.
	School.
10. Why is it not good if a person living with cerebral palsy gets to the very inner area of the public transport vehicles?	
	There is the risk of falling and also getting off the vehicle may take a longer period of time for them.
	S/he cannot request information from the driver.
11. Is there an active wheelchair?	
	Yes.
	No.
12. What is the most common injury, which requires wheelchair?	
	Diabetes
	Fractured leg.
	Spinal cord injury.
13. Can a car be driven only by hands?	
	Only by hands and legs.
	Yes, it can.
14. Can we help an electric wheelchair user, by standing next to him/her and taking over the control of the driving of the wheelchair, by the help of the joystick?	
	Yes, if the owner of the electric wheelchair has permitted us to do so.
	No.
15. In case we wish to help a wheelchair user to overcome a higher barrier (e.g. curbs) and hold the push handles of the backseat, what should we do?	
	First, we should pull the wheelchair backwards to lift the first wheels and then lift the back wheels over the curbs.
	First, we should push it downward to lift the first wheels and then lift the back wheels over the curbs.
16. How to guide a blind and partially sighted person?	
	We hook the arm of the blind or partially sighted person and walk next to him/her as a guiding person.
	The blind or partially sighted person takes the seeing person's elbow.
	We place our hands on his/her shoulder and guide him/her.

## 6.3 Supplementary studies by persons with disabilities

The below-described studies made as a supplementary of the training material have been written by persons with disabilities belonging to the relating target groups, in order they could demonstrate their everyday, in particular their transport-related, difficulties which they face, by sharing their personal experience.

### 6.3.1 Life with cerebral palsy

**Under cerebral palsy<sup>8</sup> we mean every non-progressive neurological disorder (residual condition), which is characterised mainly by physical-impairment.** As this condition lasts for a lifetime, we cannot or it is not worth talking about recovery.

**The causes of cerebral palsy could be:** lack of oxygen during the birth process, problem with local blood flow, heart attack, haemorrhage, inflammation, mechanical damage, genetics.

Brain damage does not worsen, however symptoms may get worse over time. As a consequence of the damage of the nervous system, muscles are stiff and are in a constantly spastic condition, they are unable to be relaxed, thus muscles become shortened, joints become strained and the range of mobility of persons with cerebral palsy decreases. We call this described condition as increased muscle tone (**spasticity**).

We can come across various types of cerebral palsy from the very mild to the very severe forms. Due to the deterioration of joints and the physical condition, persons who are able to walk could end up in wheelchair.

Muscle condition can affect balance, thus a complex kinesitherapy on a continuous basis is required, otherwise the condition could deteriorate.

**Types of the muscle paralysis are:**

- one arm is affected (monoplegia)
- both legs are affected (diplegia)
- one arm and one leg are affected (hemiplegia)
- both arms and both legs (all four limbs) are affected (tetraplegia /quadriplegia)

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<sup>8</sup> It is referred to as cerebral palsy (CP) or Little's disease.

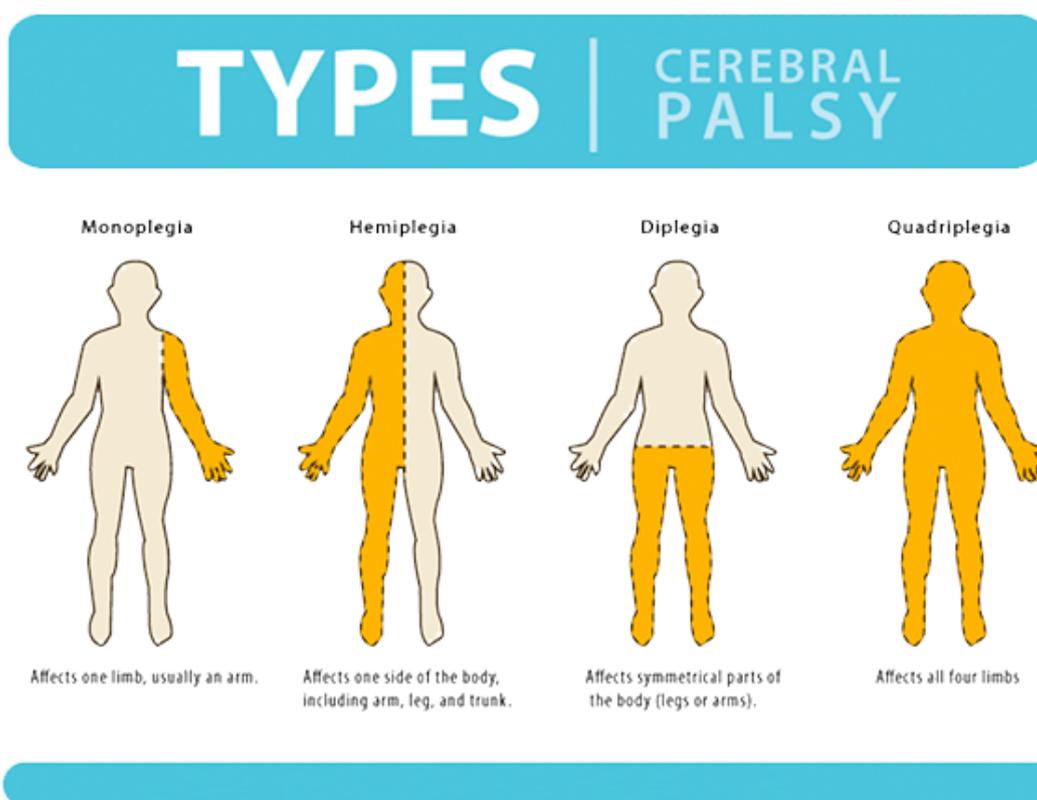


Figure 12. Types of cerebral palsy.

Source: <https://cerebralpalsyhome.com/types-of-cerebral-palsy/>

**The following symptoms can be observed, while moving and walking:**

- crossing feet, while walking (knees are bended, facing inward);
- “duck-like” walking when persons walk with their feet facing outwards;
- in case the arm is affected, they hold objects with difficulties or are unable to hold objects at all.

**In case of locomotion:**

- owing to stiff walking, walking up and down the stairs could be hard or slower (could be different person by person). In the majority of cases, the stair handrail must be held both upwards and downwards;
- owing to uneven surface, an assistant might be necessary (e.g. pothole, holes on the pavement, minor roads, cobble stones);
- it could be more existent in case of persons using crutches than persons walking without an aid.

Orthopedic operation might be required for treatment; in most cases tendon lengthening or transfer is carried out. In a lot of cases, it is recommended to take pills for muscle relaxation and pain killers.

**Aids worn on the body can be:**

- correctional insoles, orthopedic shoes;
- orthosis (types: support, fix, correction and weight bearing suspension)

### **Experience of experts with disabilities gained in transport**

Getting on and off a vehicle may take longer, especially if there are a lot of passengers wishing to get onboard. Owing to safe balance, I choose to hold the handrail next to the door and I do not take a seat. There are more reasons why I do so. On one hand, if there is a free seat only in the inner area of the vehicle, I can approach it more slowly in case the inner area is crowded and in the meanwhile the vehicle sets in motion. I do not take risks of falling. It doesn't make me feel good if a passenger tries to help me, by grabbing my arm, as I do not know how I can stand in a stable way. It goes without saying that I have gained also good experience. It occurred to me several times that the vehicle driver waited, while I reached my seat and informed me that he would depart from the stop only after I took my seat.

Experience gained second-hand from an acquaintance: this situation could differ in case of persons using a crutch, but it can be generally stated that their balance works badly, thus a seat should be given up on for them in all cases. In case a person using a crutch gets onboard, s/he will put his weight both on the handrail and on his/her crutch. With luck, the person could get on and off alone, yet slowly. In case s/he uses two crutches, s/he should hold the handrail with one hand and hold the crutch with the other hand, thus s/he cannot hold the other crutch (the handrail is more stable). This is the reason why s/he requires assistance.

The other issue that can pose challenges is uneven surface (cobble stones, minor roads). As due to the damage of the nervous system, walking is not a natural movement, and increased effort must be made to concentrate, while walking on such a road. This is the reason why it is one of the biggest challenges they must face. We cannot pay particular attention to our surroundings, as we must fully focus on how we lift our leg, in order the toe cap and the heel cap of our shoes could not be stuck. We do not feel safe, while walking on such surfaces. This makes the brain "tired" badly enough, therefore there is increased risk of falling.

## 6.3.2 Hitting the roads by wheelchairs

### Basic concept of paralysis

Paralysis is the partial or complete loss of muscle function of a limb. In neurology, paralysis is the decreased function of nerves with additional loss of senses and movement. Figuratively speaking, subjective sensation is considered to be paralysis, too, even when there is still function. It is important to mention that persons with physical disability are against using the word *crippled*, as it means also *clumsy* in the Hungarian language. They accept this word only and solely in relation to a limb.

### Possible reasons of paralysis

Palsy is the synonym of paralysis. In the compound of words, plegia signifies complete paralysis.

Paralysis decreasing the muscle function can be caused by poison, inflammation, physical injuries of motor nerves or muscles, brain damage. Reasons known: stroke, cerebral palsy, peripheral neuropathy, amyotrophic lateral sclerosis, botulism, open spine, sclerosis multiplex and the Guillain–Barré syndrome. Plegia caused by inflammation is e.g. poliomyelitis and physical damage is the legs' plegia, owing to the cut of the spinal cord. In the REM stages of sleep, paralysis is temporary, whose regulation error can lead to sleep paralysis. Among the chemicals affecting innervation, curare is a known example. Besides, science is well aware of other reasons.

### Mobility aids

There are different aids that can make easier the life of persons who are unable to walk or able to walk with difficulties.

### Electric wheelchair used on the street

Characterised by: long travel range (30-40 km), massive construction, high weight capacity, light signaling device, spring-type suspension, maximum speed (8-15 km/hour).

### Electric wheelchair for indoor use

Characterised by: narrow, easy turning radius (are designed to be easily manoeuvrable), can be folded, smaller travel range (15-30 km), no suspension capacity, foldable direction control, adjustable armrest, foldable footrest, light signal requested on demand, low speed (6-8 km/hour).



Figure 13. Electric wheelchair for indoor use (on the left) and Electric wheelchair used on the street (on the right)  
Source: ETIKK (Universal Design Information and Research Center of Hungary)

### Mechanical wheelchair for indoor use

Characterised by: massive, suitable for high weight capacity (up to 120 kg), foldable, removable armrest and footrest, can be folded, removable wheels.

### Active wheelchair for street use

Characterised by: lightweight, easy turning radius (are designed to be easily manoeuvrable), sporty appearance, compact sizes, easily transportable, foldable, rigid frame (non-foldable) versions, tailor-made in terms of size and comfort, fashion colours, quick-release axles allow the wheel to be detached with a push of a button.



Figure 14. Kuschal active and Meyra-type of wheelchairs for indoors  
Source: ETIKK (Universal Design Information and Research Center of Hungary)

## Other mobility aids improving walking and life quality

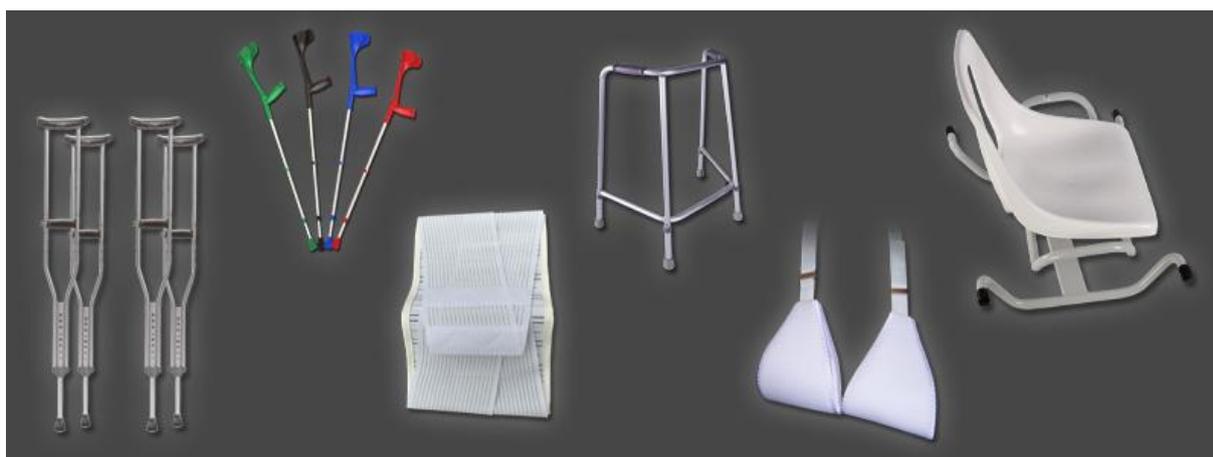


Figure 15. From left to right: underarm crutch, elbow crutch, brace, walking frame, portable wheelchair lift for persons with physical disability to enter the car, bath chair.

Source: Internet.

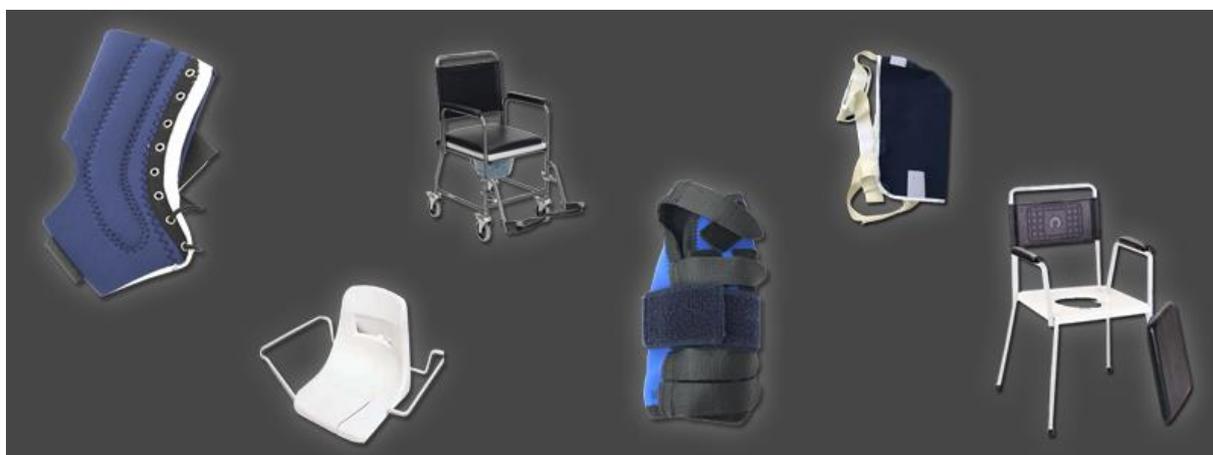


Figure 16. From left to right: ankle braces, bath chair, specially-designed room toilet, leg brace, brace, bath chair-WC.

Source: Internet.



Figure 17. Different types of rollators. Source: Internet.

**Electric mopeds (scooters) for persons with mobility disability**

Characterised by: 3-wheel and 4-wheel versions, comfortable seats with armrest folded outwards and upwards, lighting, fine-tuned gas, basket, middle travel range (20-30 km), a wide range of use.



Figure 18. Three - and four-wheel electric moped Source: Internet.

### 6.3.3 Living and getting around as a blind or partially sighted person

I have been working as an expert with low vision since 2015 at the Universal Design Information and Research Center of Hungary. I can see approximately 1-2%, which means a lot to me, however it is very little.

I lost my sight at the age of 9, however there is not any problem with my eyes. The pathway of the cerebrospinal fluid (liquor) was blocked by something. The neurosurgeon who was operating on me supposed that it could be a tumor but they found nothing at all.

A tube was put into my head to detour the cerebrospinal fluid from the brain to the atrium of the heart, decompressing the pressure, which had been put on the visual nerves, as a consequence of which I lost my eye sight to a great extent, so-to-say completely.

Although I am not considered to be a hydrocephalous, the below-described sentences can well illustrate what happened to me and how I was cured.

Hydrocephalus means that the cerebrospinal fluid existent and producing normally is greatly increased in the skull and in case it puts damaging pressure on the brain, severe symptoms are caused. Big part of the cerebrospinal fluid is situated in the brain chambers, thus it is not difficult to make the diagnosis, by examining the enlargement of the brain chambers. The surgical treatment of hydrocephalus depends on the factor, by which the cerebrospinal fluid is enlarged. We cannot go into detail about each reason and treatment-related possibility but it can be generally stated that the cerebrospinal fluid is detoured by either an endoscopic surgery or a shunt is inserted. Shunt is a narrow, flexible tube, which detours the excess cerebrospinal fluid under the skin to a place of the body where the fluid can be absorbed without any problem., e.g. to the abdominal cavity. Both surgeries are safe and routine and no surgical incision on the skin can be seen afterwards.

After the surgeries (I was in hospital for circa 2.5 months), I could slowly regain 10% of my eyesight. Majority of the visual nerves died (nerve atrophy), this is the reason why after the recovery I could see only that much. I could not differentiate between colours; I could see only the shades and I could recognize only the colour blue. I could read with the help of a magnifier and also large-print books without any aids.

There were times when I was still down when I got easily tired, forgetful and sometimes confused and I was sleeping a lot. In the interim periods (which could last for years), my condition was perfect without taking any medicine and medical check-ups.

Around the turn of 2006–2007, I had quite a bad period once again. My doctor tried to do the best to regulate with the help of a magnet the strength of shunt inserted in my head, yet my condition did not improve.

My doctor immersed himself in my past and medical reports, from which he deducted that there could be something behind my visual nerves. Namely, it was a cyst, which he burst by an endoscopic method and since then the cerebrospinal fluid has been circulating in my head just like until the age of 9. My eyesight did not improve but the sickness I felt on a regular basis was over once and for all.

**What signifies the term of the visually-impaired? How much a blind and partially sighted person can see? Can a blind or partially sighted person see at all?**

We consider persons to be visually-impaired if they can see less than 30%. Mutatis mutandis, persons who cannot see anything at all are also in this category. Persons who can perceive light and probably shades are considered to be persons with low vision (they can perceive and recognize a lot but their sight is not reliable) and partially-sighted persons (they can read and write with or without an aid, they use the white cane as a signal but they often keep it in their bag).

Based on the above-written information, let us not be surprised when we bump into a person in the street who holds a white cane and walks so self-confidently, as if s/he could see perfectly, as it can occur that in the next instance s/he bangs into something that s/he has not perceived beforehand.

### **How do blind and partially sighted persons get around?**

Blind and partially sighted persons walk either using a white cane or are guided by a guide-dog specially trained for blind and partially sighted persons, while persons with low vision walk independently.

There are different types of white canes. Persons who cannot see at all or persons with low vision use a cane with the length reaching circa the breast-bone. In possession of this kind of cane, they can reach a distance of circa 80-100 cm, so if the cane comes across an obstacle, people have time to stop and prevent the accident.

Persons with better or very good eyesight use shorter canes, which are not necessarily a one-piece, stabile cane- to be more precise, they carry a cane with them– as they are not required to scan their surroundings on a continuous basis for obstacles or orientation marks.

Besides, there are support canes, whose one function is to tell that the person is with visual impairment and the other function is to give stability for a senior person whose movement is instable.

There are a few persons who have guide dogs but their number cannot be negligible, either. Experts make a decision on whether or not a dog is able to guide. the person with visual impairment.

It is important to note that whenever guide dogs wear a harness, they carry out their tasks; they guide the person and in such cases we should not distract or upset the guide dogs. In no circumstances should we give guide dogs food. Although also guide dogs love eating, we cannot know when they ate the last time, to what food they are intolerant, etc., and we do not incur the costs arisen in relation to the dog's upset stomach and other inconveniences.

Dogs cannot see colours, they do not know when the traffic lamp is red and when it turns green. Guide dogs follow their owners' commands. We should intervene solely and exclusively when we see them in an extremely dangerous situation.

### **Transport in Budapest, in our place of residence and while reaching our workplace from our place of residence**

It is rare that a completely blind person as a "starter" heads for a place where s/he has not been beforehand. It is worthwhile to study a route with the help of a family member,

acquaintance or a mobility trainer where the person can orient himself/herself, can scan reference points and also obstacles to which s/he must pay attention. If it is a route section where the blind or partially sighted person often walks during a given period, s/he will learn and experience other nuances along the way by himself/herself.

In case s/he has gained experience in certain routes, s/he will leave sooner for a place where s/he has not been beforehand. It goes without saying that the blind or partially sighted person thinks it over and also asks in advance how a given place can be reached.

Persons with low vision and partially-sighted persons are in a better situation, as they can perceive (see) more reference points. They could be disturbed with light conditions: in case it is too dark or light and they cannot perceive (see) features and street furniture (pole, stand, tree, etc.) in all cases, which could be a reference point to them, e.g. showing them that they must turn right at that spot.

### **Which are the places that we can and cannot reach? Which place is not worthwhile to head for as a blind person without any assistance?**

It could be apparent by now based on the previous part of my information that blind and partially sighted persons can reach their workplace, schools, and grocery stores. They require assistance in grocery stores at all times, as even if they can orient themselves between the aisles safely, they cannot find the items they wish to purchase.

In the malls, it is not impossible but shopping is even harder. A completely blind person is unable to find a store, which s/he is looking for on long floors, just like he could not find the clothes, electronic devices, etc. of the most optimal price range on the shelves.

It is not worthwhile to head for a concert or a mass event, either as a blind person, as in the mass the already-known reference points, which could help us orient ourselves are lost and it is almost impossible to leave the spot, the room or the premises alone without assistance when the event is over.

The situation is similar, when taking trips and touring in the forest. When walking on rocky, bumpy and cart-roads where day by day changes can be made and there could be even height differences, assistance may be required by a person who is able to see. The assistant who is able to see is not required to provide physical contact on a continuous basis, when accompanying the blind or partially sighted person, however verbal, timely-provided information and help is essential.

### **Good and bad examples**

In case we address a blind or partially sighted person, we should do it naturally, in order s/he could not perceive our hesitation regarding whether or not we offend him/her if we provide help.

In case we wish to help a person walking with a white cane, we should always address him/her before taking his/her arm. S/he is a sovereign person, too, and able to solve a lot by himself/herself and let him/her decide whether or not s/he needs help. Let us not make a decision about it on behalf of the blind or partially sighted person. It goes without saying that good manners dictate that we should not touch anyone without addressing and greeting him/her.

We should not do accordingly especially if the blind or partially sighted person is standing one step far from the stairs or goes downward on the stairs, as s/he concentrates on the stairs. As the blind or partially sighted person does not anticipate that someone would touch and address him/her, an accident could occur when s/he is frightened.

When we accompany a blind person in the street, we should not hold him/her, we should not guide him/her, by placing our hand on his/her shoulder and we should not take his/her arm. Instead, we should allow him/her to take our elbow or arm. I have the feeling that taking the elbow has more sense, however there are blind or partially sighted persons who prefer to take the assistant's arm.

Let us not wish to help the blind person to take a seat by all means if there is a free seat only far from the door on a crowded vehicle, as in a big crowd it is more difficult to get into the inner area of the vehicle and before getting off to get to the doors, compared to standing for a period of a couple of stops.

In case there is not a free seat onboard the vehicle, we could help the blind or partially sighted persons get onboard the vehicle, if we place his/her hand on a handrail before the vehicle departs from the stop.

**We should not act on behalf of the blind or partially sighted person! .**

In case we help blind or partially sighted person at the stop and we wish to take a line different from that of the blind or partially sighted person, we should not find someone else who could help him/her, without his/her request. In case s/he needs further help, s/he could find the person who could be at his/her disposal.

This is applicable also to vehicle use. In case a blind or partially sighted person gets onboard the vehicle, it is not advisable to find a seat, by shouting into the crowd and say: a seat should be given up on for the Lady/Gentleman..

Apart from the fact that it could be inconvenient for the blind or partially sighted person, it could occur that s/he does not wish to take a seat, as it could be convenient to him/her to stand at a place onboard the vehicle where s/he does not block the way of passengers wishing to get on and off. It goes without saying that it is not applicable to a person of whom we can see that s/he is quite exhausted and it could be hard for him/her to even stand in a stable way onboard the vehicle.

In case we are ahead of the blind or partially sighted person when getting off, we should not look back to check whether or not everything is alright. Despite, we should get off, step 2-3 steps forward or side step, in order we could not block passengers behind us to leave the vehicle. We should not stretch our arm to blind or partially sighted person, as it could distract and not help him/her.

Finally, this is a brand new "issue". As far as I have experienced, there are passengers who switch off their hearing ability in the street and wish to perceive everything by their sight. In case we see a blind or partially sighted person under the display of BKK's FUTÁR Journey Planner (state-of-the-art, real-time traffic management and passenger information system) who is even talking. We should not ask him/her the line number s/he is waiting for, as s/he may pay attention to (listen to) when the next bus is expected to arrive and it is not certain that s/he could focus on two tasks simultaneously and even give a reply to the question.

## 6.3.4 Transport-related aspects of deaf and hard-of-hearing persons

### Who are considered to be deaf and hard-of-hearing persons?

The term of persons with hearing impairment is an umbrella term, which incorporates the deaf and hard-of-hearing persons.

**Deaf persons** do not have residual hearing, as a consequence of which, they usually do not wear a hearing aid, as their hearing-related condition cannot be improved with an aid. They speak the sign language.

**Hard-of-hearing persons** form a heterogeneous group, in terms of their hearing condition. They usually wear a hearing aid, by the help of which they more or less understand audible speech. There are hard-of-hearing persons who do not wear a hearing aid and prefer lipreading, through which they gain information. There are even severely hard-of-hearing persons speaking the sign language.

### Infocommunication-related accessibility

Equal access to transport for the deaf and hard-of-hearing persons is realised by the infocommunication-related accessibility: for deaf and hard of hearing persons, visual display of information is the most important factor.

### Some useful devices and services

#### 1. Induction loop

“This system is based on the transmission/reception principle: with the help of the loop-formed cable laid visibly or invisibly around the perimeter of the floor or ceiling of a room, the sound to be amplified, as the transmitter, induces a magnetic field inside the loop, in which hearing aids supplied with an inductive amplifying system is able to receive directly the filtered sound, appropriately amplify it and filter excessive, distracting noises when the hearing aid is set in the appropriate mode.”<sup>9</sup>

#### 2. Sign language interpreter and interpreting services

A sign language interpreter can make communication accessible for persons using the sign language. Sign language interpretation services provide communication not only by the sign language but also by special communications systems used by the deaf, the hard-of-hearing persons and also by deafblind persons specified in the Appendix of the Sign Language Act. Communications can be accessible for the hard-of-hearing persons by the palantype service (speech-to-text reporting) and for deafblind persons by the tactile sign language. Further information: [www.tolmacsszolgalat.hu](http://www.tolmacsszolgalat.hu) and [www.fszk.hu](http://www.fszk.hu).

<sup>9</sup> Universal Design and Accessibility User’s Guide – CORPORATE DESIGN HANDBOOK

### 3. **CONTACT Interpreter Service**

Employees working at Customer Service Centres and also ticket inspectors could benefit from the CONTACT Interpreter Service, which is a video-based interpreter service: the sign language interpreter contributes to the communication with the help of a telecommunications device. The sign language interpreter translates messages told by BKK's employee to sign language - or for a hardofhearing person to a written form - via a videophone / tablet and translates messages told by the hard-of-hearing person and/or the deaf person to "sound" (voice-based translation) to BKK's employee. Further information: [www.skontakt.hu](http://www.skontakt.hu).

#### **How will transport become accessible for the deaf and hard-of-hearing persons?**

##### 1) **Information boards at stops**

Besides indicating the timetables, it is important to display real-time passenger-information on boards. In case the timetable is modified (delay, maintenance works), the notification has to be available and displayed in a written form in all cases and alternative routes have to be offered.

The names of stops must be written always with capital letters, in order they could be clearly visible even from the vehicle.

##### 2) **Onboard information boards**

Onboard the vehicles of different public transport modes, such as buses, trams, trolleybuses, metrocars and suburban railway, the actual (where the vehicle actually is) and the next (the adjacent stop where the vehicle is heading for) stops have to be displayed at all times in writing, besides providing the voice-based information. Also at this display, it is extremely important to pay attention to and check on a continuous basis whether or not real-time information is provided, in particular

- the displayed information and stops should be correspondent to one another (the displayed information and stops should not be slipped);
- name of the adjacent stop should be displayed after the vehicle has already departed from the stop/station (e.g. onboard the metrocars running along M4 it is common that the metrocar is still in the stop, the doors are still open, yet the adjacent stop is displayed already);
- it is very useful if different information is displayed on the information boards (e.g. date, terminus, number of line(s) with transfer points) but the key information that should be displayed in the first place should be the name of the adjacent stop;
- information boards should be installed on different spots of the vehicle: onboard a long vehicle, not everyone is able to see the information boards placed in the front side of the vehicle;
- in case the timetable is modified (delay, maintenance works), the notification has to be available and displayed in a written form in all cases and alternative routes have to be offered.
- as much as possible, it is recommended to install an induction loop in the vehicle for hard-of-hearing persons, with the help of which they are able to hear announcements directly in their hearing aid.

### **3) Customer Service Centres**

Customer Service Centres should be designed to provide access even to the deaf and hard-of-hearing persons. At ticket dispensers, deaf and hard of hearing persons could be able to voice their needs that they use the service, as a result of which the service could be provided for them at an accessible counter.

How will a Customer Service Centre become accessible for the deaf and hard-of-hearing persons?

- In case the ticket dispenser is in operation, the number of the customer next in line should be written and indicated on a well-visible place.
- When the counter is designed, it is recommended that plexi glass be avoided, as the sound could be transmitted through the plexi glass with difficulties.
- The counter should be supplied with a pictogram, representing that the counter is accessible.
- For hard-of-hearing persons, an induction loop should be applied and checked on a continuous basis, in order the induction loop could be operable.
- Employees working at the Customer Service Centres should be taught about how to use the induction loop correctly.
- Deaf customers should be informed on their mother tongue; the sign language. There should be either a staff on the spot who knows and properly uses the sign language or there should be other solutions available; e.g. the CONTACT Interpreter Service.

### **4) Ticket inspectors**

Ticket inspectors working onboard the transport vehicles should be supplied with each and every key information on the deaf or hard-of-hearing persons, in order communication could be accessible whenever they encounter a deaf or a hard of hearing person. It is of paramount importance that they could recognise whether they encounter a deaf or a hard-of-hearing person, as they should apply strategies that make communication effective (addressing the relating passenger, articulation, addressing him/her face to face, etc.) accordingly. In case they communicate with either a deaf or a hard-of-hearing person using sign language, it is worthwhile for them to use the sign language. In case they do not know sign language, it is recommended that they download and save and the app of the CONTACT Interpreter Service on their phone.

### **5) Buildings and lifts**

One of the most essential elements to make buildings and lifts accessible is to make their alarm buttons accessible. Alarm buttons and alarms (warning signals) should not only be audible but they should be complemented also with optical (visual) signals and should be installed in all parts of a building.

Informative panels should be installed, notifying the user that the emergency call has been received and required actions have been started to be taken.

### **6) Websites**

These days every one of us, including the deaf and hard-of-hearing persons get information on websites, this is the reason why it is important that the content of the website is accessible to them. For long, text-based descriptions, it is required to make and place their sign language adaptation.

Voice-based videos that are uploaded on the website should be subtitled.

### **7) Alarm buttons**

Many times we experience that transport vehicles are already accessible for the deaf and hard of hearing persons (e.g. stops are indicated well-visibly and precisely), yet whenever there is any modification in schedules, deaf and hard-of-hearing persons are unfortunately not informed in any way about these modifications. When passengers are required to suddenly get off the vehicle and there is a replacement line in service to which they are required to transfer, it is necessary to inform them on these changes also in a written form.

The issue is similar in case of alarm buttons. Alarm buttons should provide also visual signals in all cases and exit routes, e.g. in a building or onboard a metrocar should be well-visible.

## 6.4 Solutions of the series of questions aiming at testing participants' knowledge

<b>1. Universal design</b>	
	is such a design method that can be acquired only by university students (e.g. engineers)
X	is such a proactive design method, which takes diversity of individuals into account.
	is the more developed branch of accessibility.
<b>2. Psychosocial disability</b>	
X	is relatively a brand new concept, which considers persons with psychiatric problems to be persons with disabilities.
	is an imaginary disability, from which a lot of persons suffer but causes real issues for the sufferers.
<b>3. We can talk about accessible vehicle use in case,</b>	
X	each and every vehicle is low-floor and also routes to the vehicle, as well as stops and stations are accessible, vehicles and stations/stops are provided with visible and audible information.
	ramps can be folded out and also assistance is within reach.
	passengers provide every help, both verbal and physical.
<b>4. Appropriate PC terminology:</b>	
X	person with intellectual disability, , person with learning disability, persons with Down syndrome.
	person with Down syndrome, mentally-retarded person.
	idiot, mentally-handicapped, mentally-impaired, mongoloid.
<b>5. In line with BKK Zrt's Business Policy, prams are permitted on the escalators</b>	
	prams are permitted to be carried in a folded form and the child should be held in the adult passenger's arm.
X	at stations where lifts are in operation, it is recommended to use the lifts.
	wheelchair users are allowed to use escalators at their own responsibility.
<b>6. Cerebral palsy</b>	
	is an illness.
X	is a lifelong condition.
<b>7. The transport-related difficulties are various, yet it can be generally stated that for persons who are able to walk (ambulant persons), the most difficult task which they face</b>	
X	is to walk on an uneven surface (e.g. holes on the pavement, cobble stones).
	is walking.
<b>8. In case a blind and partially sighted person gets onboard the vehicle, what should we do first if there is not a free seat next to the door?</b>	
	We go towards the inner area of the bus through the crowd because we can spot a free seat.
	We shout into the crowd, requesting our fellow-passengers to give up on their seat for the blind and partially sighted person

X	We help the blind and partially sighted person put his/her hand on a handrail as soon as possible.
9. Which is the place among the below-listed places where a blind person or a person with low vision certainly do not head for alone?	
X	A mass event.
	Grocery store.
	School.
10. Why is it not good if a person living with cerebral palsy gets to the very inner area of the public transport vehicles?	
X	There is the risk of falling and also getting off the vehicle may take a longer period of time for them.
	S/he cannot request information from the driver.
11. Is there an active wheelchair?	
X	Yes.
	No.
12. What is the most common injury, which requires wheelchair?	
	Diabetes
	Fractured leg.
X	Spinal cord injury.
13. Can a car be driven only by hands?	
	Only by hands and legs.
X	Yes, it can.
14. Can we help an electric wheelchair user, by standing next to him/her and taking over the control of the driving of the wheelchair, by the help of the joystick?	
X	Yes, if the owner of the electric wheelchair has permitted us to do so.
	No.
15. In case we wish to help a wheelchair user to overcome a higher barrier (e.g. curbs) and hold the push handles of the backseat, what should we do?	
	First, we should pull the wheelchair backwards to lift the first wheels and then lift the back wheels over the curbs.
X	First, we should push it downward to lift the first wheels and then lift the back wheels over the curbs.
16. How to guide a blind and partially sighted person?	
	We hook the arm of the blind or partially sighted person and walk next to him/her as a guiding person.
X	The blind or partially sighted person takes the seeing person's elbow.
	We place our hands on his/her shoulder and guide him/her.