Please note that the driving school instructor may use a different presentation to teach this module.

Module 8

Speed

Targeted Competencies

- Recognizing the personal characteristics that can influence one's behaviour as a prospective driver
- Identifying the legal framework and the rules of courtesy that make safe, cooperative and responsible driving possible
- Identifying the characteristics of ecological, economical and safety-conscious driving (eco-driving)
- Performing driving manoeuvres
- Taking other road users into account

Outline of Module 8

- Activity: Speeding
- Speeding and Speed Limits
- Why Are Speed Limits Needed?
- Is Speed a Problem?
- Young People and Speed
- Deciding How Fast to Drive
- The Effects of Speed
- Failing to Wear Seat Belts
- The Legal Consequences of Speeding
- Photo Radar

Activity: Speeding

Instructions (in teams)

- Appoint a spokesperson.
- Discuss the reasons given for exceeding the speed limit. Do you think that the reasons are valid?
- Find solutions to encourage people to obey the speed limit
- Create a slogan to promote awareness of why people should obey the speed limit.

Activity: Speeding (cont.)

Full Class Session

- Do you still think that the reasons given for exceeding the speed limit are valid?
- Do you think that the solutions and slogans given could help to promote safe, cooperative and responsible driving? Why?
- What can you do to get yourself to obey the speed limit?
- How can you influence your family and friends so that they obey the speed limit?

Speeding and Speed Limits

In general, there are two ways of thinking about driving speeds:

- The **speed limit** (legal limit) is the speed authorized by law: this is the speed posted on road signs along roadways.

- The **effective speed** is the speed at which the driver chooses to drive.

Speeding and Speed Limits

- **Speeding** refers to a situation where a driver travels at a speed greater than the posted speed limit.

- **Unsafe speeding** refers to a situation where a driver travels at a speed that is too high for the weather and road conditions, even if the speed is within the posted speed limit.

- **Excessive speeding** refers to a situation where a driver travels at a speed that is far above the posted speed limit.

Why Are Speed Limits Needed?

Speed limits:

- reflect the point of balance between the mobility, safety and diversity of road users
- make it possible to reduce differences in speed between vehicles
- are adapted to road traffic
  - The road is a dense and complex environment with cars, pedestrians, cyclists, motorcyclists, heavy vehicles, etc.
- reflect this complex environment and are essentially designed to **reduce the number and severity of accidents**

Why Are Speed Limits Needed? (cont.)

Drivers often have a false sense of security

Drivers...

- Incorrectly evaluate their own speed and that of others
- Overestimate their abilities
- Have a poor understanding of the distance it takes to stop their vehicle
- Are generally unaware of their vehicle's condition and underestimate the importance of having good tires and brakes

Is Speed a Problem?

- Speed is one of the leading causes of traffic accidents in Québec
- Even when speed is not the primary cause of an accident, its effects can be felt
- On average from 2008 to 2012, speed was a factor in approximately
  - 32% of fatalities
  - 28% of accidents involving serious injuries
  - 18% of accidents involving light injuries
- These percentages represent annually
  - 110 people killed
  - 6,705 people injured

Is Speed a Problem? (cont.)

- Speed and failing to obey speed limits are generalized problems
  - Speeding and speeding-related accidents occur frequently
  - They occur on all types of roads
  - They involve all drivers
    - Drivers of all ages
    - Both men and women
- It is difficult to create and maintain a public consensus on speed, since the degree of public disapproval is so low.

Young People and Speed

- Generally speaking, young people aged 16 to 24 are overrepresented in traffic accidents
- Young people represent only 8% of all driver's licence holders, but 19% of all drivers involved in accidents resulting in bodily injury
- From 2015 to 2019, **speed** was a factor in **54%** of all fatal accidents involving drivers aged 16 to 24

Young People and Speed (cont.)

Young people involved in accidents per 1,000 licence holders

- On average, young drivers travel fewer kilometres than older drivers
- When the number of kilometres travelled is taken into account, younger drivers are even more markedly overrepresented

NUMBER OF DRIVERS INVOLVED IN AN ACCIDENT RESULTING IN BODILY INJURY PER 1,000 LICENCE HOLDERS IN THE SAME AGE GROUP IN 2019	
Age Group	**Number of Drivers**
16 to 19	26
20 to 24	15
25 to 34	10
35 to 44	8
45 to 54	7
55 to 64	6
65 to 74	4
75 to 84	5
85 to 89	6
90 and older	7

Young People and Speed (cont.)

Young Drivers and Offences

In 2019, drivers aged 16 to 24 represented 8% of licence holders, but 19% of drivers involved in an accident resulting in bodily injuries

In 2018, they

- committed 14% of all offences resulting in demerit points
- received 29% of all tickets for exceeding the speed limit by more than 45 km/h
- committed 29% of all offences for speeding or reckless driving

Deciding How Fast to Drive

How does a driver decide how fast to drive?

What are the reasons for each person's choice?

3 factors:

- Driver (age, experience, sex, state of mind, being in a hurry, alcohol, drugs, fatigue, other users, etc.)
- Environment (speed limit, road profile, weather conditions, traffic density, etc.)
- Vehicle (weight, condition, age, model, etc.)

The Effects of Speed

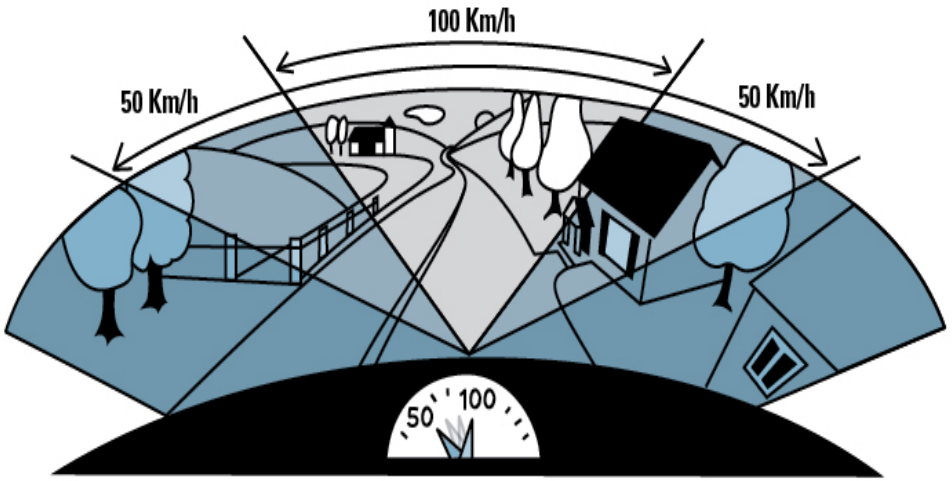
Speed

- Reduces the field of vision
- Reduces tire traction
- Makes it impossible to perform certain emergency manoeuvres
- Increases stopping distance
- Increases the force of impact

Reduced Field of Vision

- When stopped or driving at low speed, a driver normally has a field of vision of 150° to 180°

- At 100 km/h the field of vision is greatly reduced
  - The greater a vehicle's speed, the more information the brain receives
  - Since it can process only a limited amount of information at a time, it is forced to eliminate peripheral data
  - This is why the field of vision is reduced



Reduced Tire Traction

- As a vehicle goes into a curve, the tires are compressed, the springs flex, and the vehicle's suspension prevents it from veering off the road

But if it is travelling too fast…

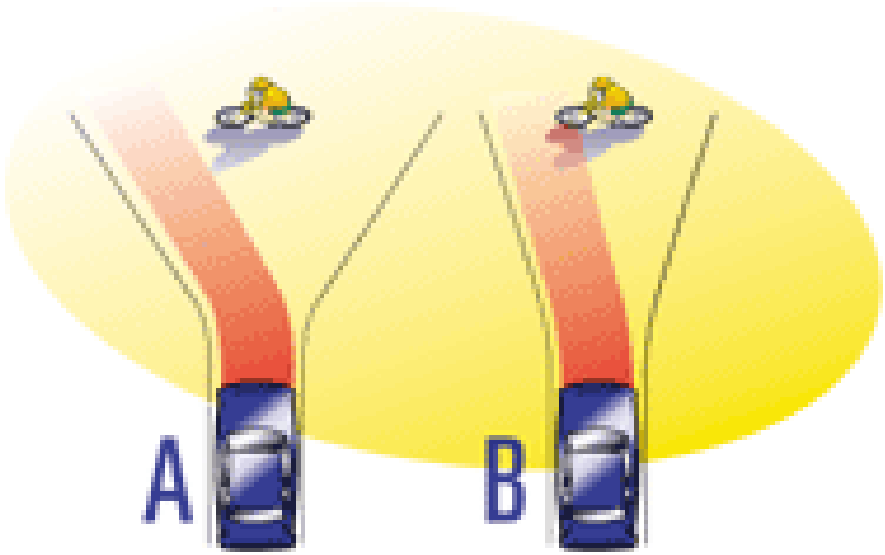
- Centrifugal force overcomes the force of friction exerted by the tires and the vehicle skids or rolls over

Certain Evasive Manoeuvres Become Impossible to Perform

As speed increases, the available trajectories for avoiding obstacles, such as a cyclist, are considerably reduced

Trucks are more difficult to manoeuvre and slower to react than automobiles

To brake, a truck requires more time and distance than an automobile



Car B is travelling faster than car A

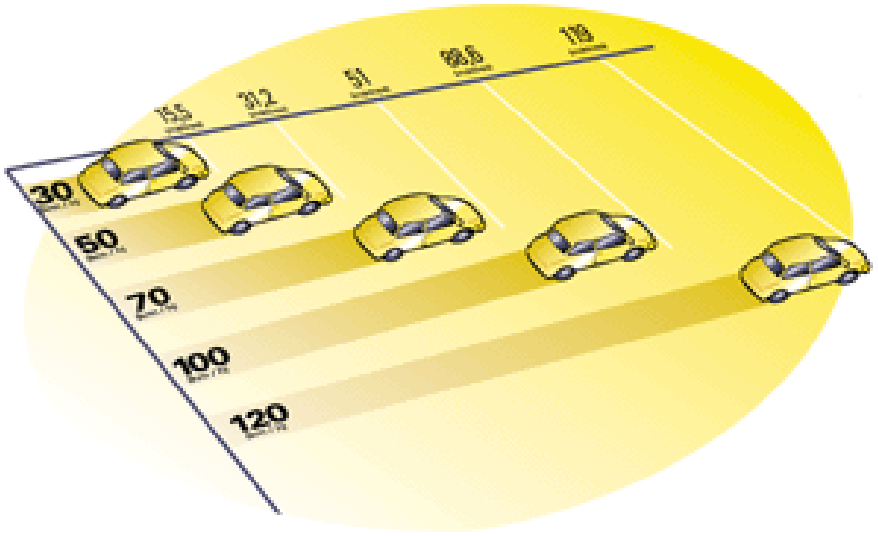
Increased Stopping Distance

The number of metres it takes for a vehicle to come to a stop depends on two factors

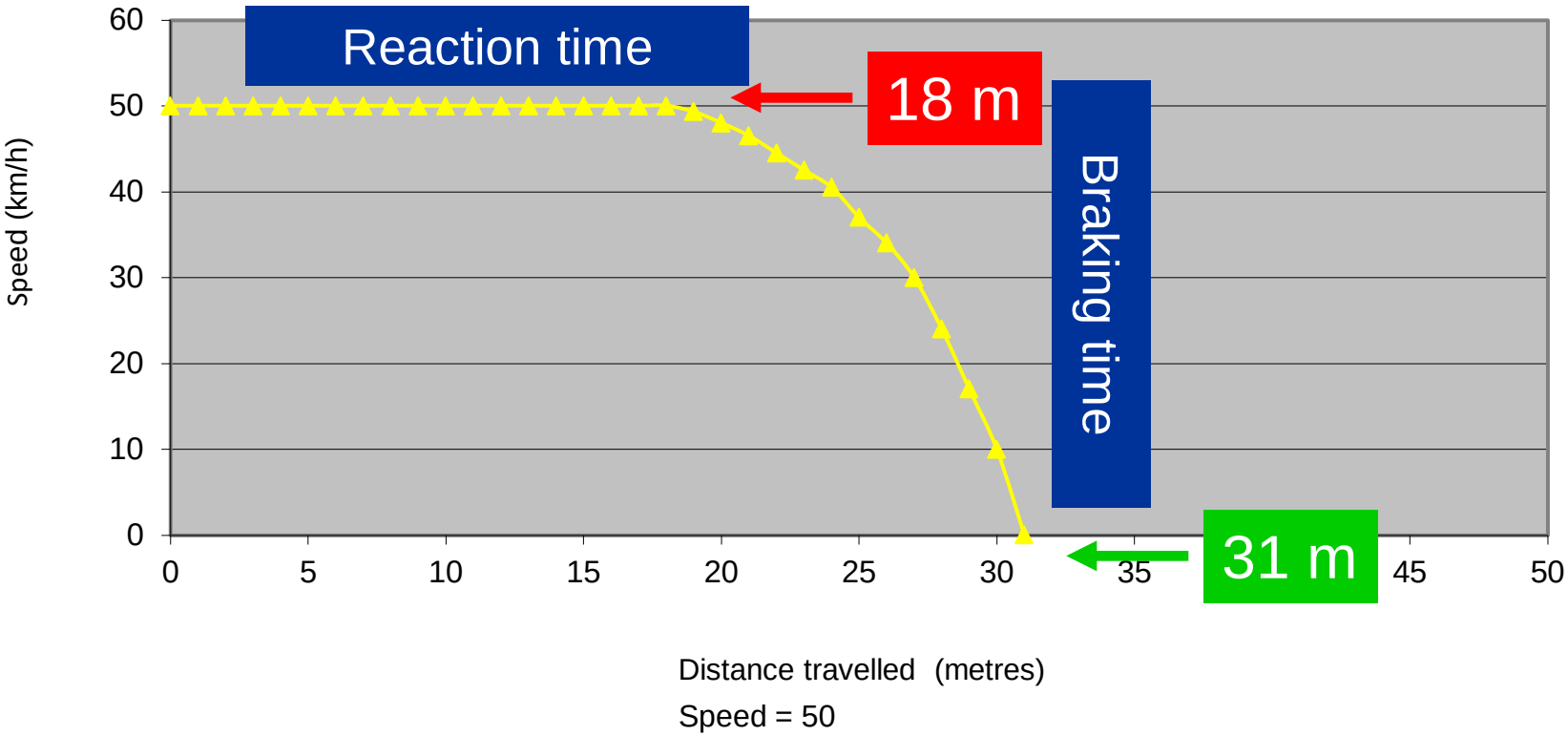
- **Reaction time** – Length of time between the moment the driver decides to brake and the moment the driver presses down on the brake pedal

  Average reaction time is **1.3 seconds**

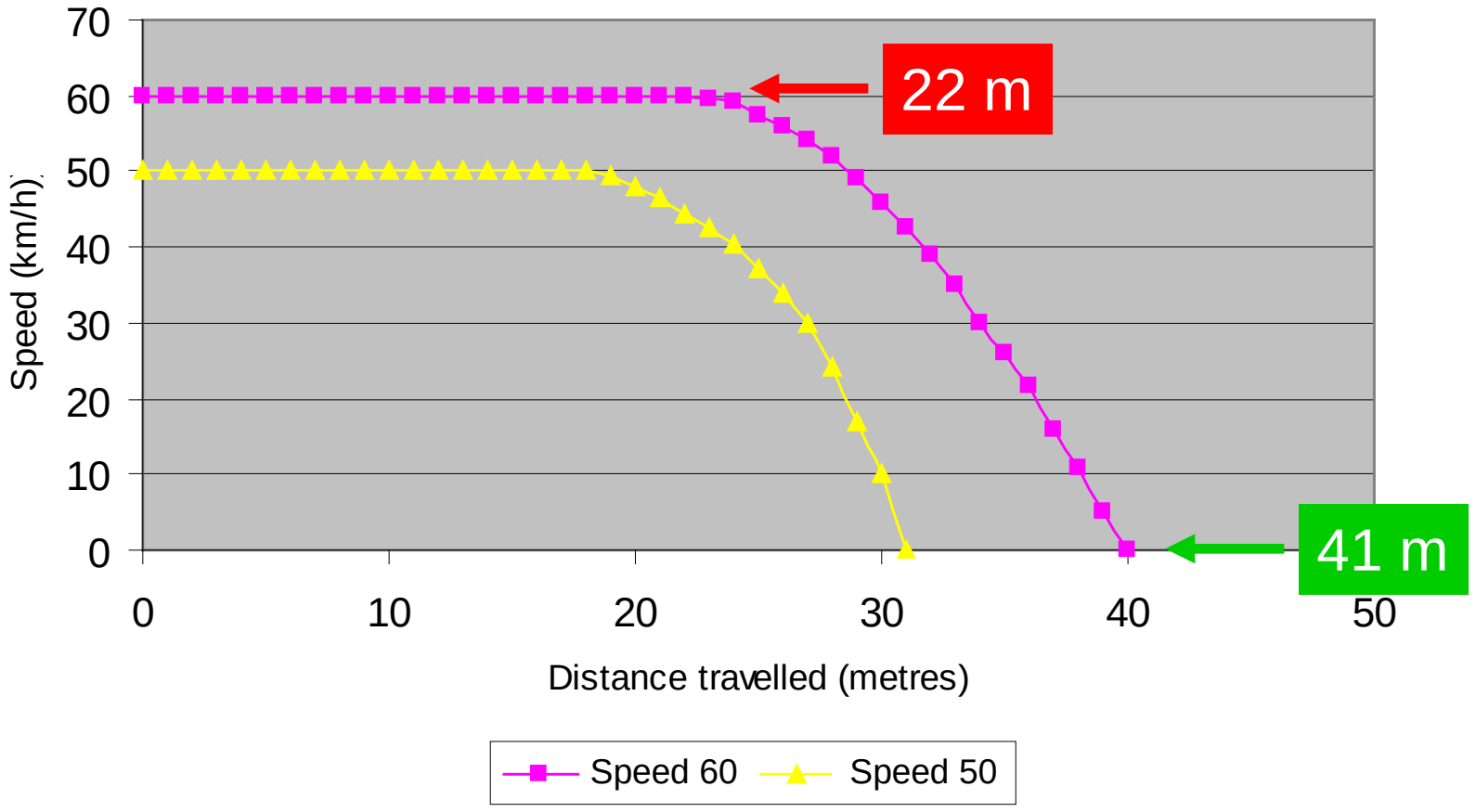
- **Braking time** – Length of time the driver presses down on the brake pedal until the vehicle comes to a complete stop



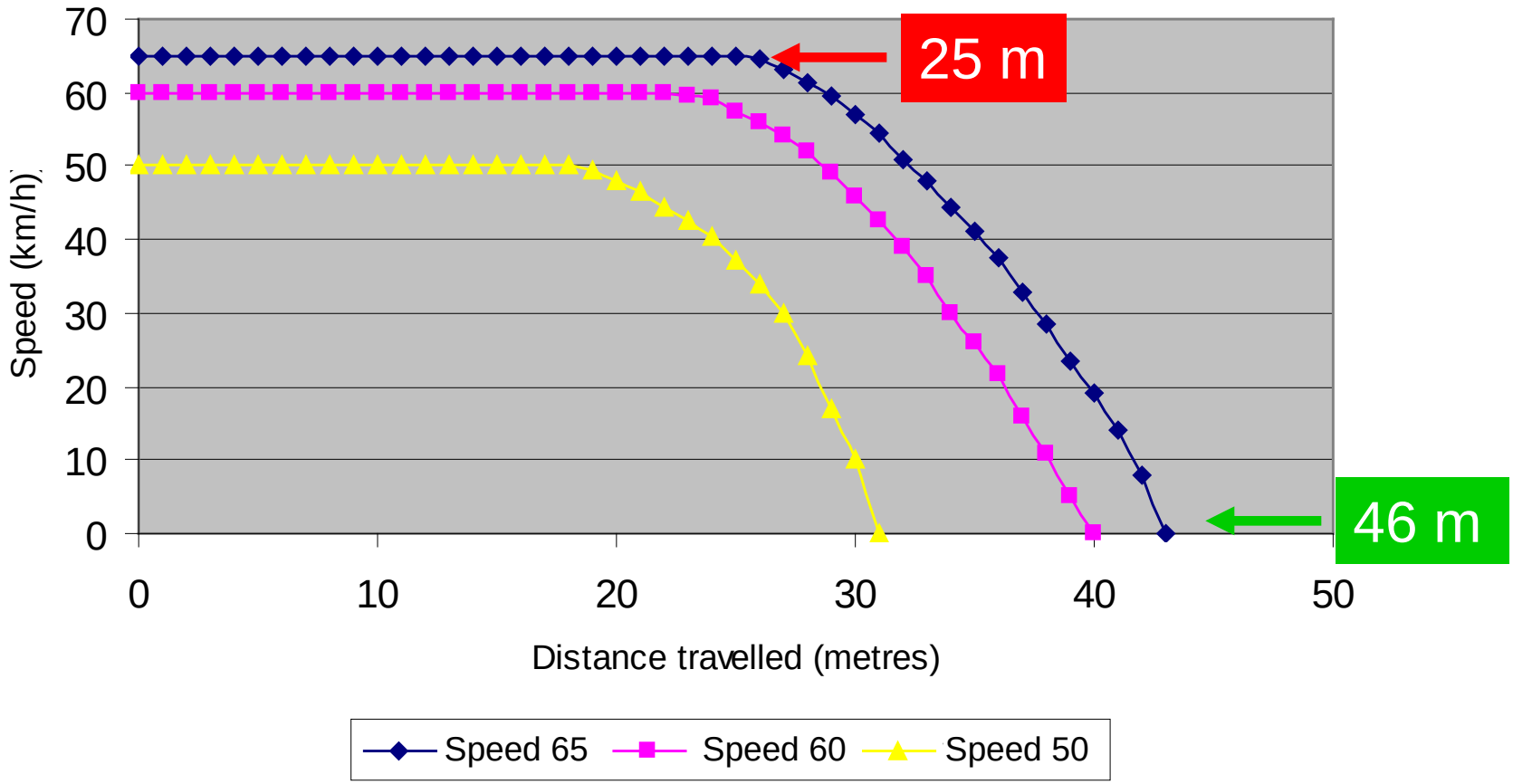
Stopping Distance at 50 Km/h



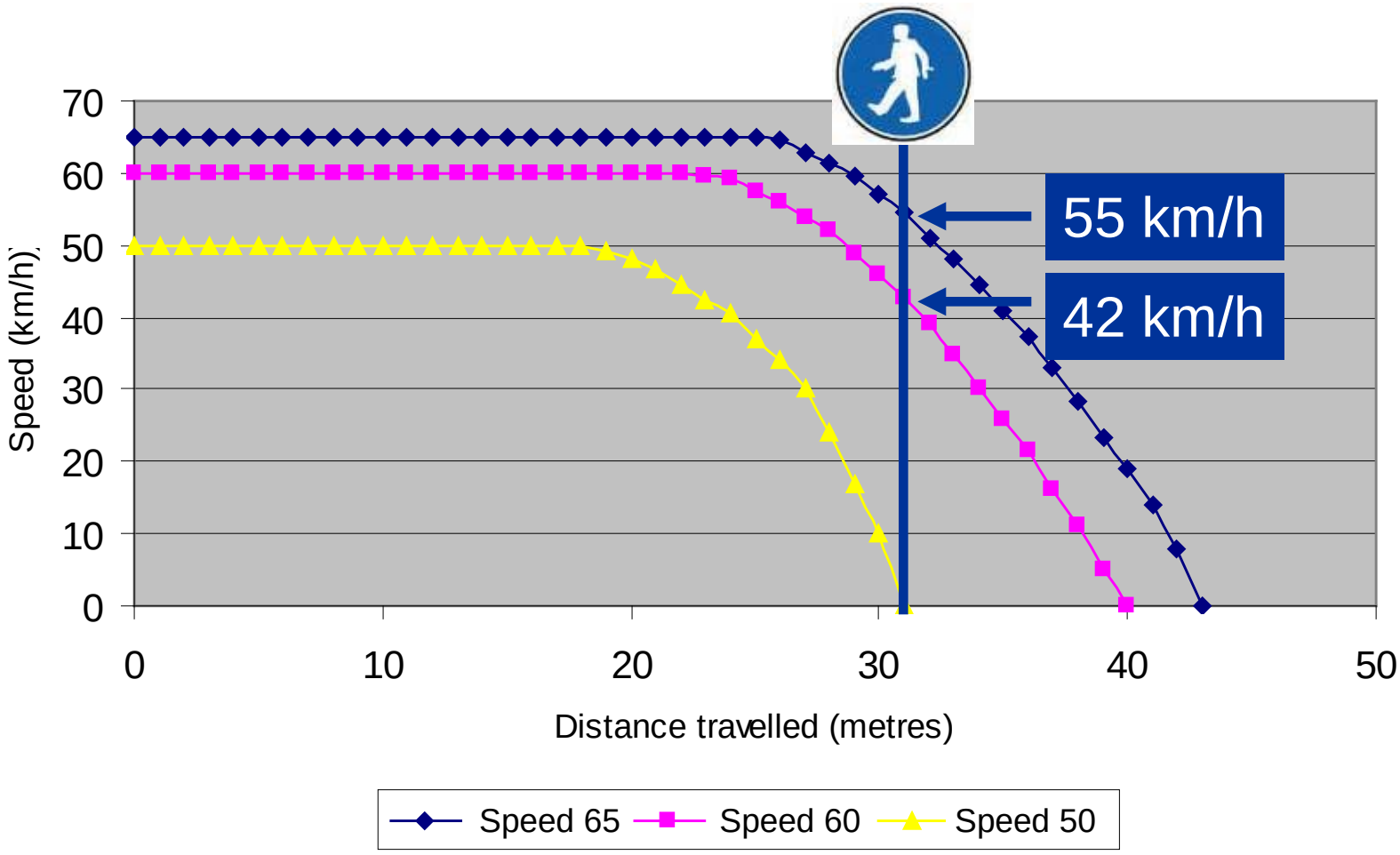
Stopping Distance at 60 Km/h



Stopping Distance at 65 Km/h

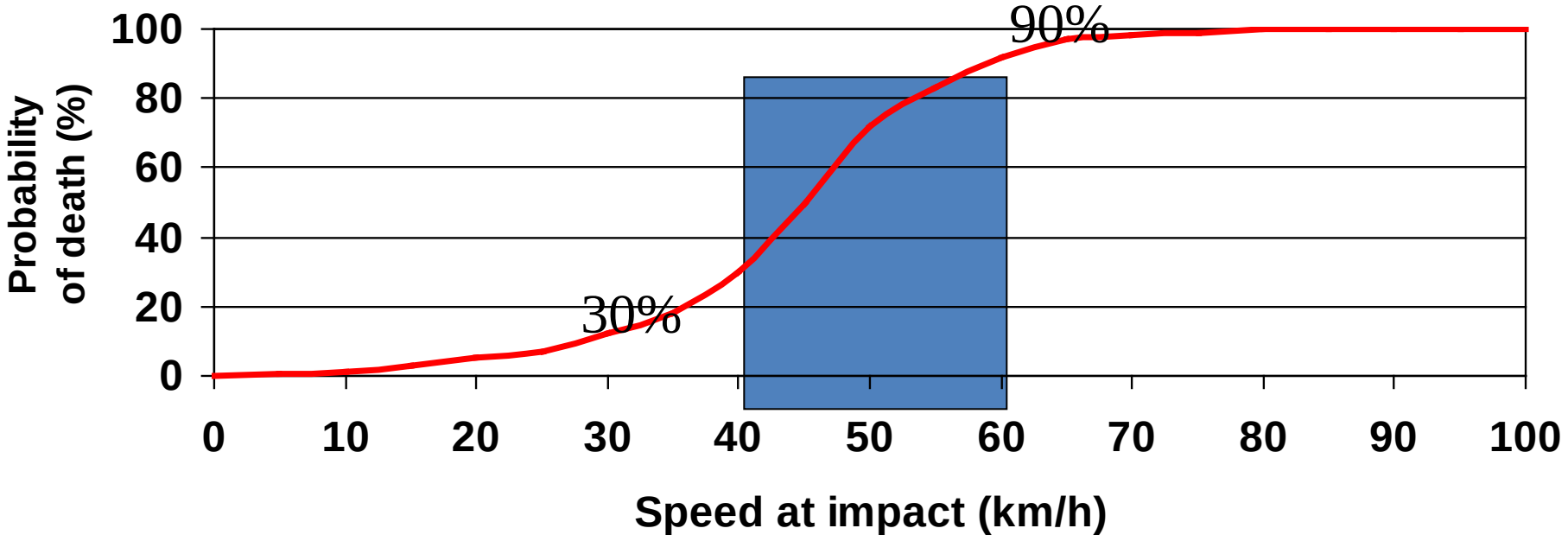


Impact on a Pedestrian



Probability of Death for a Pedestrian Based on Speed at Impact

Ashton, 1982



Bodily Injuries to a Pedestrian Struck by a Car

20 km/h	30 km/h	40 km/h	55 km/h
Slight contusions	*Serious injuries begin to occur*	*Serious injuries occur*	*Fatalities occur in almost all cases*
Minor contusions	*Fatalities begin to occur*	*Fatalities occur frequently*	

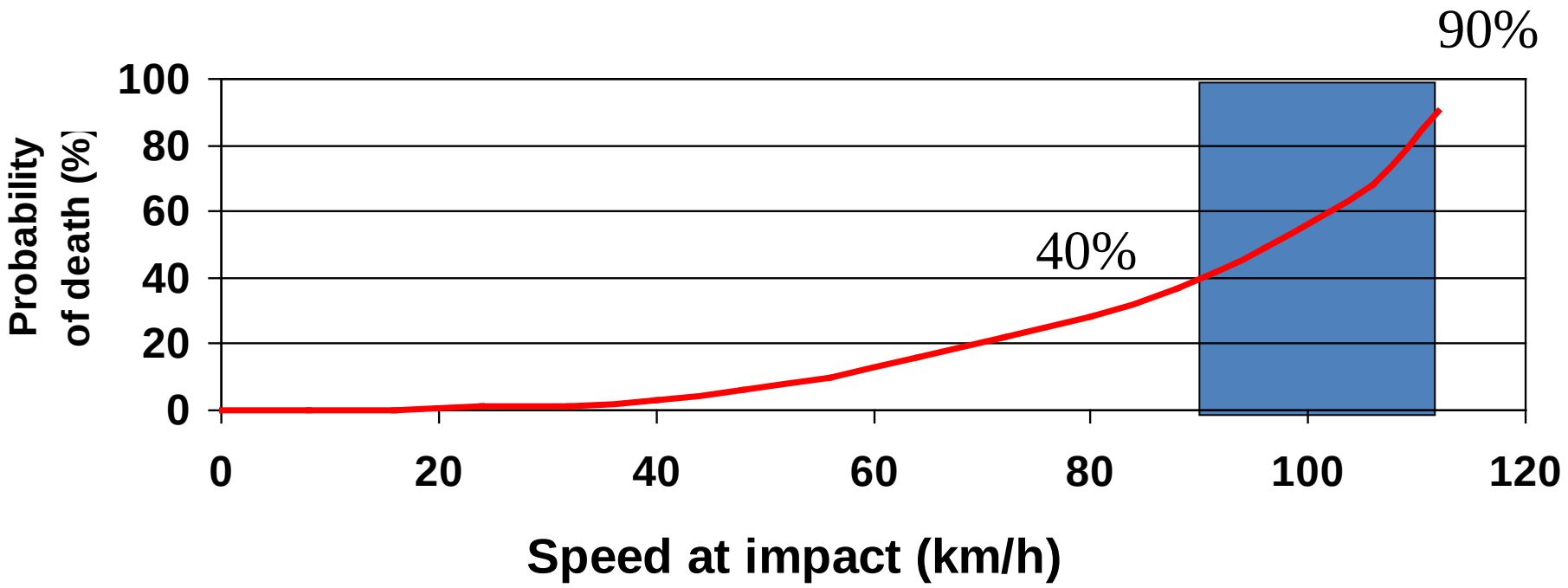
Increased Force of Impact

The risk of being seriously injured or killed doubles between 50 km/h and 70 km/h, and quadruples between 50 km/h and 100 km/h

- A collision at 50 km/h is like falling from a 4-storey building
- A collision at 75 km/h is like falling from an 8-storey building
- A collision at 100 km/h is like falling from a 14-storey building

Probability of Death for a Vehicle Occupant Based on Speed at Impact

Joksch, 1993



An Accident: Three Types of Impact

1. Car vs. obstacle

- At the moment of collision, the energy is transferred to the vehicle, which absorbs part of the energy associated with the deceleration

An Accident: Three Types of Impact

2. Body vs. car

- The body continues its forward momentum, but is halted by
  - seat belts, if the occupants are wearing them
  - airbags, if the car is equipped with them

    or
  - the steering column and the windshield

An Accident: Three Types of Impact

3. Internal organs vs. body

- The body's internal organs are still moving forward, but are "stopped" by
  - the skull

    and
  - the rib cage

Failing to Wear Seat Belts

- For over the past decade, numbers show that approximately 30% of passenger vehicle drivers and passengers killed in traffic accidents were not wearing their seat belt
- During that same time period, 130 people each year sustained serious injuries
- From 2015 to 2019, on average, 47 people who were not wearing a seat belt were killed each year (drivers and passengers)
- Failing to wear a seat belt is often associated with other dangerous driving behaviours (alcohol, speeding)

Failing to Wear Seat Belts

- When a car strikes an obstacle at **50 km/h**, the force exerted on a body in motion multiplies its weight by **35**
    - A person weighing 70 kg becomes a 2,450 kg projectile

- If you are thrown from your vehicle, your chances of survival are **5 times** lower
    - There is a greater risk of being injured when you hit the ground, as you could be run over by your own car, struck by another vehicle, hit a lamp post, etc.

The Legal Consequences of Speeding

Type of offence	Penalty
Exceeding the speed limit (ss. 299, 303.2, 328 and 329 of the *Highway Safety Code*)	A fine and demerit points, which vary depending on the speed
Speeding or reckless driving (s. 327)	$1,000 to $3,000 plus costs 4 demerit points
Driving too fast for weather conditions (s. 330)	$60 to $100 plus costs 2 demerit points
Racing or driving for a wager or stake (s. 422)	$1,000 to $3,000 plus costs 12 demerit points Immediate suspension of driver's licence and seizure/impoundment of the vehicle

What Is Excessive Speeding?

A person commits an excessive speeding offence when driving at a speed of:

- **40 km/h or more** above the speed limit in a zone of 60 km/h or less
- **50 km/h or more** above the speed limit in a zone of 60 km/h to 90 km/h
- **60 km/h or more** above the speed limit in a zone of 100 km/h

What Are the Penalties for Excessive Speeding?

Penalties immediately applied by the peace officer

- For a first offence: immediate licence suspension for **7 days**
- For a second and subsequent offence: immediate licence suspension for **30 days**
- Suspension extended to **60 days** in the case of a third offence committed in a zone of 60 km/h or less (2 identical previous offences)
- Seizure and impoundment of the vehicle for 30 days for an offence committed in a zone of 60 km/h or less, if the offender has a prior conviction for such an offence

Penalties after conviction

- Number of demerit points x 2
- Amount of the fine x 2
- Amount of the fine x 3 for a fourth offence within 10 years

Example of Penalties for Excessive Speeding

Annie has been pulled over for driving at 77 km/h in a 30 km/h zone

This is her first offence

- Her driver's licence will be immediately suspended for 7 days

In the event of a conviction

- Annie will have to pay a fine of $480 plus costs
- 10 demerit points will be entered in her driver's record
- In addition, if Annie holds a learner's licence or a probationary licence, it will be suspended for 3 months

If Annie commits a repeat excessive speeding offence within 10 years, stiffer penalties will be imposed

Increased Surveillance Thanks to Photo Radar