

ITARDA INFORMATION

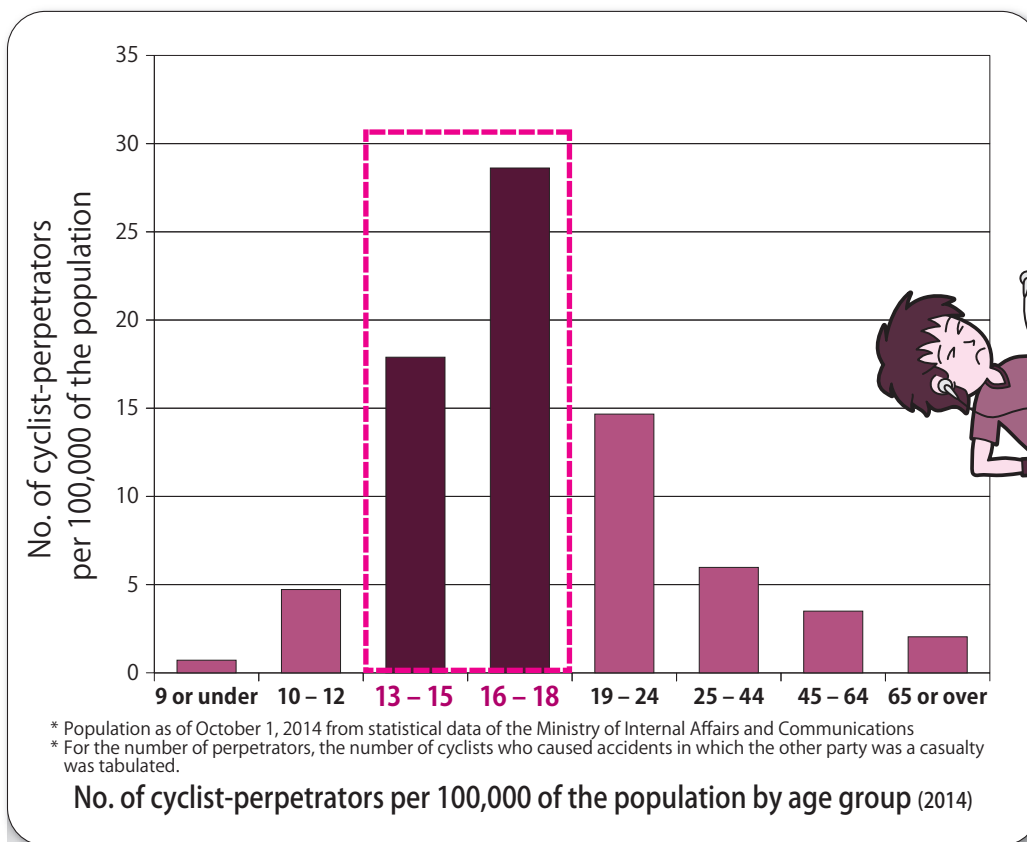
交通事故分析レポート

No.112

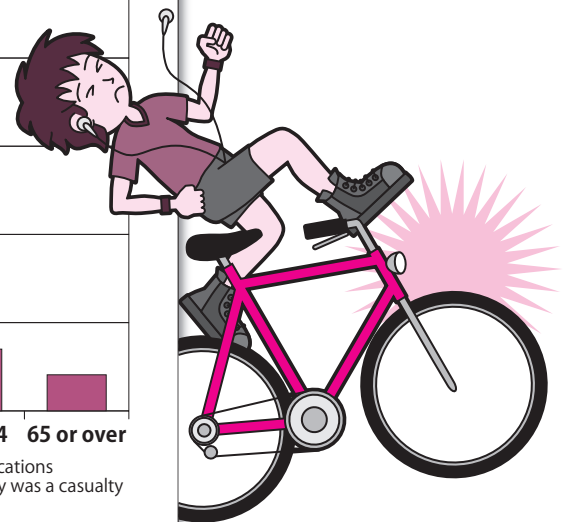
Special
feature

Accidents perpetrated by cyclists

~To ensure that your precious child is not the perpetrator of a traffic accident~



Age group 13-18 are often the perpetrators of traffic accidents while riding bicycles!



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1 Introduction

In 2014, 112,134 people were involved in an accident while riding their bicycle (total for both primary and secondary parties), and roughly 65% of these people committed some sort of traffic violation that served as the cause of the accident. Bicycles are classified as vehicles in the sense that they must be ridden in accordance with traffic regulations such as the Road Traffic Law and other related laws and regulations. But you often catch sight of bicycles being ridden dangerously without the rider upholding traffic rules and the like. The **Cyclist Retraining Course**^{*1)} was initiated in June 2015, and efforts geared towards improving compliance with traffic rules and etiquette among bicycle users are being strengthened.

Many of the people who have accidents while riding their bicycle become casualties. Therefore there is a strong impression that cyclists are vulnerable road users (victims). However, there are also cases where the other parties involved in the accident caused by traffic violations by cyclists become casualties, particularly in the case of accidents that occur with pedestrians and between cyclists, with a strong tendency for the cyclist to be the perpetrator. In actuality, there have been court decisions handed down in cases where elementary school students riding their bicycles collided with pedestrians and were deemed to have inflicted injuries that left the other person severely disabled, such that their parents were ordered to pay enormous sums amounting to several tens of millions of yen (hundreds of thousands of dollars) in compensation, as would have been in the case of any other vehicle accidents.

Therefore, in this issue of ITARDA Information we will analyze “bicycle-pedestrian accidents” and “bicycle-bicycle accidents” in which cyclists tend to be the perpetrators, and will introduce the characteristics of these accidents.

*1) The Cyclist Retraining Course is a course that mandates that cyclists who are 14 years or older and have repeatedly engaged in certain dangerous acts, such as ignoring traffic signals while riding their bicycle on two or more occasions within three years, must attend safety classes for cyclists.

2 Trends in the number of bicycle accidents ~ Small rate of decrease in accidents perpetrated by cyclists ~

As shown in Table 1, the number of bicycle accidents continues to decrease year by year, and has fallen by approximately 75,000 cases (40.6%) relative to 2005. However, the rate of decline for bicycle-pedestrian accidents is 2.5% and that for bicycle-bicycle accidents is 29.1%, which are both low compared with bicycle accidents on the whole. This means that the accidents perpetrated by cyclists have not fallen all that much. Bicycles are convenient vehicles for which you do not need a driver's license. However, bicycle users must be self-aware of the fact that they are dangerous vehicles that have the potential to inflict harm on people just like any other vehicle, and their awareness of traffic safety must be increased.

Table 1. Trends in the no. of bicycle accidents

Classification by other party	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	No. decreased	Rate of decrease (%)
Versus four-wheeled vehicle	152,302	144,519	141,357	134,308	130,754	127,422	121,006	111,414	102,118	92,192	60,110	39.5
Versus two-wheeled vehicle	12,709	11,340	11,642	10,639	9,975	9,498	9,134	7,854	7,023	6,071	6,638	52.2
Bicycle-bicycle	4,039	4,055	4,184	4,348	3,919	3,799	3,616	3,260	3,037	2,865	1,174	29.1
Bicycle-pedestrian	2,617	2,783	2,869	2,959	2,946	2,770	2,806	2,625	2,605	2,551	66	2.5
Single bicycle	5,926	5,770	5,484	5,015	4,371	3,747	3,179	2,816	2,499	2,212	3,714	62.7
Other	6,400	6,002	5,633	5,393	4,520	4,445	4,317	4,079	3,758	3,378	3,022	47.2
No. of bicycle accidents	183,993	174,469	171,169	162,662	156,485	151,681	144,058	132,048	121,040	109,269	74,724	40.6
No. of cyclists involved	188,032	178,524	175,353	167,010	160,404	155,480	147,674	135,308	124,077	112,134	75,898	40.4

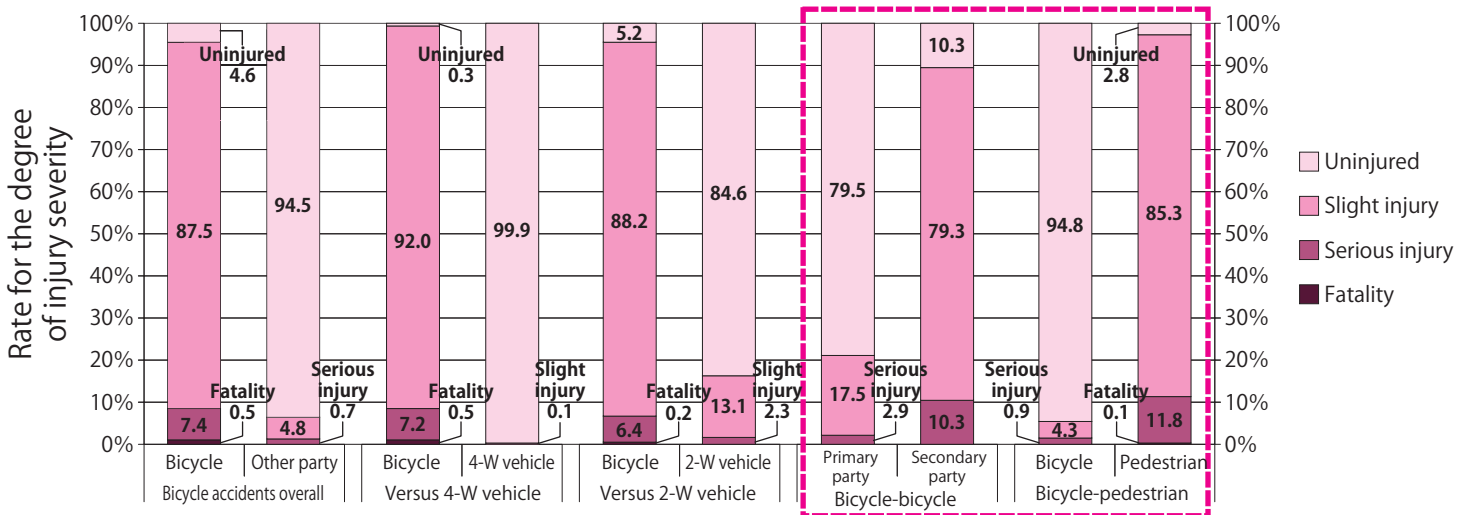
* Tabulates accidents in which a cyclist is the primary or secondary party involved in an accident.

* The number decreased and the rate of decrease were found as a result of comparing figures from 2005 and 2014.

3 Are cyclists victims or perpetrators?

~They tend to be perpetrators in bicycle-pedestrian accidents~

Fig. 1 shows the rate for degree of injury severity to the parties involved in an accident for each type of other party. The parties were divided up into primary and secondary parties according to the relative gravity of the negligence, and here we classified people who became casualties as victims and those causing the casualties as perpetrators. For bicycle accidents as a whole, the cyclist became a casualty in about 95% of the cases (except for secondary parties in bicycle-bicycle accidents), whereas the other party became a casualty in roughly 5% of the cases. By just looking at this you could possibly be led to think that cyclists are often involved in accidents as victims. However, when you look at only bicycle-bicycle accidents and bicycle-pedestrian accidents, you can see that primary party cyclists rarely become casualties, and the rate with which the other party involved in the accident (secondary parties in bicycle-bicycle accidents, pedestrians) become casualties, increases. Consequently, while cyclists are victims against four-wheeled vehicles and two-wheeled vehicles, they could be the perpetrators against other cyclists and pedestrians.



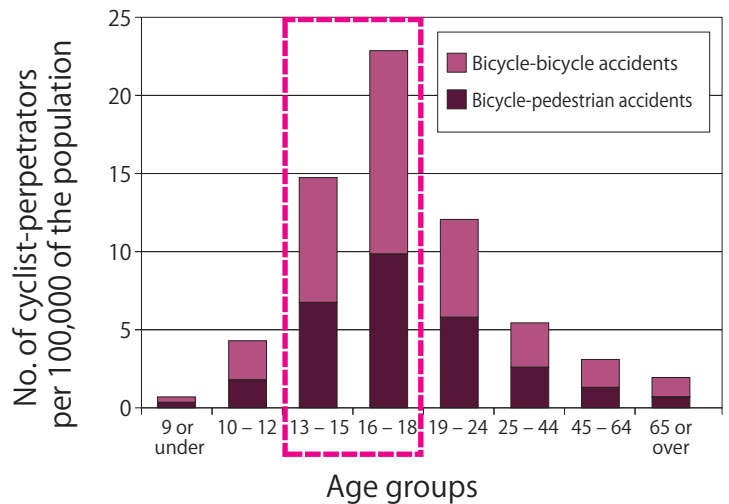
* Cases where it has not been proven that the injury to a party was caused by a hit-and-run or the like were excluded.

Fig. 1. Rate for the degree of injury severity of cyclist and other road users involved in an accident by accident type (total from 2010 – 2014)

4 Age groups that tend to cause bicycle-pedestrian and bicycle-bicycle accidents

~13 – 18 year old cyclists tend to perpetrate accidents~

Fig. 2 shows the number of cyclists that caused bicycle-pedestrian accidents and bicycle-bicycle accidents per 100,000 of the population (only primary parties for bicycle-bicycle accidents) by age group. For both bicycle-pedestrian accidents and bicycle-bicycle accidents, the number of children in the higher grades at elementary school (ages 10 – 12), of which there are many bicycle users, begins to rise, with the number increasing as the children advance onto the higher grades in middle school (ages 13 – 15) and high school (ages 16 – 18). This is believed to be due to the fact that the frequency with which they use their bicycles to commute to school increases as they advance into the higher grades, and because they have more opportunity to use their bicycles as they cannot choose other means of transportation, such as a car or motorcycle, the way an adult could.



* Population as of October 1 of each year from statistical data of the Ministry of Internal Affairs and Communications was used.
 * For the number of cyclists, primary and secondary parties for bicycle-pedestrian accidents and primary parties for bicycle-bicycle accidents were tabulated.

Fig. 2. No. of cyclist-perpetrators per 100,000 of the population by age of cyclist (total from 2010 – 2014)

5 Characteristics of bicycle-pedestrian accidents

Time periods with lots of accidents

~Bicycle-pedestrian accidents occur more often in the mornings and evenings~

Fig. 3 shows the rate for each time period in which bicycle-pedestrian accidents occur by age group of the cyclist. Generally speaking, they peak in the mornings and evenings, revealing that the majority occur in time periods when people are commuting to and from work and school. This is believed to be because many bicycles and pedestrians are in transit during this time period, and it is also thought to be impacted by the fact that in the evenings one's surroundings become dark and it becomes difficult to detect pedestrians. Moreover, there are many accidents after the time when people 12 years old or under return home (16:00 - 18:00), or from 10:00 - 12:00 for people 65 years old or over, with the results reflecting the lifestyle pattern of each age group.

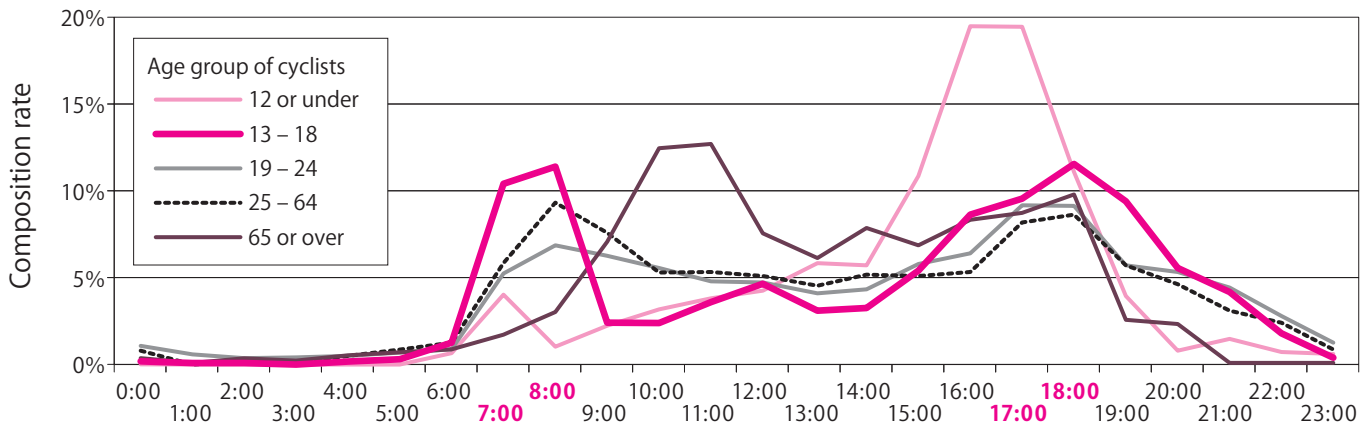
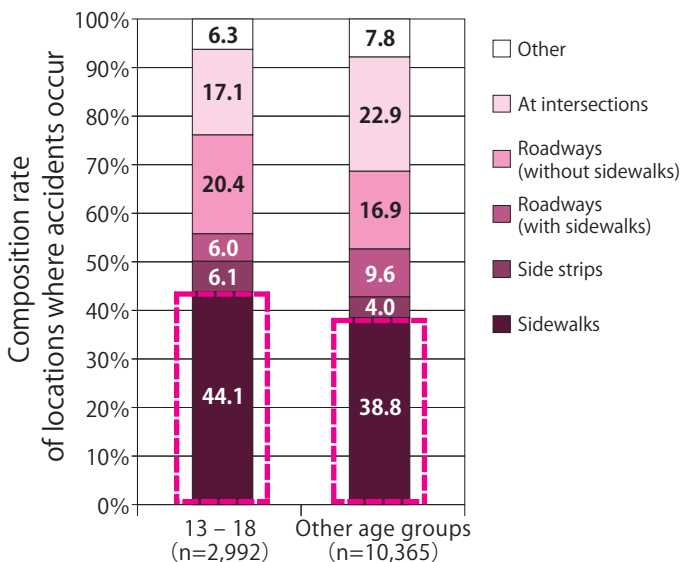


Fig. 3. Rates for time periods in which bicycle-pedestrian accidents occur (total from 2010 - 2014)

In what sorts of situations do accidents occur?

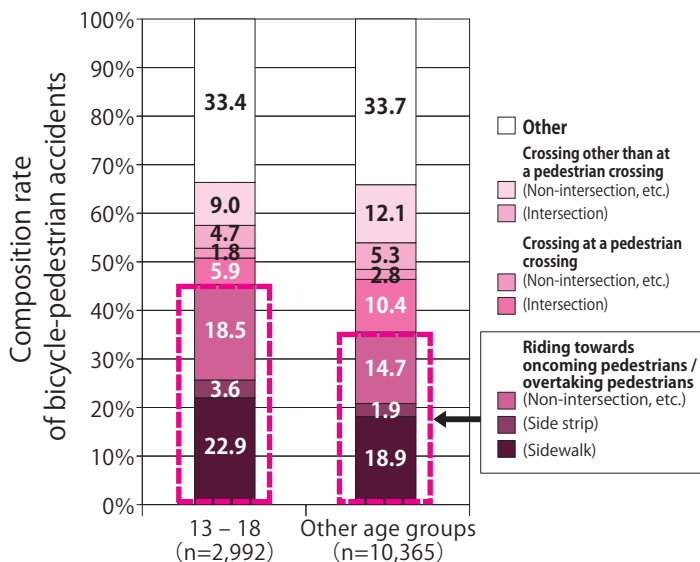
~Roughly 40% of bicycle-pedestrian accidents occur on sidewalks~

Figs. 4 and 5 show the locations where bicycle-pedestrian accidents occur and the types of accidents. Roughly 40% of the accidents occur on sidewalks, where cyclists failed to uphold the overriding principle that pedestrians have priority on sidewalks. When you look at a breakdown of the accidents, many of the accidents involved collisions with pedestrians walking towards the cyclist from front (riding towards pedestrians) or with pedestrians walking in front of the cyclist (riding to overtake pedestrians). These are believed to be caused by the cyclist failing to keep a close eye on what is happening up ahead, or not leaving enough space between them when passing. Cyclists bear a greater responsibility when it comes to accidents on sidewalks. It is important to provide thorough instruction on how to ride on sidewalks and the like to bicycle users between the ages of 13 - 18, who have many accidents on sidewalks.



* Age group expresses the age group of the cyclist.

Fig. 4. Bicycle-pedestrian accidents by age of cyclist and location (total from 2010 - 2014)



* Age group expresses the age group of the cyclist.

Fig. 5. Bicycle-pedestrian accidents by age of cyclist and type of accident (total from 2010 - 2014)

■ Human factor in accidents

~There is a high share of inattention to what is ahead and failure to confirm safety among cyclists~

When you look at the human factor of cyclists in accidents you see that inattention to what is ahead and failure to confirm safety occupy a large share for each type. In particular, roughly half of 13 – 18 year olds fail to pay attention to what is ahead while riding towards oncoming pedestrians or overtaking pedestrians, and it was revealed that many cyclists fail to keep a close eye on what is ahead. Further, while riding towards oncoming pedestrians or overtaking pedestrians, the rate for failure to observe surrounding traffic movement is high compared with other bicycle-pedestrian accidents (Fig. 6). Given that the pedestrians may sometimes come to a sudden standstill or turn around, cyclists must keep a close eye on movement of the pedestrians around them and leave enough space in between when passing the latter on sidewalks and the like. Conversely, approximately 90% of the pedestrians who get into accidents where a cyclist is riding towards oncoming pedestrians or overtaking them are not guilty of any violation, and in other bicycle-pedestrian accidents as well approximately 70% of the people were not guilty of any violation (Fig. 7).

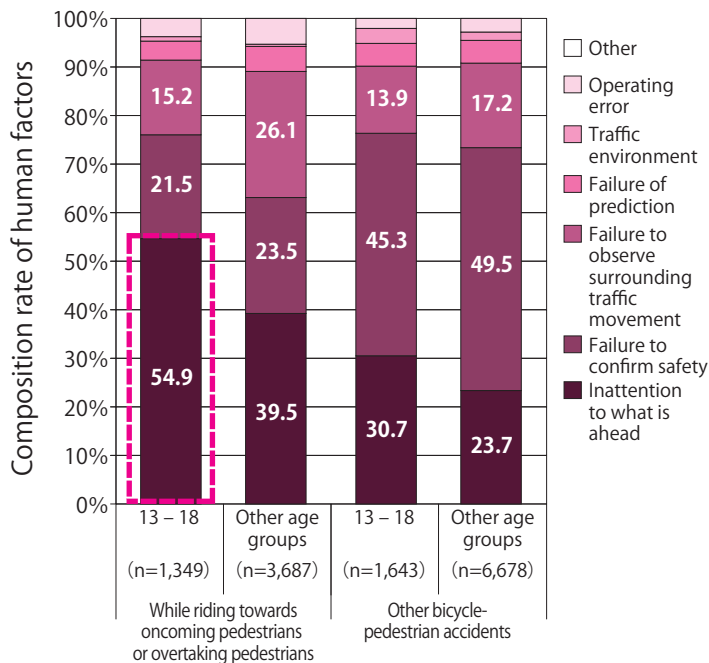


Fig. 6. Bicycle-pedestrian accidents by human factor (total from 2010 – 2014)

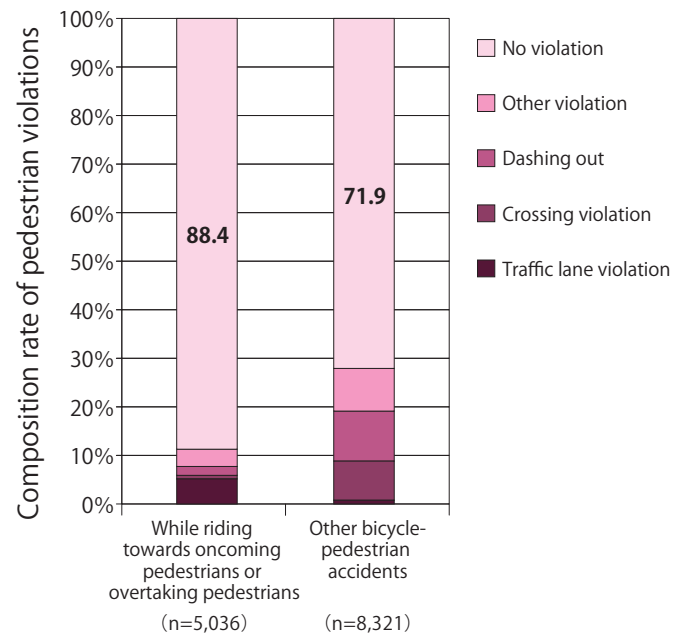
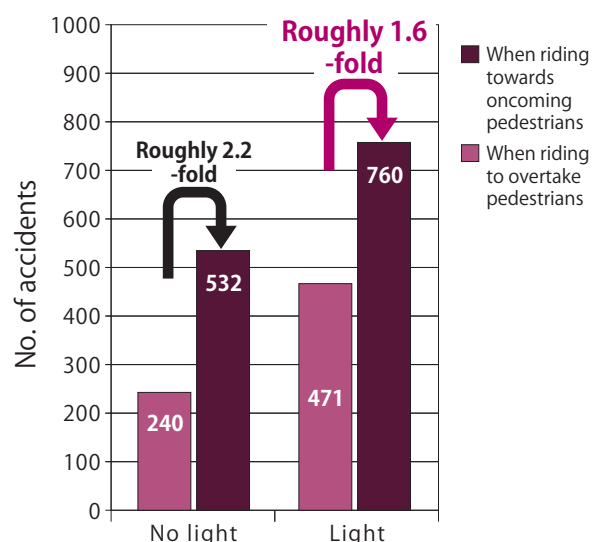


Fig. 7. Bicycle-pedestrian accidents by pedestrian violation (total from 2010 – 2014)

■ Effects of using a light ~Using a light makes it easier for oncoming pedestrians to see cyclists~

Bicycle lights are not just effective for allowing riders to confirm the conditions around them, but also for alerting other people to the presence of a bicycle. Therefore, here we analyze whether having a bicycle light situated in a position that pedestrians can see makes any sort of difference in the number of accidents.

Fig. 8 shows the number of accidents while riding towards oncoming pedestrians or overtaking pedestrians at night by whether or not the cyclist was using a light. When not using a light, there were roughly 2.2-times more accidents while riding towards oncoming pedestrians than when riding to overtake pedestrians. If there was no effect of increased visibility when using a light, the accidents from riding towards oncoming pedestrians when using a light should be about 2.2-times greater, than when riding to overtake pedestrians in the same way as when no light is used. But there were only 1.6-times more accidents when riding towards oncoming pedestrians when a light was used. In other words, using a light on a bicycle makes it easier to alert oncoming pedestrians to the presence of the bicycle, so therefore it helps in reducing the occurrence of accidents when riding towards oncoming pedestrians.



* The "No light" category also includes cases where no lights have been installed on the bicycle.

Fig. 8. No. of accidents when riding towards oncoming pedestrians and overtaking pedestrians at night by use/non-use of light (total from 2010 – 2014)

6 Characteristics of bicycle-bicycle accidents

Time periods with lots of accidents

~Particular attention is required during the time period when people are going to school / work~

Fig. 9 shows the rate of bicycle-bicycle accidents by the time period in which they occur by the age group of the primary party. Bicycle-bicycle accidents start to increase from around 7:00, and then peak between 8:00 – 9:00. This trend is commonly shared between people aged 13 – 64, who frequently use their bicycles to commute to work and school. Since the times people leave work and go home from school vary depending on their type of occupation or grade in school, bicycle traffic is dispersed at these times. But since, generally speaking, the time people go to work or school is usually between 7:00 – 8:00, bicycle users are out in full-force during this time period. As a result, they frequently intermix on sidewalks and roadways, which is believed to be the reason for why accidents increase.

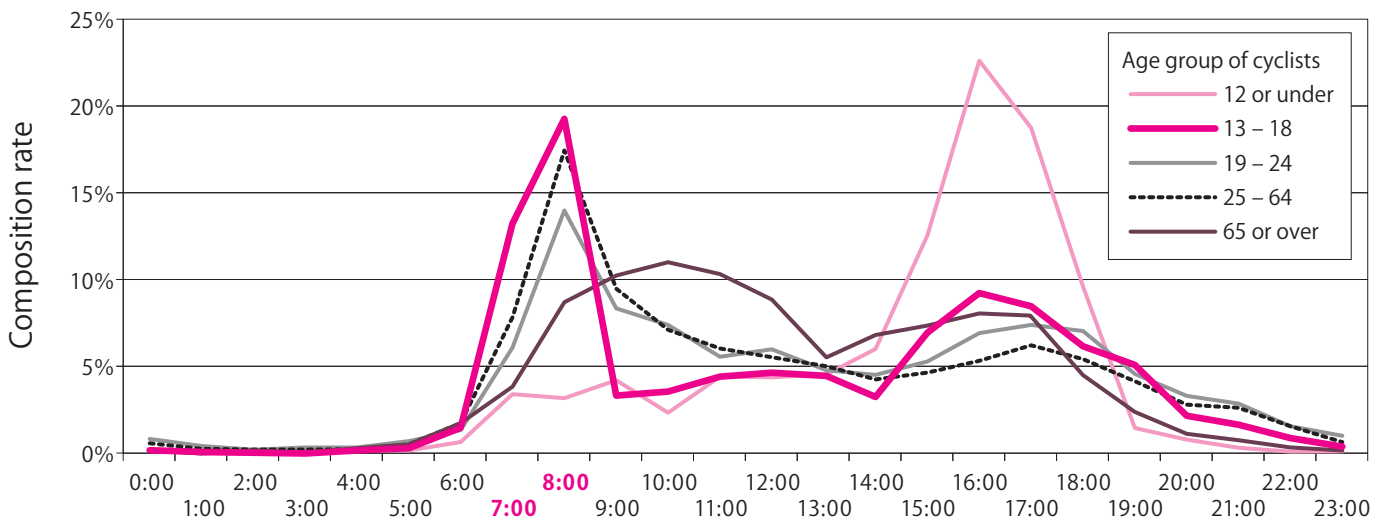
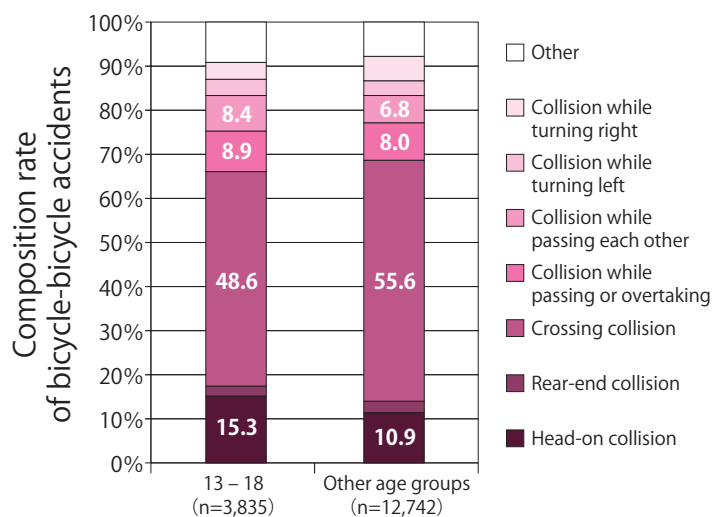


Fig. 9. Rates for time periods in which bicycle-bicycle accidents occur (total from 2010 – 2014)

What sorts of accidents are common?

~With bicycle-bicycle accidents, accidents from head-on collisions are common~

Fig. 10 shows the types of bicycle-bicycle accidents. Crossing collisions account for roughly half of these, and there are also a great many accidents when cyclists pass one another, such as from head-on collisions, while passing or overtaking, or while passing each other. The rate of head-on collisions is particularly high among riders between the ages of 13 – 18 compared to the other age groups. It goes without saying that riders should keep a careful eye on what's ahead of them, but they must also be sure to keep to the left on roadways, and leave enough space when overtaking or passing vehicles up ahead on sidewalks and roadways. Also, when they cannot leave enough space, cyclists should refrain from overtaking others recklessly, and should ride in a pressure-free manner.



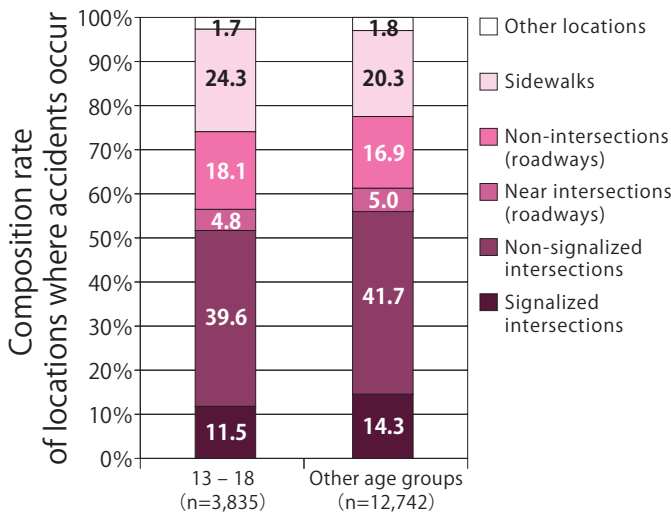
* Age group expresses the age group of the cyclist who is the primary party.

Fig. 10. Bicycle-bicycle accidents by type of accident (total from 2010 – 2014)

■ Where do accidents occur?

~Pay attention to crossing collisions at intersections with narrow roads~

Fig. 11 shows the rates for locations where bicycle-bicycle accidents occur. Roughly 40% of the accidents occur at non-signalized intersections, and you can see that crossing collisions frequently occur at non-signalized intersections. Moreover, accidents on sidewalks account for more than 20% of these, and just like with bicycle-pedestrian accidents, the rate caused by 13 – 18 year olds is high. When you look at accidents that occur at non-signalized intersections by the width of the roadway, you see that nearly half of these occurred at intersections with relatively small roadways of 5.5m or less, on which both the primary and secondary parties were riding (Table 2). When traveling through non-signalized intersections and with narrow roadways, cyclists should sufficiently slow down in anticipation of other bicycles and other traffic passing through, and should properly check to make sure it is safe by coming to a complete stop as needed.



* Age group expresses the age group of the cyclist who is the primary party.

Fig. 11. Bicycle-bicycle accidents by location (total from 2010 – 2014)

Table 2. No. of casualty accidents by road width at non-signalized intersections (total from 2010 – 2014)

Side of primary party	Side of secondary party	13 – 18 year olds	Other age groups
Less than 5.5m	Less than 5.5m	706 (46.4)	2,569 (48.4)
	5.5 – Less than 13m	293 (19.3)	935 (17.6)
	13m or wider	42 (2.8)	152 (2.9)
5.5 – Less than 13m	Less than 5.5m	155 (10.2)	484 (9.1)
	5.5 – Less than 13m	285 (18.8)	935 (17.6)
	13m or wider	16 (1.1)	102 (1.9)
13m or wider	Less than 5.5m	13 (0.9)	75 (1.4)
	5.5 – Less than 13m	9 (0.6)	40 (0.8)
	13m or wider	1 (0.1)	16 (0.3)
Total		1,520 (100.0)	5,308 (100.0)

* Age group expresses the age group of the cyclist who is the primary party.

■ Violations by the parties involved in accidents

~High rate of careless riding and distracted riding among 13 – 18 year olds~

Fig. 12 shows a breakdown of the violations by the parties involved in accidents. There is a high rate of violations of mandatory safe riding among both primary and secondary parties, but particular violations such as ignoring traffic signals and failing to come to a complete stop were seen with primary parties. No difference was seen based on the age group of the primary party, but Table 3 reveals that 13 – 18 year olds frequently engage in careless riding and distracted riding.

Moreover, with bicycle-bicycle accidents, 66.6% of secondary parties committed a traffic violation that caused the accident. The claim cannot be made that the casualties in these cases were the result of a one-sided error on the part of the other cyclist, like with bicycle-pedestrian accidents, as both cyclists warrant attention.

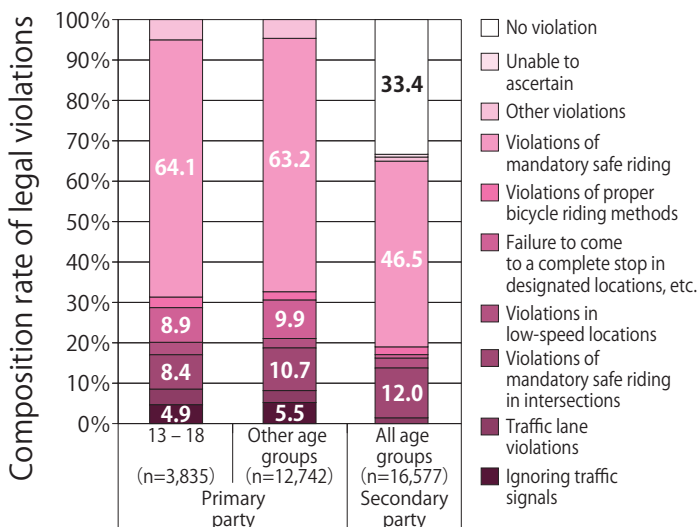


Fig. 12. Breakdown of violations by cyclists (total from 2010 – 2014)

Table 3. Breakdown of violations of mandatory safe riding by primary parties (total from 2010 – 2014)

	13-18 year olds	Other age groups
Steering error	42 (1.7)	137 (1.7)
Braking error	9 (0.4)	39 (0.5)
Aimless riding	116 (4.7)	223 (2.8)
Distracted riding	327 (13.3)	699 (8.7)
Failure to observe surrounding traffic movement	503 (20.5)	1,524 (18.9)
Failure to confirm safety factors (front, sides)	1,249 (50.8)	4,660 (57.9)
Failure to confirm safety factors (rear)	85 (3.5)	426 (5.3)
Safe speed	14 (0.6)	27 (0.3)
Failure of prediction	50 (2.0)	130 (1.6)
Other	62 (2.5)	182 (2.3)
Total	2,457 (100.0)	8,047 (100.0)

7 Conclusion

Bicycles do not require a driver's license, and can even be used by children who do not know the traffic rules. But these children frequently end up perpetrating accidents. To ensure that children do not perpetrate accidents, it will be important to promote traffic safety education for cyclists as part of their school education, while also providing them with instruction that reiterates this at home. Given the fact that 13 – 18 year old cyclists in particular tend to perpetrate accidents, it is important to work to thoroughly inform them of traffic rules, such as by providing bicycle safety education aligned with the timing in which they advance in school.

For bicycle-pedestrian accidents, violations by pedestrians are rare, and pedestrians are made casualties as a result of one-sided carelessness on the part of the cyclist. Conversely, with bicycle-bicycle accidents, more than 60% of secondary party cyclists were guilty of some sort of violation, and both cyclists bear responsibility for the accident. However, in cases where the other party becomes a casualty due to the accident, then the rider must bear the commensurate responsibility for this. Young cyclists and their parents must pay attention to the following points to ensure that they do not perpetrate accidents.

■Bicycle-pedestrian accidents

- (1) Pedestrians have priority on sidewalks. When cyclists have no choice but to ride on sidewalks, they must be attentive to pedestrians, and must ride slowly near roadways. Also, cyclists must avoid riding in a manner that would cause pedestrians to jump back, such as by ringing a bell or passing close beside them.
- (2) Using a light improves rider's visibility to pedestrians. Take care to use your light in order to be visible when it starts to get dark. Furthermore, when selecting a children's bicycle, select one with an automatic light feature to prevent the children from forgetting to turn on their light.

■Bicycle-bicycle accidents

- (1) Cyclists must come to a stop at intersections with stop signs. They should also ride slowly through intersections with poor visibility, even in the absence of a stop sign, or come to a complete stop to check to make sure that it is safe.
- (2) Morning is a time period when everyone is in a rush. When people are in a rush they fail to adequately check to confirm safety, which means they are more liable to cause accidents. Make an effort to leave home a little earlier and dedicate yourself to a pressure-free riding.

(Masahide Honda)

Follow the
five principles
for safe bicycle
use!

1. Ride on roadways as a general rule, and only on sidewalks as an exception
2. On roadways, ride on the left side
3. On sidewalks, pedestrians have priority so ride slowly close to the roadway
4. Follow the safety rules
 - Drunk riding, riding with two people, and riding side-by-side are prohibited
 - Use a light at nighttime
 - At intersections, abide by the traffic signals, come to a complete stop and confirm safety
5. Children must wear helmets



Bicycles are classified as vehicles. Cyclists must follow traffic rules and ride bicycles safely.

Reference: Please see the homepage of the National Police Agency for the structure of the Cyclist Retraining Course.
National Police Agency homepage. Ensure safe and comfortable traffic / Safely riding bicycles by following the rules: Bicycles are classified as vehicles.

<http://www.npa.go.jp/koutsuu/kikaku/bicycle/index.htm>

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