**21st All-Russia Scientific Conference for high school students**

**“Discovery”**

**Section:**

**Knowledge of first aid at lower secondary and high schools**

**Authors: Klára Havlínová & Anna Malachová**

**Class: “6.V & 3.A”**

**School:** Gymnazium J. z Podebrad, Podebrady, The Czech Republic

**Consultants:**

**Mgr. Martin Matějka, Ph.D.** (Civics teacher at the Grammar School of George of Podebrady, Podebrady, Czech Republic)

**Mgr. Radka Charousová** (Biology teacher at the Grammar School of George of Podebrady, Podebrady, Czech Republic)

**Yaroslavl, 2018**

CONTENT

[1 INTRODUCTION - 2 -](#_Toc506152331)

[2 HISTORY OF FIRST AID - 2 -](#_Toc506152332)

[3 TEST AND QUESTIONNAIRE CREATION - 3 -](#_Toc506152333)

[4 EVAULATION OF THE TEST - 3 -](#_Toc506152334)

[Emergency numbers (Question nr. 1) - 3 -](#_Toc506152335)

[In order to relieve the respiratory tract, it is recommended in particular (Question nr. 2) - 4 -](#_Toc506152336)

[Cardiopulmonary resuscitation is done in the ratio (Question nr. 3) - 4 -](#_Toc506152337)

[Cardiopulmonary Resuscitation (CPR) is performed (Question nr. 4) - 5 -](#_Toc506152338)

[When performing the CPR, what is the correct frequency of pressing the chest of the affected person? (Question nr. 5) - 6 -](#_Toc506152339)

[Which picture shows the recommended recovery position? (Question nr. 6) - 6 -](#_Toc506152340)

[“Gasping” - agonal respiration, sharp and irregular breathing (Question nr. 7) - 8 -](#_Toc506152341)

[5 EVAULATION OF THE QUESTIONNAIRE - 8 -](#_Toc506152342)

[6 CONCLUSION - 9 -](#_Toc506152343)

# INTRODUCTION

Nowadays, many people may get into a situation, where it is necessary to provide first aid. However, theory is something else than experience. People, who get into such situation, often don't know what the first step is to ensure vital functions. Ignorance of first aid can cause not only lifelong consequences for the affected person, but even death.

In some countries (e. g. Russian Federation), first aid is included in compulsory military service. However, in some countries, military service was dissolved (Czech Republic), or was never implemented. In the CR, the essentials of first aid are regularly lectured at secondary schools in biology or civics lessons.

The aim of our research paper was to find out if young people have basic knowledge of first aid. A survey, which is divided into two parts (a test and a questionnaire), was created to reveal the knowledge of first aid among young people. The test examined the practical knowledge of respondents, focused on basic principles of first aid. On the other side, the questionnaire focused on the psychical side of first aid, which is a very important part when saving life. During the two months, pupils of three elementary and three high schools were asked. The questions were answered by 1029 respondents, aged 11 to 19.

# HISTORY OF FIRST AID

For the first time, the term 'first aid' was used by the Prussian military surgeon, J. F. A. von Esmarch, who taught that soldiers should be able to help their wounded friends on the battlefield. In the 18th and 19th centuries, professional societies were set up, especially for the resuscitation of drowned people. In 1877, the Ambulance of St. John was started in Great Britain, where laymen were taught to provide first aid. In the Czech book "First Aid Manual for Injuries and Accidents" from 1897, the author K. Ploc describes the practice of resuscitation of a seemingly dead man. This was only done with drowned people because other deaths were considered to be natural deaths. In the past, people in the Czech Republic (especially pupils) could acquire first aid in several ways. There was the so-called 'military training' at schools, where twice a year pupils and students practiced map reading and buzzing, trained with gas masks, and learnt the basics of first aid (including fixing fractures). This education was abolished in 1991, mainly because of lower chance of a war conflict in Central Europe. Another way men could recall and strengthen their knowledge of first aid was the military service, which was officially cancelled on 1 January 2005.

An important organization was the Czechoslovak Red Cross (CSRC), which was established in February 1919. For twenty years (1919–1938), the position of the president of the organization was performed by Dr. Alice Masaryk, wife of president T. G. Masaryk. During the World War II, the CSRC was dissolved on 5 August, 1940. In 1993, the CSRC has been restored and transformed into the Czech Red Cross (CRC). It performs tasks in non-contributory donation of blood, education and providing first aid in other areas.

# TEST AND QUESTIONNAIRE CREATION

For verification of knowledge (of selected pupils) about first aid a survey was made, which has two parts (a test and a questionnaire). The survey was given out in a paper form at 4 elementary schools, 2 specialized schools, a vocational high school and a grammar school. Pupils had to complete the whole survey in 10 minutes. The aim of the survey was to compare the knowledge of boys (433 respondents)[[1]](#footnote-1) and girls (588 respondents)[[2]](#footnote-2) and to find out, if their attitude and knowledge varies.

The test (Attachment nr. 1) contained 8 questions based on the most basic and important questions connected to first aid. Respondents could choose from 3 or 4 possible answers, and just one answer was correct.

The questionnaire (Attachment nr. 2) was focused on willingness of providing first aid. In the beginning, an emergency situation was outlined. The questioned person had to choose, how he/she would behave in the particular situation.

Note: Due to shortage of space not all questions were mentioned.

# EVAULATION OF THE TEST

## Emergency numbers (Question nr. 1)

Respondents had to write down phone numbers to those organizations/corps that were pre-printed in the questionnaire. The reason for creation of these numbers is to enable citizens of the Czech Republic to report an extraordinary event and to request the assistance of the integrated rescue system. None of the listed numbers is charged and their misuse is considered a misdemeanor in the Czech Republic.

*Mountain Service of the Czech Republic (5,54 %)[[3]](#footnote-3)*

In 2012, the Mountain Service introduced a nationwide single number of 1210. We expected people not to know this number because they do not normally need it, yet 38 women and 19 men were able to answer the question correctly.

*Police of the Czech Republic* (97,3 %)3

Citizens of the Czech Republic can use 2 numbers when contacting the Police – 158 in case of the Police of the CR and 156 in case of the Municipal police. Both responses were evaluated. When we consider the answers according to gender, women with 98 % were more successful than men with 96,3 %.

*Emergency line (89 %*)3

The Emergency line was unified in 1996 for the whole European Economic Area and Switzerland. The aim of this step was to facilitate communication with emergency services throughout the European Union, as there has been an increase in travel within Europe. Although the number 112 has been in use for 22 years, 11 % of respondents failed to answer correctly. A frequent mistake was that students mistook the number and wrote 122. The correct answer was written by 86,6 % of men and 91 % of women.

*Fire Rescue Corps of the Czech Republic (96 %*)3

The correct answer, that respondents should have written, was 150. Men with 94,9 % more often missed than women with 96,8 %.

*Ambulance service (95,5 %)*

In the Czech Republic, there is the medical emergency service number 155. This answer was well-known to 96,6 % of women and 94 % of men.

The police, fire and rescue service numbers were written by over 90 % of respondents, which fulfilled our assumptions. For each phone number, women had a higher percentage of success than men, with an average difference of 2 %.

In order to relieve the respiratory tract, it is recommended in particular (Question nr. 2):
Respiratory release should be one of the first techniques used when somebody becomes unconscious. If there is no airway passage, it may lead to suffocation by a sunken tongue, vomit or a foreign object.

*A) Head tilt. (21 %)*[[4]](#footnote-4)

Tilting the head back releases the airway, but only this is not enough. When doing so, the victim should not be killed.

*B) Perform a triple maneuver* *(head tilt, open mouth and pull out the tongue). (58, 7 %)4*

This is the right answer. Whenever a person is breathing badly, the most important step is to tilt the head back, which is the best way to release the airway. It should be followed by a mouth opening and oral cleanliness check or cleaning (there may be vomit). Finally, it is neccessary to check if the tongue is not in the background. A statistically significant difference was between men (52 %) and women (64 %).

*C) Pull the tongue out of the mouth by hand. (7 %)4*

By pulling the tongue out, the airway is really released, but it is not recommended to pull it out by hand, as it easily escapes from the hand. It is better to use a piece of cloth or a handkerchief for a better grip.

*D) Lean the head forward, underlay the head. (13,2 %)4*

This is the worst possible reaction. This answer was inserted into the test and it revealed how many pupils do not know what to do.

From these results it can be understood that, if needed, people would only partly know how to release the airway.

## Cardiopulmonary resuscitation is done in the ratio (Question nr. 3):

Nowadays, it is not obligatory to do artificial ventilation in case of strangers for various reasons (diseases, etc), but it is still recommended in case of family.

*A) 30 chest compressions to 2 breaths. (78,8 %)4*

According to Czech doctors, this is the only correct answer. In adults always start with 30 chest compressions, then 2 breaths and this is repeated until the arrival of the ambulance or until the vital functions are renewed. In infants and children younger than 8 years, always start with 5 breaths, and then it is the same like in adults (30:2). In newborns, it is recommended to use a different ratio of compressions and breaths, only 3:1 and starting with 5 breaths, it is the same like in infants. Women were more successful (80,5 %).

*B) 30 breaths to 2 chest compressions. (3,1 %)4*

This answer is wrong because chest compressions are more important than artificial ventilation. Nowadays, doctors recommend only chest compressions without breaths.

*C) 15 chest compressions to 3 breaths. (18,1 %)4*

It is a wrong answer too. This response was chosen by 19,6 % of men and 17,1 % of women. The ratio of breaths and compressions of the chest must be maintained. More than 75 % of respondents would be able to choose the right ratio of breaths to chest compressions and thus save another person's life.

## Cardiopulmonary Resuscitation (CPR) is performed (Question nr. 4):

Each year, more than 700 000*[[5]](#footnote-5)* people in Europe suffer from a heart attack, therefore it is crucial to know the right technique of CPR, which is needed to save the affected person and his/her survival until the arrival of ambulance. By failing to select the right CPR location, the efficiency of CPR rapidly decreases, which may result in irreversible damage or death of the affected person.

*A) On the left side of a chest (straight arms). (26,7 %)4*

One of the most common myths about the heart is about its location[[6]](#footnote-6). The heart isn’t placed on the left side of the chest, only *ventriculus sinister* and *apex cordix* slightly point out to the left. When CPR is performed, the heart is used like bellows, being compressed between the *sternum* and backbone. It is therefore best to compress the heart at the site of the *sternum*. If CPR is performed outside the chest bone, the chest is unevenly pressed, resulting in a rapid loss of efficiency and a high risk of injury to the affected person.

*B) At the place of the heart (relaxed arms). (9 %)4*

A wrong answer too. In order to perform the CPR properly, it is important to straighten your arms and massage the affected person practically with the whole weight of the upper part of body (it is different in children). When the elbows are relaxed, the rescuer’s force is lost and the heart is not massaged sufficiently. As a result, organs of the affected person can not be supplied with blood sufficiently, the spontaneous circulation can not be restored (ROSC). So the CPR is practically inefficient and the rescuer could cause death of the affected person.

*C) In the middle of the chest bone (straight arms). (64,2 %)4*

This is the only correct answer. The CPR should be performed on the chest bone and on the connecting line between nipples (or 2 inches up from *processus xiphoideus*). At this place, CPR is the most effective and in combination with straight arms it is has enough pressure on the heart (other factors should be considered: frequency, depth of compression, etc.). There is a higher probability that spontaneous blood circulation and stabilization of the affected person will be restored. Women were more successful than men, they scored 4 % more.

More than 60 % of respondents managed to choose the right answer, which means that place of the CPR is quite known to public.

## When performing the CPR, what is the correct frequency of pressing the chest of the affected person? (Question nr. 5)

It is stated that the chest compression frequency is one of the main techniques, which are necessary for mastering the CPR. Frequency has influence on coronary perfusion pressure (CPP, further in Attachment nr. 5), which affects probability of the ROSC and survival of the affected person.

*A) 130 compressions per minute. (10 %)4*

When the frequency is higher than 120 compressions per minute, there is a decrease in the CPP and it loses its efficiency. Another negative is also a faster tiredness of the rescuer. This answer is wrong.

*B) At least 100 compressions per minute. (53 %)4*

The chest compression frequency should ideally be higher than 100 compressions per minute, but shouldn’t exceed 120 compressions per minute. Studies proved (further in Attachment nr. 5), that the CPP value must be higher than 15 mm Hg (more than 19, 9 milibars), in order to produce ROCS. Right between these values the CPP achieves the highest values and the probability of stabilization of the affected person is high. Therefore, answer B) is the only correct one.

*C) 90 compressions per minute. (37, 3 %)4*

This answer is wrong too. If the chest compressions frequency doesn’t reach at least 100 compressions per minute, the CPP will not achieve sufficient values to produce ROSC C). This opinion dominated by men (39 %), it was chosen by 36 % of women.

Surprisingly, possibility C was selected by more than 37 % of respondents, probably because of a lack of knowledge or influence of television, where the CPR is shown more slowly.

## Which picture shows the recommended recovery position? (Question nr. 6)

Recovery position is a lateral position. It should be stable, the head is tilted back and padded by a hand of the affected person, so that his/her face (and airways) do not lie in the vomit. This position is for recovery and for situations when we have to leave the injured alone for a while. If you place somebody in a recovery position, you have to be sure that the injured is breathing and you should control it regularly. The recovery position has been developing for a long period of time.



1. [[7]](#footnote-7) (*14,6 %)4*

The lying position on the back, when knees and hips are bent at the right angle, is used in case of fractures of the pelvis. This position is inappropriate, because there is a danger that the affected person would suffocate with the vomit.



1. *(23,5 %)4*

In case of head or brain injuries, the injured should be placed in a lying position, the head is padded and lower limbs are stretched out. This was the second frequent answer. This answer was chosen by 29,1 % of men and of 19,3 % of women.



1. *(53,4 %)4*

Lateral position, intended to keep the passage of airway open and to prevent inhaling the vomit, was formely called 'stabilized'. Nowadays, the term 'stabilized' is not used anymore, the term recovery position is used instead. In 2007, the so called 'Europosition' was introduced, replacing the original position which differed by placing the arm. The reason for introducing the new position is that the lower arm is pressed and paralyzed in the older position. The disadvantage is a difficult transport of the affected person in this position. We were surprised that this answer was chosen by 58,6 % of women and 46,4 % of men, being not even a half of right answers.



 *D)*

 *(8,52 %)4*

This is just the first step of the recovery position. This answer is wrong because bending of the knee has no point in stabilizing the injured person.

Respondents don´t know the basics of positioning, which is proved by 53,4 % of right answers. Choice of the right position can save a life.

## “Gasping” - agonal respiration, sharp and irregular breathing (Question nr. 7):

Detected gasping is a sign of a recent heart attack or atrial fibrillation, and therefore signifies a dangerous situation. Inexperienced rescuers might be so shocked by this that they even forget to start resuscitation and choose to turn the affected person into the recovery position.

*A) Gasping is a sign of problem of a sudden stop in the circulatory system and resuscitation should be started immediately. (54,1 %)4*

A) is the only correct answer when gasping is detected in an unconscious person. According to gender, 53,9 % of women and 55,2 % of men answered this way. From the result, it can be deduced that the term gasping is not widely spread among pupils and many of them would not know how to react.

*B) Gasping is a sign of alcohol/drug poisoning and the victim has to be turned into the recovery position. (13,2 %)4*

If the rescuer acted as suggested in B) gasping would eventually lead to death. This myth prevails among men with 16,5 %, less by women with 10,5 %.

*C) Gasping means the person is not breathing enough. However, the blood circulation is fine. (32,7 %)4*

If rescuer would have not started resuscitating. Once again, this decision could cost a life.

To conclude, term gasping is not widely spread among pupils.

# EVAULATION OF THE QUESTIONNAIRE

A model situation was introduced in the questionnaire.

**Imagine you are a witness of an accident, where a man is hit by a car, is bleeding and unconscious.**

*1) Would you provide him first aid?*

55,3 % of respondents answered, that they would provide full first aid service and would do their best to help the affected person. Men are more willing to help than women. Full first aid would be provided by 59,4 % of men and 52 % of women. More than 40 % of respondents would only call an ambulance and 2 % of respondents would not provide first aid at all.

*2) If you only call an ambulance, or don't provide first aid at all, please let us know your reasons why you decided not to do it.*

The most common reason, why people would decide not to provide first aid, is a fear that the saver could do more harm than good, which was stated by 39 % of respondents. Another common answer was a lack of knowledge, chosen by 23 % of respondents. The third most common reason, chosen by 13 % of people was the fear of one’s own life because of aggressiveness or illness of the affected person. 10 % would not help because of blood phobia and about 3 % would not help because of physical disability.

*3) If you don't provide first aid, do you think is it a crime?*

First aid is anchored in the Czech law. Failure to provide first aid is an offence under act number 40/2009 Call. Providing first aid is mandatory under the law especially in these cases: When there is no danger to you or anyone else, if your profession itself includes the obligation to provide first aid and in case of a car accident. If someone doesn´t provide first aid, there is a possibility of 5 year imprisonment. From the results of the questionnaire, we found out that two thirds (66,7 %) of respondents think that it is an offense. According to gender, men (72,2 %) were more likely to be right than women (62,9 %).

*4) Have you ever (or your friends) provided first aid?*

80,5 % of respondents haven't provided first aid yet. 19,5 % is not a small number. Therefore, it is important to manage at least the basics of first aid.

*5) Do you think that you would be able to provide full first aid?*

Only 41,3 % of respondents are persuaded that they would be able to provide full first aid. Naturally, nobody knows how someone might act in this situation. However, the feeling of knowledge and skill is a good basis.

*6) If there was another potential rescuer, would it influence your decision to provide first aid?*

67,4 % of people answered yes. Of course it is better, when there are more rescuers. However, higher number of potential rescuers could have the opposite effect. There is a situation called 'bystander effect', also called 'bystander apathy'. It is a social psychological phenomenon which could be described as follows: The more people are witnesses of a dangerous or bad situation, the more people won't help. The reason of this situation: 'There are others who can help instead of us'. Psychologists Bibb Latané and John Darley were interested in this effect. Some experiments were done on this topic. One of them found out that if the tested people thought they were the only witnesses, 85 % of them helped immediately. If there was another witness, the percentage dropped to 65 %. And when tested people knew that there are four other witnesses, only 31 % of them were motivated to help.

# CONCLUSION

Nowadays, people can get into a crisis situation very easily. The traffic density is higher and higher and people in a hurry don't care about their safety. This is evidenced by the statistics, e.g. from 2016, when almost 100 000 accidents occured on roads in the Czech Republic.[[8]](#footnote-8) Pupils, who should have the best awareness about newest first aid methods, are slightly behind in this knowledge. Overall success in the test was only 67,6 %. Women succeed with 69,5 % better than men, who had 65,2 %. The results are really surprising, the success rate was expected to be at least 10 % higher due to recent education in this field.

But how could this problem be solved? The Czech government is considering the reestablishment of military education, where young people could learn both theoretical and practical knowledge. It is important to raise interest in it, especially among young people. It could be the fault of teachers and professors who do not give so much emphasis on first aid training in education and often neglect the practical side of things.

However, a person who is interested in self-education will always find a way. For example, the above mentioned Red Cross offers first aid courses to the public several times a year. Unfortunately, the courses are often charged and many people think that they will never get into a life threatening situation. The schools that participated in the survey have been sent out with pupils' results and it is up to them to deal with this information.

# SOURCES

<http://www.prvni-pomoc.com/kardiopulmonalni-resuscitace>

<https://cs.wikipedia.org/wiki/Kardiopulmon%C3%A1ln%C3%AD_resuscitace>

<https://www.fsps.muni.cz/sdetmivpohode/kurzy/gl2010/rdo.php>

<http://www.magazin.viaprotect.cz/index.php/takticka-medicina/urgentni-medicina/29-high-quality-cpr>

<http://www.resuscitace.cz/wp-content/uploads/2014/11/1-%C5%A0kola-Z%C3%A1kladn%C3%AD-neodkladn%C3%A1-resuscitace-%C4%8CRR-2014_final.pdf>

<https://www.prpom.cz/prvni-pomoc-mytus-30/>

<https://www.prpom.cz/zpruchodneni-dc/>

 <http://www.kardio-cz.cz/data/clanek/699/dokumenty/27-patofyziologie-srdecni-ischemie.pdf>

http://www.stefajir.cz/?q=lapave-dechy-gasping

<https://www.muni.cz/vyzkum/publikace/1162010>

<https://www.modrykonik.cz/resuscitace-deti/>

<https://www.prpom.cz/resuscitace-deti/>

# ATTACHMENTS

**Attachment nr. 1 (Test)**

**1) Emergency numbers**

*Mountain Service of the Czech Republic:*

*Police of the Czech Republic:*

*Emergency line:*

*Fire Rescue Corps of the Czech Republic:*

*Ambulance service:*

**2) In order to relieve the respiratory tract, it is recommended in particular:**

***A) Head tilt.***

*B) Perform a triple maneuver* (head tilt, open mouth and pull out the tongue).

*C) Pull the tongue out of the mouth by hand.*

*D) Lean the head forward, underlay the head.*

**3) Cardiopulmonary resuscitation is done in the ratio:**

*A) 30 chest compressions to 2 breaths.*

*B) 30 breaths to 2 chest compressions.*

*C) 15 chest compressions to 3 breaths.*

**4) Cardiopulmonary Resuscitation (CPR) is performed:**

*A) On the left side of a chest (straight arms).*

*B) At the place of the heart (relaxed arms).*

*C) In the middle of the chest bone (straight arms).*

**5) When performing the CPR, what is the correct frequency of pressing the chest of the affected person?**

*A) 130 compressions per minute.*

*B) At least 100 compressions per minute.*

*C) 90 compressions per minute.*

**6) Which picture shows the recommended recovery position?**



*A)*

*B)*

*C)*

**

*D)*

**7) “Gasping” - agonal respiration, sharp and irregular breathing:**

*A) Gasping is a sign of problem of a sudden stop in the circulatory system and resuscitation should be started immediately.*

*B) Gasping is a sign of alcohol/drug poisoning and the victim has to be turned into the recovery position.*

*C) Gasping means the person is not breathing enough. However, the blood circulation is fine.*

**8) The main difference between resuscitation of kids and adults. (except of using reasonable force and breathing volume).**

*A) When resuscitating kids, there is different ratio of chest compressions and breaths.*

*B) The first step (when resuscitating kids) is releasing the airway and performing expelling maneuver.*

*C) When resuscitating kids, we never do artificial ventilation.*

**Attachment nr. 2 (Questionnaire)**

Imagine you are a witness of an accident, where a man is hit by a car, is bleeding and unconscious.

**1) Would you provide him first aid?**

*A) Yes, would provide full first aid service.*

*B) I would only call an ambulance.*

*C) No.*

**2) If you only call an ambulance, or don't provide first aid at all, please let us know your reasons why you decided not to do it.**

*A) Fear of my own life (aggressiveness or illness of the affected person).*

*B) Physical disability.*

*C) I could do more harm than good.*

*D) Blood phobia.*

*E) Lack of knowledge.*

*F) Another reason.*

**3) If you don't provide first aid, do you think is it a crime?**

 *Yes/No*

**4) Have you ever (or your friends) provided first aid?**

 *Yes/No*

**5) Do you think that you would be able to provide full first aid?**

 *Yes/No*

**6) If there was another potential rescuer, would it influence your decision to provide first aid?**

 *Yes/No*

**Attachment nr. 3 (Results)**

Attachment nr. 3 is available in excel file Attachment nr. 3.

**THE RESULTS (TEST)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | Total | 1) | 2) | 3) | 4) | 5) | 6) | 7) | 8) |
|   | PO1 | FC2 | MS3 | AS4 | EL5 | A | B | C | D | A | B | C | A | B | C | A | B | C | A | B | C | D | A | B | C | A | B | C |
| Nr. of respondents | 1029 | 1001 | 988 | 57 | 983 | 916 | 215 | 599 | 71 | 135 | 799 | 31 | 184 | 270 | 92 | 649 | 100 | 536 | 378 | 149 | 240 | 545 | 87 | 526 | 128 | 318 | 643 | 198 | 140 |
| Percentage | 67,6%6 | 97,3% | 96,0% | 5,5% | 95,5% | 89,0% | 21,1% | 58,7% | 7,0% | 13,2% | 78,8% | 3,1% | 18,1% | 26,7% | 9,1% | 64,2% | 9,9% | 52,9% | 37,3% | 14,6% | 23,5% | 53,4% | 8,5% | 54,1% | 13,2% | 32,7% | 65,5% | 20,2% | 14,3% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| WOMEN |
| Nr. of respondents | 588 | 576 | 569 | 38 | 568 | 535 | 115 | 370 | 38 | 55 | 467 | 14 | 99 | 149 | 48 | 378 | 61 | 309 | 209 | 87 | 113 | 343 | 41 | 298 | 58 | 197 | 382 | 108 | 66 |
| Percentage | 69,5%6 | 98,0% | 96,8% | 6,5% | 96,6% | 91,0% | 19,9% | 64,0% | 6,6% | 9,5% | 80,5% | 2,4% | 17,1% | 25,9% | 8,3% | 65,7% | 10,5% | 53,4% | 36,1% | 14,9% | 19,3% | 58,7% | 7,0% | 53,9% | 10,5% | 35,6% | 68,7% | 19,4% | 11,9% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MEN |
| Nr. of respondents | 433 | 417 | 411 | 19 | 407 | 375 | 97 | 225 | 33 | 78 | 328 | 16 | 84 | 119 | 43 | 266 | 37 | 223 | 167 | 60 | 125 | 199 | 45 | 228 | 68 | 117 | 257 | 89 | 72 |
| Percentage | 65,2%6 | 96,3% | 94,9% | 4,4% | 94,0% | 86,6% | 22,4% | 52,0% | 7,6% | 18,0% | 76,6% | 3,7% | 19,6% | 27,8% | 10,0% | 62,1% | 0,087 | 52,2% | 39,1% | 14,0% | 29,1% | 46,4% | 10,5% | 55,2% | 16,5% | 28,3% | 61,5% | 21,3% | 17,2% |
|  |  | 1 Police of the Czech Republic  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 2 Fire Rescue Corps of the Czech Republic  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 3 Mountain Service of the Czech Republic  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 4 Ambulance service  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 5 Emergency line |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 6 Total succes rate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Note: Some of respondents did not mention sex and/or fill all answers. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |
| --- |
| **THE RESULTS (QUESTIONNAIRE)** |
|
|
|   | Total | 1) | 2) | 3) | 4) | 5) | 6) |
|   | A | B | C | A | B | C | D | E | F | YES | NO | YES | NO | YES | NO | YES | NO |
| Nr. of respondents | 1030 | 567 | 436 | 23 | 90 | 23 | 264 | 66 | 157 | 72 | 675 | 337 | 197 | 814 | 412 | 585 | 673 | 325 |
| Percentage |   | 55,3% | 42,5% | 2,2% | 13,4% | 3,4% | 39,3% | 9,8% | 23,4% | 10,7% | 66,7% | 33,3% | 19,5% | 80,5% | 41,3% | 58,7% | 67,4% | 32,6% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| WOMEN |
| Nr. of respondents | 589 | 305 | 265 | 14 | 46 | 9 | 167 | 48 | 101 | 37 | 364 | 215 | 123 | 454 | 212 | 358 | 398 | 168 |
| Percentage |   | 52,2% | 45,4% | 2,4% | 11,3% | 2,2% | 40,9% | 11,8% | 24,8% | 9,1% | 62,9% | 37,1% | 21,3% | 78,7% | 37,2% | 62,8% | 70,3% | 29,7% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MEN |
| Nr. of respondents | 433 | 258 | 167 | 9 | 44 | 14 | 95 | 17 | 54 | 34 | 307 | 118 | 73 | 353 | 196 | 223 | 269 | 155 |
| Percentage |   | 59,4% | 38,5% | 2,1% | 17,1% | 5,4% | 36,8% | 6,6% | 20,9% | 13,2% | 72,2% | 27,8% | 17,1% | 82,9% | 46,8% | 53,2% | 63,4% | 36,6% |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Note: Some of respondents did not mention sex and/or fill all answers. |  |  |  |  |  |  |  |

**Attachment nr. 4 (Graphs)**

**TEST**

**QUESTIONNAIRE**

Imagine you are a witness of an accident, where a man is hit by a car, is bleeding and unconscious.

**Attachment nr. 5**

**CPP (coronary perfusion pressure)**

* the mean value of blood pressure
* diastolic pressure in *aorta* (pressure in the estuary of coronary arteries)





Source: http://www.resuscitationcentral.com

Source: http://circ.ahajournals.org/content/125/24/3004

1. In survey stated as men [↑](#footnote-ref-1)
2. In survey stated as women [↑](#footnote-ref-2)
3. The percentage of respondents, who have known this telephone number. [↑](#footnote-ref-3)
4. The percentage of respondents, who have chosen this answer. [↑](#footnote-ref-4)
5. American Heart Association: CPR Quality: Improving Cardiac Resuscitation outcomes Both Inside and Outside the Hospital. A Consensus Statement From the American Heart Association. Endorsed by the American College of Emergency Physicians Print ISSN: 0009-7322, Online ISSN: 1524-4539, History: Originally published June 25, 2013. [↑](#footnote-ref-5)
6. 11 Facts about your heart. *Www.health.com* [online]. 2012 [cit. 2018-02-06]. Available from: http://www.health.com/health/gallery/0,,20572496,00.html#your-heart-is-your-center-0 [↑](#footnote-ref-6)
7. Sources of pictures: http://www.prvni-pomoc.com/stabilizovana-poloha [↑](#footnote-ref-7)
8. Accident Rate on Roads in 2016. *Www.policejninoviny.cz* [online]. 2016 [cit. 2018-02-06]. Dostupné z: http://www.policejninoviny.cz/dopravni-nehodovost-za-rok-2016-statistiky.html [↑](#footnote-ref-8)