



Adult education on **digital**, **health** and
data literacy for citizen empowerment

Manual for citizens, educators, and policymakers



Co-funded by
the European Union

ABOUT THIS PUBLICATION

This report summarises the results of the research activities carried out in Portugal, The Netherlands, Spain, Romania and Germany within the Erasmus+ project **TRIO: Adult education on digital, health and data literacy for citizen empowerment** (cooperation partnerships in adult education programme under grant agreement no. KA220-ADU-000033817.). More information is available at <https://trioproject.eu/>.

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1. Introduction

1.1 Aim of the manual

In many European countries more and more health services are being digitalised. This is done to improve data exchange and services, to empower patients, and to alleviate the overcrowded healthcare system. The COVID-19 pandemic has accelerated this digital growth significantly. In order to keep up with the advancements, we now need to possess a certain level of digital, health and data literacy skills, like knowing how to find reliable health information online, how to operate health applications, and how to compare healthcare insurance offers, as well as data privacy regulations.

For many of us, these kinds of skills are not straightforward and are sometimes difficult to learn. **“TRIO – Adult education on digital, health and data literacy for citizen empowerment”** is an Erasmus+ project that aims to improve the digital, health and data skill levels of adults of all ages by developing a manual and an online learning platform, a toolkit for adult educators, and a Green Paper for policy makers and relevant European initiatives. These deliverables will be available in six different languages: English, Dutch, German, Portuguese, Romanian, and Spanish.

This Manual for citizens, educators, and policy makers serves as a reference work to help you find your way in the labyrinth of digital health services. It contains information on how the healthcare system works, where most challenges are perceived, and what actions to take to improve your own skill levels. The manual also includes helpful website links, good practice examples, and available educational programs. With the help of these tools, you will be able to improve your digital, health, and data skills and/or help others do the same!



1.2 Target groups of the TRIO project

The TRIO project has three main target groups:



Citizens are the main target group of the TRIO manual and the online learning platform, which aim to inform and educate adults of all ages and education levels to improve their digital, health, and data skills, empowering them to navigate in the eHealth world.

Formal and informal **educators** are the main target group of the toolkit. This TRIO output will provide educators with an organised content to share with the citizens and help them improve their skill levels.



Policy makers are the main target group of the Green Paper, which provides recommendations on how to enhance the trio of literacies in our society. This TRIO output will support policy makers in creating improved person-centred health pathways.

1.3 Structure of the chapters



Chapter 2 “Digital, health and data literacy” (after this introduction) provides a definition of these three literacies and a description of the current digital, health and data skill levels in the five project partner countries (Germany, the Netherlands, Portugal, Romania, and Spain) and on a European level. There is also a test included for readers to assess their own eHealth skills (for a definition, see §2.1).



Chapter 3 “The healthcare system” gives a short description of the healthcare system of each project partner country, including useful links to official websites and instructions on which steps to take when you are in need of medical care.



Chapter 4 “Improving digital, health and data skills” is aimed to improve digital, health, and data skills on four different topics: internet navigation, health promotion / disease prevention, tele-health, and health records. Here you can find information on how to find reliable medical websites, nutrition and lifestyle choices, how to use a medical portal, and how to tele-consult your doctor. Each topic includes useful links to official websites and available courses or programs in your country.



Chapter 5 “Information for formal and informal educators and policy makers” discusses the results of the desk research and workshops, including the identified gaps, needs, and demands, as well as a list of good practices, education offers, and initiatives of each partner country.



On the TRIO website you can find **a complete list of references with links to all websites mentioned in the manual** to enable fast access, and other interesting sites and further reading related to the topics of digital, health and data literacy.

Click the link here: <https://trioproject.eu/language/en/virtual-library/>

Or scan the QR-code with the camera function on your mobile phone:

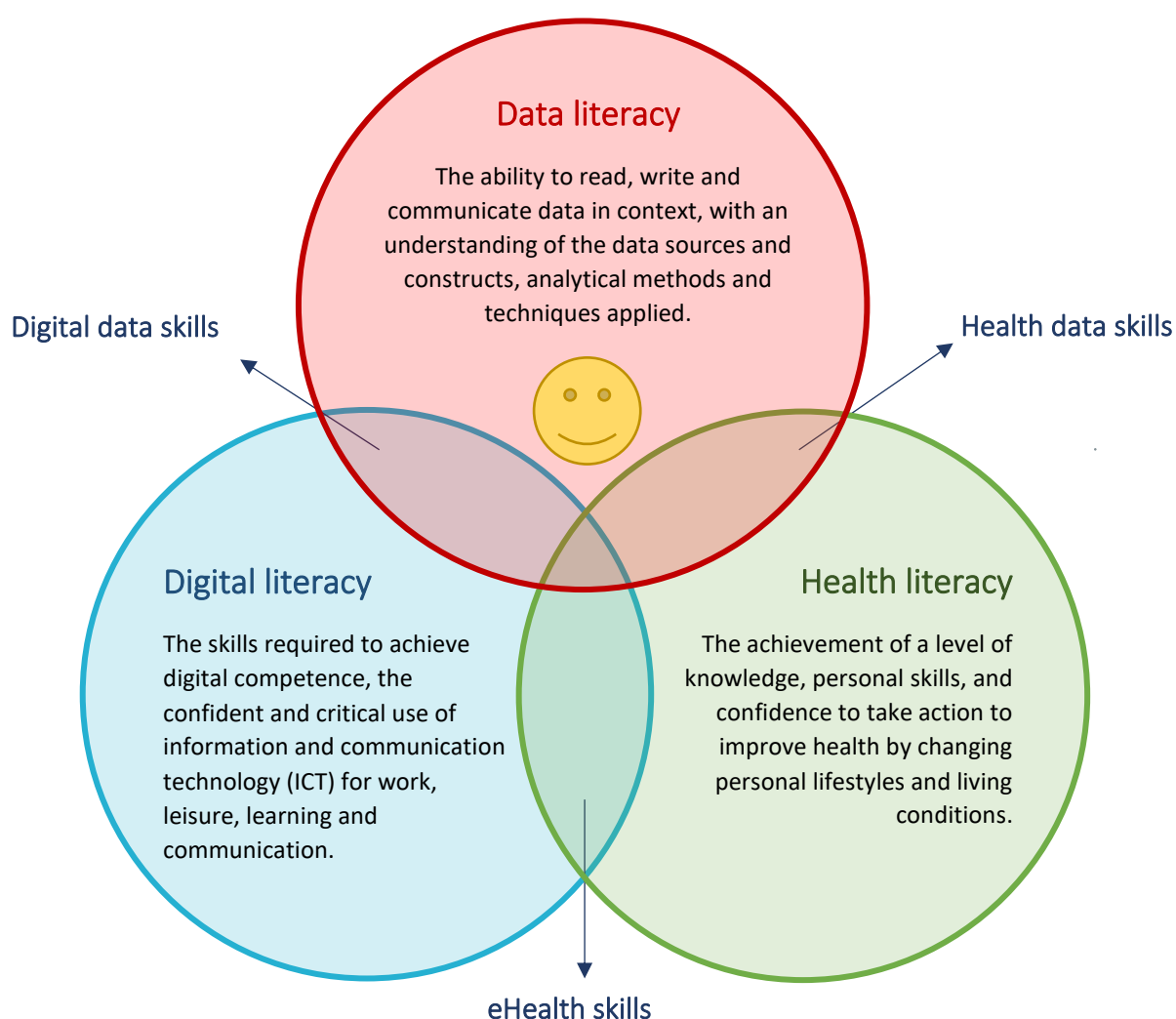


2. Digital, health and data literacy

2.1 What are digital, health and data skills?



You may have noticed the TRIO logo is comprised of three overlapping circles (a Venn diagram). This symbolises the interconnections between digital, health, and data skills. In the figure below you can find the project's definitions of the three literacies. The overlapping areas represent the occasions in which a combination of skills is required:



The **red** circle symbolises all data literacy skills, both analogue (like data stored in books or files) and digital (like data on the internet), the **green** circle represents all health literacy skills, and the **blue** circle represents all digital literacy skills.

The overlapping area between digital and data literacy is about **digital data skills** specifically. The overlapping area between health and data represents **health data skills**, like knowing

where your personal health record is stored and how to access it. The overlapping area between health and digital represents digital health skills (also called **eHealth skills**), like making a doctor's appointment online.

The small triangle at the centre of the Venn diagram is where all three elements come together, and what the TRIO-project aims to improve: **the ability to understand, evaluate, use, and communicate all aspects of digital health data**. For instance: finding reliable health information online and knowing how to use it to improve your overall health.

2.2 TRIO skill levels in Europe

This chapter gives an overview of the identified needs and gaps for the TRIO literacies in each project partner country (Germany, the Netherlands, Portugal, Romania, and Spain) and European wide.

By 2030, 80% of citizens should have at least a basic level of digital skills. This goal was set by the European Union in 2021. Some countries are already very close to this goal, but others are still far.

On average, 54% of people are estimated to have basic digital skills in the EU. The European Commission lists other problems as well:

- Less than 40% of teachers feels capable of using digital technology in their class.
- And 25% of households with a low income do not have access to computers or internet.



In the context of the TRIO project, digital skills include digital health skills (also called eHealth skills) and digital information skills. More and more health services are being digitalised. This is necessary because the healthcare system can otherwise not keep up with our growing population. Therefore, it is important that everyone has basic digital health information skills, so that everyone continues to have access to healthcare. Currently, many people are struggling with these skills.

Research has shown that people have the most difficulty with:

- Knowing how to navigate the internet to find (reliable) health information.
- And knowing how to use health information found on the internet.

Of course, these difficulties vary per person and can depend on a someone's age, education, income, or cultural background.

Preliminary research

The information in this chapter was gathered during desk research of available statistics and current education offers, and interviews with citizens of different ages and education levels, as well as professionals in the healthcare or health policy sector. The aim of this research was to identify the gaps and needs in digital, health, and data skills in all partner countries, as well as European wide, and which factors play a role in this. The results are described in **the national and European reports**. These reports can be accessed by clicking the flags below:



In a later stage, workshops were conducted with citizens of different age groups to further determine where the main difficulties lie and how to improve their skills. The results of the **workshops** can be found here:

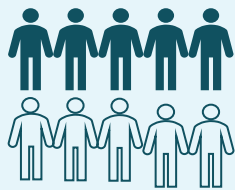


Are you curious about the statistics on digital, health, and data literacy in your country?

Check out the information sheets on the next pages

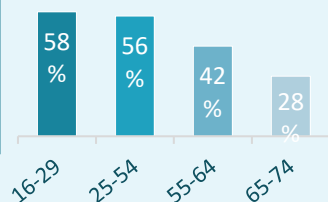


DIGITAL, HEALTH, AND DATA LITERACY IN GERMANY



49% of German citizens aged 16-74 have at least basic digital skills

Digital proficiency **drops** significantly **with age**



Digital skills are more or less **equal** between men and women in Germany



Digital literacy is most **influenced by:**

Place of Birth 



Employment

Income 

DIGITAL LITERACY

Most **difficulties** are perceived in:

Health Care 

& Disease prevention 



58,8 % of German population has poor health literacy skills


75%

of German population interviewees has **low literacy in assessing health information**

Health literacy is most **influenced by:**



Education

Migratory background 



Social status

HEALTH LITERACY




77% of German citizens have basic data skills

Data literacy is (slightly) **influenced by:**



Education

Age 

Migratory background 

There are **no remarkable differences** in data literacy regarding gender



DATA LITERACY

Low education and income negatively affect:



Nutrition

Sport 



Lifestyle

Lower health expectancy is clearly linked to:



Lower income


Unemployment is linked to:

Low education 



& Migratory background

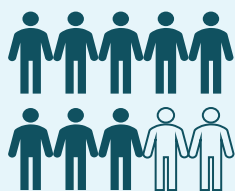
Mental sufferings are linked to:

Low education 

SOCIETAL AND ECONOMIC IMPACTS

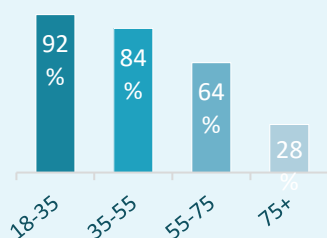


DIGITAL, HEALTH, AND DATA LITERACY IN THE NETHERLANDS



79% of Dutch citizens aged 16-74 have **basic digital skills**

Digital proficiency **drops** significantly **with age**



Digital skills are **equal** between men and women aged **18-55**, but **better** among **men** aged **55-75**



Digital literacy is most **influenced by:**



DIGITAL LITERACY

Most **difficulties** are perceived in:



6% of Dutch interviewees had **poor eHealth skills**

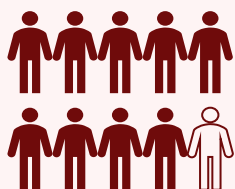
63% of Dutch interviewees had **low food literacy**



Health literacy is most **influenced by:**



HEALTH LITERACY



93% of Dutch citizens aged 16-74 have **basic data skills**

Data literacy is (slightly) **influenced by:**



Education



Employment

Income



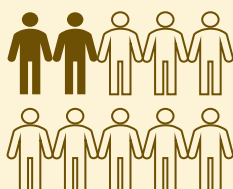
Migratory background



Both **younger** (16-25) and **older** (65+) individuals are **less apt** in **online data security**

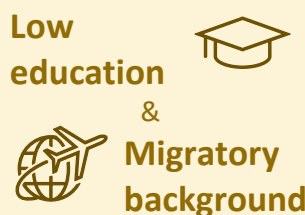
DATA LITERACY

Low education and income negatively affect:



18% of Dutch citizens is considered **low literate**

Unemployment is linked to:



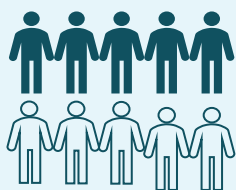
Roughly **30%** of **social media posts** about health topics contains **misinformation**



SOCIETAL AND ECONOMIC IMPACTS

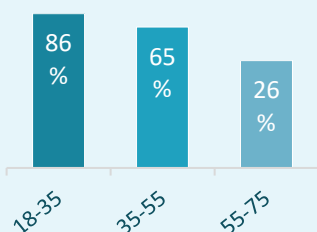


DIGITAL, HEALTH, AND DATA LITERACY IN PORTUGAL



55% of Portuguese citizens aged 16-74 have **basic digital skills**

Digital proficiency **drops** significantly **with age**



Digital skills are **better** among **women** aged

18-55,



but **better** among **men** aged **55-75**

Digital literacy is mostly **influenced by:**



DIGITAL LITERACY

Most **difficulties** are perceived in:

Health Promotion.



And then **Disease Prevention**

& **Health Care**



73% of the population has difficulty accessing, understanding and using **health information**

17%

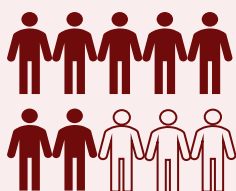
of Portuguese are **overweight**



Health literacy is most **influenced by:**



HEALTH LITERACY



55% of Portuguese citizens aged 16-74 have **basic data skills**

Data literacy is (highly) **influenced by:**



Education

Income



Employment



Older (65+) individuals are **less apt** in **online data security**

DATA LITERACY

Low education and income negatively affect:



Nutrition

Sport



Lifestyle



3% of Portuguese citizens are considered **illiterate**

Unemployment is linked to:

Low education



& **Age** (16-24)

49%

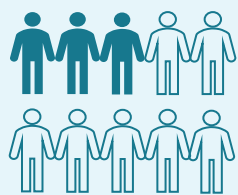
of Portuguese citizens search for health information **online** with the risk of **misinformation**



SOCIETAL AND ECONOMIC IMPACTS

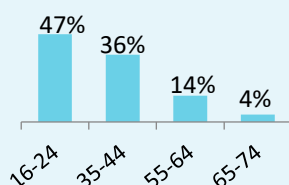


DIGITAL, HEALTH, AND DATA LITERACY IN ROMANIA



28% of Romanians aged 16-74 have **basic digital skills**

Digital proficiency **drops** significantly **with age**



Digital skills of men and women aged **16-24** are



unequal:

51% of men have digital skills compared to **44% of women**

Digital literacy is most **influenced by:**

Education



Employment

Living environment



DIGITAL LITERACY

Most **difficulties** are perceived in:



7.5% of respondents have **poor e-Health skills**



40% of Romanians search for health information online

More than **21%** of Romanian interviewees find it **difficult** to **protect** themselves from diseases **based on health information in the media**



Health literacy is most **influenced by:**

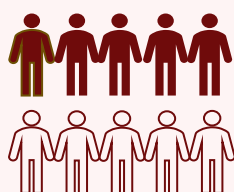


Education

Social status



HEALTH LITERACY



48% of Romanians aged 16-54 have **basic data skills**

Data literacy is **influenced by:**



Education

Employment



income



Both **younger** (16-24) and **older** (65+) people are **less apt** in

Of the **25%** of people aged **65-74** that have basic digital data security skills, only **9%** refused to have their **personal data** used for **advertising purposes**



DATA LITERACY

Low education and income negatively affect:



Nutrition

Sport



Lifestyle



15% of Romanians participate weekly in **physical activities and sports**

Unemployment is related to:

Low Education



Age



Gender



41% of Romanian citizens is considered **low literate**



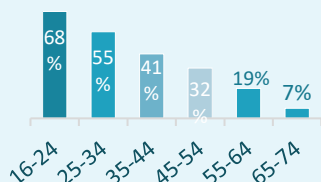
SOCIETAL AND ECONOMIC IMPACTS



DIGITAL, HEALTH, AND DATA LITERACY IN SPAIN



Digital proficiency **drops** significantly **with age**



In the last 3 months...



...have **used a smartphone**

99% aged 16-54

97% aged >55



...have **shopped online**

68% aged 16-34

62% aged 35-54

30% aged >55



...have **used internet daily**

97% aged 16-34

90% aged 35-54

50% aged >55

Preferred activities



Aged 16-34



Aged 35-54



Aged >55



DIGITAL LITERACY

Most **difficulties** are perceived in:



Identifying **political determinants of health**

Assessing **media-based health information**



Spanish citizens aged 35 - 54 most often **use health-related digital tools**



Health literacy is most **influenced by:**

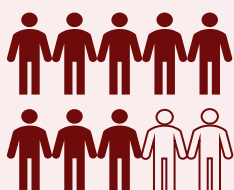


Education

Income



HEALTH LITERACY



80% of Spanish citizens aged 16-74 believe that they possess **advanced data skills**

Most **data literacy resources** are geared **towards the workforce**



86% of Spanish workers believe that data is instrumental in helping them perform their job duties



83% of the Spanish workers have expressed interest in enhancing their proficiency in Data Literacy



Only half of the Spanish workers report having access to the necessary datasets to enhance their job performance

Most important **data literacy skills** for Spanish citizens



Using data appropriately for specific purposes



Interpreting data visualisations



Applying critical thinking



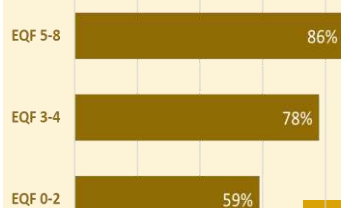
Using analytical tools and methods



Identifying manipulated data

DATA LITERACY

Self-perceived health status and wellbeing of Spanish citizens increases with **educational level**



Unemployment is linked to:



Economic crisis



Lack of specific training & skills



International competition



Technological changes



High dependence on seasonal tourism

1 out of 3 social media posts about health topics contains **fake, inaccurate, or misleading information**



SOCIETAL AND ECONOMIC IMPACTS

2.3 Test your own eHealth skills

If you want to get a better insight into your own eHealth skills, you can do the short questionnaire below. The test is called **eHeals** (eHealth Literacy Scale)¹ and it is meant to assess your self-perceived skills in using information technology for health purposes.

Please keep in mind that this is just a short test about your self-perceived eHealth skills and it may not accurately reflect your health literacy level. This test only serves as a tool for self-reflection.

Instructions: answer each question on a scale of 1 to 5 as followed:

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree



Now answer the **8 questions** below and record your points (1 to 5) for each question:

QUESTION	POINTS
1. I know how to find helpful health resources on the Internet.	
2. I know how to use the Internet to answer my health questions.	
3. I know what health resources are available on the Internet.	
4. I know where to find helpful health resources on the Internet.	
5. I know how to use the health information I find on the Internet to help me.	
6. I have the skills I need to evaluate the health resources I find on the Internet.	
7. I can tell high quality from low quality health resources on the Internet.	
8. I feel confident in using information from the Internet to make health decisions.	
TOTAL POINTS	

Add up the points of all your answers (it should be between 8 and 40). No scoring table is available for this test, but the mean average of participants in a Dutch validation study was 28 points.

¹ Norman, C.D.; Skinner, H.A. eHEALS: The eHealth literacy scale. J. Med. Internet Res. 2006, 8, e27.

3. The healthcare system

This chapter gives a short overview of how the healthcare system works in Germany, the Netherlands, Portugal, Romania, and Spain, with helpful links and a clear step-by-step guide on what to do when you are in need of medical care.

Note: If you are travelling to another country in the European Union, be sure to bring your European Health Insurance Card. This will make it easier for you to declare potential medical costs. For more information visit:

<https://ec.europa.eu/social/main.jsp?catId=559&langId=en>.



Healthcare in Germany

How are the healthcare system and the insurance organised?

There are **4 principles** of healthcare:



Public health insurance is **compulsory** for German citizens; a private insurance is optional.



Public insurance **contributions are divided** between the insured and the employer.

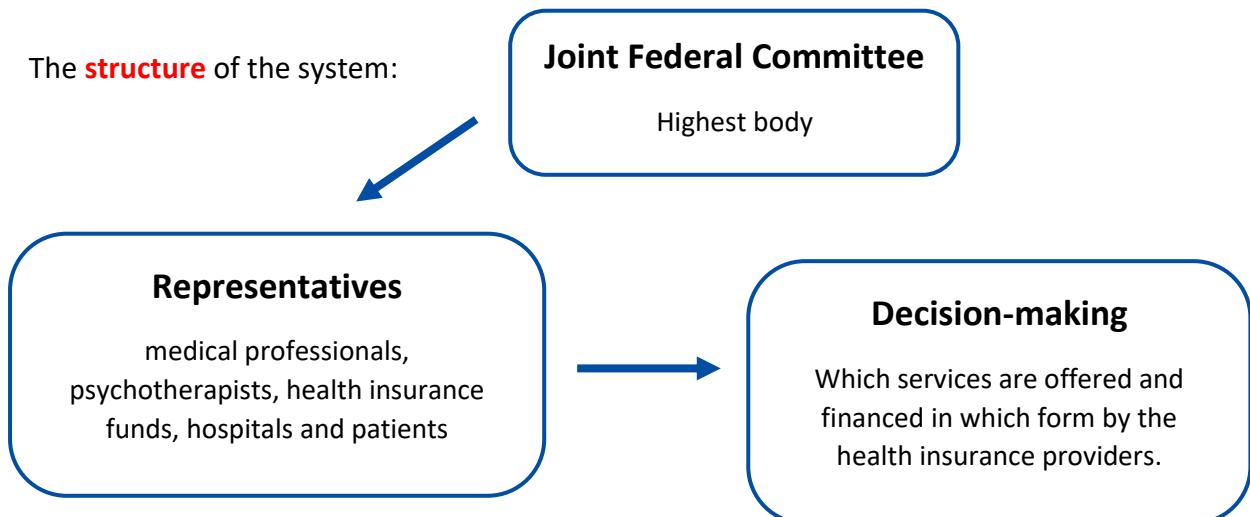


The **Solidarity** principle: bearing the same 'risk' of health costs means having the same right to medical care for everyone.



Principle of **self-administration**: the state sets the framework conditions for medical care and the individual is responsible for the financial and organisational part.

The **structure** of the system:



What is covered by the public insurance in Germany?

Which services are ultimately covered by the respective health insurance funds is not centrally regulated for all services. Thus, insured persons must consult the benefit catalogues of their respective insurance companies and inquire about the coverage of certain benefits in case of illness.

However, there are overview pages that attempt to list the basic benefits of the statutory health insurances in a clear manner and distinguish them from private benefits. You can find more information here:

<https://www.gesetzlichekrankenkassen.de/leistungen/leistungen.html>

<https://www.krankenkasseninfo.de/leistungen/gesetzliche-leistungen/>

Accessing the German healthcare system

The healthcare system in Germany can be used by every person regardless of their social or economic status. Every person in Germany is obliged to be insured through one of the public health insurance funds. The costs are shared by employees and their employers and deducted directly from the gross salary. The only difference is for people with private insurance. You can only access this from a certain income level or, for example, if you are a civil servant in an institution. This includes services that are not covered within the public insurance benefits. People with public insurance would have to pay for such treatments themselves.

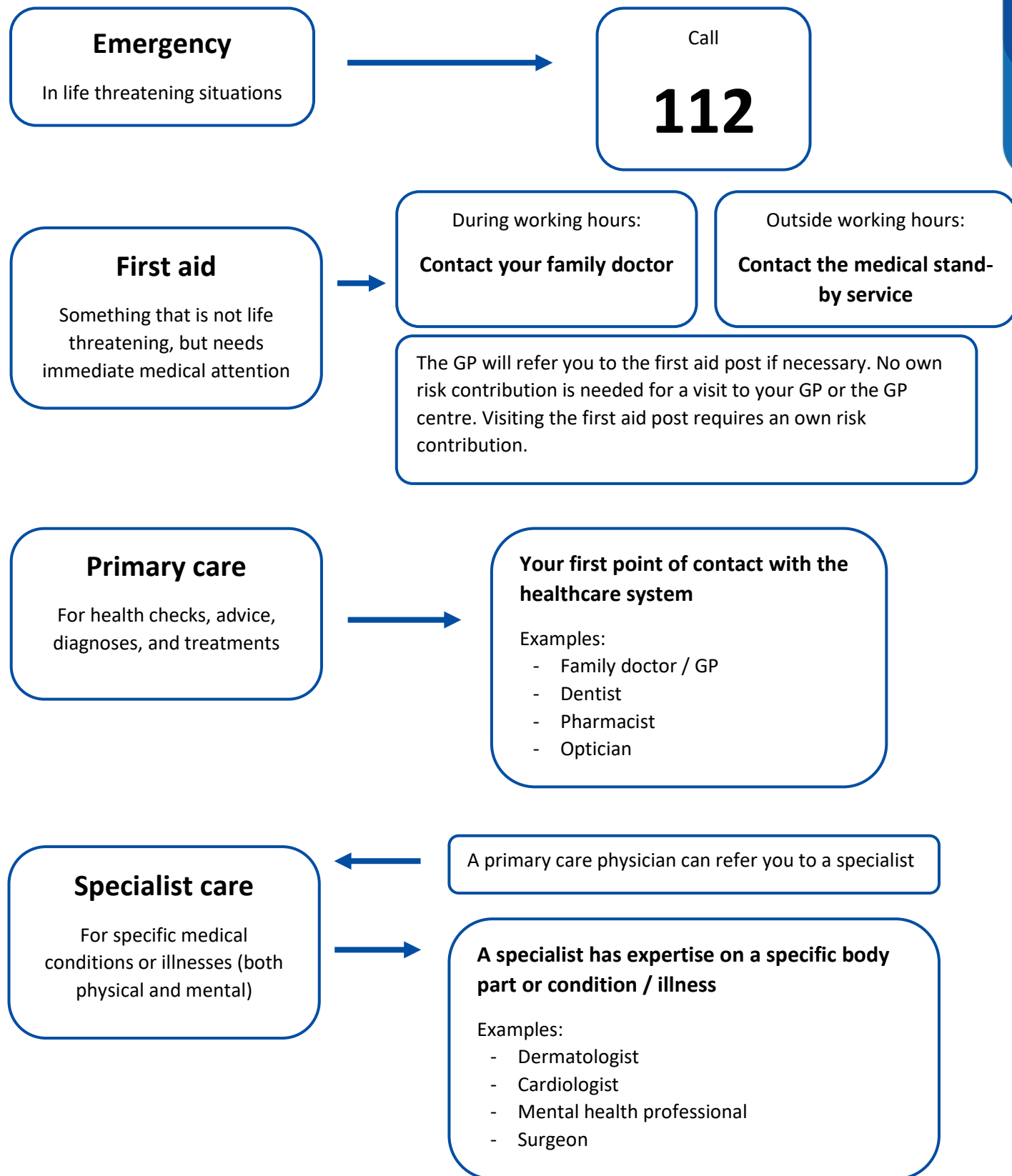


In Germany, most people commonly are registered with a family doctor who acts as the first point of access to the health system. This doctor can also refer patients to specialists or hospitals. Hospital visits and stays after accidents or serious illnesses are also covered by the statutory insurance for all persons. Only, as described above, certain forms of therapy may possibly result in additional costs.

More information on the German healthcare system can be found here:

- <https://www.bundesregierung.de/breg-de/service/publikationen/schaubild-unser-gesundheitssystem--1666134>
- <https://www.bundesgesundheitsministerium.de/gesetzlich-versicherte.html>

What to do when in need of medical care?





Healthcare in the Netherlands

How are the healthcare system and the insurance organised?



Basic care – everyone living or working in the Netherlands has an equal right to basic healthcare.



While citizens are **required to take out health insurance**, they have the freedom to choose the healthcare insurer and any additional coverage; they cannot be declined.



For individuals with **sub-nominal income** the government provides a healthcare allowance covering part of the costs of the health insurance premium. Children under the age of 18 do not need to pay a premium at all.



How to apply for healthcare benefit

Dutch citizens with a low income can receive a healthcare benefit to help them pay for their health insurance. The limit of this income requirement varies per year. In 2023 the bar is set at a gross income of € 38.520 a year or a joint gross income of €48.224 a year. The maximum amount of benefit you can receive in 2023 is €154,- a month.

Find out if you're eligible for healthcare benefit here:

<https://www.belastingdienst.nl/wps/wcm/connect/nl/zorgtoeslag/content/kan-ik-zorgtoeslag-krijgen>

Apply for healthcare benefit here:

<https://www.belastingdienst.nl/wps/wcm/connect/nl/zorgtoeslag/content/hoe-moet-ik-zorgtoeslag-aanvragen>

The Dutch Health Insurance Act (Zvw)

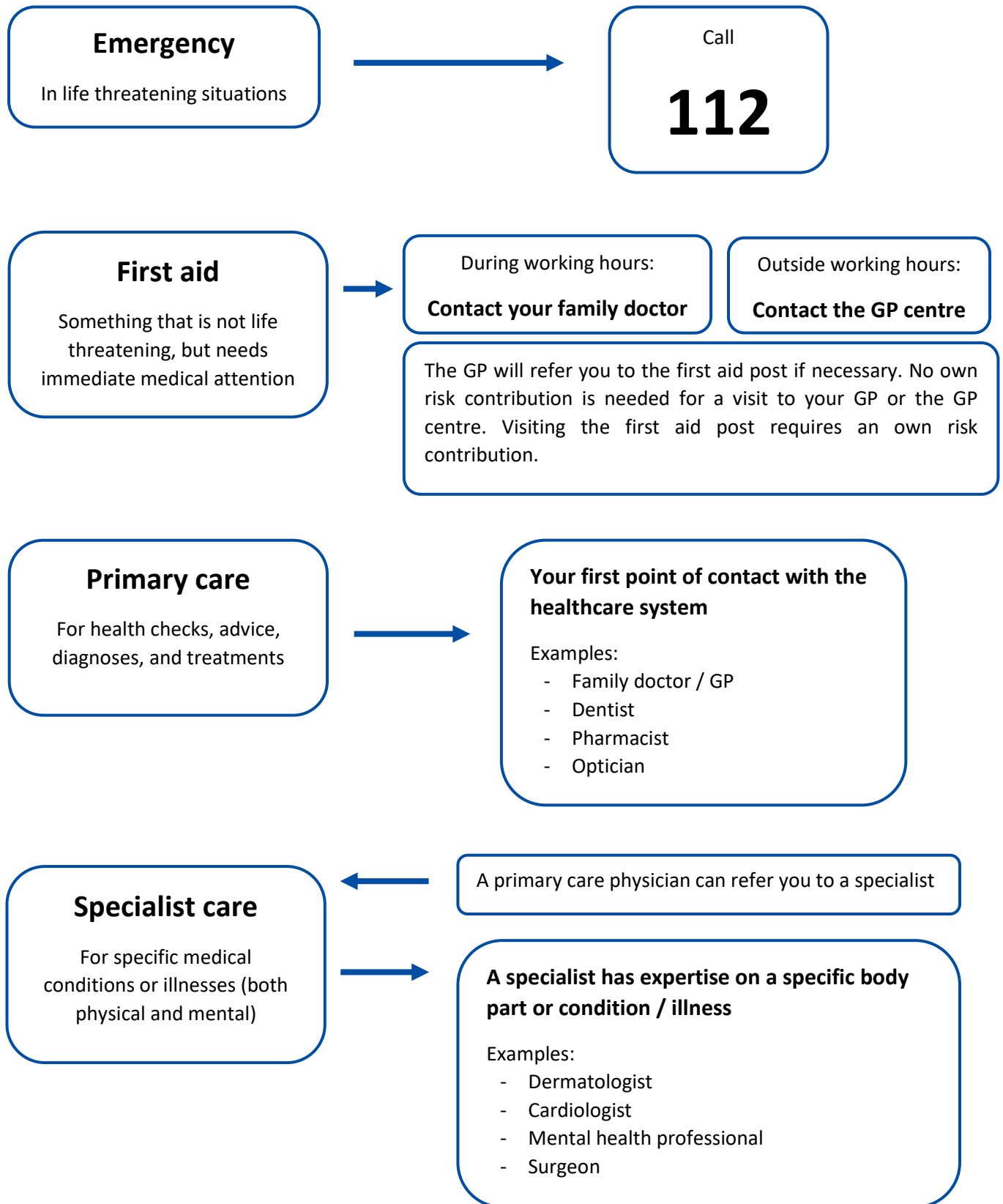
The Dutch Health Insurance Act describes which healthcare treatments, services and products must be made available to people by the private health insurance companies and health providers.

Accessing the Dutch healthcare system

- **Access** to Dutch acute and outpatient hospital and mental care is only possible by first going to the general practitioner (GP), who functions as a gatekeeper. When more specialistic care or further treatment is needed the GP will arrange a reference to a specialist. For emergency care, a visit to the GP is not needed, an emergency care post is available in every hospital.
- There is **no obligation** to register at a GP, but registration is highly recommended, since it will assure fast access to a doctor, also during evenings, nights, and weekends. Citizens are free to choose a (new) GP at any time, but the GP is allowed to refuse new patients, for instance if they live too far away or the GP practice is fully booked
- **Medicine's prescription and availability** – Certain medicines can be bought without prescription. The Medicines Evaluation Board (CBG) decides which medicines should be made available and where. For instance, only at apothecaries and pharmacies, or also at supermarkets and gas stations. Medicines for long-term use, that can have severe side effects, need an injection, or are relatively new on the market need a prescription from a GP or specialist and can only be picked up at the apothecary
- A **website** was created by medical professionals and contains reliable and clear information on medical symptoms and which actions to take: www.thuisarts.nl



What to do when in need of medical care?

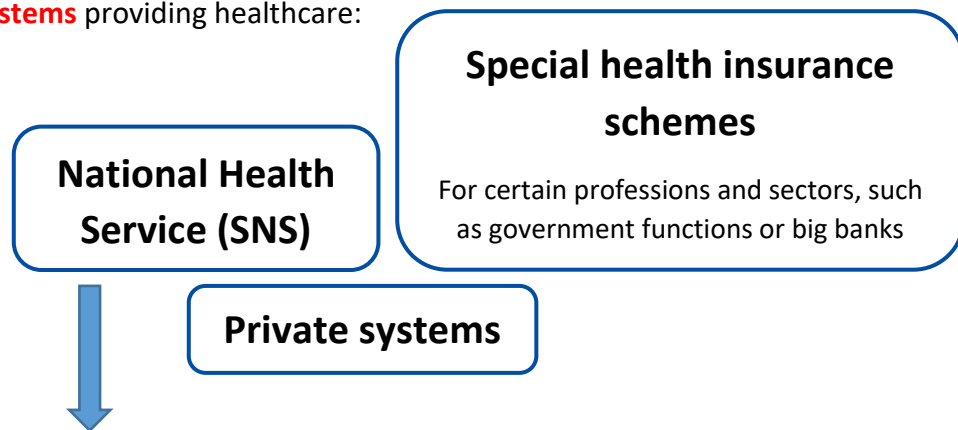




Healthcare in Portugal

How are the healthcare system and the insurance organised?

There are 3 Systems providing healthcare:



The **National Health Service**

The 'Serviço Nacional de Saúde' (SNS) in Portugal consists of a set of institutions and services under the Ministry of Health.



Purpose of the institutions: To guarantee equal access to healthcare for all citizens.



System financing: The health system is financed by tax payments.



Insurance Coverage: The SNS covers a broad benefits package for Portuguese citizens. with the exception of dental care, that is predominantly offered by private institutions. However, there are certain groups that can receive a 'Dentist's check' such as pregnant women receiving SNS care, recipients of the Solidarity Supplement, young people up to the age of 18 regardless of their school or institution, individuals with HIV/AIDS infection, and users with suspected oral cancer lesions.



How to access the National Health Service

Universal health coverage ensures that everyone has access to the necessary health services, regardless of when and where they need them, without experiencing financial difficulties.

To access the Portuguese National Health Service (SNS), individuals are required to have a user number. This number is assigned to each person and serves as their identification when accessing public healthcare services. Obtaining a user number is free of charge.

- Portuguese citizens automatically receive a user number when they apply for the Citizen Card, and it can be found on the back of the document.
- Foreign individuals living or staying in Portugal with a valid residence permit must request a user number for the SNS.

To learn **how to register** at your health centre:

<https://eportugal.gov.pt/servicos/inscrever-se-no-centro-de-saude>

To learn **how to make an appointment** at the health centre:

<https://eportugal.gov.pt/pt/servicos/marcar-uma-consulta-no-centro-de-saude>

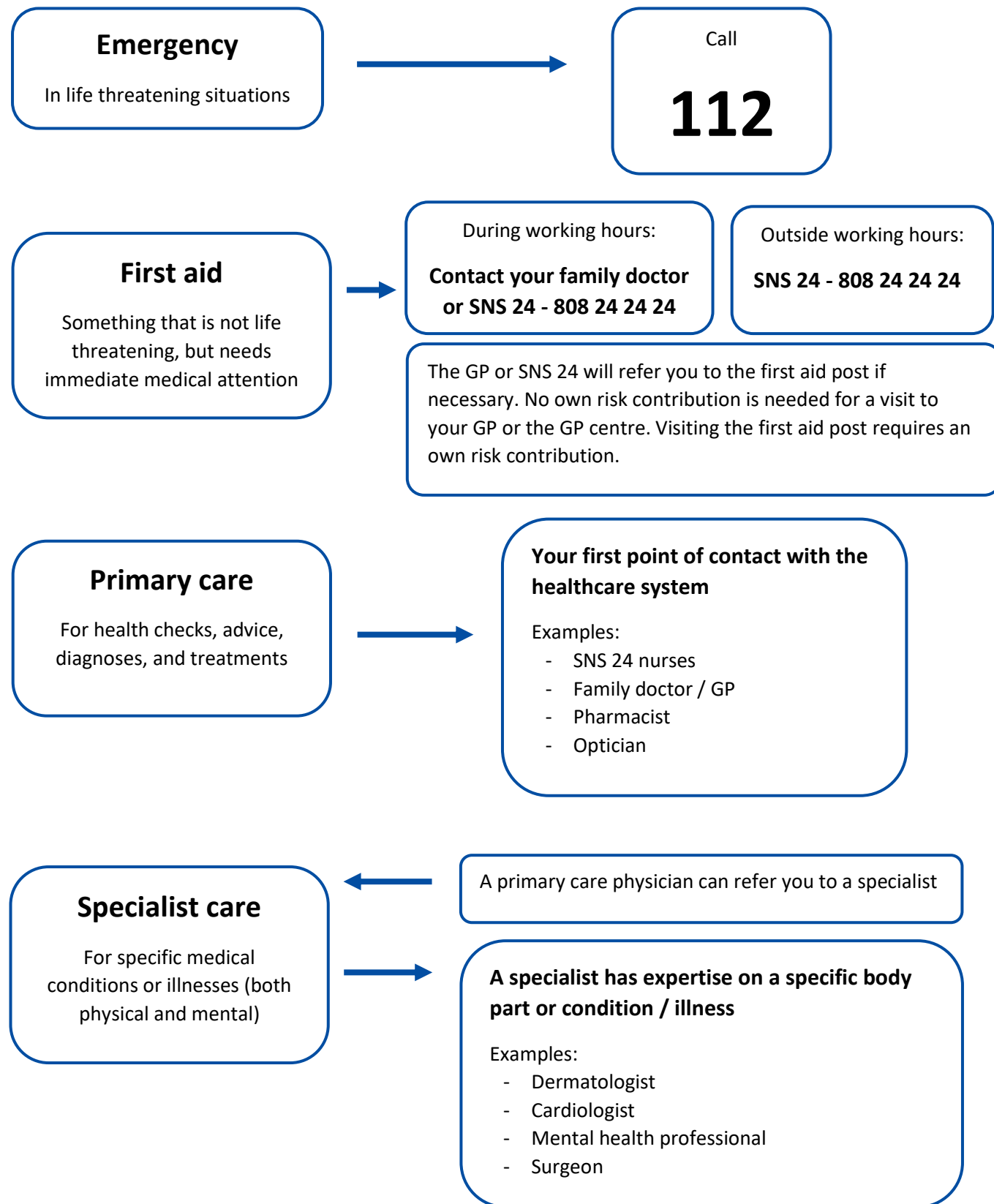
Accessing the Portuguese healthcare system

App SNS 24 – A mobile application that allows citizens to access digital health information and services, like the following:

- Vaccination bulletin
- Prescriptions and examinations
- Medication consultation.
- EU COVID-19 Digital Certificate.



What to do when in need of medical care?





Healthcare in Romania

How are healthcare system and insurance organised?

A **public health insurance is mandatory** for all citizens; a private health insurance is voluntary.



Romania has a **public healthcare system**, regulated by Law no. 95/2006. According to the law, the public health system comprises all medical structures, public and private organisations, institutions and resources designed to prevent illness, and to maintain, to improve and to restore the population health.



Instances: The Ministry of Health is the main authority in public healthcare.



System financing: Health insurance premiums are paid by all citizens who work or have an income over 50% of the minimum annual salary. The state pays for unemployed and retired citizens and those on social benefits.

The **main principles** of the Romanian medical system are:

- **Social responsibility** for public health
- Focus on **population groups** and **primary prevention**
- Focus on **health determinants**: social, environmental, behavioural and health services
- Close **communication** with the population and local authorities
- **Decisions** are based on current scientific research and the precautionary principle
- **Decentralisation** of the public health system
- Existence of an integrated **informational and computerised system** for public health management



How to apply for healthcare benefit

Employed individuals are automatically registered as beneficiaries of the Romanian public healthcare system (CNAS). Unemployed individuals and those with an income below the limit (set at ½ the annual minimum salary) can apply yearly for healthcare benefits by filling in the D212 declaration and paying the contribution (10%) corresponding to 6 monthly minimum salaries. In 2023 this contribution is calculated as $6 \times 3000 \text{ RON} \times 10\% = 1800 \text{ RON}$. Children up to 18 years old and students up to 26 years old benefit of free healthcare services of the public healthcare system.

Find out if you're eligible for healthcare benefit here:

Verificare calitate asigurat – Casa Națională de Asigurări de Sănătate

<http://cnas.ro/verificare-asigurati/>

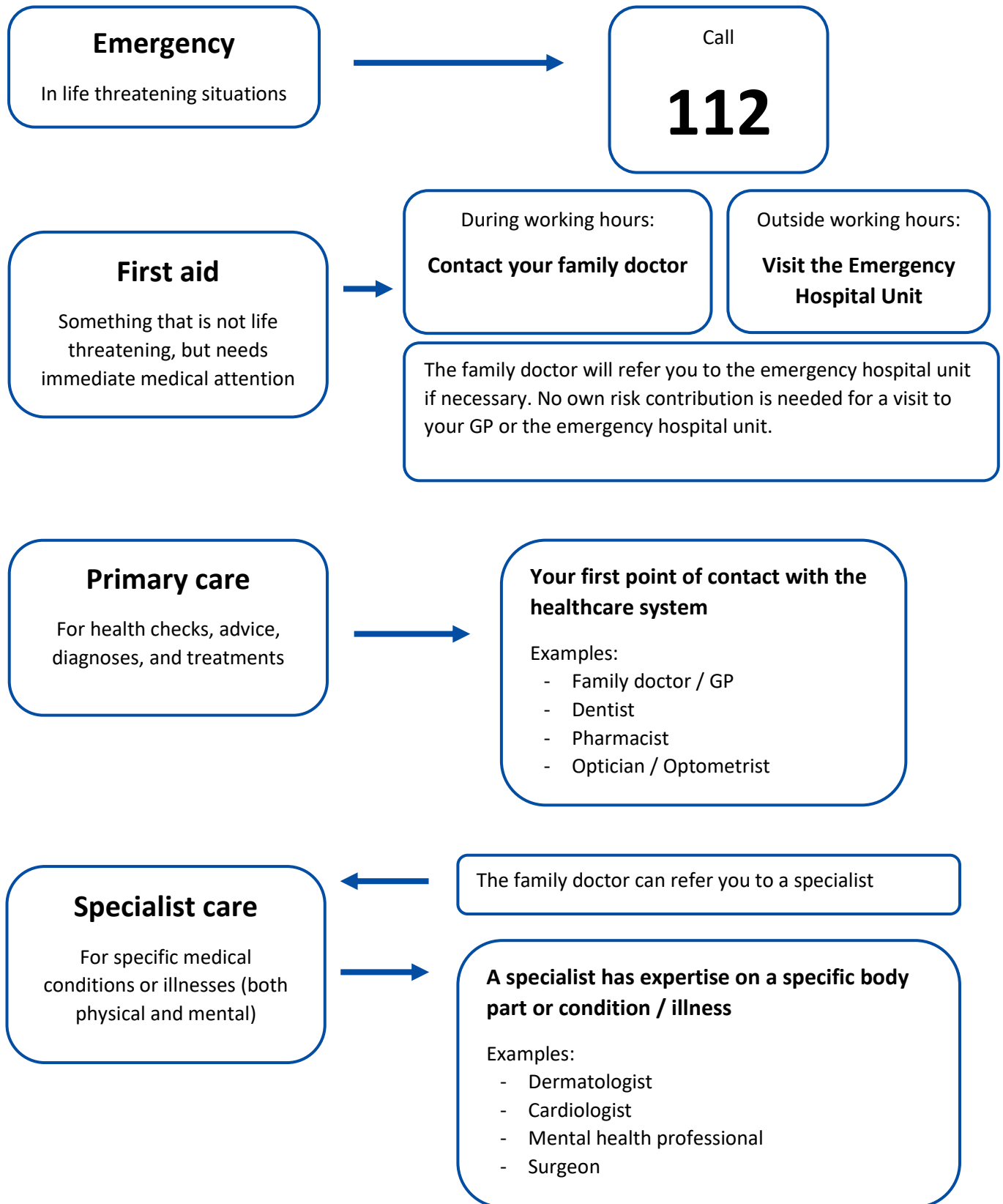
How to apply for healthcare benefit: The declaration D212 can be submitted through the virtual space of the Romanian Tax Authority (ANAF) at

www.anaf.ro/

Accessing the Romanian healthcare system

- **Access** to Romanian acute and outpatient hospital and mental care is only possible by first going to the Family Doctor. **Exception:** emergency care.
- A **registration** at a Family Doctor is compulsory.
- **Medicine's prescription and availability:** the decision on the percentage of compensation is made periodically by the National Health Insurance Organization (CNAS). The updated list can be found here: <https://cnas.ro/medicamente/>. A prescription is needed to receive compensation.
- Detailed information on **the services and how to access** the Romanian Public Healthcare System can be found in the dedicated guide: https://cnas.ro/wp-content/uploads/2023/03/cnas_ghidul_asiguratului_final_v2-1.pdf.

What to do when in need of medical care?





Healthcare in Spain

How are the healthcare system and the insurance organised?

Main principles of National Health System:



The Spanish Constitution states that public authorities shall maintain a **public Social Security System** for all citizens. The 'Sistema Nacional de Salud' (SNS) regulates public healthcare in Spain.



System financing: the health system is financed by tax payments.



The healthcare system is **decentralised** to 17 autonomous communities, who all have their own healthcare systems. The State keeps the overall coordination of health issues.



The **public health system covers 85%** of health services in Spain. Private health services are also available.

Health card

In Spain you get a health card to get access to healthcare benefits. This card includes specific data of the cardholder.

Spain is divided into **autonomous communities** → each community has its own digital health card format which can be read throughout the State.



How to apply for healthcare benefit

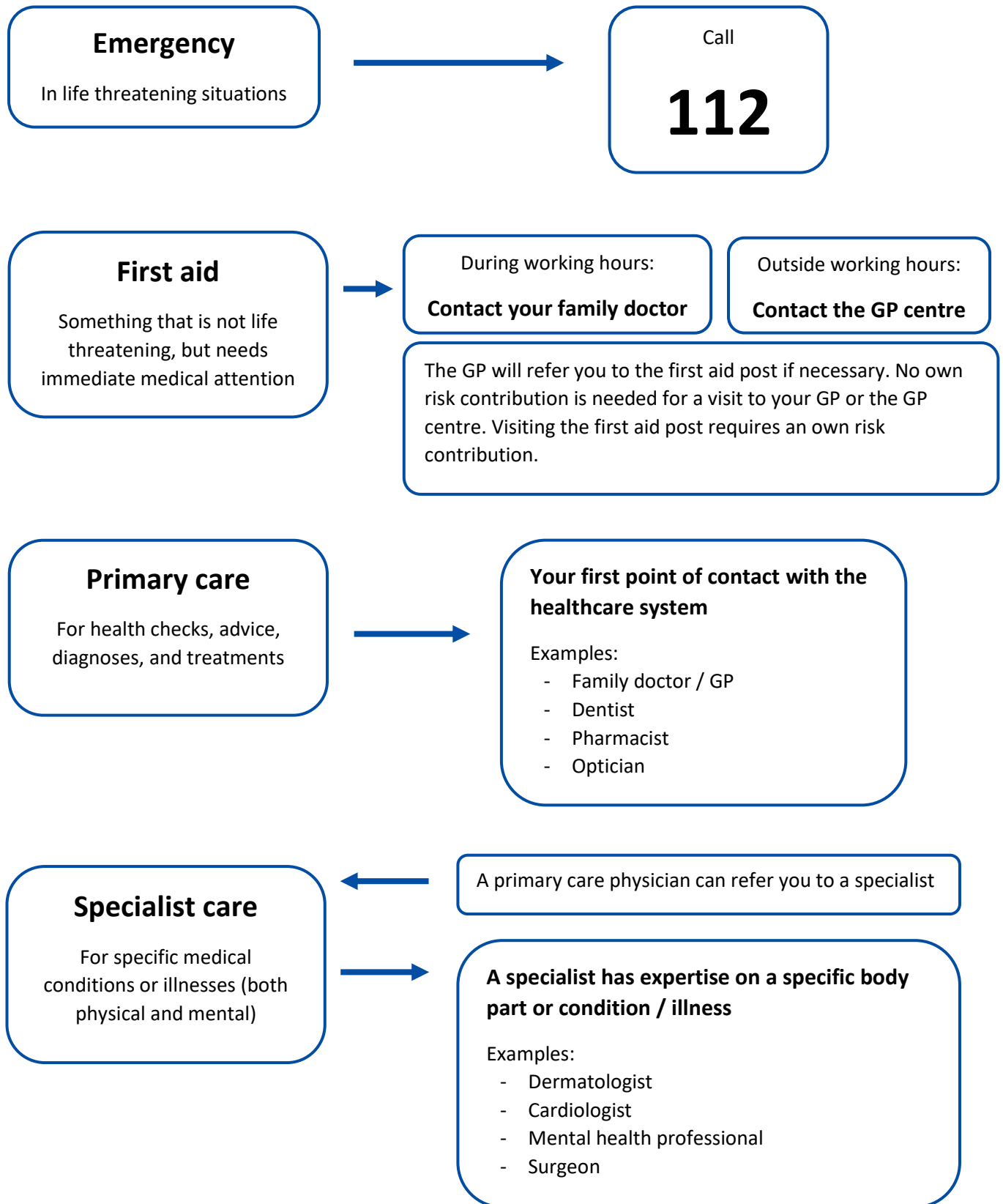
Spanish healthcare system is decentralised, so procedures and processes may vary slightly among autonomous communities. However, the general steps for applying for healthcare benefit are applicable in most cases:

1. The first step is to be **registered in the municipality** where you live, the official record of residence is necessary to access health services in Spain and can be delivered at the municipal town halls.
2. Once you registered, you must **obtain the Tarjeta Sanitaria Individual (TSI)**, the document that identifies you as a beneficiary of the health system in Spain and entitles you to receive medical care. They are delivered in the municipal health centres.
3. With the TSI, you will be able to **choose a general practitioner or health centre**. This involves selecting a referring doctor who will coordinate your medical care, follow up with you and refer you to specialists if necessary. To choose your GP, you must go to your assigned health centre and request a change or assignment to the doctor of your choice.
4. When you need medical care, you can **contact your family doctor to make an appointment**. He or she will assess your situation and provide you with the right treatment. If necessary, he or she will refer you to specialists or other care facilities, such as hospitals or clinics.

Accessing the Spanish healthcare system

1. **Non-emergency care**
 - Citizens can make an appointment with the GP.
 - *How?* – by calling the primary health centre. In some regions there are websites or apps available as well.
2. **Primary care**
 - For example:
 - On-demand, scheduled and urgent health care
 - Family care & basic rehabilitation
 - Children, teenagers, older adults
 - Chronic patients & other risk groups
 - The general practitioner refers the patients to a specialist

What to do when in need of medical care?



4. Improving digital, health and data skills

4.1 Navigating the internet

Are you searching for health information? You can use the internet! In this chapter you will learn about web browsers and search engines. It is important to know where to find trustworthy information and how to recognise mis- and disinformation on websites and on social media.

How to use web browsers and search engines to find health information



Why is it important to know how to navigate the internet?

The healthcare system is more and more digitalised and general information about illnesses, diagnoses and treatments are now accessible via the internet. It is important for everyone to know how to move in this new eHealth world - do you want to know how?

The web browser

Digital know-how is important when you want to find health information on the internet. Starting with the main tool: the web browser. The web browser is used to access the internet; therefore, it needs an internet connection to work. The most common web browsers are *Firefox*, *Google Chrome*, *Safari* and *Edge*. They are free to download, but your computer should already have one browser available.



The search engine



The internet is filled with websites, including health information, articles from professionals, or personal experiences shared by other people. To find the right information, you can use a search engine, which will **give you a list of results** depending on what you search for. The most popular search engines are [Google](#), [Bing](#) and [Yahoo](#).



Be aware that search engines and websites collect personal information, like your location and your search history. They do this by placing **cookies** on your computer. Cookies can be practical, because they save for instance your username and password on a certain website, so you don't have to log in every time. But cookies can also be used to target advertisement or track your online behaviour. Nowadays, websites are required to let you choose which cookies are saved when you first visit it.



Search engines such as [DuckDuckGo](#) and [Qwant](#) are privacy-friendly search engines that are **anonymous**. This means, that your search information will not be saved by the provider and your data is kept private and will not be sold for marketing purposes. The downside is that these search engines cannot be personalised; you will not receive search suggestions and it might take longer to find what you are searching for.

Did you know?

'Ecosia' is an **ecological search engine** that invests into tree planting projects worldwide to combat climate change.

Since the founding of Ecosia, over 170 million trees were planted on our planet.

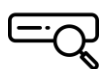


Choose the correct search terms

To get the most relevant results from the search engine, you need to type in suitable search terms. [Here are some tips on how to do so:](#)

- Use search suggestions, which appear as you type.
- Try different search terms.
- Exclude a word from your search by putting a hyphen (-) in front of the word.
- Use quotation marks to search for exact phrases and narrow down your search.
- Use the links at the top of the page to categorise your search into image/video/shopping etc.
- Use the 'search tools' button at the top of the page to filter your search.
- Connect your search terms with 'And' to get only results with both words included.
- Check for advertisement; these results are shown first, but might not necessarily fit your search.
- Click here for more information:

<https://support.google.com/websearch/answer/2466433?hl=en>



Now you are ready to start your search - type the correct search term in your search engine and click enter!

Do you wish to improve your digital skills? Here you can find information and/or education offers in your country:



<https://www.wie-digital-bin-ich.de/angebotsuebersicht?target=7>



<https://www.digisterker.nl/>



<https://portugaldigital.gov.pt/formar-pessoas-para-o-digital/oferta-de-formacao-em-competencias-digitais/cursos-gratuitos-de-formacao-digital/>



<https://digital-skills-romania.eu/>

<https://centrulupgrade.ro/>



<https://alfabetizaciondigital.fundacionesplai.org/>

<https://mejorconectados.com/>

Trustworthy health information

Over 50% of EU citizens use the internet to find health information. There is a large number of medical websites on the internet, but not all information is reliable. So how can you know if a website is trustworthy?

First, it is important to know about the effects of getting misinformed about health-related information on the internet.

Health-related misinformation can cause:

- Mental health problems
- Distress during pandemics and health emergencies
- Mistrust in the healthcare system and recommendations
- Aversion against vaccination programmes
- Promotion of unproven treatments
- Misinterpretation of scientific knowledge



How to know if a website is trustworthy?

To know if a website is reliable, you can follow these 8 rules:



Rule 1: Who is behind the website?

To know if a website is reliable, it is important to know its purpose: is it to inform the reader or to sell a product or service? If there is advertisement on the website, the purpose of the website is to make money.

Check the website address (URL) to know whose website it is; here are some **examples**:

Website Address	Identification
.de / .nl / .pt / .ro / .es	Citizens, residents or businesses located in consecutively Germany, the Netherlands, Portugal, Romania, and Spain
.eu	Citizens, residents or businesses located in the EU
.org	Non-profit organisations
.museum	Used exclusively by museums

Extensions like .com or .net are international and can be used by anyone. These URL's are often used for commercial purposes. Be aware that, even when you trust the origin of a website, that does not necessarily mean that the information on the website is reliable.



Rule 2: Who wrote the website content?

The authors' names are mentioned on most websites, so that you can check if they are experts and professionals or in which organisation they work. Look out for contact information; this is often included in trustworthy websites.



Rule 3: Personal experience of health issues

Health issues and symptoms are different from person to person. If you are looking at a platform where people exchange their experiences (e.g. a blog) then this might be helpful or comforting to read, but keep in mind that the experience of a health problem can vary and blogs are most often not made by health professionals.



Rule 4: Is the website updated?

The content on the website might be outdated and does no longer correspond to the latest research. Look out for recent information on health topics.



Rule 5: Watch out for warning signals

Watch out for signs of your browser when accessing a website, such as warning signals on the website you are on.



Rule 6: Question the website content

Be cautious if a website offers quick, easy, or even miraculous information to cure a sickness. Also if someone is providing one treatment for different illnesses. Prevent misinformation by checking the information on other websites.



Rule 7: Writing style

If the information is given in a dramatic writing style, it usually does not have an informative purpose and the information may not be reliable.



Rule 8: Ask your doctor

Does your doctor's practice have their own website? If yes, there may be other websites mentioned where you can get the health information you are looking for.

Trustworthy websites to find health information in your country:



<https://gesund.bund.de/>



<https://www.thuisarts.nl/>



<https://www.sns.gov.pt/>



<https://www.sfatulmedicului.ro/> | <https://www.doc.ro/comunitati>



<https://medlineplus.gov/spanish/>

How to protect your personal health data

- Do not enter sensitive information over public Wi-Fi. Sensitive information is data that can be used to identify or locate you personally, or information about your opinions, beliefs, or health.
- Get informed on how your personal data is being used by the website. Website that have an “s” after “http” in the start of their website addresses (https://) encrypt the data that is being shared, which makes it harder for hackers to intercept information.
- Make sure the website is secure before entering your Social Security number. You have the option to call your doctor who will provide you with the personal information instead of providing the number online.
- Be careful about information sharing on social media – do not share personal information, such as your home address or phone number.



Health mis- and disinformation on social media

Social media platforms, like websites or apps, exist to **connect people and create communities** where one can have exchanges on different topics. It can be used to share useful information, improve knowledge and raise awareness. Therefore, social media can support the communication and management of the healthcare system. As we have seen in the chapters above about websites, social media also has the risk to be a **misleading source of information**.



Did you know?

Links and attachments in e-mails or messages on social media can be used to transmit a **virus to your computer**. By clicking on a link in an e-mail, your browser will open the website and that may transmit a virus damaging your computer. A question to ask yourself: Are you expecting this e-mail from someone? Do you know the sender and content? If not, you can delete the message.



What is fake news?

Fake news is information that is not true. This can exist in the form of text, pictures or videos. Social media is often the medium to spread this incorrect information. We can make a distinction between two different types of incorrect information:

Type 1 → Disinformation

False or out-of-context information that has the specific intent to harm or mislead someone. This type is often used to influence public opinion.

Type 2 → Misinformation

False information that was not spread on purpose, like a misinterpretation from the author or adding the wrong picture to an article.



How to know if you are reading fake news?

- Watch out for anonymous sources and sensational writing style causing panic or dismissing arguments. Eye-catching information is likely to have the purpose to attract attention.
- Who wrote the article? Can you figure out who is the writer of the article?
- Pictures can be edited and are therefore not always reliable. You can check yourself: did other sources share the same image and are they trustworthy?

The same checklist that we use to check if a website is trustworthy, we can also apply to social media platforms:

Quick Trust-Checklist

- #1 Who is behind the website?
- #2 Who wrote the website content?
- #3 Personal experience of health issues
- #4 Is the website updated?
- #5 Watch out for warning signals
- #6 Question the website content
- #7 Writing style
- #8 Ask your doctor

TIPS: Search for health information online the same way you would search for information in a **book** – check who is the author, if the information is updated and where the content came from.

Use online health information as a tool to get informed. Make sure to **double-check information** with other sources.

Be careful with the use of **ChatGPT** and other chatbots, because the source of the information is not visible and could be unreliable.

Be careful when **buying health products online**. There are a lot of treatments on the

market that are ineffective or even harmful. Only buy certified products from webshops that you know and trust.

If you have any doubts, contact your doctor!



4.2 Health promotion and disease prevention

In this chapter you can find information on how to make healthy life choices and what actions you can take to decrease the chance of developing diseases.

Nutrition, sport, and lifestyle: good practices and why this is important



Good nutrition is one of the most important elements of a healthy lifestyle. The human body is very complex, and needs the right kind of fuel in order to function properly. This does not only apply to your body as a whole, but also to every separate organ. It is therefore vital that you fuel your body with the right nutrients.

A healthy diet has both physical and mental benefits.

Physical benefits:

- It gives you more energy and strength.
- It helps you to achieve and maintain a healthy weight.
- It lowers the risk of heart disease, diabetes type 2, and certain cancers.
- It helps to prevent illness and improves recovery.
- It increases your lifespan and your healthy lifespan.
- It supports healthy pregnancy and breastfeeding.
- It supports growth and brain development in children.

Mental benefits:

- It improves your concentration, your attention span, and your reaction time.
- It reduces depression and anxiety.
- It improves brain function.
- It prevents mood swings.

Did you know?

It is harder for women to lose weight than it is for men. This is because men naturally have more muscle. To maintain those muscles the body needs to burn more calories, even while asleep.

So, if you want to lose more weight, you need to lift more weight.





An unhealthy diet can cause many health problems, like heart disease, certain cancers, diabetes type 2, and high blood pressure. The health concern is so high that Europe has declared obesity (severe overweight) an epidemic. **Obesity causes 86% of all deaths and 77% of all diseases in Europe**, and these percentages get higher every year. The rising obesity rates do not only have serious health consequences for individuals, but also put more strain on the healthcare system. This means that the more people are overweight, the less people will have access to medical care.

But **what is a healthy diet?** Making the right food choices might seem more like chemistry at times, especially with all the information that is available on the internet.

But even though nutrition is complex, there are several basic rules you can follow to have a healthy diet, without needing a doctorate:



Rule 1: Don't eat more calories than you spend.



On average, a woman will spend around 2000 calories per day and a man around 2500 (although the exact amount depends on your weight, activity level, and muscle mass). If you consume more calories than you spend you will gain weight. Foods that are high in saturated fat or added sugars contain a lot of calories. A plain donut for instance already contains roughly 200 calories, while a glazed donut holds almost 500 calories! So check the packaging of your snacks before deciding to eat a second one.

Rule 2: Eat fruit, vegetables, fibre, good fats, and protein.



Fruits and vegetables contain vitamins, minerals, and fibres, which your body needs to function properly. It is therefore recommended to eat at least 250 grams of vegetables and 200 grams of fruit per day. It's also important to vary your fruits and vegetables, since the kinds of vitamins and minerals are not the same in every item.



Fibres are necessary for a healthy digestion, and lower the risk of heart disease, diabetes, and bowel cancer. Women are recommended to eat 25 grams and men 30 grams of fibre per day. Fibres are present in fruits, vegetables, legumes, potatoes, nuts, and whole-grain products.



Unsaturated fats improve blood cholesterol levels and reduce the risk of heart disease. Omega-3 and -6 fats (a type of unsaturated fat) are needed for a healthy brain function. Women are recommended to eat between 6 and 24 grams of good fats per day and men between 7,5 and 30 grams. You can find unsaturated fats in plant oil, nuts and seeds, fatty fish, and avocado.



Your skin, muscles, bones, and blood are made out of protein. It is therefore important to get enough through your food, so your cells can renew themselves. Adults are recommended to eat 0,8 gram of protein per kilo of bodyweight (± 50-70 gram of protein per day). You can find protein in lean meat, fish, dairy, whole-grain products, legumes, and nuts.

Rule 3: Avoid heavily processed foods.



Processed foods are foods that have been altered during preparation. The more unpronounceable ingredients a product has, the more heavily processed it usually is. Heavily processed foods are unhealthy, because they often contain more calories and less nutrients. This means it is easier to gain weight (see rule 1), while remaining hungry, because your body does not get what it needs.

Rule 4: A healthy diet should be sustainable.



There are a great amount of diet plans available. These diets can give fast results, but they are very difficult to maintain over a longer period of time. As a result people following such a strict diet will often gain back the weight that they have lost. Slow steady progress is a better way to go. If you want to follow a diet plan, ask a **dietitian** for advice.

For more information on healthy nutrition in your country you can visit these websites:



<https://www.bzfe.de/>



<https://voedingscentrum.nl>



<https://alimentacaosaudavel.dgs.pt/>



<https://mets.ro/> | <https://smartliving.ro/> | <https://www.csid.ro/dieta-sport/>



<https://nutricion.org/>



Besides a healthy diet, it is also important to **be physically active**. This includes low and moderate intensity activities, like walking, biking, swimming, or cleaning your house. And high intensity activities, like running, playing sports, and walking the stairs.

Adults are required to get at least 2.5 hours of moderately intense exercise per week plus muscle- and bone strengthening activities twice a week.

Children are required to get at least 1 hour of moderately intense exercise per day plus muscle- and bone strengthening activities three times a week.

Being active has both physical and mental benefits.

Physical benefits:

- It improves your fitness and your muscle and bone strength.
- It lowers the risk of heart disease, diabetes type 2, certain cancers, and stroke.
- It helps to prevent illness and improves recovery.
- It increases your lifespan and your healthy lifespan.
- It improves balance and lowers the risk of falling.

Mental benefits:

- It improves your concentration and your confidence.
- It reduces stress, depression, and anxiety.
- It slows the development of dementia and memory loss.
- It improves mood and feelings of happiness.
- It helps you sleep better.

Did you know?

by doing regular high intensity activities you lower your blood pressure, even in rest. This reduces the risk of a heart attack by 20 to 30%!



Because of our work or studies, we often spend a long time sitting, but our bodies were built to move, so **being stationary (both sitting or standing) is not good for you**.

Not moving for long periods of time is unhealthy for a number of reasons:



Your leg muscles and spine need to move in order for blood to flow and for nutrients to be absorbed by your cells. Not moving can cause back pain, joint inflammation, swollen legs or ankles, and varicose veins.



When you're sitting for a long time, your heartrate will go down and less oxygen reaches your brain. This causes fatigue and concentration problems.



By not moving your body your muscles fibres will shrink and the ligaments around your joints will get stiff. This reduces mobility and flexibility and causes muscle imbalance and pain. It can even reduce the strength of your bones.

To counter the ill effect of sitting, be sure to move around for at least 3 minutes every hour!

For more information on physical activity in your country you can visit these websites:



<https://www.bundesgesundheitsministerium.de/service/begriffe-von-a-z/b/bewegungsempfehlungen.html>



<https://www.rijksoverheid.nl/onderwerpen/sport-en-bewegen/sport-bewegen-en-gezondheid>

<https://www.kenniscentrumsportenbewegen.nl/>



<https://www.dgs.pt/programa-nacional-para-a-promocao-da-atvidade-fisica/materiais-de-divulgacao/guias-para-avaliacao-e-aconselhamento-breve.aspx>



<https://mets.ro/>

<https://smartliving.ro/>

<https://qlife.ro/>

<https://www.csid.ro/dieta-sport/>



<https://estilosdevidasaludable.sanidad.gob.es/>

<https://www.aeped.es/comite-actividad-fisica/>



The third important lifestyle choice you can make is to **get enough sleep**. Sleep is often the first healthy habit that gets sacrificed in our busy lives, but the importance of sleeping should not be overlooked.

On average, an adult needs 7- 9 hours of sleep per night, but your needs may vary depending on your age and activity level.

Getting enough sleep has both physical and mental benefits.

Physical benefits:

- It improves your metabolism and restores your muscles and cells.
- It lowers the chance of chronic diseases.
- It helps to prevent illness and improves recovery.
- It increases your lifespan.

Mental benefits:

- It improves your concentration and your focus.
- It reduces stress, depression, and anxiety.
- It improves memory and your ability to learn.
- It improves mood and feelings of happiness.

Did you know?

If you don't sleep enough your body will start craving sugar to compensate for the lack of energy. This might lead to weight gain.



In our society people are pushed to do as much as possible in their day. As a result many wear their sleep deprivation as a badge of honour. Yet the risks of not sleeping enough can be extensive. Poor sleep can increase the risk of:

- Burn-out
- Depression
- Dementia
- Brain damage
- Overweight
- Heart problems



In order to **improve your sleeping habits** the following tips might help:

Tip 1: Exercise during the day or early in the evening



Doing moderate to high intensity activities will reduce the amount of time it takes you to fall asleep and decrease the amount of time you lay awake at night. However, don't exercise late in the evening, your body needs time to relax before bed.

Tip 2: Don't eat a big meal within 3 hours before bed



Eating before bed will start your digestion, which will make it harder for you to sleep. When you do manage to sleep, your digestion will slow down. Undigested food still in your body can cause stomach and bowel problems.

Tip 3: Avoid caffeine, nicotine, and alcohol in the evening



Caffeine, nicotine, and alcohol increase your heartrate and blood pressure, which negatively affect your sleep. Even though it will be easier to fall asleep after drinking alcohol, you will sleep less deeply and you won't get the rest you need.

Tip 4: Avoid screen time at least 1 hour before bed



The blue light from the screens on your TV, computer, and phone trick your brain into thinking it's daylight. This disrupts your biological clock and makes it more difficult to fall asleep and/or stay asleep.



For more information on sleep you can visit these websites:



<https://www.dgsm.de/gesellschaft/patienteninformationen/aktuelle-informationen>



<https://www.hersenstichting.nl/de-hersenen/gezonde-hersenen/slaap/>

<https://npokennis.nl/longread/7741/waarom-is-slapen-belangrijk>

<https://www.thuisarts.nl/slaapproblemen/ik-wil-beter-slapen>



[https://portal-chsj.min-saude.pt/uploads/document/file/802/Higiene do Sono.pdf](https://portal-chsj.min-saude.pt/uploads/document/file/802/Higiene_do_Sono.pdf)



<https://getvig.health/psihologie/somnul/>

<https://www.doc.ro/lifestyle/importanta-somnului-pentru-o-viata-sanatoasa>



<https://ses.org.es/>

<https://asenarco.es/>

This last part of this chapter is about the risks of smoking and alcohol use. As you may know, **smoking and drinking alcohol are very bad for your health**. For smoking these health risks also apply to the people around you, like your family!

The risks of smoking and second-hand smoking:

- It damages your lungs, and may cause breathing problems and asthma.
- It increases the of risk of long-, mouth, and throat cancer.
- It increases the risk of heart attack, stroke, and high blood pressure.
- It can cause eye problems and blindness.
- It damages your teeth.
- It decreases fertility.



Risks of drinking alcohol:

- It increases the risk of breast, lung, and liver cancer.
- It increases the risk of tumours in your mouth, throat, larynx, and bowels.
- It may cause stroke, heart problems and diabetes type 2.
- It may worsen or increase the risk of dementia.
- It decreases fertility.
- It can cause overweight.



For more information on smoking and alcohol you can visit these websites:



<https://www.bundesdrogenbeauftragter.de/themen/suchtstoffe-und-suchtformen/alkohol/>

<https://www.bundesdrogenbeauftragter.de/themen/suchtstoffe-und-suchtformen/tabak-und-nikotin/>



<https://www.rokeninfo.nl/>

<https://www.alcoholinfo.nl/>



<https://www.sns24.gov.pt/tema/dependencias/alcoolismo/>

<https://www.dgs.pt/programa-nacional-para-a-prevencao-e-controlo-do-tabagismo/quer-deixar-de-fumar.aspx>



https://www.sfatulmedicului.ro/arhiva_medicala/alcoolul-si-fumatul

<https://sanatatea.com/pub/deprinderi-daunatoare.html>



<https://cnpt.es/>

<https://socioalcohol.org/>

Do you wish to quit smoking or drinking, but you are having trouble?

Check out the **Intervention and prevention programmes** in the chapter below.

Intervention and prevention programmes

Everybody knows that **a healthy lifestyle is important, but that doesn't mean that having a healthy lifestyle is easy**. There are many factors that influence someone's health-related choices, including social circumstances, financial restrictions, time-pressure, and the location of their home. It is important to remember that not everyone has similar access to healthy options, and that for some it is not an option at all.













To help people have a healthier lifestyle there are intervention and prevention programmes available.

Intervention programmes give help and support to people who have an unhealthy habit and wish to change.

Prevention programmes give help and support to people to prevent them from developing unhealthy habits.



There are many different types of intervention and prevention programmes available. Here are some examples:

	Alcohol abuse		Falling prevention
	Drug abuse		Hearing damage
	Smoking		Skin protection
	Overweight		Healthy pregnancy
	Sport and movement		Sexual health
	Mental health		Sustainable choices

Do you want to find an intervention or prevention programme in your country?
Check out the links below:



<https://www.bzga.de/aktuelles/2019-12-16-mit-tipps-der-bzga-2020-endlich-rauchfrei-werden/>

<https://www.bzga.de/was-wir-tun/suchtpraevention/>

<https://www.dhs.de/suchthilfe/praevention/-/fruehintervention>

<https://www.deutsche-depressionshilfe.de/start>



<https://www.loketgezondleven.nl/interventies-zoeken#/Overview>

<https://www.thuisarts.nl/overgewicht-bij-volwassenen/ik-wil-misschien-meedoen-aan-leefstijl-programma>

<https://www.kenniscentrumsportenbewegen.nl/interventies/>



<https://www.sicad.pt/>



<https://cnas.ro/programe-nationale-de-sanatate-curative/>

<https://www.ms.ro/ro/informatii-de-interes-public/campanii-informare-educare-comunicare/>

<https://www.insmc.ro/programe-de-sanatate/programe-de-sanatate-finantate-de-ms/programele-nationale-de-sanatate-privind-bolile-netransmisibile/>



https://www.aesan.gob.es/AECOSAN/web/nutricion/seccion/estrategia_naos.htm/

https://pnsd.sanidad.gob.es/enlaces/ordentematica/recursosWeb/ordentema_campa-programa.htm/

<https://www.injuve.es/node/38013>

Available phone applications to improve or track your health



There are many apps available that can help you improve your health. **With these health apps you can monitor health-related problems, understand medical conditions, or reach fitness goals.** Health apps make it easier to track your progress and keep you motivated to continue. And there are many different types of health apps available.

Here are some examples:



Fitness → apps to help you improve eating habits, sleep patterns, or activity levels.



Mental health → apps that help reduce stress or anxiety, improve work and social functioning, or help in processing loss.



Quality of life → apps that provide information and tracking options for medical conditions, meditation and mindfulness programmes, or physiotherapy exercises.



Participation in society → apps that offer support for informal carers or relatives of people with a medical condition, help with communication or finding social contacts.



Daily functioning → apps like medication trackers, chore planners, public toilet finders, and UV-radiation forecasts.

Did you know that?

In a study on weight loss, participants that used a health tracking app lost nearly 4kg more weight than the other participants.



Health apps could help you live a healthier life. Nevertheless, there some things to consider when using these services:

Not all measurements are 100% accurate



Wearables like smart watches and fitness trackers claim to be able to measure a large range of functions, such as heart rate, skin temperature, blood pressure, and much more. Be aware that these readings are not always accurate. Health tracking apps cannot replace medical devices. If you have a medical reason to track your health, consult a doctor to ask for advice.

Not all health apps are effective



Many of the available health apps were not made by health professionals. Even though these apps could still be helpful, it is important to realise that they are not based on scientific research. It is always better to use health apps that are offered or supported by health professionals.

Health apps may track your personal data



Like many mobile applications, health apps may use your personal data to improve their services. Even though the intentions are usually good, it is wise to check what kind of data is collected and what this is used for. Be sure to read the terms and conditions and disable unwanted settings.



Are you looking for a trustworthy health app? Check out the links below:



<https://leitbegriffe.bzga.de/alphabetisches-verzeichnis/gesundheits-apps/>



<https://www.ggdappstore.nl/>



<https://www.sns24.gov.pt/guia/app-sns-24/>



<https://www.medlife.ro/articole-medicale/5-aplicatii-pentru-un-stil-de-viata-sanatos/>

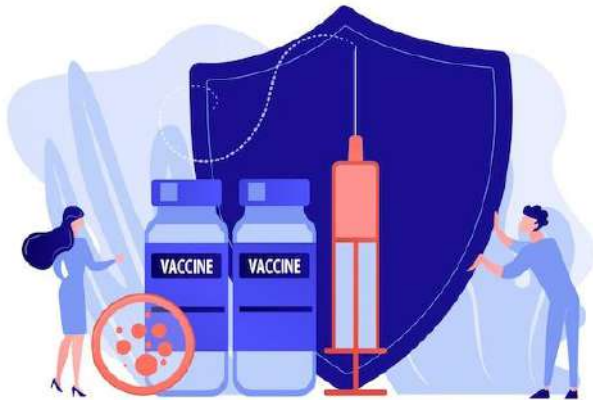
<https://www.catenaroma.ro/cele-mai-bune-aplicatii-mobile-pentru-persoanele-cu-diabet>

<https://ehealthromania.com/aplicatii-medicale-mobile/>



<https://www.yeeply.com/blog/las-10-mejores-apps-de-salud-para-android/>

The importance of vaccination programmes



During the COVID-19 pandemic there was a lot of debate about vaccination. People were afraid the vaccine was developed too quickly and would cause side-effects. Others did not understand why it was necessary for them to get vaccinated when they were not at risk. **Such misunderstandings can do great harm to the health of our society.**

❖ Why is vaccination necessary?

To prevent **you** from getting ill



A vaccination protects you from getting a disease that could lead to severe illness or even death. Examples of this are the measles, meningitis, pneumonia, tetanus, polio, and COVID-19. If everyone is vaccinated, these diseases cannot spread and could eventually die out.

To prevent **others** from getting ill



Even when a disease is not dangerous for you, it could still be very dangerous for others. When you are infected you can give the disease to someone else, even if you are not sick yourself. Some people cannot get vaccinated themselves, like young babies and people with a medical condition or allergy. But if all others are vaccinated the disease cannot spread, and everyone is protected. This is called group immunity.

❖ How do vaccines work?



Vaccines help your own immune system to fight off a bacterium, virus, parasite, or fungus that can make you sick (a pathogen). Our immune system naturally creates antibodies against these pathogens. Antibodies are the soldiers of your body; they destroy any incoming threats. But the first time you get infected with a certain pathogen, your immune system does not yet know which antibodies to make. In the time that it takes for your immune system to learn this, the pathogens can make you sick. However, your immune system remembers the pathogens that it has seen before. So if you get infected again, it will know which antibodies to make.

Vaccines contain weakened or inactive parts of a pathogen or the blueprints of a part of it. These parts or blueprints cannot make you sick, but they are enough to teach your immune system which antibodies to make.

In some cases you may need to get multiple doses of a certain vaccine. This is to make sure your immune system makes enough antibodies and that it remembers how to make them for a long period of time. It can also be that a certain pathogen, like COVID-19, mutates over time. Your immune system will then need to learn to make slightly different antibodies to fight off this new mutation.



❖ What are the chances of side effects?

It is true that there is a small risk to get serious side-effects from a vaccine, but that chance is extremely small; much smaller than the chance to get ill from the disease. More common side-effects, like a sore arm or a fever, are always temporary and much milder than the effects of the disease. So unless you have an underlying medical condition, **getting vaccinated is always a better choice.**



Did you know that:

The COVID-19 vaccine is estimated to have prevented 19.8 million deaths worldwide in 2020?



You can find a lot of misinformation about vaccines on the internet. This is caused by the way research gets translated in the media and on social platforms. Making and testing vaccines is very complicated, and this process is often simplified in order to explain it to people. But this simplification can also lead to misunderstandings about the testing and results of a vaccine. Only trust information that is shared on government websites or official institutions.

Do you want to know more about the efficacy, effectiveness and protection of vaccines?

Check out this article from the World Health Organization (English only):

<https://www.who.int/news-room/feature-stories/detail/vaccine-efficacy-effectiveness-and-protection>

Do you have questions about vaccinations in your country?

Check out the links below:



https://www.rki.de/DE/Content/Infekt/Impfen/impfen_node.html/

<https://www.bundesgesundheitsministerium.de/themen/praevention/impfungen.html/>



<https://rijksvaccinatieprogramma.nl/>

<https://rijksvaccinatieprogramma.nl/vragen/>



<https://www.dgs.pt/paginas-de-sistema/saude-de-a-a-z/programa-nacional-de-vacinacao/normas-e-orientacoes.aspx/>



<https://vaccination-info.eu/ro>

<https://www.anm.ro/medicamente-de-uz-uman/farmacovigilenta/informatii-vaccinuri-covid-19/>

<https://www.cnsrbt.ro/index.php/informatii-pentru-populatie/>



<https://www.aemps.gob.es/la-aemps/ultima-informacion-de-la-aemps-acerca-del-covid%E2%80%9119/vacunas-contrala-covid%E2%80%9119/como-funcionan-las-vacunas/>

4.3 Online healthcare

What is Tele-health?

*In recent years, tele-health services have become more widely used by healthcare providers. **Tele-health**, also known as telemedicine, is the delivery of healthcare services using technology, such as video conferencing, mobile applications, and remote monitoring. In this chapter you will get an overview on the different types of tele-health and how you can make use of these services yourself.*



Advantages and Barriers of Tele-health

With tele-health, you can have virtual consultations with healthcare providers from the comfort of your own home, which brings advantages and disadvantages like:

- + **Saving time and Money**, no need for travel and waiting in crowded waiting rooms.
- + **Bridging the gap** for patients in rural or underserved areas where many communities lack access to healthcare services.
- + **Being available 24/7**, allowing you to access healthcare services whenever you need them.

- **Not all medical examination can be done online.** For some medical conditions a full physical check-up is necessary.
- **Digital skills are needed.** A reliable internet connection and experience in using devices such as computers or smartphones are needed.
- **Potential privacy and security concerns.** It is important to ensure that all tele-health services meet the necessary privacy and security standards to protect patient data.

it is important to note that not all medical examinations can be done online. It is wise to speak to your healthcare provider to check if tele-health offers fit your specific medical needs. Keep in mind that it's always a good idea to have a backup plan for in-person care.

What types of tele-health exist and where they are applied

Due to the Covid-19 pandemic and a growing shortage of healthcare professionals and staff, a lot of healthcare systems are rapidly digitalised and offer increasingly more tele-health solutions. Now, there are several different types of tele-health available, which can be used for different needs. For an overview, see the list below:



Tele-consultation is a remote medical visit where patients and doctors communicate with each other using a video conferencing tool. Patients can discuss their symptoms and medical history, and doctors can make diagnoses, prescribe treatments and give medical advice. You can find instructions for using tele-consultation on the next page.



Tele-monitoring is the use of medical devices to monitor patients remotely. For example, patients with chronic conditions such as diabetes or high blood pressure can measure their blood sugar or blood pressure levels at home. Their doctors can see the results and adjust their treatment.



Tele-psychiatry is the delivery of psychiatric care via tele-health technologies. Psychiatric patients can receive evaluations, counselling and therapy via video or telephone, which is especially useful for those in rural or remote areas who may not have easy access to psychiatric care. There are also tele-psychiatry apps available (see chapter §4.2).



Tele-rehabilitation involves tele-monitoring and guidance for patients recovering from injury or surgery. Physiotherapists or occupational therapists can provide exercises and therapy instructions via video, telephone or text and track patients' progress with devices like smartwatches.



Tele-medicine emergency care involves the remote care of patients in emergency situations, where doctors or medical professionals can give first aid or emergency treatment instructions via video or telephone before or while the patient is taken to the hospital.

How to use Tele-consultation

Tele-consultation is a way to get medical advice from your doctor via the internet. This can be through e-mail, chat, or video calls. Tele-consultation offers a practical way to access health services from home.

Here are three easy steps for consulting your doctor online:



STEP 1 - Find a tele-consultation provider. So how do you get in contact with a doctor via tele-consultation?

Many GPs use a medical portal. This is a secure website where you can find health information, view your medical history, and order refills of your prescription. You can also use a medical portal to make appointments, either online or in person. And in some portals you can send text messages to your doctor. So ask your GP if he or she uses a medical portal and how to access it. Often this is also indicated on the website of your GP.

Do you want to try tele-consultation in your country? Try out the links below:



<https://doktor.de/>



<https://home.mijngezondheid.nl/>



<https://www.sns24.gov.pt/servico/teleconsulta/>



<https://www.reginamaria.ro/clinica-virtuala/>

<https://www.medlife.ro/medlive/>

<https://clinica.medicentrum.ro/medicii-nostri/>



<https://www.europapress.es/murcia/noticia-sistema-teledermatologia-sms-evita-desplazarse-especialista-55-ciento-pacientes-20220404135542.html/>

STEP 2 - Check the technical requirements. Before booking your appointment through your GP or a tele-consultation platform, first check that you have the right set-up. You will need the following things for a tele-consultation:



A **good internet connection** so you can run a video call.



An IT device, such as a **computer, a tablet, or a mobile phone**.



A method for getting into contact with your doctor. Normally a **video call** is the best option, as visual exchange is of great value for explaining symptoms and making diagnoses.

In the table below you will find a selection of applications for video calls you can use. Always check which digital technologies are available to you and your doctor before you book an appointment.

Internet applications for using video calls

- Zoom video call - <https://www.zoom.us/>
- Go to Meeting - <https://www.goto.com/>
- Skype - <https://www.skype.com/>
- Microsoft Teams - <https://teams.microsoft.com/>



STEP 3 - Prepare for the appointment. After finding the right technology and making an appointment with a doctor, preparation is the key to a successful consultation. Below you will find two points to consider when preparing for an online consult:

- (1) First of all, consider your personal needs before the meeting and write down all the questions you want to ask the doctor. This will ensure that you do not forget any important points during the conversation and the doctor can find the best treatment. Remember to send any necessary documents or health data to the doctor before the meeting (if needed). This will help your doctor understand your problems better.
- (2) Find a suitable place before the appointment, where you have a good internet connection and free of noise and disturbances.



With these simple guidelines, you will be able to tele-consult your doctor for health advice. Your doctor can then make a diagnosis and prepare a treatment plan for you. This may include prescribing medication, ordering further tests, or referring you to a specialist. If more tests are needed, it is important to be able to understand the results. Find out more about this topic on the following pages.

Do you wish to improve your eHealth skills? Here you can find information and/or education offers in your country:



<https://gesund.bund.de/gesundheitskompetenz-digital-staerken#angebote>

<https://dngk.de/verlaessliches-gesundheitswissen/#gesundheitsportale>



<https://digivitaler.nl/>

<https://helpdeskdigitale zorg.nl/>



<https://www.dgs.pt/documentos-e-publicacoes/manual-de-boas-praticas-literacia-em-saude-capacitacao-dos-profissionais-de-saude-pdf.aspx>

<https://www.splsportugal.pt>



<https://ehealthromania.com/>

<https://spatiulmedical.ro/categorie/e-health/>

<https://www.groupama.ro/ghiduri/telemedicina/>



<https://pydesalud.com/recursos-sobre-la-alfabetizacion-digital-sanitaria/>

How to understand health tests and results

There are a variety of health tests that target different aspects of health. Common types of health tests include blood glucose tests, blood count tests, blood pressure monitors, pregnancy tests, drug tests, COVID-19 tests, and HIV self-tests. However, the results of these tests can seem like a maths exam.

Here you will find an explanation of common testing methods, and helpful links and guidelines that explain how to read medical test results for different medical conditions.



How health tests work

There are two different ways in which health tests are analysed. Knowing this may help you understand the results of the test a little better.



Normal range analysis - Laboratory values can vary greatly depending on gender, weight, age and lifestyle, even in healthy people. To take such variations into account, experts have defined so-called normal ranges or reference ranges. Within these ranges lies the vast majority of the values measured in healthy people. If your test result lies within these ranges, it is considered unremarkable or normal. On the other side values can be called remarkable or abnormal, if they fall outside of the normal range. This technique is for example used in blood count tests.



Dichotomous analysis - A much simpler method of evaluating health tests is the distinction between positive (the person is ill or has the pathogens) and negative (the person is uninfected and has no pathogens). The results of these tests are much easier to understand. This method is used, for example, for COVID-19 and HIV self-tests.

Guidelines for understanding different health tests

Below you will find an overview of common health tests with a short description on how they work and what they measure.

Blood count test



A blood count test looks at the composition of the blood and is one of the most common tests. It gives an overview of the cells in the blood: red blood cells, white blood cells, platelets and red blood pigment. Among other things, the values can indicate inflammation, anaemia, nutrient deficiency, or an infectious disease.

Blood glucose test



A blood glucose test measures the glucose level in your blood. Glucose is a type of sugar that is your body's main source of energy. The test helps measure the level of a hormone called insulin, which is responsible for transporting glucose from the blood into the cells. The test is mainly used to detect diabetes or pre-diabetes.

Blood pressure test



Blood pressure is the level with which the blood is pressed against the walls of your arteries. The arteries transport blood from the heart to other parts of the body. Your blood pressure usually rises and falls throughout the day and the higher it is, the greater your risk of health problems such as heart disease, heart attack and stroke.

Electrocardiogram test



An electrocardiogram (ECG) is a simple, painless and quick test that records the electrical activity of your heart. Every time your heart beats, an electrical signal is passed that causes the four chambers of your heart to contract (squeeze) in the right rhythm. This helps your heart pump blood around your body. An ECG scan helps diagnose and monitor many types of heart disease and their treatment.

HIV-test



An HIV test is usually a test that identifies antibodies against HIV in your blood. Antibodies can be detected with a laboratory test at the latest six weeks after infection, with a rapid test at the latest after twelve weeks. An HIV test is recommended if you had unprotected sex with someone.

COVID-19 test



COVID-19 tests are a simple method to check if you have corona. You can do a rapid self-test at home (an antigen test), or go to a medical facility to get a more accurate PCR test. A positive test indicates that you have corona. Check your country's regulations for the current recommendations about what to do when you are infected.

3D imaging



In some cases test results may include 3D images, such as special 3D MRI's, CT scans, or ultrasounds. These new technologies may be difficult to understand at times, but it is important to realise that they give a better representation of what our bodies actually look like, and will therefore help a specialist better understand the issue at hand.

For more information on health tests and results in your country, check out the links below:



<https://www.stiftung-gesundheitswissen.de/gesund-es-leben/koerper-wissen/laborwerte-richtig-verstehen/>

<https://www.apotheken-umschau.de/diagnose/laborwerte/>



<https://www.rivm.nl/gezondheidstesten/uitslag>

<https://labuitslag.nl/>



<https://www.sns24.gov.pt/servico/resultados-dos-exames-eletronicos/>



<http://www.mymed.ro/analize-medicale-explicate-pentru-pacient-ghid-de-interpretare-a-analizelor-uzuale1.html/>

<https://www.csid.ro/analize-medicale/>



<https://muysaludable.sanitas.es/salud/interpretar-analisis-sangre/>

4.4 Health Records: Usage and data security

What are Health records and which types exist?

The use of Health Records is increasing in Europe, with many countries looking to modernise their healthcare systems and improve patient care using digital health technologies. Health records provide a central place for patients and healthcare providers to store and access health data digitally. Here you will find a description of the two common forms of health records:



Electronic Health Records (EHRs) are digital records of patients' medical history, treatment plans, test results, prescriptions and other health-related information. EHRs are typically created and managed by healthcare providers and organisations such as hospitals or clinics and are used to store and share patient information among different healthcare professionals.



Personal health records (PHRs), contain the same information as EHRs, but are managed and controlled by patients themselves. PHRs are updated by patients themselves or with the help of their healthcare providers. PHRs are designed to empower patients by giving them more control over their health information and enabling them to better manage their own care and share information with their healthcare providers.

Health Records in your country

How personal health information is accessed and shared differs per country. Below you will find an overview about health records and data security in each TRIO partner country (Germany, the Netherlands, Portugal, Romania, and Spain). Here you can find which health record solution is used, through which portal you can access it, and how data security is assured.



GERMANY

Health Record solution: Since the beginning of 2021, Germany has had the so-called Elektronische Patientenakte (ePA), which can be seen as the first major advance towards a digitalised healthcare system. Since then, patients have the right to have such a file created electronically by their health insurer, although keeping such a file is not obligatory. Patients must also fill their records with data themselves. This includes examination findings, diagnoses or doctor's letters. Data that is not available digitally must be converted into digital form by the patients themselves by scanning or photographing it. Also, the patients themselves determine which data they want to disclose to which actor and which data will be deleted.

Portal to access your Health Record: The ePA is created by the health insurance companies at the request of the patients. The exact portal you can use to manage your health record therefore depends on your insurance company. In the link below you can find out which portals are available for which insurance.

- <https://www.gematik.de/anwendungen/e-patientenakte/epa-app/>

Data security: If a treating physician wants to receive information about a patient, he or she does not have automatic access to the respective ePA. Access must always be authorised by the patients themselves. This is done by assigning a PIN, which can be used by the treating person to activate the ePA. For example, the patient's health insurance company may not simply access the data and the patient can also set only partial access to data. This is to prevent the misuse of health data, even though it is time-consuming for the patients. This is at the same time a big point of criticism. Even though the system has been in existence for almost two years, it is still largely unknown to people. Only a small part of the population knows about the existence of this service, which is why very few are already familiar with information on how to handle or protect data within health records.



THE NETHERLANDS

Health Record solution: In The Netherlands Medical information is stored in a personal electronic health record at someone's GP practice and apothecary. Everyone has the right to view their own health record, correct errors, and request information to be deleted. Medical data can exclusively be accessed by other healthcare practitioners and only if this is needed for a treatment.

Portal to access your Health Record: Since July 1 2020, it is possible for all Dutch citizens to view their medical data online. This can be done in two ways: through a patient portal or through a personal health environment (PGO). A patient portal is a secure website or app from a specific healthcare provider, for example a GP. Here, people can view, for instance, their own medical file, make appointments, order medicines, receive medical results and ask questions to a healthcare professional. Which patient portal is used depends on the healthcare provider. This is often indicated on their website.

A personal health environment (PGO) is a secure website or app in which medical data is collected from multiple care providers, for example a GP, the hospital and the physiotherapist. This gives a better overview. Patients can also add data themselves, such as blood pressure values or non-prescriptions drugs. Patients can choose a PGO themselves, but not all healthcare organisations are currently connected with a PGO. Although the number of caregivers who support this is increasing. For more information and to see if your caregiver has access to a PGO, check out the link below:

- <https://www.pgo.nl/>

The Netherlands also has a healthcare infrastructure called '*het landelijke schakelpunt*' (LSP). The LSP is a secure network that healthcare providers can connect with to share medical information. The LSP however is not a database; medical data is not stored there. The GP can sign up a patient's citizen service number (BSN) at the LSP, which will then be stored in a referral index. By searching a patient's BSN a healthcare practitioner can access the medical information that has been made available to them.

Data security: Medical data from patients records can exclusively be accessed by other healthcare practitioners and only if this is needed for a treatment. Any other medical information can only be shared after explicit permission from the patient. Insurance companies cannot access personal medical data.



PORTUGAL

Health Record solution: In Portugal, medical information is stored from each citizen in their Electronic Health Record (EHR) in order to improve healthcare delivery. In the EHR healthcare professionals can register and share health information between the patient, other healthcare professionals and entities providing health services.

Portal to access your Health Record: Citizens can access their health record through the SNS 24 platform. In the Personal Area of the platform, each citizen has access to his/her medical data including consultations, prescriptions, surgeries, exams, the COVID-19 digital certificate, and medical history. It is also possible to grant or change permission on who can access the information.

- <https://www.sns24.gov.pt/>

Data security: The Portuguese EHR solution is secure according to the requirements of the National Commission for Data Protection.

Health information encompasses a range of data associated with a person's health, including clinical records, medical history, test results, treatments, and diagnoses. Health information belongs to the person to whom it relates. Generally, individuals have the right to access all their health information, with rare exceptions where access could seriously harm their well-being. In the case of a deceased individual, a family member may access their health information if they can demonstrate a direct, personal, legitimate, and relevant interest, such as for legal actions or protecting their rights.



ROMANIA

Health Record solution: Although a law from August 2018 provides the legal framework for the implementation of the patient Electronic Health Record, the only existing version of the Electronic Health Record at a national level has been released in November 2021 as a test environment. This version only implements a section related to “emergency medical data”. In the absence of a national health information system, medical information of patients in Romania is digitally stored in a fragmented way, in the local health records of the healthcare providers. Patients are responsible themselves for keeping track of their information and to bring copies (e.g. paper copies of blood test results, CDs/DVDs of CT scans, etc.) of their medical data.

Portal to access your Health Record: Citizens can access their health record through the National Electronic Health Record portal. However, the portal has been recently deployed and its usage and data availability depends on the degree to which your family doctor is actually using it, as it is not yet mandatory for the public healthcare providers to use it. The access to the online personal health record is only possible once the family doctor has initiated the record.

<https://ehr.des-cnas.ro/cnasportalext/index.html#/acces/>

Data security: The personal data of the patients are secure and protected according to The National Supervisory Authority For Personal Data Processing.

<https://www.dataprotection.ro/>



SPAIN

Health Record solution: In Spain the healthcare system is decentralised to the 17 autonomous regions. Each region has the authority to establish their own healthcare system, while the State keeps control over the establishment of the bases and overall coordination of health issues. In 2007 was decided that a common EHR system was needed to enable the exchange of data between regions. This system is called the *Historia Clínica Digital del Sistema Nacional de Salud* (HCDS).

Portal to access your Health Record: Users can access their medical data through the website of the health service at which their health card is registered. These medical portals vary per region, but can include functions like consulting your GP, arranging and managing medical appointments, and accessing your medical history, including test results, treatments, information on allergies, active and previous episodes, previous instructions, vaccinations, alerts, diagnoses, blood type, and prescriptions.

Data security: The identity of both users and professionals needs to be verified before they can make use of the HCDS system. The responsibility for this lies with the regional authorities. Citizens can monitor which instances have access to their data, so they can verify their legitimacy. Citizens have the right to limit access to part of their data to professionals that don't normally treat them. However, data cannot be deleted from their record and professionals that access the file will be made aware that some information is hidden.

5. Information for formal and informal educators and policy makers

5.2 Results of the desk research

Age, education level, income, and employment all influence digital, health, and data literacy rates in Europe. Even though proficiency levels may vary significantly per country, these disadvantaged groups remain the same. For digital literacy the biggest determinant is age, for health and data literacy it is education. It must be noted however, that not all people that have problems in one of the three literacies, experience these problems in the same areas. For instance, while individuals over 70 may have trouble understanding medication labels and prescriptions, people that are 10+ years younger experience more difficulty comprehending health terminology. These differences in skill levels have not always been investigated thoroughly, but are likely to exist for all literacies among all socio-economic and demographic variables.

When talking about digital health data literacy combined, **the most vulnerable groups are older individuals, low educates, and people with a low health status.** In general most difficulties are perceived in finding reliable health information online, understanding the terminology used in health-related topics, and distinguishing high-quality from low-quality information. Although not all groups experience the same difficulties, people with a low health status score lowest in all eHealth skill categories. Also, other studies have linked low health literacy with poor health status and, in



addition, less frequent use of preventive services². Since poor health literacy is more prevalent among older people and low educates, these groups also have a higher percentage of people with a health condition, who in turn may be less able to seek the appropriate care. At a higher age, this problem becomes multifold, since health tends to deteriorate with age and proper health-related decisions become more crucial.

Other socio-economic factors that have a negative impact on (e)Health information literacy are low income and unemployment. Low-skilled jobs are currently being replaced by the digitalisation of society. The people that worked these jobs often cannot compete on the job market, because of their lack in skill and knowledge, and risk becoming unemployed. Individuals who have been unemployed for a longer time will have more trouble finding work, and this often includes people with a low education and individuals close to retirement age; two groups with lower digital, health, and data literacy skills in the first place. Research has

² Enwald, H., Hirvonen, N., Kangas, M., Keränen, N., Jämsä, T., Huvila, I., & Korpelainen, R. "Relationship between everyday health information literacy and attitudes towards mobile technology among older people". In *European Conference on Information Literacy*, 450-459. Springer: Cham, 2017.

shown that poor and unemployed individuals experience social isolation much more often (along with seniors) and receive less informal help when needed. Employment can protect people from this and being socially included protects people from unemployment. Another study has found that exposing unemployed individuals to poverty increases the social participation gap between employed and unemployed individuals. Low income and unemployment have also been linked to poor functional literacy; it is challenging for people with low functional literacy to find a well-paying job, or a job at all. On top of that, being unemployed tends to negatively affect literacy skills, worsening the problem. It is therefore vital that poor and unemployed individuals stay included in society, receive financial support, and are given the opportunity to enhance their skill levels.



Currently, the biggest health concern in Europe is the growing amount of people with overweight. Rising obesity rates do not only have severe health consequences for individuals, but also heavily increase healthcare expenditure. Poor nutrition and inactive lifestyles are the main reasons for this alarming trend, but as studies have shown, these are not solely individual matters. **There are many elements that influence a person's health-**

related choices, including social circumstances, financial constraints, time-pressure, and the area where households are located. This may also be one of the reasons why people with a low education or a low income are more likely to be overweight. The promotion of better health choices should therefore be aimed at whole communities and be accommodated by making healthy options accessible, affordable, and practical.

In addition, gender differences in nutrition and lifestyle choices should be taken into account. Obesity rates are more prevalent among women, although overweight rates occur more among men. It is important to understand the root of this issue, so that adequate health promotion information may be given to the right groups of people. Although women are overall more concerned about their looks and their health, and therefore more inclined to make healthy food choices, women also tend to consume more food with added sugars. Research has indicated that the consumption of sugar and processed foods have a substantively significant and negative impact on BMI levels. In addition, physiological differences make it more challenging for women to lose weight. By adequately informing people about these issues, their food- and health promotion literacy may increase.

Identified gaps

There are several socio-economic and demographic factors that influence digital, health, and data literacy skills:



For older individuals, the biggest problem is their inexperience with digital technology. Older people have more trouble with 'knowing how to navigate the internet to find health information', 'knowing how to use health information found on the internet', and 'distinguishing high quality from low quality information on the internet.' These problems can mostly be explained by the older generation's lack of digital skills. In fact, older people seem to be much better at understanding health terminology than younger people, who in turn have much less experience dealing with the healthcare system.



People with a low education experience most difficulties in 'knowing how to navigate the internet to find health information', 'understanding health-related terminology, and 'distinguishing high quality from low quality information.' The problems for this group are often multifold; they have a higher chance to have a low income, be unemployed, face social isolation, and be functionally illiterate. Additionally, low educates are more likely to have unhealthy lifestyles and be overweight, caused by poor health promotion literacy and unavailable healthier options.



People with a migratory background face similar problems. They have more chance to have a low education and income, more chance to be unemployed, and they may experience culture and/or language barriers when it comes to accessing and understanding (digital) health information.



Individuals with a low health status have more difficulty in 'knowing how to navigate the internet to find health information' and 'knowing where to find reliable health-related information on the internet.' In multiple studies individuals with poor health have been assessed as having the lowest health literacy. Health literacy has also been connected to health behaviour. People with low health literacy have a much higher chance to make poor health choices and therefore have a higher risk to develop non-communicable diseases.

Identified needs and demands



Mobile technology should be accommodated to older individuals so they may be able to use this technology to improve their health. Current mobile technology is made by and for younger people, which marginalises older generations and excludes them from properly using health-related applications that could benefit them significantly. If digital technology would be more adapted to older individuals, they would be more inclined to use digital services or devices and therefore gain experience and confidence, both of which have proven to improve everyday health information literacy.



Healthy nutrition and lifestyle choices should be made accessible, affordable, and practical. Health promotion information needs to be catered to the specific needs of different socio-demographic groups and preferably aimed at whole families, communities, or neighbourhoods. All health information should be easily accessible and be written in easy to understand language. Additionally, it should be known to people where to find reliable information for the health topics that are relevant for them.



More awareness is needed on the problem of low functional literacy and what this means for the people themselves. Low literacy often goes unnoticed. Many adults do not recognise their own shortcomings, and instead evaluate their skills as average. Others are ashamed or do not think improvement is possible. These individuals have learned to hide their inability and are difficult to persuade to participate in an educational program. Awareness may help them overcome their feelings of shame so they may be more inclined to seek help. In addition, medical professionals should be educated on how to best convey health information to low literates and educational material should be easily accessible.



Lastly, it is necessary for digital devices such as computers, laptops, tablets, and mobile phones to be financially available to people. For unemployed individuals, people with a low income, or those living on a pension, such devices are often too expensive. It could help to ensure free access to computers in public libraries or community houses, or to redistribute second-hand equipment to people that need it.

Suggested learning needs



Training material needs to be adapted to the specific needs of socio-economic and demographic groups. These needs are tied to economic, political, cognitive, and individual aspects, and therefore differ per country. Additionally, people often lack proper motivation to follow an extensive learning course. Educational material should therefore not only be adapted to a person's needs, but also to their ambitions. For instance, to combat low functional literacy it may help to set specific goals for people, like being able to write a good resume, helping your children with homework, or reading bedtime stories to your grandkids. This methodology was used in *het Taalhuis* in the Netherlands and has proven to work well. Also a Norwegian study³ found that low-skilled learners are more motivated by these so-called 'extrinsic motivators'. In addition, 'extrinsic demotivators' need to be avoided. These include the lack of support and encouragement, or the lack of opportunities in the labour market.

³ Windisch, H. C. "Adults with low literacy and numeracy skills: A literature review on policy intervention." *OECD Education Working Papers* 123 (2015), OECD Publishing: Paris. <http://dx.doi.org/10.1787/5jrxnjdd3r5k-en>.

These are the results of the desk research done for the European report. You can find the results per partner country in the national reports and national summaries on the [TRIO website](#)



5.3 Results of the workshops



In February and March 2023 all partner countries (Germany, the Netherlands, Portugal, Romania, and Spain) organised co-creation workshops with participants from three different age groups (18-35, 36-50, and 50+). The goal of the workshops was to involve citizens in the construction of the learning material and to further analyse the current needs in terms of digital health information

literacy. For this purpose a card game was developed. The first part of the workshop focussed on the main difficulties that people perceive in digital, health or data activities.

The results varied per country and per age group, but some areas were clearly perceived as more problematic than others, regardless of country or age. Most difficulties were experienced in the following areas:

- **The ability to identify which eHealth services are available.**
- **The ability to identify the reliability of online health information, health apps or online stores.**
- **The ability to understand medical diagnoses or test results.**
- **The ability to apply health information in everyday life.**

These results correspond to the results of the desk research; in a study on eHealth literacy⁴ most difficulties were perceived in: 'knowing how to navigate the internet to find health information' and 'knowing how to use health information found on the internet'.

This is a short summary of the results of the workshops. You can find the full results per partner country in the workshop summaries on the [TRIO website](#).



⁴ Vicente, M.R. & G. Madden. "Assessing eHealth skills across Europeans." *Health Policy and Technology* 6, no. 2 (2017): 161-168. <https://doi.org/10.1016/j.hlpt.2017.04.001>.

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Images

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