



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

**Improving digital, health and data skills –
Navigating the internet |
Health promotion and Disease Prevention**



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ABOUT THIS PUBLICATION

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1. Improving digital, health and data skills

1.1 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.

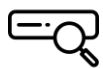
Since the founding of Ecosia, over 170 million trees were planted on our planet.



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=nl>



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://www.iseazy.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
.nl	Citizens, residents or businesses located in the Netherlands
.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!



1.2 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.

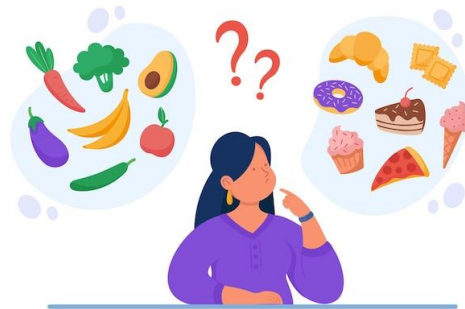




An unhealthy diet can cause many health problems, like heart disease, certain cancers, diabetes type 2, and high blood pressure. The health concern is so high that Europe has declared obesity (severe overweight) an epidemic. **Obesity causes 86% of all deaths and 77% of all diseases in Europe**, and 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 (\pm 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/slaaproblemen/ik-wil-beter-slapen>



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/>

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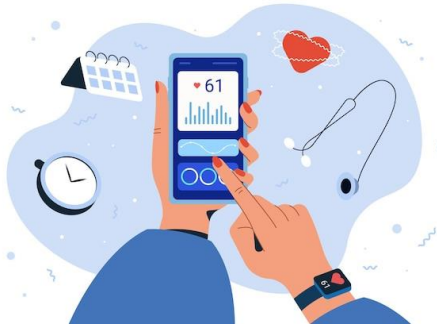


https://www.aesan.gob.es/AECOSAN/web/nutricion/seccion/estrategia_naos.htm/

https://pnsd.sanidad.gob.es/enlaces/ordentematica/recursosWeb/ordentema_campaigna-program.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/>

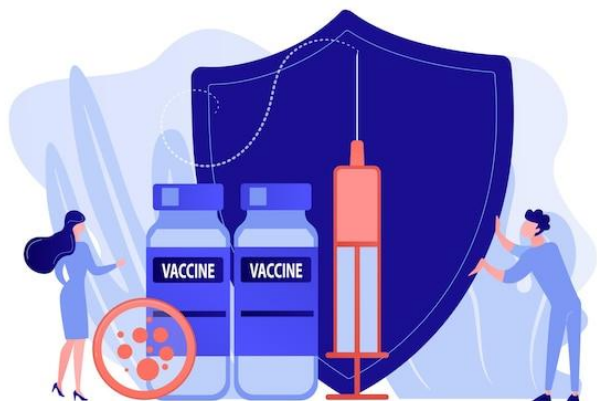
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The importance of vaccination programmes



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.cnscbt.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/>

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