**ACTIVATING LESSON SCENARIO
developed as part of the project**

'INNOVATIONS IN SCHOOL EDUCATION'

TOPIC

**Disinformation in Medicine – Fake News That Harms Health
Analysis of examples (vaccinations, pandemic, alternative
treatments)**

1. Lesson objectives

The student:

- understands what medical disinformation is and what health-related fake news is,
- knows examples of false information concerning vaccinations, the pandemic, alternative treatments,
- can indicate the difference between reliable medical advice and dangerous fake news,
- knows how to verify health information in Poland, the Czech Republic, Slovakia, and at the EU level,
- develops critical thinking and conscious use of online content related to health.

2. Target group

Primary school students

3. Teaching methods

- Brainstorming
- Mini-lecture with examples
- Group work
- Moderated discussion
- Analysis of headlines and health advice
- Verification quiz/exercise

4. Teaching aids / sources

- Projector or multimedia board
- Printed examples of medical headlines and posts (2 true, 2 false)
- Infographic: "Life Cycle of a Medical Fake News"
- Flipchart and markers
- Fact-checking platforms:
    - Poland: **Demagog.org.pl**, **FakeHunter PAP**
    - Czech Republic: **Manipulátoři.cz**, **Demagog.cz**
    - Slovakia: **Demagog.sk**, **Infosecurity.sk**
    - EU: **EUvsDisinfo.eu**, **EDMO.eu**
    - WHO Mythbusters: link

5. Lesson procedure (45 min)

1. Introduction – Is every health tip on the internet true? (5–7 min)

Form: brainstorming with short example analysis

Procedure:

1. Lesson opening: the teacher asks students to recall any health tips they have seen online – on TikTok, YouTube, Facebook, or messages forwarded by friends.
2. Questions to students:
    - Have you ever come across messages like "miracle cure for cancer" or "harmful ingredients in vaccines"?
    - What health tips do you remember from the internet? (e.g. "home remedy to cure flu in one day", "lemon water protects against all diseases").
    - Do you always know who authored such advice? Do you check whether they provide scientific sources or are a doctor?
    - Is every health tip online true and safe? How can you check?
3. Short example analysis: the teacher shows 2–3 fictional headlines (on a slide or printouts), e.g.:
    - "Carrot juice cures cancer in 3 days – doctors won't tell you this!"
    - "WHO confirms: regular vaccinations protect against severe cases of infectious diseases."
    Students answer which headline sounds more credible and why.

Background information for the teacher:

- Medical disinformation is false or misleading information about health, medicines, diseases, or vaccinations that spreads online, in social media, and sometimes even in traditional media.
- It can be intentional (someone wants to make money, sell a "miracle supplement", undermine trust in doctors or vaccines) or unintentional (e.g. someone forwards unchecked advice).
- The consequences of health disinformation can be very serious:
    - Abandoning treatment or vaccinations, leading to illness, complications, or even death.
    - Using dangerous methods, such as drinking toxic substances or taking "medicines" bought online.
    - Loss of trust in specialists, doctors, and health institutions.
- Most common motives for creating medical fake news:
    - **Financial gain:** selling supplements, books, fake therapies.
    - **Ideology:** anti-vaccination movements, groups promoting pseudomedicine.
    - **Sensationalism and popularity:** gaining thousands of views and followers through shocking content.

2. Definitions and examples (10 min)

Form: mini-lecture + oral quiz
Goal: to teach students to distinguish false medical information from reliable ones and understand basic terms related to health disinformation.

Definitions:

- **Medical disinformation** – false, manipulated, or incomplete information concerning health, treatment, medicines, vaccinations, or diseases, spread intentionally or unintentionally in the public sphere (social media, websites, forums). Its aim may be to mislead, scare audiences, undermine trust in doctors or health institutions, or encourage dangerous health practices.
  Example: An article suggesting that "high doses of vitamin C cure every disease" without scientific confirmation.
- **Medical fake news** – a completely fabricated or deliberately distorted message that looks like a genuine article or post, often massively shared. Usually relates to emotionally charged topics: vaccinations, pandemics, "miracle drugs", alleged conspiracies of pharmaceutical companies.
  Example: A Facebook post claiming "vaccines cause body magnetism", shared thousands of times without scientific evidence.
- **Health clickbait** – a headline or thumbnail (e.g. on YouTube, in articles) that is exaggerated, sensational, or mysterious, designed solely to make you click, often inconsistent with the article content or misleading. Often repeats formulas like "Doctors don't want you to know this!" or "One spoon of this drink cures every

disease".
Example: "Natural beetroot juice removes all toxins in 3 days – official medicine hides this!"

- **Medical fact-checking** – the process of thoroughly verifying health information using scientific research, medical publications, and recommendations from organisations such as WHO, ECDC, or ministries of health. Verification may show the news is true, false, or partially manipulated.
Example: Checking whether a drug's effectiveness is confirmed in clinical trial databases (e.g. PubMed, WHO websites).

Examples for analysis (oral quiz):

1. "Vaccines cause body magnetism – proof on video!"
   – Medical fake news, debunked many times, no evidence.
2. "COVID-19 does not exist – it's a conspiracy of pharmaceutical companies and governments."
   – Conspiracy theory, no scientific confirmation, contradicts medical evidence.
3. "WHO recommends vaccination as effective protection against severe disease."
   – Reliable information, confirmed by international public health institutions.
4. "Lemon water flushes all viruses from the body in 24 hours."
   – Medical disinformation, no scientific basis, false promise.
5. "Doctors sound the alarm: new flu strain in Europe – vaccination recommended."
   – True information, verifiable in official health announcements.

3. Exercise – Spot harmful fake news (15 min)

Form: group work (3–5 students)
Goal: develop skills in analysing health information, spotting false content, and using reliable sources.

Teacher instructions:

1. Prepare materials:
   o Each group gets 4 printed headlines or short health-related posts – 2 true, 2 false (fictional but realistic).
   o Include the "10 Warning Signs of Medical Disinformation" card to help analyse content.

Student task:

1. Read all four examples.
2. Identify the false and harmful information – mark which may be fake news and explain why.

3. Highlight warning signs:
   - lack of sources or reference to "anonymous experts",
   - promises of miraculous results ("cures cancer in a week"),
   - highly emotional language ("doctors hide this", "shocking discovery"),
   - content contradicting medical knowledge, which can be checked in official announcements.
4. Verify the information – if possible, use phones or computers to check in fact-checking services:
   - **Demagog.org.pl** (PL)
   - **Manipulátoři.cz** (CZ)
   - **Demagog.sk** (SK)
   - **EUvsDisinfo.eu** (EU)
   - WHO or ministries of health websites

Example headlines for the set:

1. "Natural beet mixture cures cancer in a week – doctors hide this!"
2. "New flu vaccine approved by WHO – free vaccinations from November."
3. "Pandemic is a conspiracy of pharmacists – proof on video!"
4. "Research confirms: healthy diet reduces heart disease risk."

Analysis table:

Headline / Post	True or false?	Warning signs	How to check?
Natural beet mixture…			
New flu vaccine approved…			
Pandemic is a conspiracy…			

| Headline / Post | True or false? | Warning signs | How to check? |

Research confirms…

Class discussion questions:

- What helped you tell false content from true?
- What warning signs did you notice?
- Is it easy to find reliable confirmation of health information online?
- What are the possible consequences of believing such fake news for people's health?

4. Discussion – Why do we believe fake health news? (8 min)

Form: guided conversation
Goal: help students understand why false medical content is so effective and how it affects our health decisions.

Questions to students:

1. Why do people prefer "simple solutions" and "miracle cures"?
    o Is it easier to trust simple promises than complex medical advice?
    o Do "natural therapy" ads seem more friendly and safe?
2. What emotions (fear, hope, sense of injustice) do the creators of such content exploit?
    o How do headlines like "Doctors are hiding the truth from you" work?
    o Does fear of illness or of treatment (e.g. vaccinations) increase belief in false information?
3. Can health fake news harm society as a whole (e.g. during a pandemic)?
    o Can believing such news make people refuse treatment, ignore doctors' recommendations, or put others at risk?
    o What can be the effects of mass spreading of false medical information?
4. How can we check the reliability of a health tip?
    o Which sources are most trustworthy (e.g. WHO, ministry of health, reputable medical websites)?
    o Should we trust anonymous social media posts?

Teacher's background notes (possible to share in summary):
Medical fake news works effectively because:

- They prey on human fear – illness triggers strong emotions, so people are drawn to news promising protection or cure.
- They promise easy solutions – quick results, natural methods, no doctor visits, no medicines.
- They reinforce prior beliefs (**confirmation bias**) – people distrustful of conventional medicine more easily believe in "alternative therapies".
- They look professional – with pseudo-expert opinions, fake graphs, doctor photos, logos of known institutions, but no real scientific evidence.
- They spread faster than corrections – emotions grab attention, and people share without checking.

5. Summary and reflection (7 min)

Form: individual work + joint rule-making

Procedure:

1. **Individual reflection** (3–4 min):
   Teacher hands out slips of paper or asks students to write in their notebooks short reflections finishing sentences:
   - "I understood that health fake news can…"
   - "The most suspicious thing in such news is…"
   - "Before I click or forward something, I will check…"
   - *(optional)* "From now on I will pay more attention to…"
   - *(optional)* "I now know where to find reliable medical information…"
2. **Class work** (3–4 min):
   Teacher asks each student to propose one rule to help avoid harmful health fake news. All are written on the board or flipchart. The class selects 5–7 key rules to create a poster "Safe Use of Health Information".

Proposed rules (can be extended):

1. Check the source – choose WHO, ministry of health, official hospitals, and clinics.
2. Don't believe in miracle cures, "one remedy for everything", or secret recipes hidden by doctors.
3. Always look for confirmation in at least two independent sources.
4. Consult every health decision with a doctor or specialist, not anonymous posts.
5. Don't share content you can't verify.
6. Pay attention to emotional headlines meant to cause fear or hope without evidence.
7. Use fact-checking sites and medical institutions' pages when in doubt.

Teacher's conclusions – lesson summary:

- Medical fake news not only misleads but can harm health and life if someone makes decisions based on it.
- Reliable medical information always has a scientific source (research, WHO recommendations, medical experts).
- Everyone is responsible for what they share – don't pass on unchecked advice as it can harm others.
- The main defence against health disinformation is critical thinking, caution, and trust in verified sources.

6. Glossary – Medical Disinformation

Term	Definition
Medical fake news	False information about health, treatment, or vaccinations, looking like genuine news.
Medical disinformation	Intentional misleading in health topics for profit, manipulation, or to provoke emotions.
Health clickbait	Sensational headline promising miraculous effects to encourage clicking.
Fact-checking	Process of verifying truthfulness of information through credible sources (e.g. WHO).
Confirmation bias	Tendency to believe information that matches our prior beliefs.
Information bubble	Receiving mostly content in line with our views online, making it harder to learn the facts.

7. Methodological guide for teachers – "Disinformation in Medicine – Fake News That Harms Health"

Guide objectives:

- Support the teacher in delivering the lesson safely, substantively, and engagingly.
- Provide practical tips for working with primary school students, considering their social media experience.
- Facilitate adaptation of the scenario to different group levels.

1. Choosing examples and content:

- Use fictional news or international examples (e.g. fake news about "miracle cures" from abroad) to avoid local controversies.

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- You may use real fake news already debunked by medical institutions, WHO, fact-checking sites (e.g. Demagog.org.pl, EUvsDisinfo), marking clearly that they are false.
- Avoid materials with shocking images or medical content that could cause discomfort – choose visually neutral resources.

2. Adapting language and content to the group:

- Students use TikTok, YouTube, Instagram – refer to formats they know (short videos, memes, hashtags).
- Instead of medical jargon, use simple comparisons (e.g. "a medical fake news works like a school rumour – spreads fast, but is not always true").
- Introduce terms step-by-step ("medical fake news", "health clickbait", "fact-checking") – best with a short example and student question.

3. Running exercises and discussions:

- Encourage reasoning: ask "why do you think so?", "what convinced you this news was true?"
- Show how to look for evidence in credible sources (WHO, ministries of health, fact-checking portals).
- If students share examples they've seen, analyse manipulation mechanisms, not the people or groups who believed them.

4. Creating a safe atmosphere:

- Stress that anyone can be fooled by medical fake news, even adults and experts – it's not a sign of low intelligence, but of emotional manipulation.
- Don't allow mocking others' experiences – maintain the rule that the goal is learning to spot false information, not judging people.
- Encourage questions – there are no "stupid questions", especially about health.

5. Teaching materials:

- Sets of headlines: 2–3 true and 2–3 false, age-appropriate.
- Online quiz (e.g. Kahoot) – quick knowledge check and reinforcement of safe health information habits.
- List of fact-checking websites (PL, CZ, SK, EU) – to show students where to find reliable data.

6. Possible lesson extensions:

- Class project: "Health Fake News Map" – students in pairs or small groups search online for examples (only from reliable fact-checking sources!), describe them simply, and mark potential dangers.

- Poster: "5 Rules for Safe Use of Medical Information" – co-created educational material to hang in class or on the school notice board.
- Mini-drama: role-play a scene where one person gets a fake news about a miracle cure, and the other shows how to verify it.

8. Scientific and educational sources (PL, CZ, SK, EU)

- EDMO – https://edmo.eu
- EUvsDisinfo – https://euvsdisinfo.eu
- WHO Mythbusters – https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters
- Demagog.org.pl – https://demagog.org.pl
- FakeHunter PAP – https://fakehunter.pap.pl
- Manipulátoři.cz – https://manipulatori.cz
- Demagog.sk – https://demagog.sk
- Infosecurity.sk – https://infosecurity.sk

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