



Data, analysis, perspectives | No. 5, 2016

Back Pain

Many physician visits and unnecessary imaging – patients put their faith in medicine; doctors are technology oriented

- **Significant gaps in knowledge:** Half the population incorrectly believes that back pain always requires seeing a doctor
- **38 million treated cases:** Every fifth insured person in Germany visits a general practitioner or a specialist at least once a year because of back pain
- **Incorrect approach in consultations:** The treating doctors only speak with every second patient about possible psychosocial causes
- **Inappropriate diagnostic methods:** Diagnostic imaging is applied too early and too frequently
- **Uncoordinated access and false incentives:** Family physicians should provide more guidance. Scanning should be reimbursed only in cases of defined indications.
- **Insufficient information:** An effective distribution of patient information and better remuneration of doctor-patient consultations are needed

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It impacts almost everyone: Back pain is widespread in the population and presents a serious socio-medical and health economic problem. At least once a year, 70 percent of the German population have back pain to a greater or lesser degree; only 15 percent have never had any. An abundance of diagnostic and therapeutic measures are used to treat back pain. The aggregate expenses for doctors' appointments, X-rays, CTs, MRIs, injections, physiotherapy, surgeries and rehabilitation total around nine billion euros a year. Significant indirect burdens and costs from an incapacity to work and disability add to this.

Up to now, the diagnosis of and therapy for back pain has seen little standardization, many details are disputed and differ greatly depending on the group of doctors, institution and region. The National Disease Management Guideline for Low Back Pain (Nationale VersorgungsLeitlinie Kreuzschmerz), published in 2010 by the German Agency for Quality in Medicine (Ärztliches Zentrum für Qualität in der Medizin – ÄZQ) and the German Medical Association (Bundesärztekammer), is intended to provide orientation to treating doctors and improve patient care.

For the "Back Fact Check," the Bertelsmann Stiftung has taken a close look at the current treatment situation. The Institute for Applied Health Research (Institut für angewandte Gesundheitsforschung – InGef) reviewed anonymized treatment data from more than seven million insured patients from 70 company health insurance funds from 2009 to 2015, and analyzed the back pain-related physician visits, conservative outpatient treatment as well as the application of diagnostic imaging. The central question examined was to what degree treatment is compliant with the guidelines. In addition, the "Back Fact Check" looked at whether patients' expectations influence the frequency of imaging. To explore this issue further, the Bertelsmann Stiftung had a representative survey conducted on the predominant views regarding back pain in general, and on treatment in specific cases.

“If the doctor-patient consultation and the physical examination provide no evidence of a dangerous course ..., no further examination should be conducted initially.”

Patient guidelines in the National Disease Management Guideline for Low Back Pain (1st edition, version 2, 6 August 2013)

Significant gaps in knowledge and, moreover, false expectations

The result: Many people don't know that back pain often just comes and goes. About half of the public surveyed in June 2016 were of the opinion that, with back pain, one should always go to a doctor and make an effort to rest. Likewise, almost 60 percent don't believe that back pain "often goes away by itself." In addition, it is not commonly assumed that "you get better more quickly if you fulfill your day-to-day work and family obligations as much as possible."

Around 85 percent of acute cases of back pain are, however, considered non-specific and medically harmless. They usually get better after several days or weeks, and only require very limited, symptomatic medical treatment. The National Disease Management Guideline for Low Back Pain recommends that doctors explicitly explain to patients that, firstly, most back pain is harmless, secondly, there is a very good prognosis of improvement without intervention and, thirdly, that keeping up day-to-day activities is important for recovery. This information has a major influence on dealing with pain and is very important with respect to the further course of the disease.

Doctors influence patient behavior

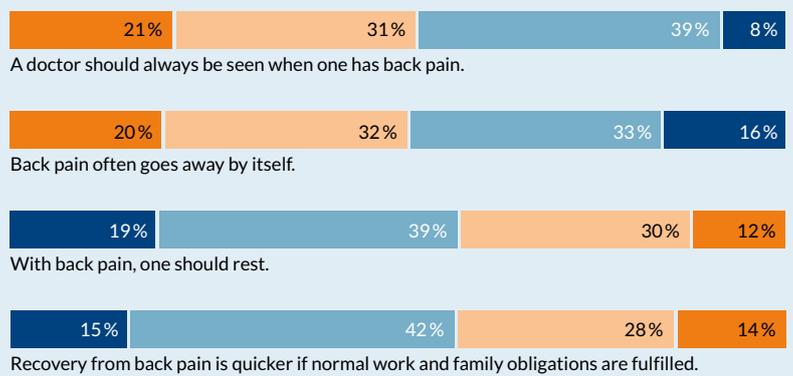
Gaps in knowledge, false expectations of therapy and the behavioral orientation of patients result from diverse experiences and influences. As studies show, the treating physicians have the strongest influence. Their behavior, the information they provide and their approach determine how patients deal with their back pain over years. Doctors have to correct the gaps in knowledge and unrealistic expectations of patients. Only then can they live up to their claim as independent, trustworthy experts.

The opinion that a physician should be seen in every case of back pain, or that back pain is an abnormal, often irreversible phenomenon that “doesn’t go away by itself” are elements of an (outdated) biomedical understanding of disease. According to this, diseases arise mainly due to external damage and can be best remedied through medical treatment. The results of the survey make clear that this biomedically framed understanding is still predominant in large sections of the population (see Figure 1). A consequence of this is the large number of consultations.

38 million cases treated per year

In 2015, 20 percent of all individuals insured visited a doctor at least once because of back pain. The analyses concluded that there were 469 cases treated (consultations in different quarters or with various physicians) per 1,000 insured individuals. Of these cases, 294 were with general practitioners and 175 with other specialists (see Figure 2). Extrapolating from these figures, 38 million cases are treated in Germany. The amount of cases treated has increased slightly since 2009 for both general practitioners and specialists. More than half (57 percent) of the patients with back pain went to their doctor on multiple occasions during the year, and 27 percent of patients had more than four consultations annually.

Views relating to back pain



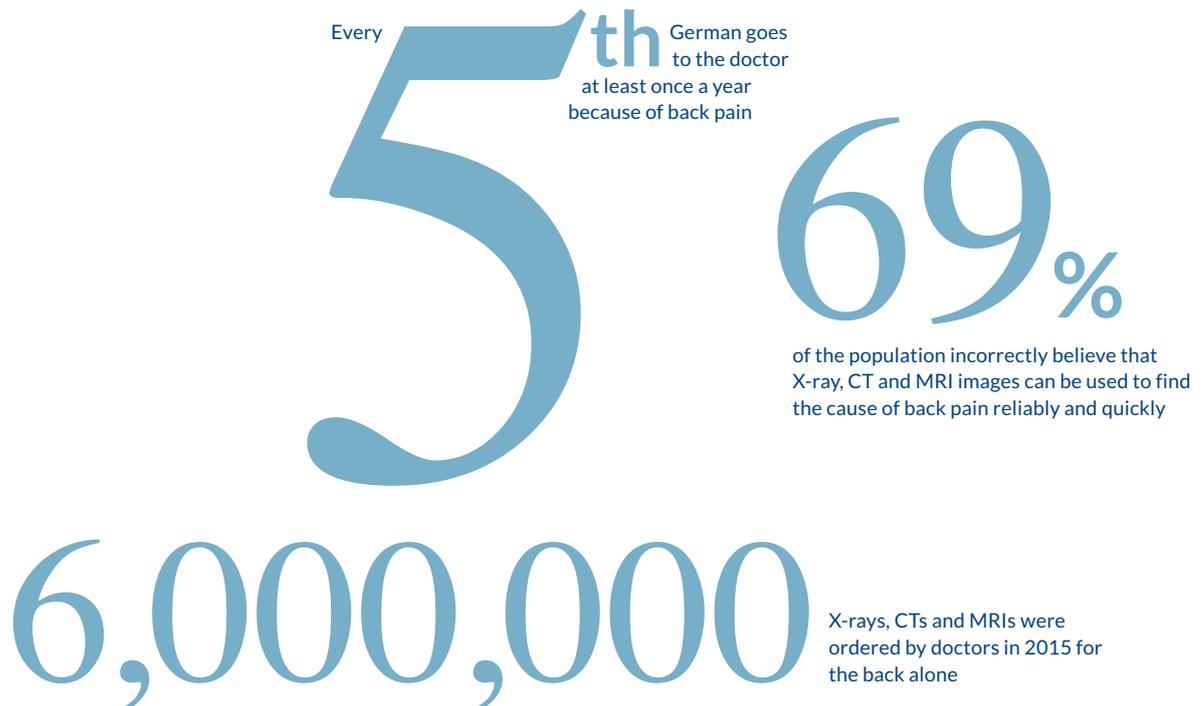
Legend: completely agree (orange), tend to agree (light orange), tend to disagree (light blue), completely disagree (dark blue). Answer of “don’t know” omitted, no response omitted, n = 914–977, survey June 2016. Figure 1 | Source: TNS Emnid, Healthcare Fact Check 2016 | BertelsmannStiftung

Outpatient cases treated

Number of back pain cases treated by family physicians and/or specialists per 1,000 insured individuals. Standardized according to age and sex.



Legend: Family physician (light blue), Other specialist (orange). Figure 2 | Source: InGef calculations (InGef database), Healthcare Fact Check 2016 | BertelsmannStiftung



Medical advice often insufficient

Three-quarters of patients were recommended physical activity and sport, in accordance with the guidelines. However, almost half the patients in the representative survey also indicated that they were advised to “rest” and “take it easy.” The same number also were told by the doctor that their back was “bad” or “worn out.” These kinds of messages demotivate, encourage a passive attitude and present a long-term hindrance to recovery or relief.

Possible psychological causes of the disease and patients’ concrete work and life situation are rarely discussed with them – with only every second patient. Studies show that doctors with a biomedical understanding of disease give sick notes more often and tend to advise resting in bed and reducing day-to-day activities. They also place too much importance on diagnostic imaging. All of this is not compliant with the guidelines and should be viewed critically with respect to orientation on patient needs and safety.

Doctors order too many X-rays, CTs and MRIs

As early as 15 years ago, the German Advisory Council on the Assessment of Developments in the Health Care System (Sachverständigenrat Gesundheit) levelled the criticism in its Appropriateness and Efficiency report that scans are taken both too early and too frequently, and are

“In the majority of cases, imaging provides no concrete evidence regarding the cause of back pain. Many causes, such as stress, dissatisfaction at work or lack of movement just can’t be detected on X-ray or MRI images.”

Prof. Dr. med. Jean-François Chenot, Professor of General Practice and Head of the Department of General Practice at the University Medicine Greifswald; outpatient doctor

repeated unnecessarily. The “Back Fact Check” shows that this overuse and misuse of diagnostic imaging with respect to patients with back pain still exists.

Contrary to the guidelines, many patients receive multiple X-rays, computer tomography scans (CTs) or magnetic resonance imaging scans (MRIs). In the first five years, following back pain diagnosis, 21 percent have two to three scans; 7 percent more than four.

In 2015, every sixth patient had diagnostic imaging performed on them without having a corresponding indication (without red flags, i.e., warning signs, such as distinct paralysis or a suspected inflammation or fracture). According to billing data examined by InGef, this is true in

the case of young adults especially: Individuals aged from 20 to 40 without red flags had around a third more X-rays than those over 40 without red flags.

Diagnostic imaging often takes place prematurely; for every fifth patient (22 percent) as early as the quarter of the initial diagnosis. Orthopedists arranged for X-rays in this time period four times as frequently as family physicians. According to the National Disease Management Guideline for Low Back Pain, without a specific indication, this should take place between 6 to 12 weeks after initial diagnosis at the earliest, and only if conservative therapy is unsuccessful. However, more than 50 percent of patients had no conservative therapy at all (such as painkillers or physiotherapy) in the three months prior to the scans.

In 2015, 375 scans were conducted for every 1,000 patients with back pain. Of these, 202 were X-rays of the spine, 139 were MRIs and 34 were CTs (see Figure 3). Although the number of X-rays and CTs decreased by 20 percent from 2009 to 2015, the number of MRIs increased by 34 percent. According to the OECD Health at a Glance 2016 report, Germany is at the top internationally with respect to the total number of MRIs. If diagnostic imaging continues on this scale in future, every citizen will be scanned three to four times in their life on average due to back problems. The considerable magnitude of diagnostic imaging harbors the danger of false positive results, which can lead to disconcerting the patients and unnecessary interventions.

Medical treatment and the public's faith in medicine worsen the problem

If a doctor has an in-depth consultation with a patient who has back pain and examines them, thereby excluding a dangerous course of the disease, the next step is not always to order a scan. In attempting to explain the large number of scans ordered, doctors always mention patients' explicit wishes. However, the results of the "Back Fact Check" show something else. For all diagnostic approaches (including diagnostic imaging), more than three-quarters of those impacted state that it was the doctor alone who suggested the respective measure (see Figure 5). On the other hand, 69 percent of the population believe that scans can reliably identify the cause of back pain, and they expect the corresponding prescription from their doctor (see Figure 4). Doctors don't

Number of X-ray, CT and MRI scans

Number of scans per 1,000 insured individuals with back pain. Standardized according to age, sex and region.

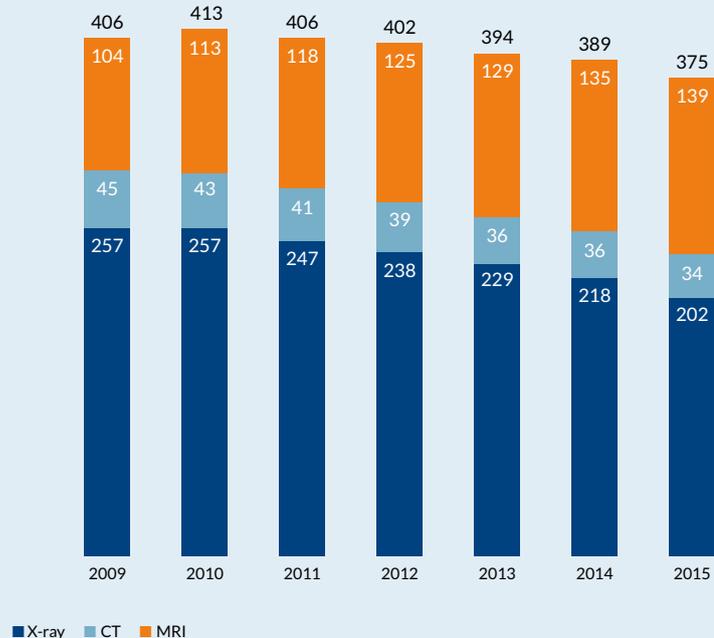


Figure 3 | Source: InGef calculations (InGef database), Healthcare Fact Check 2016

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Overdiagnosis – a risk of diagnostic imaging

Signs of degenerative changes in the spine can be seen in MRIs for almost all adults over 60, whether they have back pain or not. There is also a major risk of discovering irrelevant and misleading findings with CTs and classic X-rays. Findings on images are often taken too seriously. Studies show that diagnostic imaging and explaining any findings can contribute to disconcerting the patient and changing their self-perception, as well as to unnecessary further consultations and therapies. Diagnostic imaging is not only expensive, but leads to high follow-up costs, largely through the chronification of back pain or non-indicated measures and treatments. This was detailed as early as 2010 in the National Disease Management Guideline for Low Back Pain.

Views relating to back pain



X-rays and other scans allow doctors to find the cause of back pain reliably and quickly.



When a patient has back pain, doctors should order an X-ray or other scan as soon as possible.

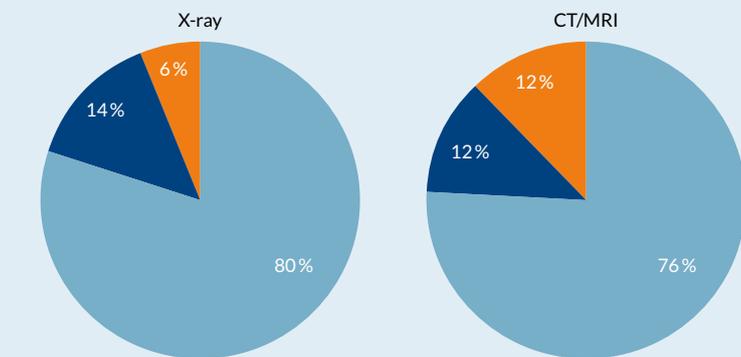
Legend: ■ completely agree ■ tend to agree ■ tend to disagree ■ completely disagree

Answer of "don't know" omitted, no response omitted, n = 914-977, survey June 2016

Figure 4 | Source: TNS Emnid, Healthcare Fact Check 2016

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Initiator of diagnostic imaging



Legend: ■ only doctor ■ only patient ■ doctor and patient

Patients with back pain in the last 12 months | n = 243, survey June 2016

Figure 5 | Source: TNS Emnid, Healthcare Fact Check 2016

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X-ray, CT and MRI scans



Number of scans of the spine per 1,000 insured individuals with back pain. Period: 2009 to 2015. Standardized according to age and sex.

Figure 6 | Source: InGef calculations (InGef database), Healthcare Fact Check 2016

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Role model: Ontario – MRI utilization reduced by 30 percent

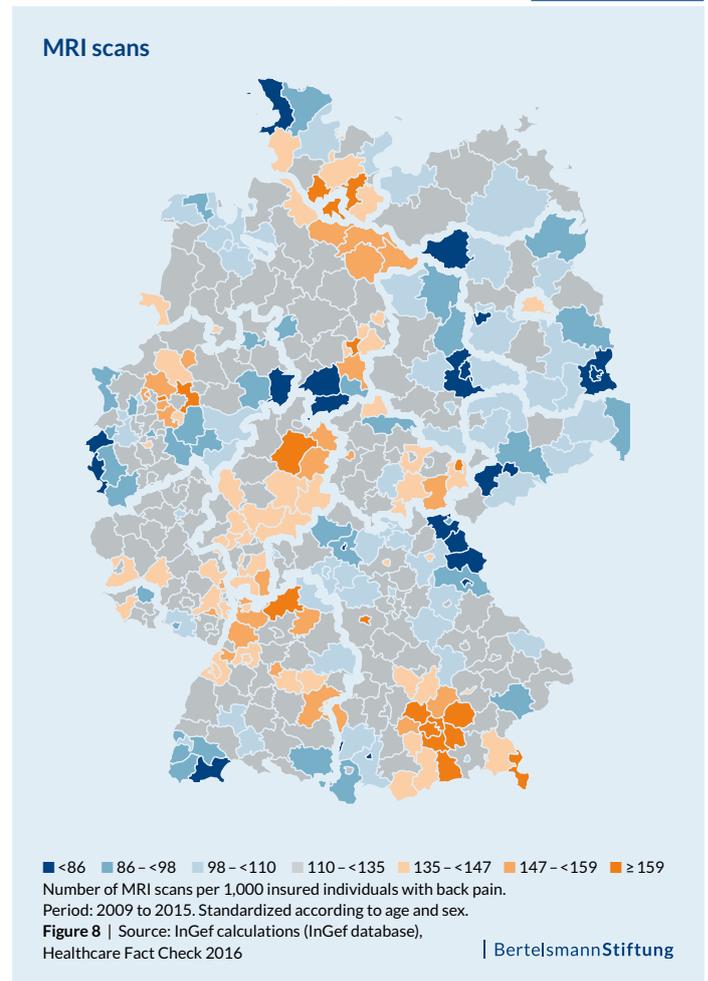
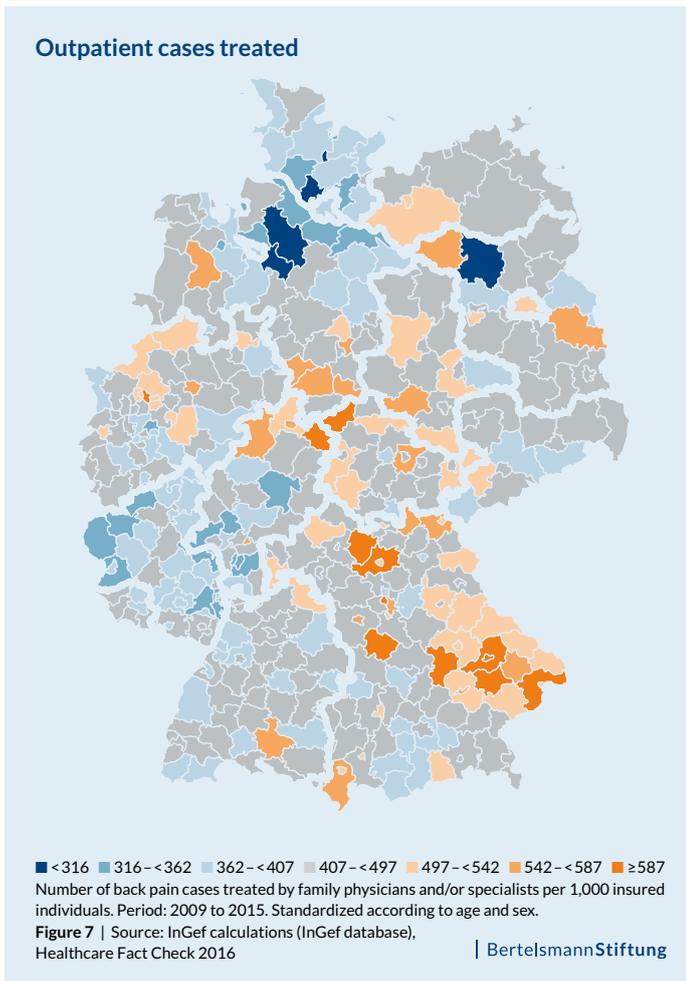
In 2012, the health ministry of the Canadian province of Ontario initiated the ISAEC program for treatment of patients with back pain. With the aid of a survey as well as a one hour examination and treatment consultation, strategies to deal with back pain are developed with patients and, if necessary, the next treatment steps determined. At the same time, the remuneration for doctors outside of ISAEC for diagnostic imaging for back pain without identifiably dangerous risks was revoked. Since then, the number of scans conducted has greatly decreased and risk of chronicity has dropped – all with very high levels of satisfaction among both patients (99 percent) and family physicians (97 percent).

correct these expectations sufficiently in practice, and order X-rays, CTs and MRIs more frequently (contrary to the guidelines). It seems then that the expectations of doctors and patients are mutually reinforcing, and patients welcome doctors' recommendations of scans.

Significant regional differences

The behavior of doctors and patients differs greatly from region to region. For example, insured individuals with back pain in Hamburg, Schleswig-Holstein and Rhineland-Palatinate go to the doctor far less frequently than those from Berlin or Bavaria. At the state level, the number of cases treated per year for every 1,000 insured ranges between 370 in Hamburg and 509 in Berlin. These differences more than double at the district level. For example, the average number of cases treated between 2009 and 2015 range from 306 Ostprignitz-Ruppin and Rotenburg (Wümme), to 711 in Werra-Meißner and even 730 in Dingolfing-Landau (see Figure 7).

The values of individual districts can be viewed and compared using an interactive map tool at faktencheck-ruecken.de



The regionally differing rates of diagnostic imaging are also a sign of the uneven healthcare structures and indications given. In the states of the former East Germany, the number of X-rays, CTs and MRIs lies between 338 and 367 per 1,000 insured individuals with back pain, compared with 374 and 441 scans in the former West German states (see Figure 6). In some states and districts, twice as many scans are conducted as elsewhere. A particularly high number of MRIs are performed in Hamburg, Munich and the Rhine-Neckar Metropolitan Region (see Figure 8). Diagnostic imaging in the same quarter as the initial diagnosis is also more frequent in these places.



InGef

The analysis of the cases treated and diagnostic imaging was conducted by the Institute for Applied Health Research (InGef). Analysis was based on the InGef research database, which is composed of the anonymized administrative data of more than seven million insured individuals from around 70 statutory health funds.



TNS Emnid

The survey with telephone interviews was conducted with a sample of 1,005 participants. This sample was limited to 18 to 80 year-olds. The sample was weighted, and is representative of the general population in terms of age, sex, level of education, household size, region, as well as employment (yes/no). The survey was conducted from June 14-28, 2016.

Download the study at faktencheck-ruecken.de

Recommended actions

More talking, less imaging – align treatment with the guidelines

Much ignorance prevails among the public regarding the correct approach to back pain. The logic that more diagnosis and treatment lead to improved health is widespread. In doctor-patient consultations, doctors have to live up to their responsibility as trustworthy experts by addressing false expectations and gaps in knowledge.

Better informing individuals with back pain

- To address public gaps in knowledge regarding how to deal with back pain, evidence-based and comprehensible information is needed, and it needs to be effectively disseminated. Doctors also have to appropriately convey to individuals with back pain the benefits and risks of the diagnostic methods as well as their relevance for further treatment. Psychosocial aspects should be given more consideration in doctor-patient consultations.

Remunerate consultations appropriately

- The doctor-patient consultation is central to evaluating the course of the disease with back pain. However, in contrast to expensive diagnostic imaging, it is insufficiently remunerated. A fee structure designed in compliance with the guidelines should also allow remuneration for diagnostic imaging for back pain only in the case of strictly defined indications.

Observe the guidelines in day-to-day patient treatment

- Medical practice has to orient itself more strongly on the National Disease Management Guideline for Low Back Pain in order to prevent premature and repeated scans, and so reduce their overuse and misuse. Patients with non-specific back pain should be encouraged to lead a more active lifestyle as soon as possible.

Improve treatment coordination

- In order to avoid premature specialist consultations and duplicate examinations, improved access control needs to be implemented. Family physicians should play a central role here. The rapid introduction of the electronic patient file and good cooperation between different groups of doctors could also prevent unnecessary multiple scans. The introduction of new devices (such as those for MRIs and CTs) and medical technologies should be systematically planned, and evaluated before extensive distribution.



SPOTLIGHT HEALTHCARE is an initiative of the “Improving Healthcare – Informing Patients” program at the Bertelsmann Stiftung. Published several times a year, SPOTLIGHT HEALTHCARE addresses topical issues in healthcare. The Bertelsmann Stiftung is committed to promoting a healthcare system relevant to public needs. Through its projects, the Stiftung aims to ensure the provision of needs-based and sustainable high-quality healthcare in which patients are empowered by access to readily understandable information.

The Healthcare Fact Check project takes an in-depth look at a variety of issues throughout the year with the goal of improving the efficient use of limited resources and aligning healthcare services with patients’ needs.

For more information, please visit faktencheck-gesundheit.de (in German), bertelsmann-stiftung.de/en/our-projects/healthcare-fact-check/

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