

# Reducing Absenteeism and a Faster Return to Work

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**Abstract:** Demographic data shows the population is ageing, and consequently we are seeing an ageing workforce. Even though the effectiveness of older workers is not in question, older workers are suffering from age-related conditions, diseases and injuries. Measures that prevent health problems throughout the working life are crucial to reduce the amount of sickness and absence in order to avail an early return to work. Established methodologies in which work disability is well defined are the foundation for successful interventions. Research shows that measures to reduce absenteeism and a faster return to work are mostly organizational in nature. Therefore, these are mainly management tasks. Article present an array of interventions that are supported by various studies and recommendations by several European government and non-government organisations that demonstrate efficiency by reducing the amount of absence and facilitate an early return to work. The study verifies perception of suggested interventions between the Slovenian workforces.

**Keywords:** Prevention of Health Problems, Return to Work, Vocational Rehabilitation, Worksite Intervention

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## 1. Introduction

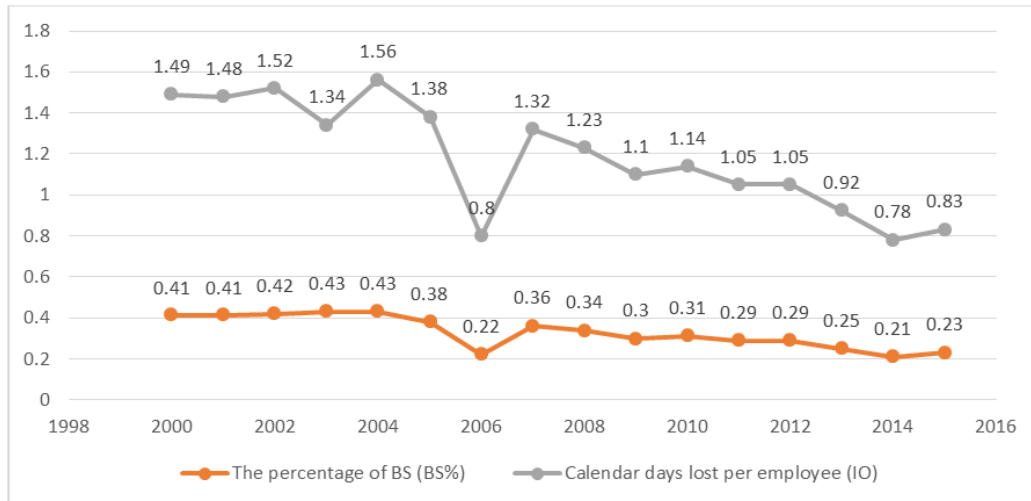
European Agency for Safety and Health at Work (EU-OSHA) in the years 2016 and 2017, organized campaign "Healthy workplaces for all generations." The main message of the campaign is to have safe and healthy working conditions throughout working life good for workers, business and society as a whole. European workforce is shrinking and ageing. During the last two decades, the official pension age has been rising all over Europe. However, this does not mean that all people actually work up to these higher ages. Many workers still leave the labour market well before reaching the official pension age and in many countries, the employment participation of older workers is relatively low. Too many workers think that they will not be able to do their current job when they will be 60 years old. Find out more about the challenges of an ageing workforce. [1]

### 1.1. Work-Related Accidents

Work-related accidents have a huge impact on the individual, the employer and the state as sick absences incur costs for the employer and the state: a direct impact on the social security system and, indirectly, on productivity and competitiveness [2]. Estimates of the cost of work-related

accidents and diseases are between 1.8% and 6% of GDP [3]. International Labour Organization (ILO) estimates the costs at 5% of GDP [4], which does not include the cost of the early retirement. In Finland, the total costs are estimated at up to 15% of GDP. These expenses negatively influence sustainable development. It found a correlation between the competition of the national economy and frequency of injuries at work [5]. Countries with a smaller number of occupational injuries and a small proportion of sick leave are, therefore, more competitive. Data NIJZ (National Institute for Public Health) [6] shows the extent of the consequences of injuries at work in Slovenia based on indicators of sick leave. When comparing data on sickness absence in Slovenia we need to separate the data were collected before the 31. 12. 2012, since by that of the working injuries at work are to be classified as injuries on the way to work and on the way from work. In addition, different methodology NIJZ and the Health Insurance Institute of Slovenia (ZZZS), as the first record only over a three-day sick leave, while others among occupational injuries all sick.

Trend graphs share of sick leave (% BS) and disabling the index (IO) is the same as it is correlated values (corr = 0.98). Number of calendar lost days due to sick leave in the past 15 years in Slovenia is decreasing and in 2015 was 14.48 days i.e. 3.97% calendar days lost.



Source [6]

Figure 1. Lost calendar days in Slovenia.

## 1.2. Age Changes in Employees

The age structure of the active labour force is changing due to the rise in retirement age. The total population in the European Union between 2005 and 2030, the proportion

between the ages of 25 and 39 decreased by 20.1%, the proportion between the ages of 55 and 64 increased by 26.1%, which will have a direct impact on the share of these age groups active population.

Table 1. Projection of change in the proportion that the total population represents a particular age group between 2005 and 2030.

| Eurostat base scenario, EU-25 (in thousands) | 2005-2050        | 2005-2010      | 2010-2030       | 2030-2050       |
|--|------------------|----------------|-----------------|-----------------|
| Total population                             | -2.1% (-9642)    | +1.2% (+5444)  | +1.1% (+4980)   | -4.3% (-20066)  |
| Children (0-14)                              | -19.4% (-14415)  | -3.2% (-2391)  | -8.9% (-6411)   | -8.6% (-5612)   |
| Young people (15-24)                         | -25.0% (-14441)  | -4.3% (-2488)  | -12.3% (-6815)  | -10.6% (-5139)  |
| Young adults (25-39)                         | -25.8% (-25683)  | -4.1% (-4037)  | -16.0% (-15271) | -8.0% (-6375)   |
| Adults (40-54)                               | -19.5% (+19125)  | +4.2% (+4170)  | -10.0% (+10267) | -14.1% (-13027) |
| Older workers (55-64)                        | +8.7% (+4538)    | +9.6% (+5024)  | +15.5% (+8832)  | -14.1% (+9318)  |
| Elderly people (65-79)                       | +44.1% (+25458)  | +3.4% (+1938)  | +37.4% (+22301) | +1.5% (+1219)   |
| Very elderly people (80+)                    | +180.5% (+34026) | +17.1% (+3229) | +57.1% (+12610) | +52.4% (18187)  |

Source [7]

Historically, the countries of the European Union since the 70s until the end of the 20th century reduced the participation of older workers in the active population. Programs to support older workers included initiatives for early retirement and similar measures. In periods of high unemployment, countries are stimulate older workers to have used financial incentive offer for early retirement. Between 1995 and 2002, in the European Union 30% of workers aged between 55 and 64 years of early retirement [8]. Consequently, the proportion of active employees aged between 55 and 64 years in the European Union in 2005 only 42%, compared with 59% in the US and 62% in Japan.

In Slovenia, the share of employed persons aged between 55 and 64 years is even lower - in 2005 this was only 27.2%, so Slovenia has found itself in last place among the then EU25. The reason can be sought primarily in a relatively low retirement age and widespread early retirement during the difficult economic situation in the 90s.

The low level of employment among older workers represents a waste of individual life opportunities and social resources. Longer lifetime allows an individual to develop its

long-term potential. Successful employees older workers can be employed to improve their social status and are socially more active compared with the unemployed [8]. From an economic point of view, it represents an early retirement reduction of the inflow and the outflow of the Pension and Disability cashier, thereby endangering the stability of the social system.

Many experimental researches support the claim that worker efficiency declines with age. Physique 60-year-old is only about 75% of the muscle strength of 30-year-old, as well as between 30 and 60 years the efficiency of the cardiovascular system is reduced by 30% [9]. Speed, flexibility, endurance, strength and coordination to reach its peak during adolescence and early adulthood, and then slowly at first, and after 40 years of rapid decline. It also begins to deteriorate the quality of vision and hearing. Dropping the ability to solve new problems that require new ways of solving, but with age, not decreasing the ability to solve known problems that can be solved with existing knowledge.

Interpretation of these studies actually very little to say

about the effectiveness of specific older workers. The results of such based on the individual functions of the body, which in many cases are not relevant for effective work. Physical strength is not important when it comes to intellectual works. In addition, all of the physical parameters of the active 60-year-old can easily better than passive 30-year-old. Declining sensory function are in their daily work superseded by the use of the glasses and the hearing device [10].

A classic study typists, where young typists efficiency compared to a typist who are older than 60 years, reveals where such a difference between experimental research and research with the evaluation. Typists, older than 60 years were surveyed able to type much less characters per minute than their younger counterparts. At the same time were the source text to fellow able to read the original text long in advance, so they require less typing break. The survey found that the speed and quality of the transcribed material there were no significant differences between young and older typists [11].

The survey responsible for human resources management confirms this thesis. Two-thirds of respondents believe that there are no significant differences between the performance of young workers and those older than 50 years. Some properties, empirical knowledge and work ethic or discipline and awareness of quality for example, responsible identified as key benefits for older workers. Other features, the ability to learn, cope with stress and desire to learn for example, on the other hand identified as key strengths of younger workers. They are responsible as key features they are looking for in their professions are also provided and work ethic or discipline and awareness of the quality, which are properties that have been attributed to senior staff [12].

However, aging often accompanies by an increase in development disorders, chronic and acute diseases and other health problems that lead to functional limitations or incapacity to work. Chronic diseases such as heart disease, stroke, cancer, diabetes and depression, are becoming a growing problem of older workers [13]. Health problems related to work, such as musculoskeletal disorders and mental disorders are a major source longer sick leave and disability retirement. Such long-term sick leave and disability retirement affect employers (loss of skilled worker), workers (curtailment of monthly income) and government (payer shift in social funds to the recipient's social spending). For all these reasons, it makes sense preventive action to reduce long-term sick leave and early retirement. This is a key part of the organization in a way that limits the causes of disease with long-term consequences and older workers actively work to retirement provided. When preventive measures are not possible, an employee with a chronic disease after a period of sick leave may make the return to work measures changes his job or duties.

### **1.3. Inability to Work**

The definition of incapacity for work and the associated understanding of the problem in Slovenia and abroad is not uniform. Due to individual, social and contextual factors is

the universal definition that would be applicable to all people in all situations is impossible. Disability, which can hinder or impossible to work in certain areas, it may be completely unobtrusive to other areas. Research has shown that a shift in the perception of inability to work and return to work. Instead of focusing on purely physical effects, a comprehensive framework that takes into account the substantive effects.

Occur two key model definition of disability, biomedical and biopsychosocial model later. In the biomedical model, individuals who are unable to work, raised medically diagnosed, their disease is associated exclusively with physical pathology. In this perspective, the inability to work is entitled to pain relief or treatment of disease, which prevents the ability to work [14]. ICF (International Classification of Functioning, Disability and Health) is based on a biopsychosocial model that contains both biomedical and social views. The process of return to work in the biopsychosocial model takes into account the interaction between biological, psychological and social component of an individual's ability to work [15].

Unlike previous, theoretical models, the model Sherbrook operational model, which was created because of studies carried out in the district of Sherbrook in Canada [16]. Sherbrook is based on a biopsychosocial perspective and can help in the development or verification measure, program, policy or practice in the field of rehabilitation and occupational medicine. The aim of the entry into force of the model Sherbrook's early return to work through the inclusion of workplace treatment programs. Research shows that such an approach is the inclusion of workplace treatment programs more successful than traditional health measures to reduce absenteeism and preventing incapacity for work among workers with MSDs (musculature skeleton desires).

## **2. Method**

Based on theoretical considerations, it was conducted the pilot online survey, carried out by 145 randomly selected respondents. The selected questions based on the measures presented in the next section, but they are also questions as possible answers recorded in secular form, to understand the full spectrum of respondents. The first part of the survey included questions on demographics (gender, seniority, education, size of company, type of work environment). The second part of the survey consisted of questions about being at the workplace (being, confounding factors), awareness of the adverse factors, the perception of enforcement measures to reduce absenteeism and early return to work in their company and their motivation to reduce sick leave in the event of force individual measures.

An online survey was conducted between September 1, 2016 and September 10, 2016. Respondents were invited to solve a survey through social networks (Facebook, e-mail group), in order to obtain the most demographically diverse respondents. The survey was completed by 145 respondents, 49% of men and 51% of women, with a working life of 10

years (46%), a work life of 11 to 20 years (36%) and the working life of over 21 years (18%). 7% of respondents have secondary vocational (level IV) or lower education, 37% of respondents have high school or secondary technical education (level V), 19% of respondents have tertiary education (level VI), 19% of respondents have tertiary education or completed first Bologna level (level VI) and 32% has a specialization of the higher program, university or finished second Bologna level (level VII), and 5% of respondents have MSc or Phd (level VIII). The majority, 69% of respondents work in the office, 14% of them work performed outside the premises of the company, while 9% work in small workshop and 8% in industrial production. 10% of respondents are self-employed, 17% work in micro-enterprises (0-10 employees), 23% of them work in small enterprises (10-50 employees), 29% of them work in medium-sized companies (50-250 employees) and 20% of respondents carry out work in large companies (over 250 employees). [17]

### 3. Results

Employers and health systems have a number of measures, which describes a theory. The solutions offered by theory are trying to be explored among Slovenian workers. [17]

#### 3.1. Communication and Coordination

Research shows that communication, cooperation, and jointly agreed objectives between workers, employers and primary health key in improving health at work [18]. The importance of communication between all participants in the process of return to work are confirmed by other studies [14] [19] [20]. It is important that communication between employers and primary health care extremely cost-effective measure that allows a net saving both the employer and the health fund, coordination could significantly reduce the cost

of return to work [20] [21].

On the question which measures the return from sick leave are present in the company of the respondent, 25% of respondents answered that this is a conversation with the supervisor on improving disturbing factor.

It is worth comparing the detected measures depending on the size of the company. Micro (0%) and small (3%) on the way back to employee absenteeism, according to the respondents are not ready to adapt the workplace or to buy equipment to reduce physical stress. Micro enterprises are significantly more willing to shorten working hours (24%).

#### 3.2. Early Return to Work

Empirical studies support the promotion of an employee to return to normal activity by the medical staff in the acute phase of incapacity for work, between the 3rd and 4th week of the beginning of the sick [14]. Studies prove that most people can return to work after a few days or weeks of sick leave, even if the symptoms are still present and the worker still feels the pain [22]. Studies show that early return leads to shorter sick leave in the year following his return to work, but it is not known whether this is due only early return to work or early return to work in combination with other components of the measure [18].

The importance of early intervention emphasizes a number of studies. The evidence is particularly strong in the case of back pain, but it is assumed that the same principle can also be used in many other medical conditions. [23]

The multidisciplinary approach also takes into account health, personal as well as a component of the workplace. Multidisciplinary approach biopsychosocial approach to work-related and can be an effective and cost-effective in reducing absenteeism [30] [22]. Multidisciplinary approach shortens the time of return to work, reducing the occurrence of some physical diseases and mental illness majority [29].

Table 2. Motivation of respondents to less sick leave benefit.

| Motivation of respondents   | Part of respondents |
|---|---------------------|
| Behaviour that project or task work without them can not be completed                               | 45%                 |
| Respondent company would offer an additional active vacation  | 24%                 |
| Shorter working hours   | 23%                 |
| Order the respondent received financial stimulation   | 21%                 |
| The company understanding of the individual needs of the respondents)                               | 21%                 |
| The company will ergonomically adapt workplace or would provide equipment to reduce physical stress | 17%                 |
| To enable the respondent employer physiotherapy during the busiest time                             | 14%                 |
| Order the respondent had the opportunity to talk with the supervisor on improving disturbing factor | 13%                 |
| To sick pay was only half the net salary  | 10%                 |
| Order the respondent will be to a lighter job   | 10%                 |
| The respondent employer to receive training on safe work  | 4%                  |
| Respondents would be less sick leave if they know that they will be at home to check controller.    | 1%                  |
| Respondent's sick leave would not be waived under any circumstances                                 | 20%                 |

Among the staff of more than 20 years, the motivation distributed differently:

Table 3. Motivation of respondents employed more than 20 years.

| Motivation of respondents  | Part of respondents |
|--|---------------------|
| Faster to return to work due to the project or workflow that without them can not be completed | 54%                 |
| If they offer part-time  | 28%                 |
| They return less interested if they offer additional vacation                                  | 18%                 |
| They would post ergonomically adapted  | 11%                 |

Comparing motivations of respondents with more than 20 years of service with the average respondent show that older respondents are more motivated to less use of sick leave, if the project or process without them not were completed (50%). They are less motivated than the average respondent is, if they receive financial stimulation (15%) and significantly, less motivated than the average respondent if he could offer additional vacation, reduced working hours or he would ergonomically adapted workplace or. provide him with equipment to reduce physical stress. On the motivation of respondents with more than 20 years of service does not affect sick pay, which is only half of the net salary, or fear of the arrival controller.

Motivation of respondents for soon return from sick leave are not significantly different motivations to sick leave benefit less. Faster to return to work due to the project or workflow that without them will not be completed (54%) and if they offer part-time (28%), while the return less interested if they were offered an extra break (18%) or to their workplace ergonomically adapted (11%).

There is a general belief that a clearly defined business strategy in terms of safety at work and promoting the return to work, which are actively involved managers, can reduce sickness absence; but research confirms this claim only to a limited extent [24].

The measures in the workplace

Moderate evidence suggests that temporary allocation lighter tasks [25] [18] [26], adapting the workplace [19] [22] [27], the adaptation of work processes, including the organization of work [28], reduces the number of sick leave and It accelerates the return to work. Such measures are usually inexpensive and can be very cost effective.

On the question of preventive measures, respondents perceive in their company, by 24% reply that their company has a clearly defined policy of return to work after the completion of sickness.

### 3.3. Continuous Control of Ergonomic Adjustments Jobs

Moderate evidence suggests that the constant supervision of the ergonomics of the workplace significantly reduce sick leave and is highly cost-effective measure [20] [26]. Control of the ergonomics of the workplace, including an analysis of the work-injured workers to improve workplace accelerate the return to work [27]. Control of ergonomics, which leads to the improvement of office furniture, also affects the speed of return to work [29].

Their company performs inspections ergonomic workplaces and introduce improvements answered 8% of respondents, and 6% of respondents answered that they have in the company available to a person or a program that allows them individual advice on the conduct of sick leave and returning to work. Their company has not detected the implementation of preventive measures stated 55% of respondents.

*Table 4. Ensuring ergonomic adaptation of the workplace.*

| Answers  |     |
|--|-----|
| company offers ergonomic adaptation of the workplace (ergonomic furniture, etc.) | 19% |
| temporarily shorter working hours after returning to work                        | 15% |
| their company offers temporary transfer to easier job                            | 14% |
| their company offers training  | 13% |
| the company offers an additional active rest                                     | 12% |
| their company offers physiotherapy during working hours                          | 8%  |
| their company provides vocational rehabilitation.                                | 5%  |
| their company does not carry out measures when returning from sick leave stated  |     |

### 3.4. Measures to Reduce Absenteeism

Programs to improve physical fitness, pledged to improve the individual's neurological, musculoskeletal and cardio-pulmonary functioning, proven to reduce the number of sick leave. Such programs have been shown effective in combination with cognitive and behavioural programs that address the patient's perception of pain, its goals and potential negative reflection on the course of the disease [28].

Their company subsidizes physical exercise answered 21% of respondents.

86% of respondents in the workplace feels good but only 33% in the workplace does not bother. With 35% of respondents annoyed corporate executives, 19% of respondents annoyed hours, 17% of respondents interfere with inadequate working space, 14% of respondents interfere with co-workers, 13% of respondents interfere with inappropriate equipment, as well as 13% of respondents disturbed by the noise and 13% of respondents interfere with other disorders. Workers with more than 20 years' service than the average population differ in that they are much less bothered executives (12%), employees (8%), inadequate working hours (12%) and noise (4%), above average deviate from the answer "other", but none of the respondents did not specify what people define as "other".

On the question of preventive measures, respondents perceive in their company, by 24% reply that their company has a clearly defined policy of return to work after the completion of sickness. Their company subsidizes physical exercise answered 21% of respondents. Their company performs inspections ergonomic workplaces and introduce improvements answered 8% of respondents, and 6% of respondents answered that they have in the company available to a person or a program that allows them individual advice on the conduct of sick leave and returning to work. Their company has not detected the implementation of preventive measures stated 55% of respondents.

On the question which measures the return from sick leave are present in the company of the respondent, 25% of respondents answered that this is a conversation with the supervisor on improving disturbing factor. The company offers ergonomic adaptation of the workplace (ergonomic furniture, etc. ) or offer additional equipment to reduce physical load (automatic crane in a warehouse, etc.),

answered 19% of respondents. It is temporarily shorter working hours after returning to work answered 15% of respondents. 14% of respondents answered that their company offers temporary transfer to easier job, 13% of respondents answered that the company offers training, 12% of respondents answered that the company offers an additional active rest, 8% of respondents answered that their company offers physiotherapy during working hours and 5% of respondents answered that their company provides vocational rehabilitation. Their company does not carry out measures when returning from sick leave stated 46% of respondents.

#### 4. Analysis of Survey Results

An essential part of the research is to review the use of proven measures to reduce absenteeism and quicker return to work in Slovenian companies and workers' motivation to reduce sick leave in case of application of these measures.

Early communication between employers and employees significantly reduce the length of sick leave. Only 6% of respondents stating that they are in the company or person available. Program, which provides advice on the conduct of sick and return to work, 25% of respondents, stated that their company part of the return to work of a conversation with the supervisor on improving disturbing factor.

Early return to the workplace leads to a reduction of sick leave in the year following his return to work. Only 20% of respondents and only 15% of respondents with more than 20 years of service are not prepared to return to work prematurely, notwithstanding the measures taken by the company. Only a small proportion of workers and a negligible proportion of workers with more than 20 years of service to the sick leave benefit less because of the low amount of sick pay or fear verification controller. An encouraging fact is that the employer may impose the majority of respondents willing to return to work early in the case of measures that.

On the other hand, 55% of respondents in their companies did not detect preventive measures to reduce sick leave and 46% believe that their company will not implement measures to accelerate the return to work. Other companies implement one or more measures for early return to work - smaller companies here have moved forward with flexible working hours and layout to better job, bigger companies but with ergonomic adjustments, education and active breaks.

The gap between the willingness of workers to early return to work, which has proven successful in reducing absenteeism and the willingness of employers to support the early return of the relevant programs, there is an obvious and shows that employers Early return to work are paying too little attention.

#### 5. Conclusion

Although some of the effects, in particular multidisciplinary measures poorly understood, is a set of

proven effective measures sufficient for the introduction of these measures into national strategies in companies and primary health care. The task of national decision-makers is that their strategies include collaboration among all stakeholders, particularly between employers and primary health care. The task of employers is that their organizations introduce processes that will prevent health problems throughout their professional lives.

Slovenian employers are much less make use of effective measures to reduce absenteeism, even in the case where measures are proven cost-effective. The survey results show that the main motivation of employees to reduce absenteeism are not financial nor the fear of an inspection service, but you mainly want more cooperation and understanding employer to their problems and the resulting adaptation of the workplace.

The survey results confirm the already known fact that older workers despite eroding the mental and physical abilities, some properties, which may be workers that are more desirable: demonstrate greater loyalty and higher work ethic than their younger counterparts. It is therefore important that the government and employers to take into account their concerns, which are the consequences of aging and aging-related diseases and injuries, as well as maintain healthy workplaces for all ages.

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#### References

- [1] EU-OSHA, Kampanja 2016–2017: Zdrava delovna mesta za vse generacije, 2016. <https://healthy-workplaces.eu/sl>. (September 10, 2016).
- [2] M. Pavlič, B. Kodrič in M. Markič, Vpliv poškodb pri delu in bolniške odsotnosti na trajnostni razvoj, Management & Safety 2016: Sustainable development and safety, Vrtnjačka Banja, 2016.
- [3] J. Takala, M. Urrutia, P. Hämäläinen in K. Saarela, The global and European work environment - numbers, trends, and strategies, Scandinavian Journal of Work, Environment & Health Supplements, 2009.
- [4] ILO, General survey concerning the occupational safety and health convention, 1981 (No. 155), the occupational safety and health recommendation, 1981 (No. 164), and the Protocol of 2002 to the occupational safety and health convention, 1981., ILO, Ženeva, 2009.
- [5] CEC, Adapting to change in work and society: A new Community strategy on health and safety at work 2002-2006, CEC, Brussel, 2002.
- [6] NIJZ, Podatkovni portal, 2016. <https://podatki.nijz.si/pxweb/sl/NIJZ%20podatkovni%20portal/>. (March 21, 2017).
- [7] European Commission, Communication from the Commission, Green Paper, Confronting demographic change: a new solidarity between the generations, COM, Brussel, 2005.
- [8] M. Morschhäuser in R. Sochert, Healthy Work in an Ageing Europe: Strategies and Instruments for Prolonging Working Life, European Network for Workplace Health Promotion, 2006.

- [9] E. Grandjean, *Physiologische Arbeitsgestaltung, Leitfaden der Ergonomie*, Thun, 1979.
- [10] J. Petrenz, *Alter und berufliches Leistungsvermögen*, Frankfurt am Main, 1999.
- [11] T. A. Salthouse, *Theoretical perspectives on cognitive aging*, Hillsdale, New Jersey, 1991.
- [12] L. Bellman, M. Hilpert, K. Ernst in J. Wahse, *Herausforderungen des demografischen Wandels für den Arbeitsmarkt und die Betriebe*, Mitt AB, 2003.
- [13] I. Varekamp in F. vanDijk, *Workplace problems and solutions for employees with chronic diseases*, Occupational Medicine, 2010.
- [14] D. Dunstan in T. Covic, *Compensable work disability management: a literature review of biopsychosocial perspectives*, Australian Occupational Therapy Journal, 2006.
- [15] G. Waddell in A. Burton, *Concepts of rehabilitation for the management of low back pain*, Best Practice & Research: Clinical Rheumatology, Izv. 19(4), 2005.
- [16] P. Loisel, L. Abenhaim, P. Durand, E. J. M., S. Suissa in L. Goselin, *A population-based randomized clinical trial on back pain management*, Spine, 1997.
- [17] M. Kermavner Kolman, *Preprečevanje zdravstvenih težav skozi celotno poklicno življenje*, Diplomsko delo. Mentor: J. Šrekl, FKKT, Ljubljana, 2016.
- [18] G. Wadell, A. Burton in A. Kendall, *Vocational Rehabilitation: what works, for whom, and when?*, Department for Works and Pensions, UK, 2008.
- [19] C. Carroll, J. Rick, H. Pilgrim, J. Cameron in J. Hillage, *Workplace involvement improves return to work rates among employees with back pain on long-term sick leave: a systematic review of the effectiveness and cost-effectiveness of interventions*, Disability and rehabilitation, 2010.
- [20] R. Franche, R. Baril, W. N. M. Shaw in P. Loisel, *Workplace-based return-to-work interventions: optimizing the role of stakeholders in implementation and research*, Journal of occupational rehabilitation, 2005.
- [21] S. Schandelmaier, S. Ebrahim, S. Burkhardt, W. de Boer, T. Zumbunn in G. Guyatt, *Return to work coordination programmes for work disability: a meta-analysis of randomised controlled trials*, PloS ONE, 2012.
- [22] EU-OSHA, *Work-related musculoskeletal disorders: Back to work report*, Office for Official Publications of the European Communities, 2007.
- [23] G. Waddell in A. Burton, *Concepts of rehabilitation for the management of common health problems*, The Stationery Office, London, 2004.
- [24] G. Waddell in A. Burton, *Occupational health guidelines for the management of low back pain at work — evidence review*, Occupational Medicine, 2001.
- [25] G. Waddell in A. Burton, *Occupational health guidelines for the management of low back pain at work — evidence review*, Occupational Medicine, 2001.
- [26] E. Tompa, C. de Oliveira, R. Dolinski in E. Irvin, *A systematic review of disability management interventions with economic evaluations*, Journal of Occupational Rehabilitation, 2008.
- [27] R. Williams in M. Westmorland, *Perspectives on workplace disability management: a review of the literature*, Work, 2002.
- [28] P. Bongers, S. Ijmker, S. van den Heuvel in B. Blatter, *Epidemiology of work related neck and upper limb problems: psychosocial and personal risk factors (part I) and effective interventions from a bio behavioural perspective (part II)*, Journal of occupational rehabilitation, 2006.
- [29] N. Hoefsmits, I. Houkes in F. Nijhuis, *Intervention characteristics that facilitate return to work after sickness absence: a systematic literature review*, Journal of Occupational Rehabilitation, 2012.
- [30] M. Gabbay, L. Taylor, L. Sheppard, J. Hillage, C. Bamba in F. Ford, *NICE guidance on long-term sickness and incapacity*, The British journal of general practice: the journal of the Royal College of General Practitioners, 2011.

## Biography



**Jože Šrekl:** Asist. Prof. Ph.D. Jože Šrekl was university teacher in the Technical Safety Section of the Faculty of Chemistry and Chemistry Technology, University in Ljubljana. There he was busy with applications of statistical methods of security and fire safety. He published five important science articles in the world magazines as the

first author; he co-worked in three bigger international conferences and many conferences with international participation. He is an author of some university textbooks and a reviewer (critic) of some textbooks, monographies and articles. He is retired from 1st October 2015.