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# **Smoking Cessation Counselling: What Makes Her or Him a Good Counsellor? Can Counselling Technique Be Deduced to Other Important Lifestyle Counselling Competencies?**

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## **Abstract**

Smoking is a major health concern in both developed and developing countries. Smoking cessation counselling is of major importance for health care providers such as physicians, psychologists, nurses and many further therapeutic workers. We recently have demonstrated feasibility of a 4-hour "student-to-student course" (1 hour of scientific background and 3 hours of role plays and intervision) that provided knowledge, skills and attitude to smoking cessation counselling. A key question remains whether such knowledge, skills and attitude can be further deduced to key public health or lifestyle counselling areas like body weight management in overweight persons, management of addictions like alcohol and substance or situation (e.g., Internet and shopping) abuse, management of physical activity/exercise or lifestyle modification like workaholic lifestyle. The authors try to develop such a base for enabling patients to adapt healthier behaviour and give objectives for such counselling situations including the elaboration of clear therapeutic aims for counsellors.

**Keywords:** smoking cessation counselling, medical education, curriculum, communication skills, motivational interviewing, knowledge, skills, attitude, tobacco cessation education, exercise, physical activity, overweight, compulsive buying, compulsive gambling, workaholism, sleep

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## 1. Introduction

The health sector is increasingly changing from a disease model to a health model. Salutogenesis is a term coined by Aaron Antonovsky, a professor of medical sociology. The term describes an approach focusing on factors that support human health and well-being, rather than on factors that cause disease (pathogenesis) [1]. It has become just as important to consider levels of vitality and healthfulness as degrees of impairment and disability. The quality of our health is strongly influenced by lifestyle habits [2]. The probability of illness and death is directly related to our lifestyle and health behaviour, including tobacco use, nutrition, physical activity or inactivity, alcohol consumption, drug use, sexual behaviour and so forth [3]. Hypertensive and coronary heart disease are in important part related to dietary patterns, smoking, sedentary lifestyle at work and in leisure time [4].

Because lifestyle habits play a central role in influencing the state of health of each individual, the effectiveness of future treatments may greatly depend on the extent to which patients and clients are involved in improving their state of health by actively changing their health habits. Although it can be interpreted discouraging to realize that our behaviour contributes directly to today's health problems, it can also be empowering to know that we can significantly improve the health of our patients and society at large by encouraging them to participate in healthy lifestyle habits [5]. Due to our profession, health professionals such as physicians, psychologists, nurses and physiotherapists come across a large number of people with negative and unhealthy lifestyle behaviour within a therapeutic framework. We can give individual, repeated advice and support to our patients [6]. Performing early intervention to reduce chronicity, increasing intervention rate and improving the quality of counselling could help many more people: probably there is no field of medical education and preventive medicine that contributes to a higher level of health, saves more lives and reduces medical costs than lifestyle changes [7].

Although attention is focused on the risks of unhealthy habits in professional literature and public media, information alone is often not enough to change a patient's behaviour. To get rid of or change deeply rooted negative lifestyle habits, it often requires professional help. Physicians and health professionals frequently pay limited attention to changing the unhealthy habits of patients. They provide information and point out the negative consequences and appeal to the rationality and good intentions of the patients. Knowledge of the risks of unhealthy habits and good intentions to change are only a prerequisite but not enough to change unhealthy habits for most patients. The traditional "fix-it" role of the general practitioners may be sufficient for the minority of patients who are ready to change, but it is only the first of many steps needed for the majority of patients who are reluctant or ambivalent

about the change [8]. Unfortunately, the dominant but unspoken Cartesian reductionism of modern medicine that views the body as a machine and medical professionals as technicians whose job is to repair that machine is not effective in this field [9]. The existential philosophy of Martin Buber is a milestone in developing the inherent asymmetric clinician-patient interaction towards healing relationships. For Buber, relationship and dialogue are not issues for medicine; rather, medicine is a matter of relationship and dialogue. Healing relationships start from a more symmetrical attitude valuing patient's contribution and power. An abiding commitment to appreciate and foster patient's own competencies and self-confidence leads to a relation based on trust and hope. Hence, building up a healing relationship is mandatory for the patient to become a co-producer of his or her health [9].

However, a problem with smoking cessation is physicians' inadequate preparation for the treatment of cigarette-dependent patients. Special training in smoking counselling to improve the efficiency of medical interventions can increase the frequency and quality of smoking cessation [10] and is often meaningful as a mandatory, targeted and practical training course [11]. WHO guidelines recommend that all health professionals, including students in medical training programmes, should receive education in tobacco use and addiction treatment. Many students in the medical field have nevertheless received inadequate training in the treatment of tobacco consumption and addiction [12]. We therefore developed and evaluated an efficient 4-hour smoking cessation counselling workshop for medical students that will be in the first part be presented in this chapter. It is an easy-to-implement course. As discussed later, much content may also be adapted to other unhealthy lifestyle behaviour counselling situations.

Every switch from a pathogenesis-oriented "patient management" to a "resource integrating salutogenetic mode of patient counselling" requires a fundamental change in the attitude and the role behaviour of health professional towards the patient during the consultation. Digging only for failures and pathology is frequently not helpful. For building up relational trust and needed energy for difficult change processes, it becomes mandatory to build up resources from patient's experience of earlier attempts and by this appreciating and integrating them. This shift of focus might be even more difficult as all pathogenetic distractors may seduce students and health professionals alike to switch back in a traditional top-down or directive role, which may be less helpful in enabling patients to intrinsically change to a healthier lifestyle.

Our chapter is aimed to give students, physicians and other health care professionals an introductory overview on the role of lifestyle behaviour that may affect the health of their patient or clients: be it smoking, be it another subject, to be best prepared to encourage, influence and motivate lifestyle changes.

## **2. An educational basis: a 4-hour smoking cessation counselling workshop for medical students was performed and evaluated**

Behavioural and pharmacological interventions in combination with professional counselling seem necessary to improve smoking cessation rates. In order to ensure benefit, effective courses on preventive medicine content are needed in the curricula of medical students.

Only a part of medical students and later also few physicians and other therapists receive formal training in smoking cessation [13, 14]. Fear and the feeling of being ill-prepared for practice are common for medical but less for psychology students [15]. In order to satisfy the importance of smoking in practically all areas of medicine, a 4-hour comprehensive smoking cessation course was offered for the first time in 2006 at the Medical Faculty of the Saarland University in Homburg/Saar, Germany. The course was thoroughly evaluated, and its results were published [16].

### **2.1. Description of the course**

The course is a compact, comprehensive and interactive 4-hour smoking cessation course for medical students with the aim of teaching students how to offer smoking cessation counselling tailored to the individual willingness and motivation of the smoker including pharmacological therapy. Conducted by a doctoral student, it is thus a course “by medical students for medical students”, with full-time supervision by a medical expert with smoking-specific medical education and many years of experience in the field of smoking counselling. The course consists of an introductory theoretical part (1/4) and a practical part (3/4) and is based on the stages-of-change model of Prochaska et al. [17]. This is an evidence-based model of behavioural change that has been developed and tested over the past decade relating to smoking cessation [18]. The theoretical part included a presentation and relevant literature on communication, changes in health behaviour and smoking cessation. In the practical part, the theoretical basics were trained by role plays. Each student received a case report corresponding to a phase of the six stages of change of Prochaska and DiClemente. The counselling interview was played and learned in the form of a role playing according to the “stages-of-change model” by Prochaska and DiClemente, once being the patient and once being the therapist at any stage situation. Depending on the stage, a certain approach is efficient and may therefore be optimal for a successful counselling. Each case was discussed after the role playing, and one received the direct feedback from the students, the doctoral student and the supervisor. The course was voluntary and could be attended by all medical students.

### **2.2. Evaluation of the course**

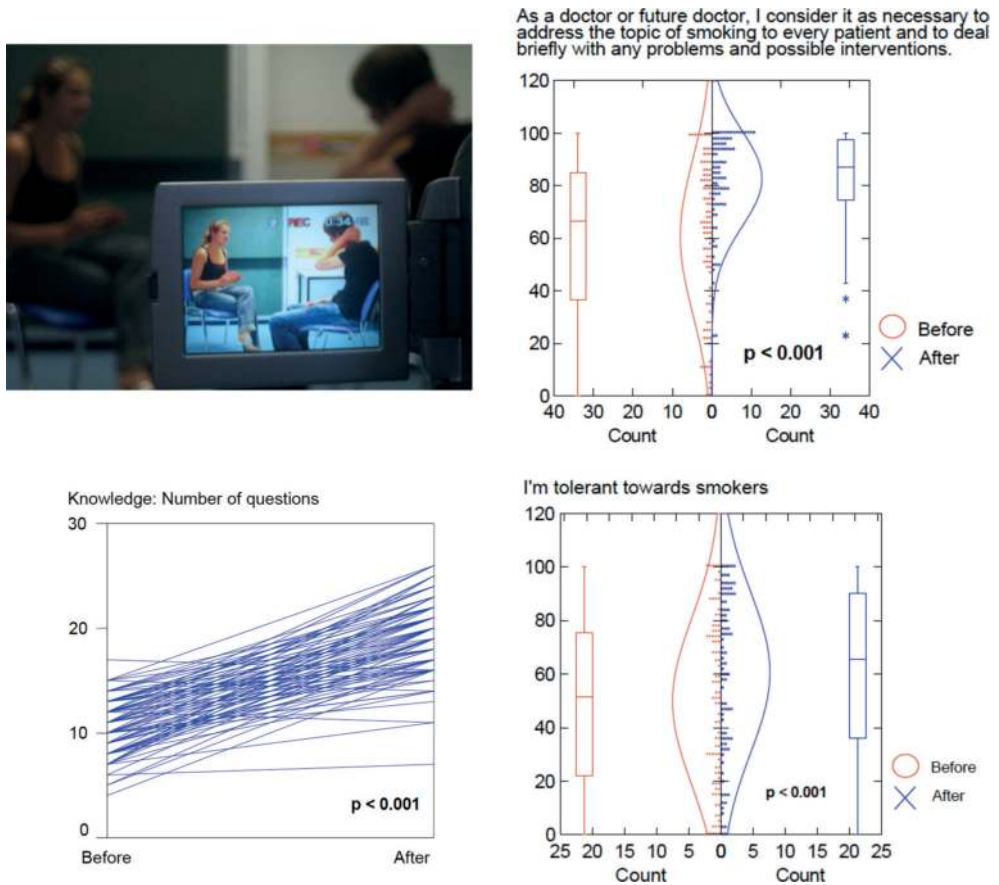
For the evaluation of the course, pre-course and follow-up assessments (4 weeks after the course) were carried out in five courses with a total of 87 students. Questionnaires and video recordings were blindly evaluated to examine the outcome regarding the competence of the students who attended the course. For the purpose of an efficient training methodology and an appropriate evaluation of the topic of smoking cessation, competence was differentiated into the components “knowledge”, “skills” and “attitude” [19] as discussed in more detail in Chapter 3. Another part of the evaluation was the anonymous course valuation directly after the course, which all students completed to optimize future courses.

### **2.3. Effectiveness of the course**

The study confirms that a compact comprehensive 4-hour interactive smoking cessation workshop for medical students is effective in terms of a profound short-term effect on the participants’

counselling abilities. Significant and relevant increases in the competence dimensions of medical students (knowledge, skills and attitude) were measured for successful patient-centred smoking cessation counselling. Knowledge of smoking counselling and smoking cessation has been significantly ( $p < 0.001$ ) and clinically relevantly (Cohen's  $d = 2.7$ ) improved by 81% (see **Figure 1**, bottom left), as also reflected in the subjective anonymous feedback. The sum of the skills was also significantly ( $p > 0.001$ ) and relevantly (Cohen's  $d = 1.3$ ) increased by the course.

In detail, significant gains were observed in the investigation of the motivation to quit smoking, in recommendations for stopping smoking, and suggestions for practical strategies to facilitate smoking cessation and prevent relapse. The evaluation of the duration and amount



**Figure 1.** Upper left: assessment of student with a figured patient. The film material was analysed in a blinded fashion to the situation before or 4 weeks after the student course. Lower left: improvement of knowledge according to question scores before and 4 weeks after the course. Upper right: improvement of attitude to address smoking in any consultation before and 4 weeks after the course: a huge shift towards addressing the problem of smoking is observed. Lower right: the course changed another attitude, it led to more tolerance towards smokers.

of tobacco consumption was determined more adequately, and the encouragement of the patient to reflect on present smoking behaviour was driven by the elaboration of arguments for and against smoking. Increased information was provided on smoking cessation and withdrawal process, and nicotine replacement therapy and support were offered for smoking cessation by arranging further appointments.

The attitude of the students changed significantly ( $p > 0.001$ ) and relevantly (Cohen's  $d = 0.5$ – $1.3$ ) in a positive direction. Tolerance, emotional understanding of dependency, respect, sense of responsibility, and interpersonal relationships have been enhanced by the course (see **Figure 1**, upper and bottom right).

The most important results may be this remarkable shift in attitude, probably most influencing in the long-term behaviour towards patients. The course seems highly effective in promoting future physicians' ability in smoking cessation counselling and thus in the long-term retention of medical students' preventive medical competence. The stage-of-changes model proved advantageous for promoting behavioural change in addiction. Such trained competences may foster general counselling competences in further areas as discussed later [20].

### **3. The competence concepts of knowledge, skills and attitude and their role in counselling**

Competence in medicine is defined by various authors as “the usual and reasonable use of communication, knowledge, technical skills, clinical thinking, emotions, values and reflection” [21] or “medical knowledge, care for the patient, professionalism, communication and interpersonal skills, practice-based learning and improvement of what has been learnt” [22]. There are many definitions of the term “competence”, but in the end, it amounts to the same concept. It depends on a person's ability to adapt the own abilities to requirements and tasks and to cope with a certain situation. Thus, competence is context-dependent.

#### **3.1. Knowledge: the network of necessary facts we need for professional work**

What kind of knowledge is important for smoking counselling? Based on the evaluation points of the smoking counselling interviews in Swiss courses [23, 24], the knowledge questions examined in the study by Purkabiri et al. relate to a basic knowledge of the procedure for counselling, the steps leading to a smoking stop and its effects, cigarettes, nicotine and nicotine replacement therapy [16]. Knowledge is therefore the basis for finding well-founded arguments, identifying the right time for a suitable strategy, drawing up an individual weaning plan and understanding the importance of smoking counselling.

The main topics in the courses of other studies are broadly similar to those of the smoking counselling course presented in this chapter [7, 25]. The contents refer especially to cigarette

smoking and the associated diseases, the pharmacology of nicotine and the medicinal and therapeutic treatment methods of cigarette addiction. The smoking counselling strategies based on the theories of Prochaska and DiClemente [26] and Humair et al. [6, 10, 23, 24, 27] were taught in the Homburg courses.

### **3.2. Skills: a basis to communication and efficient interaction for therapists**

Skills are defined as the abilities gained through learning, practice and experience. By using a good strategy to solve a particular problem, the performer responds appropriately to the task. Of course, there are many strategies, but the term “skills” includes selecting and applying the most effective ones. In the case of smoking counselling, it would be the choice and application of proven strategies for smoking cessation, which the doctor masters through practice and experience.

Skills consist of three main components:

- Awareness of goals or problems and understanding of all relevant factors: Recognizing that smoking presents a high health risk, the problems associated with it and the difficulties of weaning, and how they may be addressed.
- Choosing the reaction: making a decision: How do I react to the problem of smoking and how do I solve the problem of smoking counselling.
- Implementation of the selected strategy/reaction: It usually requires coordination and “timing” – consulting based on efficient strategies at the right time and in the right way.

Thus, the skills include communication factors, emotions and reflective thinking, as presented in the competence definition of other authors [21, 22]. The skills that should be taught in the courses correspond to the ability to give practical counselling to smokers. It is checked whether the student has addressed the most important points of the smoking counselling, such as the recognition of nicotine dependence, information on health and other consequences of smoking, nicotine replacement therapy and so on. Before a visible change of behaviour is possible, an inner sensitization, awareness and motivation process must take place in which the individual explores and sorts out his or her contradictory values, expectations and feelings (ambivalence). The successful handling of this ambivalence reflectively listening in the form of giving feedback what we have perceived and what the patient or client has said and encouraging to come up with possible own solutions or alternative behaviour, and thus, the dissolution of resistance to change is a prerequisite for lasting changes in behaviour (theory of “motivational interviewing” [28]). Elements of motivational interviewing can provide useful help in this important task of counselling. Motivational interviewing [29] is a direct, patient-centred style of counselling that encourages behavioural change by helping patients to explore and resolve their ambivalence [28].

Valuable therapeutic communication is virtually exclusively possible with empathy and symmetry: it is the door to therapeutic intervention. The above-mentioned imparting of empathy,

which is regarded as pivotal for motivational interviewing, is a skill aspect of medicine that has been sometimes in part neglected. Thus, it was crucial to promote this empathy in the courses.

The skills were evaluated, among other things, by video analyses of a counselling interview (see **Figure 1**, upper left). One advantage of the filmed sequences is the precise recording of different dimensions, such as the quality of counselling. The individual film sequences can be viewed as often as you like, and thus, different criteria such as attitude, body posture and facial expressions can be evaluated. Furthermore, video recordings offer the possibility of blinded evaluation, which was done in the study presented here. The examiner did not know whether the recording was before or after the course. In principle, simulated patients are being used much more frequently to test and evaluate the skills of a medical student [21, 30].

### **3.3. Attitude: the probable key to gain a significant patient relationship and thus patient self-efficacy to elaborate a perspective and reach an important aim**

Attitude means “spirit” or “perspective” for an assessment of topics, people and objects. This attitude consists of a cognitive and an emotional component. This mixture of opinions, beliefs and values has to do with respect for the individual and his or her socio-cultural environment, a strong sense of responsibility and care, empathy, patience, perseverance and trust in the opposite person as well as in himself or herself. The “attitude” changes in the course of life through different experiences [31]. For example, someone may have the competence to do a task but not the “attitude” to do it. In other words, being competent does not necessarily mean that you want to achieve something. Just because someone knows how to give advice to smokers [32] and has the skills to do so does not mean that they are necessarily interested in giving advice to smokers and are motivated to do so.

The question, therefore, arises whether health care professionals will use this competence in the future, that is, whether they will give advice to smokers. That depends on whether and how much sense they see in the counselling of smokers. It depends on their point of view, their attitude and their tolerance towards smokers and the recognition of the smoker as a serious person and smoking as an addictive disease. It also depends on whether they recognize the possibility and necessity of helping a patient. Attitude is subjective and based on emotions. It corresponds to what a person thinks and feels and what he or she is motivated to do. And precisely because the best competence is usually only put into practice when there is a correspondingly open, positive attitude towards patients who smoke, so much emphasis is placed on conveying attitudes in smoking counselling courses and measuring their change. In the discussions and in the role playing, the students were able to experience and live the attitude conveyed in the course, “to do everything for the smoker and do nothing against him/her”, which was well understandable and was ultimately adopted to a large extent. The remarkable change in attitudes resulting from a smoking counselling course can best provide positive outcomes in the long term, as it is likely that behaviour towards the patient is most strongly influenced in this dimension. Attitude is therefore extremely important in order to be able to apply an existing



competence and thus a prerequisite for a successful result. In the case of smoking counselling, the latter does not only mean the ultimate goal of stopping smoking but also every step towards weaning.

## **4. General concepts regarding behavioural change in lifestyle**

This chapter introduces concepts that are useful for advice. The concepts in this chapter are applied to smoking counselling, but they can also be used for counselling where other behavioural changes are in focus. At the end of the chapter, there is a handout that can be used as an overview and cheat sheet for the consultant.

### **4.1. The different motivational stages of smoking cessation**

Smoking is an addiction, and smoking cessation follows certain stages that merge into each other [26]. The doctor can help with this process, but the patient has to make the decision to quit smoking. The doctor can contribute to this decision by informing the patient using targeted strategies and arguments and leading the smoker to the next stage. This is already considered a success, and in some cases, when the smoker reaches a high level of motivation, the doctor can take the preparations for a smoke stop and accompany him/her.

During the cessation of smoking, the smoker experiences different stages of motivation. The different stages are described in the “stage-of-change” model of Prochaska and DiClemente [26, 33]. Depending on the stage, the probability of becoming a non-smoker increases.

The smoker is initially at the stage of carelessness (“pre-contemplation”), followed by the intellectual debate (“contemplation”) and the preparation (“preparation”). In order to help the smoker specifically with smoking cessation, the doctor must find out to what extent the patient is motivated to quit smoking. After that, the doctor can gradually guide him/her to the stage of action. Finally, the maintenance of abstinence after a smoke stop (“maintenance”) must be achieved, and a relapse must be avoided by successfully maintaining it [23] (see **Figure 2** and **Table 1**).

In our society, approximately 70% of patients are in the stage of pre-contemplation, 20% are in the stage of contemplation and about 10% are in the stage of preparation [33].

On average, a smoker needs several cessation attempts as “learning episodes” – up to seven times is not uncommon. Since passing through the various stages of smoking cessation process is a learning process, it is not a waste of time, but rather a further success. Ex-smokers are usually considered permanently smoke-free in studies after 1 year abstinence (**Table 2**).

### **4.2. Five major steps to intervention (the “5 As”)**

The following five As have proven their worth in smoking counselling. It is an easy to follow scheme that summarizes the practical smoking advice and can serve as an aide memoire (“cheat sheet”) during the counselling interview [34].

- *Ask*: Systematically ask smokers at each visit (since when they have been smoking, how much they smoke).
- *Advise*: Tell every smoker to stop smoking. Give him/her some good reasons in a short and concise way.
- *Assess*: Evaluate the patient's willingness to quit smoking.
- *Assist*: When the patient is ready to stop, help him/her. Develop a management plan together.
- *Arrange*: Arrange further appointments.

Every patient should be questioned about his or her smoking habits during a doctor's visit as discussed above. According to the guidelines, the doctor has to advise the smoker to give up smoking with clear and specific words. The following two sentences could be said in this regard: "It is important that you stop smoking immediately. I can help you." or "I am your

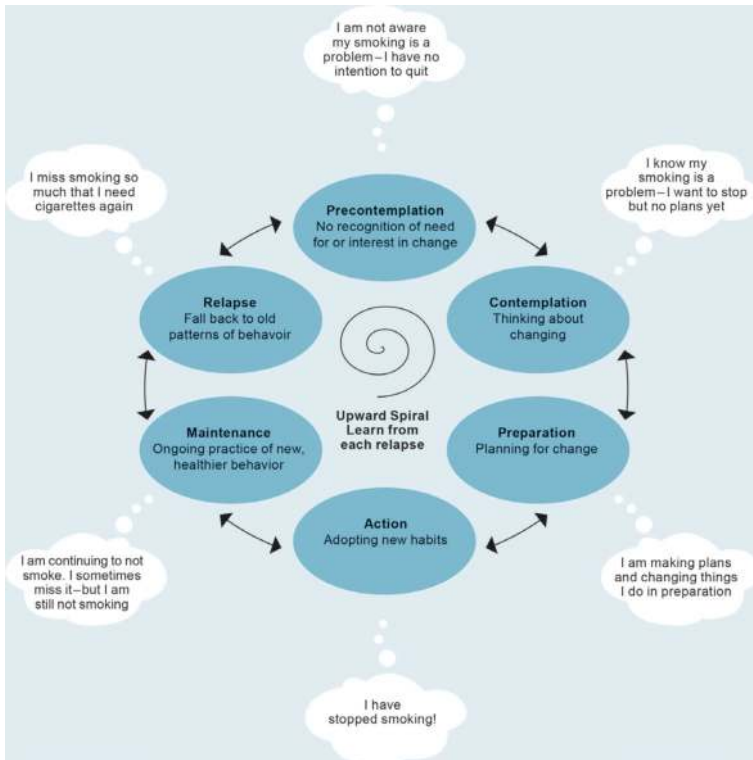


Figure 2. Stage of change model according to Prochaska and Di Clemente.

Stage	Definition	State
1. Precontemplation	No change planned for the next 6 months	Is currently against a smoke stop Is not very receptive to messages to stop smoking
2. Contemplation	Intention to make a change in the next 6 months	Is ambivalent: sees the advantages of stopping smoking but also of tobacco consumption
3. Preparation	Intention to make a change in the current month	The advantages of stopping smoking outweigh the drawbacks, seeking help and/or advice
4. Action	Smoke stop less than 6 months ago	Risk of relapse, patient actively tries to stay non-smoking
5. Maintenance	Smoke stop more than 6 months ago	Risk of relapse decreases, patient actively tries to stay non-smoking
6. Relapse	Step backwards from any stage to one of the stages 1-3	May contain characteristics of stages 1 to 3

**Table 1.** Characteristics of the smoking cessation stages [26].

1. Precontemplation	Minimal medical intervention, about 5 minutes: <ul style="list-style-type: none"> <li>- Raise the subject of smoking</li> <li>- Offer help, leave the decision to the patient</li> <li>- Rediscuss the topic again at the next appointment</li> </ul>
2. Contemplation	Short medical intervention, about 10 minutes: <ul style="list-style-type: none"> <li>- Enumerate "for and against" the smoking</li> <li>- Discuss barriers to a smoke stop</li> <li>- Offer help, leave the decision to the patient</li> <li>- Support in the form of a new appointment</li> </ul>
3. Preparation	Intensive medical intervention, about 15-20 minutes: <ul style="list-style-type: none"> <li>- Encourage and reinforce the decision of patients</li> <li>- Inform patients about the withdrawal process</li> <li>- Set a smoking stop date with the patient</li> <li>- Suggest to the patient to dispose of his smoking utensils and inform his environment</li> <li>- For strong smokers: Nicotine substitution or alternatives</li> <li>- Planning further consultations</li> <li>- In case of relapse: Identify positive aspects of the trial, identify reasons and suggest strategies to avoid relapse.</li> </ul>

**Table 2.** Objectives of the medical intervention [24].

doctor and must point out to you that stopping smoking is the most important thing you can do for your present and future health. I will support you in this.” The advice must be personal and tailored to the smoking person’s situation, health and social environment. For example, the danger to children can be mentioned [34].

### 4.3. The five Rs of motivation

Efforts to quit smoking will only be successful if the smoker has sufficient motivation and a strong will to stop smoking. In patients who are unwilling to quit smoking, the recommendation of a withdrawal program may be premature and has no effect. Details how to increase a patient’s motivation to quit using tobacco products are giving in motivational interventions. Motivational interventions can be divided into five basic types, or the five Rs: relevance, risks, rewards, roadblocks and repetition [35].

The five Rs are effective in increasing a client’s motivation to quit tobacco use. Using the five Rs, strategy gives clients the opportunity to express their motivation for quitting in their own words and provides the opportunity to tailor their responses to meet the specific needs of the client. The five Rs are discussed in more detail later.

#### 4.3.1. *Relevance*

The patient is encouraged to look for the reasons why the attempt to quit is personally relevant to him/her. In order to motivate the patient, the inclusion of the personal situation is most effective, that is, status or risk of illness, family or social situation (e.g., children at home), health concerns, age, gender and other important factors for the person (e.g., previous cessation attempts and personal barriers on the way to a smoke stop).

#### 4.3.2. *Risks*

The patient should identify potential negative effects of tobacco use. The doctor should highlight those risk factors that are the most important in this case. It should be noted that smoking cigarettes and other forms of tobacco use (smokeless tobacco, cigars and pipes) do not eliminate these risks. Examples of acute risks are shortness of breath, exacerbation of asthma, endangerment of the child to be born, impotence/infertility and increased serum carbon monoxide level. And long-term risks are, for example, myocardial infarction, stroke, lung cancer and other tumour diseases (larynx, oral cavity, throat, oesophagus, pancreas, bladder and cervix), chronic obstructive pulmonary disease (chronic bronchitis and emphysema), permanent disability and thus loss of autonomy and need for help. There are also risks for the environment: increased risk of lung cancer and heart disease for the spouse, increased probability that children will smoke, increased risk of children being born underweight or developing respiratory infections and increased risk of sudden infant death [36].

#### 4.3.3. *Rewards*

The patient should be asked to mention the advantages of smoking cessation. The physician should highlight the advantages that are most important in this case. Examples of potential benefits are

better health, improved sense of taste and smell, financial savings, you feel more comfortable in general, clothes as well as house or car don't smell like cigarette smoke, better breath, no more worrying about a possible smoking cessation and exemplary function towards the children.

#### 4.3.4. Roadblocks

The patient should be asked to name the disadvantages or barriers when stopping and to look for possible countermeasures (problem solution and pharmacotherapy). Typical obstacles are withdrawal symptoms, fear of failure, weight gain, lack of support, depression and desire to smoke.

#### 4.3.5. Repetition

The intervention to increase motivation should be repeated each time patients express doubts about the smoking stop. Tobacco consumers who have experienced unsuccessful attempts to stop smoking should repeatedly be made aware that several serious attempts to stop smoking are the rule [24].

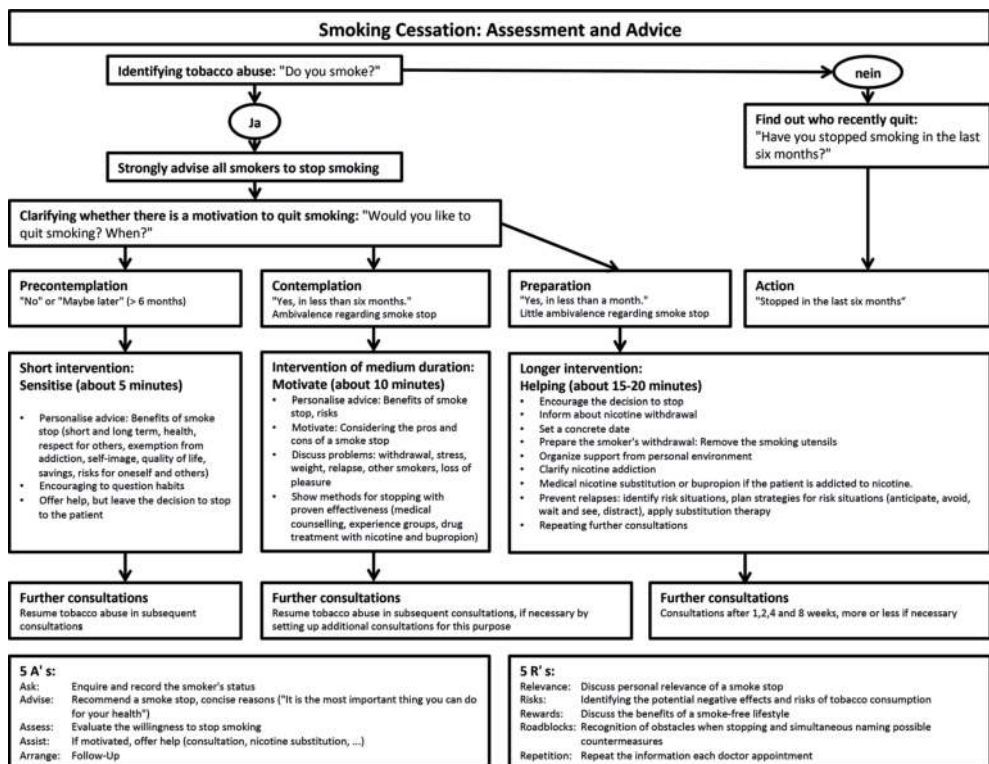


Figure 3. Smoking cessation: assessment and advice. Tobacco weaning—assessment and counselling [23]. This chart shows an aid to the procedure for practical smoking counselling.

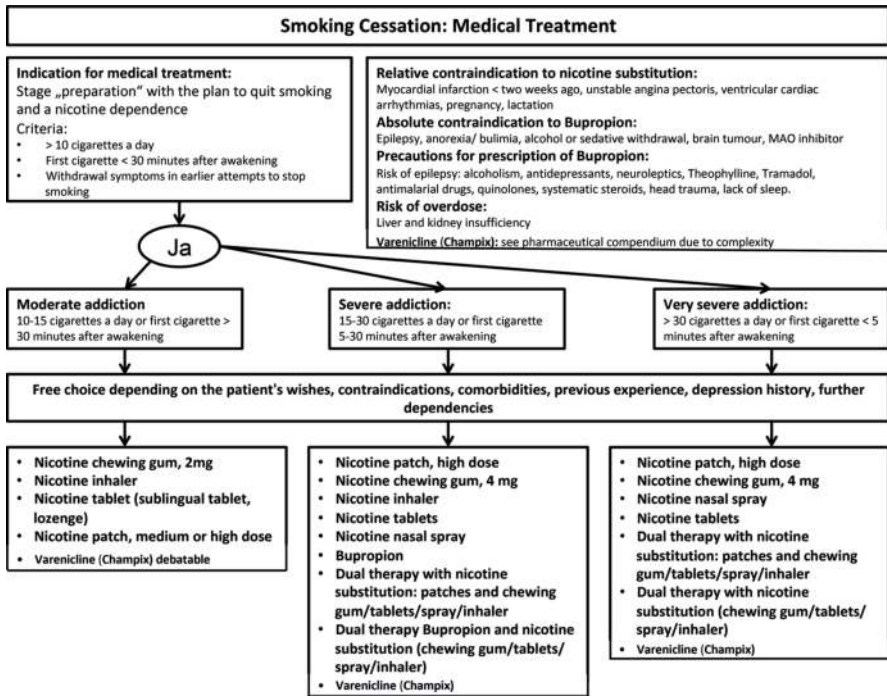


Figure 4. Smoking cessation: medical treatment.

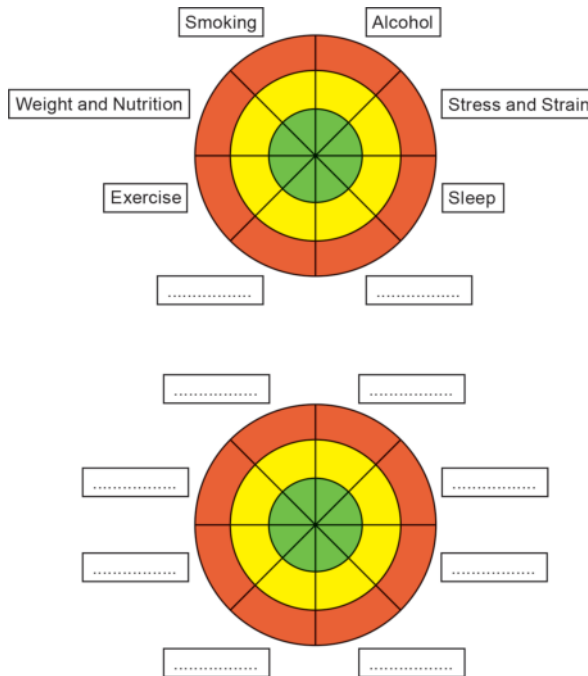


Figure 5. Axes of motivation.

#### 4.4. The consulting algorithm

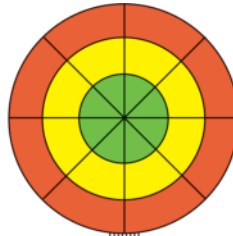
Smoking is an addiction; addiction is a disease, and it needs to be treated. Dependence is not imagination. Not only will, but also the right way is decisive (see **Figures 3** and **4**). The physician should give the patient didactic information that can help stop smoking:

- Smoking means nicotine addiction. Therefore, smoking cessation is just as serious as any other drug withdrawal. The will alone is often not enough. The patient must declare the smoke stop to be the highest priority.
- After the cessation date, total abstinence should be the goal.
- The patient should know that unpleasant nicotine withdrawal symptoms can occur. For most people, the symptoms start to appear a few days after smoking has stopped and disappeared after 1 to 2 weeks.
- The patient should be made aware of situations that can jeopardise abstinence at the very beginning of the smoke stop and should, therefore, be avoided. These can be events, states of mind, behavioural habits or activities that are associated with smoking and can, therefore, lead to recidivism (e.g., negative emotions, society of other smokers, alcohol consumption and celebrations).



**Figure 6.** Spider graph assessment of different life style axes.

**My topic(s):**



**My previous experiences**

Which topics would you like to take a closer look at?  
 What have you already done or tried?  
 What have you been through?  
*Change Talk (See "goal" on the right)*

**My goal**

Which topic would you like to work on?  
 If more than one request: What is your most important concern?  
 If still uncertain, encourage *change talk*:  
 • Wonder questions: If the problem were solved overnight, how would you recognize it?  
 What would be different then?  
 What would be better for you?  
 • What would have to happen to make you more satisfied with...?  
 • Decision scales: What speaks in favour of change and what is more against?  
 • 2x2 table: pros and cons? Effort and benefits?

**Barriers**

What or who could prevent you from realizing your project?  
 How can you deal with this?  
 What would you need to cope with this barrier?  
*Change Talk (See "goal" on the right)*

**My steps to the goal (measures)**

What is your health project?  
 What would you like to do yourself?  
 What are you ready to do?  
 What exactly do you want to achieve with your project?  
 How would you like to start your project?  
 Who can help you with that?  
 In which sub-steps/stages do you want to proceed?  
 What is your first step? Which is the second step?  
 → Planning the SMART health project: **s**pecific, **m**easurable, **a**mbitious but realistic and **t**erminated.

**My strengths and sources of support**

What are your strengths?  
 Do you have previous success stories?  
 Who or what supports you in your environment (e. g. partner, family, friends, employees)?  
 If you imagine that you have successfully changed this behaviour: What are the benefits for you?  
 How would you feel?  
*Change Talk (See "goal" on the right)*

**My experiences with my project**

What experiences have you had in the meantime?  
 What have you achieved in your health project?  
 What and who helped with your project?  
 Which of these can you continue to use?  
 What made it more difficult for you to implement?  
 How could you handle it?  
 What does this achieved results mean to you?  
 How do you proceed?  
 What might you do differently? And how?  
 How can I support you further?

**Info Requirement and Notes**

*Questions–Information–Questions (F–I–F)*  
 1. What would you like to know about...?  
 What have you heard about it...?  
 2. Communicate information and experiences of other patients  
 3. How does this affect you now?  
 What would you like to know more?

**Next meeting / I'll do until then...**

May I summarize what we have just discussed and agreed upon?  
 Is that okay for you?  
 See you again at the...  
 Until then, you do...  
 Did I understand you correctly?

Figure 7. Therapeutic aspects of life style change.



- The patient should learn appropriate cognitive and behavioural techniques to prevent the desire or need for a cigarette. Examples of cognitive techniques are recalling the reasons for smoking cessation, saying that desire passes and repeating the phrase “smoking is not a solution”. During craving, auto-suggestion could be performed, for example, combined with deep inspiration mimicking cigarette inhalation: “And I am so happy that I manage not to need a cigarette”.
- Behaviours that can be used to resist the temptation to smoke are leaving the place, dealing with a distracting activity, deeply inhaling and seeking support in the social environment [23].

#### 4.5. Working material

To find out which areas of a patient's or client's behaviour are problematic and which are not and to what extent he or she wants to change this behaviour, patients or clients and health care professionals can use illustrative tools as shown in **Figures 5–7** [37, 38].

### 5. Why should such behavioural change concepts be applied to other areas of life besides smoking cessation?

In the civilized first world, the change from nomadic life with constant daily activity of moving eight or many more hours a day and with scarce nutrition to a world of highly diverse working activity with much more non-physical, sedentary work, more spare time and with physically passive sitting transportation has become of importance and results in a number of new psychosocial problems. Time spent in sedentary posture is highly associated with waist circumference and cardiovascular risk [39]. In the past century, a dramatic shift from non-industrialized countries suffering from communicable diseases to industrialized or modernized countries burdened with chronic diseases has taken place and also affects densely populated countries such as China and Brazil [40]. This increase in chronic disease rates has created an enormous social, emotional and economic burden. However, society underestimated the problem for a long time focused too much and fostered individualised motor vehicle traffic. It thus sacrificed concepts of walkability and bikeability in most areas from little villages up to hugest towns and exposed children and their residual playing areas as well as the whole society including animals to motor traffic dangers including physical accidents, air, ambient and thus food and water pollution, noise and light.

Already nearly 2400 years ago, sedentary behaviour was considered harmful by Plato, living from 427 to 347 before Christ: “Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it”.

It is only since 2012 that we know the real impact of physical inactivity on health. Inactivity has to be attributed to a shortening of life expectancy of about 10–11 years of individuals

exposed to such lifestyle. It, therefore, became at least as important as smoking in the Western society, leading to the health slogan “Inactivity is the new smoking”.

In the light of such social development, it became increasingly important to address more lifestyle questions than only smoking in diverse health-related work. We therefore obtained to broaden the spectrum of her smoking cessation counselling student course to those normal fields and therefore aim to describe as a series of algorithms some “good” aims for a number of common problems including some substance addictions and process addictions of our patients or clients. In the forthcoming sections, he, therefore, describes very prudently, focally and not covering the whole area, and usually with only few evidence, but hopefully with the common sense of a multifaceted team of persons active in patient care, such as conceptual bases.

## **6. Application to other areas and problems of life: some subjects in more detail**

### **6.1. Sedentary behaviour: “Inactivity is the new smoking”**

As already mentioned in Chapter 5, one of the hugest changes in our lives is the change from daily seeking nutrition to a world that offers extremely diverse jobs, many of them very sedentary, and that offers mobility without important individual physical activity, and much spare time, again with in part huge sedentary activities such as TV and Internet. Over 10,000 years, the human body has been optimized and genetically programmed to move frequently [41]. While modern technology has made life easier, it has become an obstacle to physical activity. For example, sitting in front of a laptop all day will make a person less physically prone to move around: of seminal importance may then be residual physical activities besides laptop activity [42]. There is little evidence to suggest that reduced occupational physical activity leads to compensatory increases during leisure time or vice versa. Studies from Europe, the United States and Australia found that adults spend half of the working days sitting (4.2 hours/day) and about 2.9 hours/day of leisure time sitting [39]. Time spent in sedentary posture is associated with waist circumference and cardiovascular risk.

Physical inactivity actually accounts for up to one third of Western world persons reducing life expectancy by about 10–11 years [43] and, therefore, became as central as smoking. Physically inactive children and adolescents develop less cognitive skills than more active cohorts [42]. Sedentary living is a risk factor for global mortality that is associated with arterial hypertension and all consequences of vascular disease including coronary heart disease and stroke and with undiagnosed or diagnosed metabolic disorders especially including diabetes mellitus, obesity, liver disease and overweight. It is furthermore associated with sleep disordered breathing, with muscular and osteo-articular consequences including pain and disability, but also with increased risks of a number of cancers including breast, endometrial,

lung, prostate and colon cancer [43, 44], and probably also with low-grade inflammation [41]. Muscle mass, strength and function seem to play positive roles in recovering from illness, and muscle gain seems even to be anti-inflammatory [45]. Sarcopenia, the deterioration of muscle mass and quality, is a sign of aging but can usually be reversed by training. Muscle is of importance in self-determination in life due to independent deambulation and is necessary to circumvent home care in the elderly or to self-help: standing up without the help of one hand or of two hands differs concerning health prognosis, and many sarcopenic people cannot get up from the floor at all without help.

Physical activity is one of the three biological component modulators of health, that is, physical activity, enough and recovering sleep and adequate nutrition. However, key further elements are psychosocial aspects including relationship and sexuality; family, friends and social surrounding and professional situation. Physical activity is an effective means of curbing the prevalence of child obesity. Fundamental skills are important determinators leading to physically active or inactive behaviour in children: teaching movement skills to young children at the age of about 4 years seem therefore important [46], as motor skills in preschool age and physical activity at school age and probably later are much related [47].

#### *6.1.1. What to recommend for physical activity to patients and clients?*

Physical activity and exercise should be viewed as a medication, frequently surpassing health benefits of conventional medications, and in the absence of side effects. They change the underlying mechanisms for physiological functioning and cause increased myocardial oxygen supply, decreased myocardial oxygen demand, increased myocardium electrical stability and overall improved myocardial function [40]. There is a dose-response relationship: health benefits are gained with physical activity and exercise 150 minutes/week, but more health benefits are seen when 300 minutes of moderate physical activity is achieved [40].

Concerning physical activity recommendation, we stick to the World Health Organization recommendation.

In adults, physical activity includes leisure time physical activity, transportation (e.g., walking or cycling), occupational (i.e., work), household chores, play, games, sports or planned exercise, in the context of daily, family and community activities.

The recommendations in order to improve cardiorespiratory and muscular, fitness and bone health, reduce the risk of anxiety and depression and aim at physical activity and exercise as a part of our everyday life [40]:

1. Adults (aged 18–64) should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity activity.
2. Aerobic activity should be performed in bouts of at least 10-minute duration.

3. For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week or engage in 150 minutes of vigorous-intensity aerobic physical activity per week or an equivalent combination of moderate- and vigorous-intensity activity.
4. Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week.

For older adults, there are further recommendations. They should increase their moderate-intensity aerobic physical activity to 300 minutes per week or engage in 150 minutes of vigorous-intensity aerobic physical activity per week or an equivalent combination of moderate- and vigorous-intensity activity. Older patients, with poor mobility, should perform physical activity to enhance balance and prevent falls on 3 or more days per week.

Some factors can contribute to physical activity. A buddy or a group event, for example, for training can help a person to keep activity due to the group or peer pressure. Appointments should be treated at the same level of priority as professional appointments; weather should in most instances not lead to cancelling exercise. It would be of profit to integrate sports as physical activity or part of it with the partner, although there might be differences in physical strength, in endurance and so on. Sometimes the differences can well be circumvented, for example, by one partner doing only part of a jogging trial, by doing biking with a normal and the less physically performing partner with an electric bike and so on. It would be of profit to plan weekends and holidays aiming at high physical activity level. For very old and highly frail and disabled or highly impaired (e.g., COPD, respiratory failure, cancer, etc.) patients, there are to our knowledge no clear data on minimal muscle mass or on data to prevent falls [48]. Note that one of the first signs of sarcopenia is motoric uncertainty. One reasonable guess of recommendation may be to achieve at least 800 steps per day in order to sustain independence in deambulation. Also, 30 times 1-minute activity per day could be an option.

## 6.2. Overweight and obesity

Overweight is epidemic in Western civilizations, in the USA affecting nearly 70% and obesity (body mass index  $\geq 30$  kg/m<sup>2</sup>) one third of Americans. They result from the imbalance between caloric intake and caloric use [49]. Together with type 2 diabetes and dyslipidaemia, weight problems became one of the most serious health problems worldwide. Weight is crucial, and guidelines for type 2 diabetes may have too much focused on reducing blood sugar levels through drug treatments. One study showed that 9 of 10 people in the trial who lost 15 kg or more could lead their type 2 diabetes into remission [50]. Overweight after smoking is the second most frequent preventable factor for cancer prevention, including not only post-menopausal breast cancer, endometrial cancer, oesophageal adenocarcinoma, gastric cardia cancer, liver, pancreatic and kidney cancer, but also colorectal cancer, cancers of the thyroid, the gallbladder, meningioma and multiple myeloma [51]. Hormonal (adipokines) and growth factor production and metabolism

by fat tissue seem responsible. In the USA, estimated 10% to one third of cancers could thus be preventable by weight control. Estimations also link a body mass increase by 5 kg/m<sup>2</sup> to 10% additional cancer risk [52].

A part of obesity is attributed to physical exercise and activity pattern including work and spare time (sitting, television, computer, aids of car, escalator, electric dishwasher, washing machine, robotic lawn mower, robot vacuum cleaner and electric toothbrush) as above. However, body weight regulation is complex: it is dependent on appetite regulation, nutritional factors and eating behaviours, which includes biological and genetic mechanisms evidenced by heritability not only of modest effect size as in twin studies but also of epigenetic factors, and is not completely under personal control [53]. Why we eat, what and how much we eat are determined by portion size, taste, caloric density and setting. Peripheral signals from our gut and fat stereos relay information in a bidirectional pathway to our brain to tell us when we are hungry or full. While some signals translate into conscious decision-making, many do not. Therefore, many questions remain actually open on what we eat, particularly when food is always available. Known are habit, convenience, opportunity, cost and social factors [49]. Eating patterns are affected by more than the caloric and nutritional value of food. Consumptive behaviours are driven by previous experiences, timing and emotional and pleasurable aspects of eating. Modern foods and drinks are extremely highly processed, frequently with added sugar and fat and extremely appealing, and seductive to consume even more, so that we are a bit “addicted”. Often we are unaware that we are eating too much. Usually, we underestimate the caloric intake quite highly even when trying to count calories, as shown by Lichtman et al. who showed the difference of 1000 calories per day on average between perceived intake and actual intake [54]. During aging, a reduction in muscle mass and physical activity leads to a lower metabolism and therefore gives tendency to weight gain that should be adapted with less caloric intake.

Overweight is very clearly visible in most patients. It is in many instances, and society-specific, perceived as an important psychosexual burden. Many patients feel ashamed and, by that, additionally lose quality of life besides that of somatic origin that is inherent with worse mobility, higher exhaustion and so on. There is an evidence of inequities of employment, stigma from health care providers, bias from educators, weight based-stereotypes in the media and rejection and exclusion in interpersonal relationships. This weight discrimination has become one of the most commonly reported types of discrimination in the Western world, and among youth, being overweight is one of the most prevalent reasons for victimization and harassment at school [55, 56].

Individuals experiencing weight stigma are vulnerable to psychological stress, including depression, anxiety, low self-esteem, poor body image, substance use disorder and suicidal thoughts and behaviours. Perhaps the consecutively increased risks of binge eating, unhealthy weight control behaviours, increased calorie intake, avoidance of physical activity, reduced motivation to diet and elevated physiological stress are less intuitive, but consistently demonstrated, all of which can reinforce obesity and weight gain [57, 58]. Such weight discrimination

increases further odds of becoming and remaining of these over time [59, 60]. Reduced quality of health care and avoidance of health care owing to experience of weight stigma have been reported [61]. Actual evidence contradicts public perceptions that fat shaming will provide the concerned individuals with incentive or motivation to lose weight. Instead, such stigma reduces the quality of life and may inadvertently worsen weight-related health outcomes [53].

Both, losing weight and, more important, maintaining weight loss, are two different entities and require distinct skills and attitudes. During weight loss, adaptive responses of metabolic, neuroendocrine and autonomic pathways try to reset weight to the previous higher weight, for example, by the systemic rise of the hunger hormone ghrelin, the decline of leptin as the key adiposities and suppressor of food intake; the resting metabolic rate—the biggest contributor to energy expenditure—declines, and skeletal muscle adapts to become more efficient, requiring fewer calories for the same work [49]. A couple of diseases not only hypothyroidism, lipodema, M. Cushing, syndrome X and polycystic ovary syndrome hormonal changes but also sometimes depression and chronic stress are associated with more difficulty for weight loss due to a metabolic interference, which is also the case with medications such as sulfonyleureas, beta-blocking agents, some antipsychotics, antidepressants, antiepileptics, hormones including anti-conceptive agents and corticosteroids.

Whereas exercise contributes rather little—but sometimes the important part—to weight loss, it plays an important role in maintaining reduced weight. It confers other benefits. It improves insulin sensitivity and blood pressure, redistributes fat and improves mood and well-being. It should, therefore, be part of any lifestyle intervention. However, some patients may be relieved to hear that they do not have to focus so much on exercise. Non-exercise activity thermogenesis is performed by standing more than sitting, doing more little walks by parking the car farther away from a store or the work site and so on. These activities may contribute to a modest increase in energy expenditure and are a way to gradually add in exercise [49].

### *6.2.1. What are the relevant aims for weight reduction?*

Probably the most important aim is the normalisation of the physical and the psychosocial situations. In many patients' situations, this means that normalisation of weight should be the aim of weight reduction.

However, a weight reduction into a range of much better physical performance, of normalisation of actual disease such as pre-diabetes, can sometimes be a compromise. In a considerable proportion of patients, the compromise occurs itself, as it is where the patient arrives within months or years of follow-up with his weight and fitness. We still then have to keep in mind that the whole psychosexual aspect of obesity can highly impact the person's life, relational and social functioning.

There are recommendations that if people wish to have a sustained successful weight loss that then not 10,000 steps but 12,000–15,000 steps would be wise [62]. Note that this is a lot, as the 30 minutes of moderate exercise is only about 3100–4000 steps [63]. In order to build aerobic fitness, the recommendation would be to do 3000 of the daily steps fast. Note that for a 75–80 kg person, 10,000 steps are roughly 500 calories of energy. However

many variables contribute in this fact, for example, speed, denivellation and so on, 10,000 steps more per day would be 3500 calories difference and thus about the burning of 0.5 kg of fat per week (1 kg equals about 7000 calories). In 20 weeks, there would be a potential of 10 kg weight loss (that had then to be stabilized as the second challenge). Note that walking is easier for most overweight persons and is also clearly more recommended than jogging by the associations like the American College of Sports Medicine; walking is less leg joint distressing than jogging, that is, it halves maximum forces for a knee from the equivalent force of about 7 to 3.5 times the own body weight. Beginning with jogging is more difficult, as any activity will give muscle soreness, and initial "overactivity" can thus lead to pain and sufferance, frustration and potentially impede an excellent intention. Nordic walking clearly further reduces those forces; it gives further a more integral muscular training integrating virtually the whole body musculature [64]. Novel data on 40-minutes per day by an electrobicycle to go to work suggest important health profit in sedentary persons.

The surgeon general advises for an increase in physical activity, for example, to increase the steps per day by 20% each week and to get to 10,000 (or 15,000) steps [62]. Apart from Amish and from Tsimane populations, we might derive that more than 15,000 or even more than about 17,000 steps a day might be ideal in terms of health, possibly reflecting that we are not meant to sit around and that for hundred thousands of years we have been on our feet for 8 hours or more. As we all cannot necessarily hit that number, we should aim to reduce sedentary behaviour by interrupting prolonged periods of sitting with walking or standing and reflect our working, transportation and spare time procedures.

As professional life is an important integrating factor and an important axis of self-fulfilment, it may be important, especially in young persons, to best integrate or help to integrate the patient/client in professional life, to manage that the person has fulfilled adequate schools and works, that is, appropriately to her or his professional educational level in the first-job market (see the discussion earlier on inequities of employment) and to help to keep in a long-term stable and good professional life. Workload reduction may sometimes be a solution for physical activity or training in severely obese patients.

Sleep is rather frequently affected in obese and severely obese patients, either by obstructive sleep apnoea hypopnoea syndrome or by adiposity-hypoventilation. As sleep is a huge resource for any physical, mental or intellectual activity, it is of key importance to solve relevant concomitant sleep problems. Patient history and sleep screening tests should in many instances be performed, and arterial hypertension, pre-diabetes or diabetes mellitus should be diagnosed and treated.

### **6.3. Sleep: your body's best friend**

Besides nutrition and exercise, sleep is the probably most underestimated physiological resource for a healthy life. It is of central importance for physical functioning as well as for emotional and intellectual integrity. Deep sleep and rapid eye movement sleep, for example, are the key to learning, be it memorizing facts or be it movements, and thus the key to any good functioning in a society.

Sleep is necessary to be performant. However there are untoward restrictions of sleep for many peoples, whether in school and student life, at weekends, or during the working week. Its consequences are manifold and probably more complex than long time assumed.

Sleep deprivation is one of the most prevalent problems of Western society beginning usually in adolescence. Within a 5-day week, there are a huge proportion of people who have a sleep deprivation of about one night in total. We all need individual sleep time that may bit and rarely considerably differ from about adults 7½–7¾ hours as a rule of thumb. Retired persons usually sleep 20 minutes per night longer and with better sleep quality probably due to less psychological distress [65]. Also, midlife sleep problems are probably associated with cognitive decline [66].

Sleep deprivation has many consequences. Sleep is important for any cerebral process and therefore for any functioning of our physical systems. For example, sleep influences how our bodies recovering and restoration and includes metabolic links, it influences how we learn and memorize facts or movements and it influences our psychic stability. It is also linked to weight gain. Data suggest that 30-minutes less sleeping lead to weight gain: Logically, it is practically impossible to stay committed to a healthy lifestyle if we do not have the energy for it. If we go late to bed or have a restless night, we are more likely to both skip exercise and eat less healthily. Sleep deprivation is thus linked to car and work accidents, relationship troubles, poor job performance, job-related injuries, memory problems and mood disorders. Short sleep duration, obstructive sleep apnoea and overnight shift work are underrecognized as predictors of adverse outcomes after acute coronary syndrome. Increased efforts should be made to identify, treat and educate patients about the importance of sleep for the potential prevention of cardiovascular events [67].

#### **6.4. Other substance addiction than smoking**

There may clearly be huge and in part vital impacts for any other substance addictions including alcohol, cannabis, oral, sniffable and inhalable or injectable drugs. There is some basis in common that makes the situation rather similar to counselling like for smoking cessation. It is of note that we know from heroin addicted persons who frequently are also smokers that heroin addiction is not more difficult to stop than smoking, but rather similar. For all those substances, there are peculiarities, for example, the limited evidence of chronic cannabis use and less employment, which is not so clearcut as cannabis is more frequently chronically used in socially less privileged persons. This also seems similar to cannabis and social functioning or the engagement in the developmentally appropriate social roles [68].

##### *6.4.1. Compulsive buying*

Shopping has become one of the most popular leisure activities. Shopping centres are increasingly replacing green areas on which people used to play, walk and breathe clean and healthy air. Complex and subtle advertising measures influence our consumer behaviour [69]. In the 1990s, it was highly controversial to realize that buying, like playing or working, can take



on the character of an addiction. Looking at the surface, the compulsive buying is actually lacking some characteristics of other addictions; it is a “clean” addiction, and the people affected are active, successful and performance-oriented and seem to have a perfect grip on their lives, while alcoholics or other addicts are regarded as unstable, weak-willed and externally controlled [70]. It is a rather discreet addiction that is difficult to recognise for outsiders. Compulsive buying rarely changes the personality at least not at an early stage [71].

Compulsive buying can be described as a persistent and recurring, and maladaptive buying of consumer products that disturbs personal, family and professional goals often even burdens them very heavily. People concerned often negate the serious psychological, social and economic consequences [72]. It is not the products purchased that constitute addiction, but rather the experience of buying itself. This alienated behaviour is characterised by increasing internal pressure, which can only be reduced by purchasing the goods. Short-term relief and the resulting feeling of happiness after the purchase are associated with long-term consequences such as financial and social problems in addition to feelings of guilt. Other features are the futile attempts to resist the impulse and the loss of control over buying behaviour [73].

Prevalence rates of 2–8%, and 80–95% of those affected are female. The disorder usually starts at the age of  $20 \pm 5$  years. The course of the disease is generally chronic, although most patients do not receive treatment until two decades later. Systematic studies on therapy are missing [73].

Treatment of compulsive buying is much developing. Pharmacotherapeutic approaches play an important role in the USA [74], whereas the focus in Germany is on behavioural therapy [75]. “Immediate measures” for the establishment of controlled purchasing behaviour include the immediate return of credit and debit cards and the return to cash payments, the targeted analysis of the triggering situations, the avoidance of periods of high seasonal consumption (e.g., the pre-Christmas period), the inventory of one’s own possessions and the permanent keeping of this inventory and the regular keeping of budget books. The therapy aims to process and modify situations that trigger compulsive buying and to strengthen the resources in order to prevent unwanted and damaging behaviour in the future [76]. Key behavioural interventions include graduated exposition with reaction prevention, self-regulation techniques and stimulus control as well as cognitive restructuring techniques. Leite et al. examined a number of cognitive-behavioural therapies [77], including cognitive-behavioural model, identifying buying problem behaviours and learning to identify the normal buying, assessment of pros and cons of compulsive buying, financial planning including putting limits or getting rid of credit cards, assessing the “pleasure of buying” behaviour that includes emotional regulation of impulsive feelings, restructuring thoughts; working with exposure; response prevention, work on self-esteem and training in social skills, stress management and problem solving. Relapse prevention and the elaboration of a relapse plan are further key elements ([77], p. 419). Affected persons can also benefit from self-help groups and self-help books.

Theoretically, unresolved addictive behaviour like compulsive behaviour can shift to other compulsive behaviour, for example, to compulsive Internet use or gambling.

#### 6.4.2. *Pathological gambling or compulsive gambling (ludomania)*

Pathological gambling is a common disorder associated with social and family costs. Much is in common to substance addictions, and much less with impulse control disorders and high comorbidity exists especially with alcohol problems. According to DSM-V, an individual must have at least four of the following symptoms within 12 months [78]:

1. Needs to gamble with increased amount of money in order to achieve the desired excitement;
2. Being restless or irritable when attempting to cut down or stop gambling;
3. Having made repeated unsuccessful force to control, cut back or stop gambling;
4. Being of preoccupied with gambling (e.g., having persistent thoughts of relieving past gambling experiences, handicapping or planning the next venture and thinking of ways to get money with which to gamble);
5. Often gambling when feeling distressed (e.g., helpless, guilty, anxious and depressed);
6. After losing money gambling, of returning another day to get even (“chasing” one’s losses);
7. Lies to conceal the extent of involvement with gambling;
8. Having jeopardized or lost a significant relationship, job, education or career opportunity because of gambling;
9. Relying on others to provide money or relieve desperate financial situations caused by gambling.

The lifetime suicide risk seems rather high especially in the early onset of problem gambling, and comorbid substance use and comorbid mental disorders increase its risks. Reports that are up to one in five pathological gamblers attempt suicide underline that the rate is higher than in any other addictive disorder [79]. Treatments involve counselling, step-based programs, self-help, support, medication or a combination; however, no treatment is considered to be most efficacious, and no medications have been approved for this specific addictive disorder. The SSRI paroxetine or the opioid antagonist nalmefene or in comorbid bipolar person lithium seems to have some effect [80, 81]. Similar to “Alcoholics Anonymous”, “Gamblers Anonymous” exists and is in the USA, a commonly used resource. Cognitive behavioural therapy has been shown to reduce symptoms and gambling-related urges.

#### 6.4.3. *Workaholism*

Cultural achievements and processes in economic and social life are based on the work of people, so that work can be understood as a central foundation of human life. Diligence, efficiency and success are considered virtues and foundations of the modern performance

society [82]. Through work, people can satisfy many basic needs, such as social contact and self-realization. As a result, the work fulfils numerous functions in addition to merely securing one's livelihood [83]. However, if a person becomes addicted to work, cannot determine the amount and duration of work, cannot be inactive and develops withdrawal symptoms, if he or she does not work [84], then work behaviour becomes pathological, problematic and is defined as workaholism. This is an uncontrollable, inner compulsion to become active not only in the world of work but also in leisure time and private life, while at the same time, other possibilities of behaviour that are subordinated to working and addictive behaviour similar to substance-related dependencies are shown [85].

The workaholic is mentally and physically addicted to work. He can no longer control his work behaviour (loss of control). He works longer than he intended or in situations in which he cannot or should not work, for example, in the event of illness or in social situations outside the workplace. It is impossible for him not to work (abstinence incapacity), so that he suffers from withdrawal symptoms when he is not working. Workaholics report that in such situations they experience feelings of pressure and tightness, deep sadness or massive states of inner restlessness. However, physical symptoms can also occur during periods of non-work, for example, nausea, headaches or sleep disorders. Due to the development of tolerance, the workaholic has to work much more to achieve the desired effects, for example, a feeling of performance, a feeling of *raison d'être*, the suppression of feelings of fear or displeasure, hinting to a dose increase. The working behaviour is not only extended quantitatively in the sense of more working hours, but there are also qualitative changes in the working behaviour. For example, many workaholics tend to take care of jobs for which they are not or too well qualified. Psychosocial and/or psychoactive disorders also occur [86]. The characteristics of workaholism are summarized in **Table 3**.

Results show that workaholics complain significantly more about physical complaints than non-workaholics. In a group of workaholics, 40% report heart pain, 54% report aching limbs, 43% of workaholics suffer from stomach complaints and 58% from general exhaustion such as fatigue or feeling weak. In all aspects, the workaholics can be classified into a greater extent in the group with severe health problems [87].

Workaholics often lack the insight to be ill. Normally those affected do not take help because of excessive work, but the pressure of suffering and the desire for change grow due to the numerous negative consequences that occur [88].

The focus of therapy is on concrete instructions for future everyday life. They include meditation, relaxation, better daily schedule, flexibility and balance. Regular participation in meetings with other workaholics to talk about one's own problems, which could help to overcome conflict situations, also plays an important role. Fundamental is that the addict shows an insight into the disease and thus sees a need for action due to the pressure of suffering. The addict should analyse his or her work behaviour more closely, set new goals and refrain from all unnecessary activities. Finally, a detailed schedule is drawn up, which precisely regulates the daily schedule—in particular breaks and leisure time [89].

Being a slave to work behaviour	The entire imaginative and intellectual space is focused on the work. The thoughts and actions of the person concerned are completely geared to the work.
Loss of control	The workaholic can neither determine the extent nor the duration of the work behaviour by himself. He works out of an inner compulsion.
Inability to be abstinent	The workaholic finds it impossible not to work for a certain period of time.
Withdrawal syndromes	Withdrawal symptoms and possibly vegetative symptoms occur in the case of intentional or forced non-working.
Development of tolerance and dose increase	Since the workaholic develops a certain tolerance towards the amount of work, he must work more and more quantitatively in order to achieve the desired emotional state or the desired state of consciousness.
Psychosocial & psychoreactive disorders	Problems arise in the social and health field.

**Table 3.** Characteristics of workaholism [84].

Cox et al. [90] described the concept that workaholism is an endogenous addiction. In their leisure time, workaholics should be led to activities that give them pleasure. This would bring the joy itself and then the new experience of leisure activities. This could act as a stimulus for endogenous opiate secretion in a more stress free and therefore healthier way [90].

Specific individual measures are [91] a consistent time management; read and edit emails only 1–2 times a day; set up smartphone-free times, if necessary via an app; set up regular rest periods, for example, with a block as an appointment in the calendar; follow a hobby regularly, for example, minimally 2 times per week; spend time with friends and family on a regular basis; learn passive relaxation techniques, for example, autogenic training, MBSR and meditation and if required, support in individual coaching by business coach.

### **6.5. To summarize: how can we probably best do our counselling for our patients or clients?**

Basis for any more profound professional relationship is, however, a symmetrical communication basis at the same level as the patient or client. The good relationship is essential, and its authentic emotional basis is the only way to be able to put together in question things: The patient or client accepts confrontation only when a symmetry is present and he or she feels a huge quality of relationship. Relationship that functions gives the patients or clients “moments of truth” and the authenticity of feeling and thinking that help him/her to find and believe in

his/her own resources to try a novel way with a life change. Therapy is completely oriented at the patient's or client's resources. This is contrary to physician's assessment of pathologic findings as a deficiency-oriented thought. As therapists, we have to support self-efficacy, that is, the patient's or client's self-belief in his ability to change, for example, focusing on past successes, skills and strengths and promoting self-esteem and confidence. Briefly, therapists can only help to modulate a life change when they have this sound relationship. The necessary skills and attitude for counselling can be learnt and trained, intervised or supervised, with elements from different techniques, including motivational interviewing, as shown earlier.

As soon as a therapist "lives" or communicates non-verbally or verbally a bias, for example, devalorises smoking or overweight, an emotional barrier between therapist and client or patient results that may block emotional openness to address important personal problems in an ensuing discussion. Therapeutic persons should therefore be very open-minded and supportive towards any problem that interferes with the health of a patient or client. Carl Rogers with his humanistic person-centred approach defines three essential basic elements for an optimal conversation: congruence, empathy and unconditional appreciation. Congruence means authenticity, genuineness and transparency on the part of the therapist/consultant. Empathy is the empathetic understanding, the non-valuing approach, that is, the real understanding of a person. Unconditional appreciation is the therapist/consultant's acceptance and sympathy for the feelings and statements of his patient or client. This does not mean that the therapist must necessarily agree with these feelings. But it means that he accepts his patient or client without judgement and prejudice. This attitude should be adopted by every good therapist/consultant [92]. And we should be aware of interfering central roles of relationship and sexuality, of working or occupational situation and of the patient's home situation.

One of the key questions is which aim to propose to a patient or a client. The aim should have a rational background and should be realistic to obtain in a shorter period of time as well as in long term. There might be a mixture of "tailored" aim that not only includes the assumed patient or client resources, but also some ideal should probably be included. This seems important as we sometimes overestimate patients and, especially, also sometimes underestimate their faculties: if a heroin- and nicotine-dependent persons achieve to stop smoking or to stop the heroin consumption, then it is a huge achievement that should also be reflected with the patient or client and highly valorised. In areas like overweight management or physical activity management especially, intermediate aims could also be iteratively adapted, for example, in terms of a shared decision.

In the perspective that patient and client care have changed due to a novel insight into the major role of lifestyle aspects, as discussed, that can tremendously interfere with health status and survival, we are obliged to integrate those in therapeutic situations and to improve communication on them also between different therapists. Setting together aims (e.g., stopping smoking) and defining milestones (e.g., at 3-month re-assessing smoke stop, in case of smoke stop empowerment and 3-month follow-ups, in case of continuous smoking beginning with varenicline and weekly therapist visits for smoking cessation during 2 months,

then monthly follow-ups) when to re-assess patient or client situations and defining the adequate algorithms for patient or client care would probably improve the patient or client outcome.

## **7. Conclusion**

In a short, a 4-hour course could give 87 medical students a wide array of knowledge, skills and attitude towards smoking cessation and evidenced with a vast spectrum of measurements including blinded analyses of conversations with a figured patient. However, as many other areas are of major importance in terms of prevention, the most important question arises whether or not such gain of experience can be derived to other subjects as obesity counselling or exercise counselling in our patient and client care. While many parallels exist between the different areas of counselling on habits and lifestyles, we can only assume that counselling competencies can be deduced to such areas but cannot answer this by data. In common, for any important therapeutic effect, some bases for effective communication and a therapeutic attitude most probably exist. One common denominator is also that there is no way to make people like a lifestyle change. By means of thoughtful and empathic communication and an adequate attitude, we most probably can help for a lifestyle change, ultimately always to make the patient or client feel less threatened by performing this change.

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## **Conflict of interest**

The authors declare no conflict of interest.

## **Note**

This book chapter is intended to develop ideas on increasing knowledge, skills and attitude in different therapeutic settings. It is far from perfect and is aimed to lead to discussion and interaction. The authors highly welcome feedback and criticism to improve this presented work in progress.

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## References

- [1] Heim E. Salutogenese versus pathogenese: Ein neuer zugang zu einer alten weisheit. *Schweizerische Medizinische Wochenschrift*. 1994;**124**(29):1267-1275
- [2] Bandura A. Health promotion by social cognitive means. *Health Education & Behavior*. 2004;**31**(2):143-164
- [3] Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. *Journal of the American Medical Association*. 2004;**291**(10):1238-1245
- [4] Stamler J, Neaton JD. The multiple risk factor intervention trial (MRFIT)—importance then and now. *Journal of the American Medical Association*. 2008;**300**(11):1343-1345
- [5] Anton SD, Hand KA, Perri MG. Problematic lifestyle habits. In: *Handbook of Cognitive Behavioral Approaches in Primary Care*. New York, NY: Springer; 2009. pp. 317-346
- [6] Humair J, Ward J. Smoking-cessation strategies observed in videotaped general practice consultations. *The American Journal of Preventive Medicine*. 1998;**14**(1):1-8. DOI: S074937979700010X [pii]
- [7] Richmond R. The process of introducing a tobacco curriculum in medical school. *Respirology*. 2004;**9**(2):165-172
- [8] Botelho R. Motivating healthy behavior. In: Sahler O-J, Carr JE, editors. *Behavioral Sciences and Health Care*. Boston: Hogrefe Publishing; 2007
- [9] Scott JG, Scott RG, Miller WL, Stange KC, Crabtree BF. Healing relationships and the existential philosophy of Martin Buber. *Philosophy, Ethics, and Humanities in Medicine*. 2009;**4**(1):11
- [10] Humair JP, Cornuz J. A new curriculum using active learning methods and standardized patients to train residents in smoking cessation. *Journal of General Internal Medicine*. 2003;**18**(12):1023-1027
- [11] Mühlhig S, Nowak D. Neun Thesen zur Raucherentwöhnung. *Suchtmedizin*. 2004;**6**(1):88-90
- [12] Corelli RL, Kroon LA, Chung EP, Sakamoto LM, Gundersen B, Fenlon CM, Hudmon KS. Statewide evaluation of a tobacco cessation curriculum for pharmacy students. *Preventive Medicine*. 2005;**40**(6):888-895
- [13] Strobel L, Schneider NK, Krampe H, Beissbarth T, Pukrop T, Anders S, West R, Aveyard P, Raupach T. German medical students lack knowledge of how to treat smoking and problem drinking. *Addiction*. 2012;**107**(10):1878-1882. DOI: 10.1111/j.1360-0443.2012.03907.x
- [14] Mounsey A, Bovbjerg V, White L, Gazewood J. Do students develop better motivational interviewing skills through role-play with standardised patients or with student colleagues? *Medical Education*. 2006;**40**(8):775-780
- [15] Dunn S, Ehrich L, Mylonas A, Hansford B. Students' perceptions of field experience in professional development: A comparative study. *Journal of Nursing Education*. 2000;**39**(9):393-400



- [16] Purkabiri K, Steppacher V, Bernardy K, Karl N, Vedder V, Borgmann M, Rogausch A, Stammberger U, Bals R, Raupach T, Koellner V, Hamacher J. Outcome of a four-hour smoking cessation counselling workshop for medical students. *Tobacco Induced Diseases*. 2016;**14**:37. DOI: 10.1186/s12971-016-0103-x
- [17] Prochaska JO, Velicer WF. The transtheoretical model of health behavior change. *The American Journal of Health Promotion*. 1997;**12**(1):38-48
- [18] Goldberg D, Hoffman A, Añel D. Understanding people who smoke and how they change: A foundation for smoking cessation in primary care, part 1. *Disease-a-Month*. 2002;**48**(6):385-439
- [19] Epstein R, Hundert E. Defining and assessing professional competence. *Journal of the American Medical Association*. 2002;**287**(2):226-235
- [20] Hauer KE, Carney PA, Chang A, Satterfield J. Behavior change counseling curricula for medical trainees: A systematic review. *Academic Medicine*. 2012;**87**(7):956-968. DOI: 10.1097/ACM.0b013e31825837be
- [21] Epstein RM. Assessment in medical education. *New England Journal of Medicine*. 2007;**356**(4):387-396
- [22] Batalden P, Leach D, Swing S, Dreyfus H, Dreyfus S. General competencies and accreditation in graduate medical education. *Health Affairs*. 2002;**21**(5):103-111
- [23] Cornuz J, Humair J, Zellweger J. Tabakentwöhnung 1. Teil: Wie es geht und was es bringt. Paper presented at the Schweiz Med Forum 2004
- [24] Cornuz J, Humair J, Zellweger J. Tabakentwöhnung. 2. Teil: Empfehlungen für die tägliche Praxis. Paper presented at the Swiss Med Forum 2004
- [25] Suchanek Hudmon K, Corelli RL, Chung E, Gundersen B, Kroon LA, Sakamoto LM, Hemberger KK, Fenlon C, Prokhorov AV. Development and implementation of a tobacco cessation training program for students in the health professions. *Journal of Cancer Education*. 2003;**18**(3):142-149
- [26] DiClemente CC, Prochaska JO. Stages and processes of self-change of smoking: toward an integrative model of change. *Journal of Consulting and Clinical Psychology*. 1983;**51**(3):390-395
- [27] Cornuz J. Smoking cessation—A central role for physicians. *Therapeutische Umschau Revue Therapeutique*. 2005;**62**(9):655-660
- [28] Miller WR, Rollnick S, Kremer G. Motivierende Gesprächsführung: Ein Konzept zur Beratung von Menschen mit Suchtproblemen. Lüneburg: Lambertus; 1999
- [29] Demmel R, Peltenburg M. Motivational interviewing: Kommunikation auf gleicher Augenhöhe [DVD]. Im Vertrieb der Neuland-Verlagsgesellschaft mbH, Postfach. 2006; **1422**:21496
- [30] Reznick RK, MacRae H. Teaching surgical skills—changes in the wind. *New England Journal of Medicine*. 2006;**355**(25):2664-2669

- [31] Marzano RJ. *A Theory-Based Meta-Analysis of Research on Instruction*. Aurora, Colorado: Mid-continent Regional Educational Laboratory; 1998
- [32] Clark D. Performance, learning, leadership & knowledge. 2004. Available from: [www.nwlink.com/donclark/index.html](http://www.nwlink.com/donclark/index.html)
- [33] Kollya S, Bessona J, Cornuzb J, Zullinoa DF. Stage of change of cigarette smoking in drug dependent patients. *Alcohol (Dependence)*. 2005;**13**:12.7
- [34] Cornuz J, Humair J, Seematter L, Stoianov R, van Melle G, Stalder H, Pécoud A. Efficacy of resident training in smoking cessation: A randomized, controlled trial of a program based on application of behavioral theory and practice with standardized patients. *Annals of Internal Medicine*. 2002;**136**(6):429-437
- [35] Fiore MC, Jaen CR, Baker T, Bailey W, Benowitz N, Curry SJ, Dorfman SF, Froelicher ES, Goldstein MG, Heaton C. *Treating Tobacco Use and Dependence: 2008 Update*. Rockville, MD: US Department of Health and Human Services; 2008
- [36] Wisborg K, Kesmodel U, Henriksen TB, Olsen SF, Secher NJ. A prospective study of smoking during pregnancy and SIDS. *Archives of Disease in Childhood*. 2000;**83**(3):203-206
- [37] Neuner-Jehle S, Grüninger U, Schmid M. Efficacy of a communication skill training fostering health promotion in primary care: A mixed method analysis. *Journal of Community Medicine and Health Education*. 2016;**6**(2):1000413
- [38] Neuner-Jehle S, Schmid M, Grüninger U. The “health coaching” programme: A new patient-centred and visually supported approach for health behaviour change in primary care. *BMC Family Practice*. 2013;**14**(1):100
- [39] Tigbe WW, Granat MH, Sattar N, Lean ME. Time spent in sedentary posture is associated with waist circumference and cardiovascular risk. *International Journal of Obesity*. 2017;**41**(5):689
- [40] Durstine JL, Gordon B, Wang Z, Luo X. Chronic disease and the link to physical activity. *Journal of Sport and Health Science*. 2013;**2**(1):3-11
- [41] Freese J, Klement RJ, Ruiz-Núñez B, Schwarz S, Lötzerich H. The sedentary (r)evolution: Have we lost our metabolic flexibility? *F1000Research*. 2017;**6**:1-24
- [42] Booth FW, Roberts CK, Laye MJ. Lack of exercise is a major cause of chronic diseases. *Comprehensive Physiology*. 2012;**2**(2):1143-1211
- [43] Lee I-M, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT, Group LPASW. Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. *The Lancet*. 2012;**380**(9838):219-229
- [44] Miles L. Physical activity and health. *Nutrition Bulletin*. 2007;**32**(4):314-363
- [45] Greulich T, Nell C, Koepke J, Fechtel J, Franke M, Schmeck B, Haid D, Apelt S, Filipovic S, Kenn K. Benefits of whole body vibration training in patients hospitalised for COPD exacerbations-a randomized clinical trial. *BMC Pulmonary Medicine*. 2014;**14**(1):60

- [46] Chen A. Motor skills matter to physical activity—At least for children. *Journal of Sport and Health Science*. 2013;**2**(1):58-59
- [47] Trudeau F, Laurencelle L, Tremblay J, Rajic M, Shephard RJ. Daily primary school physical education: effects on physical activity during adult life. *Medicine & Science in Sports & Exercise*. 1999;**31**(1):111-117
- [48] Tudor-Locke C, Craig CL, Aoyagi Y, Bell RC, Croteau KA, De Bourdeaudhuij I, Ewald B, Gardner AW, Hatano Y, Lutes LD. How many steps/day are enough? For older adults and special populations. *International Journal of Behavioral Nutrition and Physical Activity*. 2011;**8**(1):80
- [49] Rothberg AE. Why is obesity so challenging? *Medscape Journal of Medicine*. 2018. <https://www.medscape.com/viewarticle/893068>
- [50] Lean ME, Leslie WS, Barnes AC, Brosnahan N, Thom G, McCombie L, Peters C, Zhyzhneuskaya S, Al-Mrabeh A, Hollingsworth KG. Primary care-led weight management for remission of type 2 diabetes (DiRECT): An open-label, cluster-randomised trial. *The Lancet*. 2017;**391**(10120):541-551
- [51] National Cancer Institute. NCI is the Nation's Leader in Cancer Research. 2017. Available from: <https://www.cancer.gov/>
- [52] Basen-Engquist K, Chang M. Obesity and cancer risk: Recent review and evidence. *Current Oncology Reports*. 2011;**13**(1):71-76
- [53] Puhl R. Health professional: Do you have hidden weight bias? *Medscape Journal of Medicine*. 2016. <https://www.medscape.com/viewarticle/872071>
- [54] Lichtman SW, Pisarska K, Berman ER, Pestone M, Dowling H, Offenbacher E, Weisel H, Heshka S, Matthews DE, Heymsfield SB. Discrepancy between self-reported and actual caloric intake and exercise in obese subjects. *New England Journal of Medicine*. 1992;**327**(27):1893-1898
- [55] Bucchianeri MM, Eisenberg ME, Neumark-Sztainer D. Weightism, racism, classism, and sexism: Shared forms of harassment in adolescents. *Journal of Adolescent Health*. 2013;**53**(1):47-53
- [56] Puhl R, Latner J, O'Brien K, Luedicke J, Forhan M, Danielsdottir S. Cross-national perspectives about weight-based bullying in youth: Nature, extent and remedies. *Pediatric Obesity*. 2016;**11**(4):241-250
- [57] Puhl R, Suh Y. Health consequences of weight stigma: implications for obesity prevention and treatment. *Current Obesity Reports*. 2015;**4**(2):182-190
- [58] Vartanian LR, Porter AM. Weight stigma and eating behavior: A review of the literature. *Appetite*. 2016;**102**:3-14
- [59] Sutin AR, Terracciano A. Perceived weight discrimination and obesity. *PloS one*. 2013; **8**(7):e70048
- [60] Jackson SE, Beeken RJ, Wardle J. Perceived weight discrimination and changes in weight, waist circumference, and weight status. *Obesity*. 2014;**22**(12):2485-2488

- [61] Phelan SM, Burgess DJ, Yeazel MW, Hellerstedt WL, Griffin JM, van Ryn M. Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. *Obesity Reviews*. 2015;**16**(4):319-326
- [62] The 20% Boost Program: Fit Walking into Your Life. 2002. Available from: <http://www.pbs.org/americaswalking/health/health20percentboost.html>
- [63] Pillay JD, Ploeg HP, Kolbe-Alexander TL, Proper KI, Van Stralen M, Tomaz SA, Van Mechelen W, Lambert EV. The association between daily steps and health, and the mediating role of body composition: A pedometer-based, cross-sectional study in an employed South African population. *BMC Public Health*. 2015;**15**(1):174
- [64] Scott SJ. How many calories are burned with 10,000 steps? *Develop Good Habits*. 2017. Available from: <https://www.developgoodhabits.com/calories-burned-10000-steps/>
- [65] Myllyntausta S, Salo P, Kronholm E, Pentti J, Kivimäki M, Vahtera J, Stenholm S. Changes in sleep difficulties during the transition to statutory retirement. *Sleep*. 2017;**41**(1):zsx182
- [66] van Oostrom SH, Nooyens AC, van Boxtel MP, Verschuren WM. Long sleep duration is associated with lower cognitive function among middle-age adults—The Doetinchem Cohort Study. *Sleep Medicine*. 2018;**41**:78-85
- [67] Barger LK, Rajaratnam SM, Cannon CP, Lukas MA, Im K, Goodrich EL, Czeisler CA, O'Donoghue ML. Short sleep duration, obstructive sleep apnea, shiftwork, and the risk of adverse cardiovascular events in patients after an acute coronary syndrome. *Journal of the American Heart Association*. 2017;**6**(10):e006959
- [68] National Academies of Sciences, Engineering, and Medicine. *The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research*. Washington, DC: National Academies Press; 2017
- [69] Hand I. Pathologisches Kaufen-Kaufzwang, Kaufrausch oder Kaufsucht? In: *Spektrum der Zwangsstörungen*. Vienna: Springer; 1998. pp. 123-132
- [70] Gross W. *Sucht ohne Drogen: Arbeiten, Spielen, Essen, Lieben*. Frankfurt: Fischer-Taschenbuch-Verlag; 2003
- [71] Raab G, Neuner M. Kaufsucht als nichtstoffgebundene Abhängigkeit entwickelter Konsumgesellschaften. In: *Rausch ohne Drogen: Substanzungebundene Süchte*. Vienna: Springer Vienna; 2009. pp. 95-107
- [72] O'Guinn TC, Faber RJ. Compulsive buying: A phenomenological exploration. *Journal of Consumer Research*. 1989;**16**(2):147-157
- [73] Black DW. Compulsive buying disorder. *CNS Drugs*. 2001;**15**(1):17-27
- [74] Benson AL. *I shop, therefore I am: Compulsive buying and the search for self*. Lanham, Maryland: Jason Aronson; 2000
- [75] Bongers A. Fallbeschreibung einer verhaltenstherapeutisch orientierten Behandlung von Kaufsucht. In: Poppelreuther S, Gross W, editors. *Nicht nur Drogen machen süchtig*. Weinheim: Beltz PVU; 2000

- [76] Poppelreuter S. "Consumo ergo sum"?—Die Kaufsucht als Verhaltenspathologie. Springer; 2004
- [77] Leite PL, Pereira VM, Nardi AE, Silva AC. Psychotherapy for compulsive buying disorder: A systematic review. *Psychiatry Research*. 2014;**219**(3):411-419
- [78] Association AP. Diagnostic and Statistical Manual of Mental Disorders (DSM-5®). American Psychiatric Pub; 2013
- [79] Cox S, Lesieur HR, Rosenthal RJ, Volberg RA. Problem and Pathological Gambling in America: The National Picture. Columbia, MD: National Council on Problem Gambling; 1997
- [80] Kim SW, Grant JE, Adson DE, Shin YC, Zaninelli R. A double-blind placebo-controlled study of the efficacy and safety of paroxetine in the treatment of pathological gambling. *The Journal of Clinical Psychiatry*. 2002;**63**(6):501-507
- [81] Hollander E, Pallanti S, Allen A, Sood E, Rossi NB. Does sustained-release lithium reduce impulsive gambling and affective instability versus placebo in pathological gamblers with bipolar spectrum disorders? *American Journal of Psychiatry*. 2005;**162**(1): 137-145
- [82] Poppelreuter S, Windholz C. Arbeitssucht in Unternehmen—Formen, Folgen, Vorkehrungen. *Wirtschaftspsychologie*. 2001;**4**:62-69
- [83] Jahoda M. Work, employment, and unemployment: Values, theories, and approaches in social research. *American psychologist*. 1981;**36**(2):184
- [84] Poppelreuter S, Evers C. Arbeitssucht—Theorie und Empirie. In: Poppelreuter S, Gross W, editors. Nicht nur Drogen machen süchtig. Entstehung und Behandlung von stoffungebundenen Süchten. Weinheim: Beltz Verlag/Psychologie Verlags Union. 2000:73-91
- [85] Wehner I. "Arbeitssucht", "Arbeitsphobie" und "leisure sickness"—eine Kritik an arbeitspsychologischen Pop-Konzepten. *Stress im Erwerbsleben: Perspektiven eines integrative Gesundheitsmanagements*. Lengerich: Pabst Science Publishers; 2006. pp. 222-248
- [86] Poppelreuter S. Kann denn Arbeit Sünde sein?—Von Überstunden und überallstunden in der modernen Arbeitswelt. *Fehlzeiten-Report 2013*. Springer; 2013. pp. 101-113
- [87] Städele M. Arbeitssucht und die zwanghafte Persönlichkeitsstörung: Eine theoretische und empirische Auseinandersetzung. VDM Publishing; 2008
- [88] Grüßer-Sinopoli SM, Thalemann CN. Verhaltenssucht: Diagnostik, Therapie, Forschung. Huber; 2006
- [89] Orthaus J, Knaak A, Sanders K. Schöner schufteten: Wege aus der Arbeitssucht. Kiepenheuer & Witsch; 1993
- [90] Cox D. The workaholic pattern and the experience of burnout—A correlative study (dissertation). San Diego. 1982
- [91] Rademacher U. Für die Praxis. Arbeitssucht: Springer; 2017. pp. 43-48
- [92] Rogers RC. Der neue Mensch. Stuttgart: Klett-Cotta; 1981

