

## EDITORIAL

# A paradigm shift from a tissue- and disease-based approach towards multimodal lifestyle interventions for chronic pain: 5 steps to guide clinical reasoning

In the first contribution to this *Comprehensive Pain Management* editorial series, we highlighted that cumulating evidence indicates that lifestyle factors such as physical (in)activity, sedentary behavior, stress, poor sleep, unhealthy diet, and smoking are associated with chronic pain severity and sustainment.<sup>1,2</sup> Hence, these lifestyle factors perpetuate the chronic pain condition. Yet current treatment options often do not, or only partly address the many lifestyle factors associated with chronic pain, or attempt to address them in a standard format rather than providing an individually tailored multimodal lifestyle intervention.<sup>3-5</sup> Therefore, this fourth paper in the *Comprehensive Pain Management Editorial Series* addresses this gap by discussing how clinicians can account for various lifestyle factors concomitantly into an individually-tailored multimodal lifestyle intervention for people with chronic pain. Such a paradigm shift from a tissue- and disease-based approach towards individually-tailored multimodal lifestyle interventions fits well in our current understanding of the underlying mechanisms of chronic pain,<sup>6</sup> and should lead to improved outcomes and decrease the psychological and socio-economic burden of chronic pain. Evidence supporting such a paradigm shift from a tissue- and disease-based approach towards individually tailored multimodal lifestyle interventions for chronic pain is growing,<sup>7-11</sup> but further study are needed. Below, we encourage clinicians to apply an individually-tailored multimodal lifestyle intervention for chronic pain by explaining 5 key consecutive steps in the clinical reasoning process (Fig. 1).

### Step 1. Identify the relevant lifestyle factors

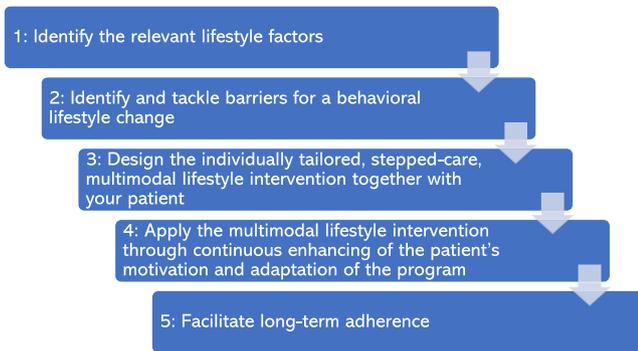
For individualizing the lifestyle approach to each patient, it is important to identify the relevant lifestyle for each patient. For instance, people having chronic pain and comorbid insomnia require evidence-based treatment for insomnia (i.e., cognitive behavioral therapy for insomnia). Likewise, patients with chronic pain experiencing difficulties in coping with everyday stressors require a stress management program, while those

relying on passive ways of coping with pain such as smoking are in need of a smoking cessation intervention. Those having chronic pain and comorbid overweight/obesity require integration of a behavioral weight reduction program (changes in dietary and physical activity behavior) into current best-evidence rehabilitation.<sup>12</sup> Moreover, patients with weight within a normal range, who have chronic pain could also have poor dietary habits and could therefore benefit from dietary changes.

With regard to exercise or physical activity, the great majority of patients with chronic pain will require an intervention, yet, individual tailoring in these interventions is needed. More specifically, patients with chronic pain often combine avoidance and persistence (or overactivity) behaviors to deal with their condition.<sup>13,14</sup> As such, they tend to persist in activities, that are important for continuing their professional and/or household activities, while avoiding social and leisure time activities. Obviously, this should be reflected in the exercise therapy or physical activity program. Avoided activities can be addressed using graded exercise therapy, behavioral graded activity, or exposure in vivo, while persistent activities require pacing activity self-management and acceptance-based interventions.

### Step 2. Identify and tackle barriers for a behavioral lifestyle change

Engaging in a lifestyle approach implies a behavioral change from the patient. Hence, clinicians not only need to identify the relevant lifestyle factors, but also the barriers for engaging in the behavioral change required for adhering to a healthy lifestyle. A comprehensive lifestyle program for people with chronic pain should consider possible determinants and barriers for behavioral lifestyle changes. For instance, pure biomedical beliefs, fear of movement, catastrophizing, hypervigilance, self-compassion, perceived injustice, and poor acceptance are often seen in patients with chronic pain, and each of them can serve as a barrier for an adaptive lifestyle change. Therefore, they should be addressed before initiating



**Fig. 1** Five key consecutive steps in the clinical reasoning process when applying an individually-tailored multimodal lifestyle intervention for patients with chronic pain.

the behavioral lifestyle intervention. For instance, pain neuroscience education can decrease catastrophic thinking and fear of movement,<sup>15</sup> allowing people to increase physical activity levels and engage in exercise/physical activity interventions.<sup>16</sup>

Finally, many patients with chronic pain require a ‘case manager’ to support them in balancing and prioritizing the various treatments they receive. Primary care practitioners or expert physical therapists can take on this role. Many patients with chronic pain, desperate and eager to get the best treatment response, combine a multitude of conservative (e.g., psychology, osteopathy, massage therapy, acupuncture, homeopathy) and pharmacological interventions. Managing the comprehensive treatment approach is important for several reasons: (1) adhering, even partly, to passive treatments often prevents patients from fully engaging in a lifestyle approach and/or fully embracing the biopsychosocial model; (2) the combined use of various treatments usually implies a financial burden for the patient; and (3) unless the various treatments are offered by an in-house interdisciplinary team of clinicians, they increase the odds of receiving conflicting messages from various health care practitioners (which is a yellow flag). Not thoroughly addressing the comprehensive health care plan for the patient can be a barrier for implementing a multimodal lifestyle approach, which brings us to [step 3](#).

### **Step 3. Design the individually tailored, multimodal lifestyle intervention together with your patient**

Targeting various lifestyle factors at once can be overwhelming for patients. To account for this, it is essential that the patient is fully engaged in designing the multimodal lifestyle intervention. The therapist offers required information, background knowledge, and opportunities, while the patient decides. Hence, shared decision-making<sup>17</sup> should be applied when designing the multimodal lifestyle intervention. This communication strategy facilitates behavioral change, patient satisfaction, and treatment adherence.<sup>18</sup> Shared decision-making involves: (1) providing treatment options to the patient (e.g., a treatment consisting of education and exercise versus a treatment consisting of education and exercise and sleep training); (2) evidence-based education about the anticipated outcomes of these options; and (3) letting the patient decide. Shared decision-making can be used for designing the multimodal lifestyle intervention, and also for allowing the patient to pick the order of the interventions depending on their

personal preferences and the time-investment required for each lifestyle factor to be changed (e.g., addressing stress management before sleep training or vice versa), and deciding whether or not to proceed with addressing a certain lifestyle factor in a stepped-care approach. While addressing all perpetuating lifestyle factors in the context of chronic pain necessitates specific interventions to enhance overall therapeutic outcomes, it is essential to prioritize them effectively in the management of patients, as attempting to address all factors simultaneously may not be feasible due to time constraints.

### **Step 4. Apply the multimodal lifestyle intervention through continuous enhancing of the patient's motivation and adaptation of the program**

An individually-tailored, multimodal lifestyle approach should adhere to guidelines for patient-centered care,<sup>19</sup> including offering an individualized treatment, continuous (verbal and non-verbal) communication, education during all aspects of treatment, working with patient-defined goals in a manner that the patient is supported and empowered with a therapist having social skills, being confident, and showing specific knowledge.<sup>20</sup>

Patients with chronic pain experience greater difficulty engaging in general positive health behaviors than those without pain.<sup>21</sup> Therefore, providing information to patients with chronic pain about the importance of a healthier lifestyle can be challenging, as it can be perceived as an inconvenient truth.<sup>3</sup> Behavioral change strategies such as motivational interviewing can overcome this issue. Motivational interviewing aims at developing autonomous motivation by increasing perceived competence and self-regulation.<sup>22</sup> The principles of motivational interviewing encompass expressing empathy, identifying or developing perceived discrepancy between the patient's current behavior and important personal goals and values, rolling with resistance and supporting self-efficacy, which fit perfectly in the idea of engaging the patient in an individually-tailored, multimodal lifestyle intervention.<sup>23</sup> It implies that components of the lifestyle intervention (e.g., dietary change, exercise therapy/physical activity intervention, sleep training) are proposed by the patient based on the guided question and answer interactions between the interviewee and interviewer. Hence, the multimodal lifestyle intervention may be adapted based on the patient's preferences, attitudes, self-efficacy, and feasibility issues. During every session the patients' actions with regard to the multimodal lifestyle intervention should be evaluated, discussed, and reinforced or tailored in more detail. Principles of self-monitoring, goal setting, and feedback on the behavior<sup>24</sup> can be integrated within these sessions to optimize the success rate of the multimodal lifestyle intervention. Short- and long-term consequences of the current (often unhealthy) lifestyle should be discussed, along with general encouragement and examples of how engaging in a healthier lifestyle can positively impact pain, general health, and quality of life.<sup>22</sup>

### **Step 5. Facilitate long-term adherence**

The behavioral change techniques discussed in [step 4](#) should contribute to long-term adherence of the individually-tailored, multimodal lifestyle approach for chronic pain. Moreover, emphasis should be given to overcome barriers related to long-term adherence, because these barriers are often significantly different from barriers to initial

change. As such, the therapist and patient as a team, can discuss and construct action-plans allowing the patient to anticipate relapse. This strategy also enables the patient to effectively address potential unforeseen obstacles and challenges as they develop a 'modus operandi' through these reflecting experiences. In addition, spreading the treatment sessions over a longer time period will provide the patient more time to implement the healthier lifestyle and receive appropriate guidance/support for addressing feasibility issues and implementation barriers. Engaging a significant third party (e.g., the patient's partner, child, or parent) in the multimodal lifestyle intervention can also boost long-term adherence. In addition, clinicians are advised to schedule at least one, and if possible multiple long-term follow-up visits (i.e., 'booster sessions'), and/or at the very least explain to the patient at the end of the intervention period that in case of relapse, the patient should contact the treating clinician for a follow-up visit.

The *Comprehensive Pain Management Editorial Series* aim to contribute to the implementation of pain science in clinical practice and facilitate clinicians around the globe to provide individually-tailored multimodal lifestyle interventions for the many patients suffering from chronic pain. Upcoming contributions will therefore build on the current topic, and address various key lifestyle factors for patients with chronic pain, such as diet, sleep, stress, and physical activity, in more detail.

## Conflicts of interest

All authors are involved in examining various lifestyle factors and interventions for patients with chronic pain, and their institution received funding from various funding bodies, including Foundation Flanders (FWO), and Stand up to Cancer (Kom op tegen Kanker), to do so. Jo Nijs and the Vrije Universiteit Brussel received lecturing/teaching fees from various professional associations and educational organizations.

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