



## REVIEW

# Call for action: incorporating wellness practices into a holistic management plan for rheumatoid arthritis – going beyond treat to target

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**ABSTRACT**

This expert opinion article explores the strategy of adopting a holistic approach to the management of rheumatoid arthritis (RA) by incorporating the wellness practices of exercise, optimised sleep, optimised nutrition, mindfulness, social connectedness and positive emotions into the management plan. The aim is to attain optimal health for each patient beyond that achievable by limiting disease management to pharmacological treatment to attain the lowest achievable composite scores of disease activity, as recommended with the current treat-to-target approach, and addressing the recent recognition of pain control as a key patient-reported outcome. Incorporating wellness practices into a busy clinical setting requires creativity and customisation based on the individual practice setting and the individual needs of each patient. Such practices can help people living with RA to achieve optimum wellness through the introduction of measures—according to individual need—designed to improve the aspects of life most impacted for that person, thereby complementing treat-to-target and pain control strategies with pharmacological agents. Clinicians must consider wellness practices in addition to treat-to-target pharmacological agents for the holistic management of people with RA.

**INTRODUCTION**

Wellness can be defined as ‘an active process through which people become aware of, and make choices toward, a more successful existence’.<sup>1</sup> It is a multidimensional, holistic concept encompassing lifestyle, environment and mental and spiritual wellbeing. Wellness differs from health promotion (eg, stopping smoking) and comorbidity control (eg, lipid control to prevent heart disease) as it encompasses attitudes and active decisions that contribute to positive health outcomes. Wellness can be improved through a combination of exercise, optimum nutrition, social support, constructive coping strategies (eg, optimised sleep practices and mindfulness) and personal responsibility.<sup>1</sup> Previous

**Key messages**

- ▶ Wellness practices (exercise, optimised sleep, optimised nutrition, mindfulness, social connectedness and positive emotions) can help people with rheumatoid arthritis (RA) to improve their health status by reducing inflammation and symptoms (eg, stiffness, pain, fatigue) and improving functional ability and wellbeing.
- ▶ Such practices complement and enhance outcomes achievable with treat-to-target pharmacological management alone and encourage a more complete and patient-centred approach to treating RA in individuals with ongoing symptoms.
- ▶ Incorporating wellness practices into a busy clinical setting requires creativity and customisation based on the individual practice setting and the individual needs of each patient.
- ▶ Clinicians should consider wellness practices in addition to treat-to-target pharmacological agents for the holistic management of people with RA.

research highlighted the value of these wellness interventions in chronic diseases, particularly rheumatoid arthritis (RA).<sup>2</sup>

This expert opinion article explores the science and strategy of a holistic approach to treating RA by incorporating wellness practices into the management plan to help patients achieve optimal health in addition to that achievable with current treat-to-target<sup>3 4</sup> and patient-reported outcome (PRO) improvement strategies<sup>5</sup> supported by the use of novel antirheumatic drugs.<sup>6</sup>

**METHODOLOGY**

This article used references identified through non-systematic searches of the internet, including Medline and Embase, using the search terms ‘rheumatoid arthritis’, ‘exercise’, ‘lifestyle’, ‘diet’, ‘sleep’, ‘wellness’,

**Table 1** Exercise and dietary recommendations for patients with rheumatoid arthritis<sup>10 11</sup>

Exercise	Beneficial effects	Schedule for optimum results
Exercise recommendations		
Walking	Helps with aerobic conditioning and mood	30–60 min, 3–5 times/week
Stretching	Helps with flexibility and range of motion	10–15 min, 2 times/week
Flowing movements	Helps with flexibility, range of motion, balance and stress	10–15 min, 2 times/week
Working out in water	Helps with flexibility, range of motion, aerobic conditioning and strength	30–60 min, 3–5 times/week
Cycling	Improves range of motion, aerobic conditioning, endurance and leg strength	30–60 min, 3–5 times/week
Strength training	Helps with strength and aerobic condition	8–12 repetitions for 2–3 sets, 2–3 times/week
Hand exercises	Improves range of motion and flexibility	
Dietary recommendations—Mediterranean diet		
High intake	Fruit; vegetables; legumes; nuts; unrefined whole grains (whole wheat, rice, oats, corn, barley, rye); unsaturated fats (olive oil, canola/rapeseed oil)	
Moderate intake	Lean meats; fish; wine	
Low-to-moderate intake	Dairy products	
Low intake	Red meat; processed foods; saturated fat	

‘social support’, ‘mindfulness’, ‘positive emotions’, ‘self-care’, and ‘patient-reported outcomes’.

### Exercise

Up to 80% of patients with RA have limited exercise capacity due to joint inflammation and damage,<sup>7</sup> leading to physical pain and functional limitation.<sup>8</sup> Exercise prevents muscular atrophy and improves physical function by maintaining/improving muscular strength and range of motion, and reducing pain.<sup>9</sup> Ideally, the patient, rheumatologist and physical therapist should collaborate to ensure exercise undertaken is appropriate for each disease phase to prevent further joint damage. The best exercises are walking, stretching, flowing movements, working-out in water, cycling and strength training<sup>10 11</sup> (table 1).

Perceived barriers to exercise from the perspective of patients with RA include pain, fatigue, fear of damaging joints, comorbidities, insufficient advice from healthcare providers (HCPs) and lack of time or support.<sup>12</sup> However, regular exercise can reduce disease activity, pain and fatigue and improve physical function, sleep quality and quality of life (QoL) in patients with RA.<sup>11 13–17</sup> Additionally, it can improve cardiorespiratory/cardiovascular health, muscle mass and strength and reduce adiposity.<sup>10 13 15</sup>

Possible mechanisms for the beneficial effects of exercise in RA include stimulation of interleukin-6 release from skeletal muscle; increased angiogenesis, leading to reduced hypoxia and associated inflammation; reduced endothelial cell production of adhesion molecules, stimulating regeneration of these cells and reduced vascular wall inflammation; reduced expression of toll-like receptors and proinflammatory cytokine production in monocytes and increased regulatory T-cell production.<sup>18</sup>

### Sleep

Disturbed sleep is a major concern for people with RA.<sup>19 20</sup> Many studies report relationships between pain, depression, sleep and functional disability in RA,<sup>21</sup> including interdependence in causality.<sup>22</sup> Sleep and pain should be routinely evaluated during clinical assessments using a multidimensional PRO tool, such as the Rheumatoid Arthritis Impact of Disease Score,<sup>23</sup> and non-pharmacological management approaches, such as physiotherapy, meditation, massage, sleep restriction therapy, sleep scheduling and imagery exercises, advised.<sup>24</sup> Practical approaches for enhancing sleep and wellbeing are summarised in box 1.

Poor sleep is one of the risk factors for RA<sup>25</sup> and can lead to increased pain, fatigue, depression and anxiety.<sup>26</sup> Lack of pain control also impacts sleep, resulting in a vicious cycle.<sup>27</sup> Immune activation, as occurs in active RA, can disrupt both deep and dreaming sleep, leading to sleep fragmentation, feeling unrefreshed and daytime fatigue.<sup>28</sup> Medications, such as beta-blockers, corticosteroids, analgesics and antidepressants, may further compound the problem.<sup>29</sup> Improved sleep through effective RA management can improve disease activity measures.<sup>30</sup>

Sleep deprivation reduces ATP production and alters the lymphatic system, leading to reduced clearance of cellular waste products. Hyperphosphorylated tau and amyloid  $\beta$  plaques accumulate, increasing cell death and, ultimately, causing cognitive dysfunction.<sup>31</sup> Persistent sleep disturbance activates  $\beta$ -adrenergic signalling, increasing inflammatory gene expression, proinflammatory cytokine production and markers of systemic inflammation. It also increases monocyte production of signal transducer and activator of transcription proteins, which

**Box 1 Techniques to promote effective sleep and improve social connectedness<sup>77–79</sup>**
**Promoting effective sleep**

- ▶ Exercise regularly.
- ▶ Manage stress through stress-management strategies.
- ▶ Avoid daytime naps.
- ▶ Have a regular sleeping schedule; try to get 7–8 hours of sleep.
- ▶ Do not go to bed unless you are feeling sleepy.
- ▶ Avoid caffeine, alcohol, and nicotine close to bedtime.
- ▶ Do not go to bed hungry, but also do not have a heavy meal close to bedtime.
- ▶ Reduce fluid intake before bedtime.
- ▶ Avoid the use of electronic devices at least 30 min before bedtime.
- ▶ Limit exposure to bright light close to bedtime.
- ▶ Develop a relaxing bedtime routine (eg, have a warm bath, read, listen to relaxing music).
- ▶ Keep the bedroom quiet, cool and dark.

**Improving social connectedness**

- ▶ Join a volunteer group.
- ▶ Get involved with community activities or a cause the person is passionate about.
- ▶ Take up a hobby and join an appropriate group.
- ▶ Take up a team sport.
- ▶ Keep in contact with family and friends.

mediate inflammatory cytokine signalling, and impacts the sympathetic nervous system and hypothalamic–pituitary–adrenal axis, which are also involved in inflammatory signalling.<sup>32</sup>

**Nutrition**

Of all the wellness behaviours with a potential impact on RA, patients are most likely to ask about diet. Currently, a Mediterranean diet is the most studied dietary recommendation, although other diets have potential anti-inflammatory benefits.<sup>33</sup> Recommended components of the Mediterranean diet are listed in [table 1](#).<sup>11</sup>

Studies suggest that a Mediterranean (vs non-Mediterranean) diet is associated with a reduced risk of developing RA, particularly in seropositive individuals,<sup>34 35</sup> and improves inflammation, joint swelling and physical function.<sup>36 37</sup> The Mediterranean diet derives its benefit from polyunsaturated fatty acids (PUFA), polyphenols and fibre. PUFA, found in oily fish and fish oils, have been shown to reduce inflammatory cytokine levels, while also increasing anti-inflammatory lipid production.<sup>38</sup> Polyphenols—a family of phytochemicals in fruits, vegetables and olive oil—reduce oxidative stress and inflammation, while dietary fibre—in whole grains, fruit and vegetables—demonstrates anti-inflammatory properties.<sup>39</sup> A Mediterranean diet may reduce the risk of atherosclerotic cardiovascular and cerebrovascular disease, which are increased in patients with active RA.<sup>40</sup>

HCPs should set patient expectations so dietary changes are viewed as complementary rather than an alternative to pharmacological therapy, as the benefits are likely to be modest.<sup>38</sup> Of note, dietary effects in patients with

RA may vary with sex, serologic status, gut microbiome and hormonal status (in women).<sup>33–35</sup> Weight loss discussions, particularly with patients who are obese, can help patients to lose weight<sup>41</sup> and form an important first step in changing patients' weight management behaviour.<sup>42</sup>

Advice on appropriate weight-management services should be provided, while recognising factors that demotivate/motivate patients. Barriers to weight loss include pain and fatigue, limited mobility, stress, work demands and other priorities, poor psychological health, comorbidities and boredom. Appropriate advice includes increased intake of fruit, vegetables and water, switching to low calorie food/drinks, reduced intake of unhealthy foods and drink, reduced portion sizes, changes in eating habits and increased physical activity.<sup>43</sup>

**Mindfulness**

Mindfulness can be defined as 'the awareness that arises from paying attention, on purpose, in the present moment and non-judgmentally to the unfolding of experience moment by moment'.<sup>44</sup> Mindfulness meditation is the wellness practice most likely to be met with uncertainty, probably being a new concept for many HCPs and patients.

To demystify mindfulness, it is helpful to recommend mindfulness apps and provide a one-page handout on its benefits (reduced stress, pain, anxiety and depression and improved health and wellbeing),<sup>45</sup> along with a list of online free guided meditations and 'how-to' suggestions<sup>46</sup> ([table 2](#)). Educating patients about how little time is needed to meditate is also helpful; 10 min of mindfulness meditation per day is beneficial, particularly in patients with anxious and repetitive thoughts,<sup>47</sup> while 20 min/day for 3 days can reduce pain and anxiety.<sup>48</sup> Tips for fitting meditation into everyday life include introducing the practice into all aspects of daily life (eg, when walking, sitting at one's desk), having a set routine, practicing for short sessions (a few minutes), using reminders (eg, a sound from a watch or computer) and using a meditation anchor (eg, observing the breath).<sup>49</sup>

Mindfulness training can reduce disease activity, physical disability<sup>17 50</sup> and inflammation<sup>51</sup> and improve morning stiffness, pain, fatigue, patient QoL, illness perception and psychological aspects of RA (eg, depression, anxiety, stress).<sup>17 50–53</sup> Stress exacerbates RA symptoms, including pain, and can cause immune dysregulation, increased proinflammatory cytokine production, cardiovascular reactivity and altered coagulation.<sup>54</sup> Mindfulness-based stress reduction significantly increases grey matter concentration in the left hippocampus of the brain—an area involved in learning and memory processes, emotion regulation, self-referential processing and perspective taking<sup>55</sup>—and activates brain regions that modulate pain.<sup>56</sup>

**Social connectedness**

One in three patients with RA believe others do not understand the impact of their disease and more than

**Table 2** Suggestions for practicing mindfulness<sup>46</sup>

Stop and breathe	▶ Take frequent breaks and breathe deeply several times during the day; this fosters calmness and focus
Take time to sit still	▶ Sit quietly in purposeful thought and reflection each day ▶ Avoid filling time with activities
Focus on one task at a time	▶ Practice moment-to-moment awareness in everyday activities
Listen well to everyone	▶ Listen actively and mindfully to coworkers, family members and friends; strong relationships form a strong support network
Appreciate the world around you	▶ Take a walk and use your senses to enjoy what surrounds you
Feed your body well	▶ Choose seasonal, colourful food containing healthy phytonutrients
Eat mindfully	▶ Eat slowly and enjoy the sight, taste and smell of food; it allows for easier digestion
Practice gratitude	▶ Write down five things you are grateful for three times per week
Prepare for bed	▶ Soothe yourself at the end of each day ▶ 1 hour before bedtime, dim the lights, set aside electronic equipment, take a warm bath, read

half feel frustrated when unable to undertake daily activities.<sup>57</sup> Additionally, many patients believe rheumatologists do not support subjective interventions or consider patients' personal situations as part of the disease control process. However, by suggesting sources of support (eg, community groups), HCPs can help to improve an individual's social connectedness.<sup>58</sup>

Social connections with other people in the same situation and feelings of inclusion are important for physical and mental health.<sup>59</sup> Support from family and friends is also important to help patients with RA to better understand their illness, attend appointments, adhere to treatments and eat an appropriate diet.<sup>60</sup> Further suggestions for improving social connections are shown in [box 1](#).

Rewarding social relationships are known to predict better mental and physical health and greater longevity,<sup>61 62</sup> while loneliness and social isolation are associated with increased inflammation and poor health and wellbeing.<sup>63 64</sup> Conversely, pain and physical impairment can impact patients' social and work lives.<sup>65</sup>

Social isolation promotes immune dysfunction, including proinflammatory cytokine production, and increases inflammatory markers. Such isolation may cause stress or depression that stimulates proinflammatory cytokine production and exacerbates inflammatory symptoms.<sup>54 64</sup> Additionally, social isolation may exacerbate the adverse effects of disturbed sleep on inflammation.<sup>32</sup>

### Positive emotions

Positive emotions (joy, contentment, happiness, love, optimism, serenity and amusement) contribute to mental and physical wellbeing.<sup>61 66 67</sup> However, HCPs are often trained to focus on negative emotions and reducing symptoms. Integrating positive emotions into clinical work allows HCPs to go beyond this more traditional treatment approach. Encouraging patients to undertake an activity they enjoy is similar to prescribing exercise, social connectedness or other wellness practices; takes little time and is cost effective. Similar practices can be

individualised and integrated into treatment planning and may even improve RA medication adherence.<sup>68</sup>

The link between positive emotions and physical health and longevity is well known. Positive emotions also promote positive social relationships that are reciprocally associated with physical health,<sup>61</sup> reduce the intensity of persistent pain and buffer the effects of such pain on functioning and wellbeing in patients with RA.<sup>69</sup>

Studies have shown that positive emotions are associated with larger grey matter volume in a brain area from the left thalamus to the parahippocampal gyrus<sup>70</sup> and activate brain areas involved in the sensing of pleasure (ventral striatum and orbital frontal cortex).<sup>71</sup> Positive emotions are also associated with lower circulating proinflammatory cytokine levels.<sup>66 67 72</sup>

### DISCUSSION AND 'CALL FOR ACTION'

Treat to target has been the main approach to managing RA, based on compelling evidence for reduced joint destruction and preservation of functional status. However, many areas of contemporary unmet need are subjective aspects of key importance to the individual, such as pain reduction, improved functioning and QoL. While pharmacological interventions are needed, it is important to provide a holistic approach to treating patients to reduce pressure on healthcare systems and increase productivity. Studies have highlighted the importance of the emotional and social impact of RA and how most patients still do not feel well despite pharmacological treatment, mainly due to uncontrolled pain that impacts daily activities and wellbeing.<sup>57</sup>

As outlined in this article, wellness interventions can improve health and reduce the impact of RA on a person from both a physical and an emotional perspective. These lifestyle changes can be considered part of the overarching practice of self-management, which encompasses a variety of activities aimed at improving a person's ability to manage symptoms and treatment, and the physical and psychological consequences of a



chronic disease.<sup>73</sup> The importance of self-management strategies to optimise wellbeing for people living with RA has recently been recognised with the publication of EULAR recommendations<sup>74</sup> and Portuguese multi-disciplinary recommendations for non-pharmacological interventions.<sup>75</sup> The latter include exercise, psychological interventions, social participation, sleep hygiene and self-management.<sup>75</sup> Recommended self-management strategies include problem solving, goal setting and cognitive behavioural therapy (CBT).<sup>74</sup> CBT is a type of psychotherapy used to challenge negative thought patterns to change patient behaviours that maintain symptoms and disability; it has been shown to provide small-to-moderate improvements in impairment/disability, fatigue and self-efficacy in patients with RA.<sup>17 76</sup>

This is the first article to comprehensively discuss a rationale and existing evidence for the holistic management of RA and to provide practical suggestions for incorporating wellness practices into a busy clinical setting—a process requiring creativity and customisation based on individual needs and practice settings in line with EULAR treat-to-target and self-management goals.<sup>4 74</sup> Wellness is not necessarily an additional outcome to address above and beyond treat to target, as all treat-to-target metrics include the Patient Global Assessment, which is a PRO. By enhancing wellness and thereby improving patient global scores, rheumatologists may be able to improve other disease metrics (eg, the Disease Activity Score for 28-joint count and the Clinical Disease Activity Index). Whether specific RA drugs also contribute to enhanced wellness by improving key PROs connected to wellbeing (eg, pain) is not yet determined.

We call for clinicians to consider wellness practices in addition to pharmacological agents and PRO measurement for the holistic management of people with RA.

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